Appendix E

Daylight and Sunlight

Contents

E1 Daylight, Sunlight and Light Pollution – additional methodology

E1.1 Introduction

E1.1.1 This appendix contains a description of the relevant planning policy, the methods used to assess the effects associated with daylight and sunlight and the baseline conditions currently existing at the Site.

E1.2 Policy and Guidance

National Legislation

E1.2.1 There is no national legislation that concerns itself specifically with daylight and sunlight amenity.

National Planning Policy

E1.2.2 The National Planning Policy Framework (NPPF) 2019 addresses the need for the flexible application of guidance relating to daylight and sunlight under section 11 "Making effective use of land".

E1.2.3 Paragraph 123. c) under subsection "Achieving appropriate densities" states the following;

"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 so long as the resulting scheme would provide acceptable living standards."

E1.2.4 Planning Practice Guidance (PPG) 2019 'Effective Use of Land', in paragraph 004 provides the following advice in relation to daylight and sunlight amenity;

"A range of considerations should be taken into account in establishing appropriate densities on a site or in a particular area. Tools that can assist with this include;…

- …characterisation studies and design strategies, dealing with issues such as urban form, historic character, building typologies, prevailing sunlight and daylight levels, green infrastructure and amenity space; …"

E1.2.5 Paragraph 006 goes on to advise on how daylight and sunlight is regulated in the planning process;

"Where a planning application is submitted, local planning authorities will need to consider whether the proposed development would have an unreasonable impact on the daylight and sunlight levels enjoyed by neighbouring occupiers, as

well as assessing whether daylight and sunlight within the development itself will provide satisfactory living conditions for future occupants."

E1.2.6 Regional and local policy set out below expands on the above PPG guidance, which follows into the assessment undertaken within this chapter.

Regional Planning Policy

E1.2.7 The London Plan –Spatial Development Strategy for Greater London ('The London Plan') March 2016, references daylight and sunlight amenity in chapter 7, 'London's living places and spaces' policy 7.6 –architecture;

"… buildings and structures should … not cause unacceptable harm to the amenity of surrounding land and buildings, in relation to privacy, overshadowing, wind and micro climate. This is particularly important for tall buildings."

E1.2.8 Policy 7.7 of the London Plan 'Location and Design of Tall and Large Buildings' includes the following references to applications for tall or large buildings and their effect on their surroundings;

A. "Tall and large buildings should be part of a plan-led approach to changing or developing an area by the identification of appropriate, sensitive and inappropriate locations. Tall and large buildings should not have an unacceptably harmful impact on their surroundings….

D. Tall buildings:
a) should not affect their surroundings adversely in terms of microclimate, wind turbulence, overshadowing, noise, reflected glare, aviation, navigation and telecommunication interference"

E1.2.9 The New London Plan, which was submitted to the Secretary of State in December 2019 with intention to publish, (the 'Intend to Publish London Plan'), relates mainly to the provision on daylight and sunlight within new developments, with limited reference to safeguarding existing neighbouring daylight and sunlight amenity. The provision of daylight and sunlight amenity within the proposed development is outside the scope of this chapter, but a standalone report addressing this will be submitted with the planning application. It is understood the GLA intend to produce supplementary guidance in relation to daylight and sunlight amenity in additional to the Intend to Publish London Plan, which states at paragraph 3.6.10;

"The Mayor intends to produce a single guidance document which clearly sets out the standards which need to be met in order to implement Policy D6 Housing quality and standards for all housing tenures, as well as wider qualitative aspects of housing developments. This will include guidance on daylight and sunlight standards. This will build on the guidance set out in the 2016 Housing SPG and the previous London Housing Design Guide."

E1.2.10 Policy D6 'Housing Quality and Standards' states the following in relation to daylight and sunlight amenity;

D. "The design of development should provide sufficient daylight and sunlight to new and surrounding housing that is appropriate for its context, whilst

avoiding overheating, minimising overshadowing and maximising the usability of outside amenity space"

E1.2.11 Paragraph 3.6.4 of the Guidance notes for Policy D6 states;

"Dual aspect dwellings with opening windows on at least two sides have many inherent benefits. These include better daylight, a greater chance of direct sunlight for longer periods, natural cross-ventilation, a greater capacity to address overheating, pollution mitigation, a choice of views, access to a quiet side of the building, greater flexibility in the use of rooms, and more potential for future adaptability by altering the use of rooms."

E1.2.12 Paragraph 3.6.5 continues;

"**Single aspect dwellings** are more difficult to ventilate naturally and are more likely to overheat, and therefore should normally be avoided. Single aspect dwellings that are north facing, contain three or more bedrooms or are exposed to noise levels above which significant adverse effects on health and quality of life occur, should be avoided. The design of single aspect dwellings must demonstrate that all habitable rooms and the kitchen are provided with adequate passive ventilation, privacy and daylight, and that the orientation enhances amenity, including views. It must also demonstrate how they will avoid overheating without reliance on energy intensive mechanical cooling systems.

A variety of approaches to housing typologies and layout of buildings should be explored to make the best use of land and create high quality, comfortable and attractive homes. For example, increasing ceiling heights and having bay windows can optimise daylight and sunlight and allow buildings to be closer together than can otherwise be achieved"

E1.2.13 Table 3.2 'Qualitative design aspects to be addressed in housing developments' in the Intend Publish Local Plan sets out guidance on layout, orientation and form of new residential development;

"iii The site layout, orientation and design of individual dwellings and, where applicable, common spaces should: - provide privacy and adequate daylight for residents"

E1.2.14 Policy D9 'Tall Buildings' of the Intend to Publish London Plan provides the following update to Policy 7.7 of the current London Plan;

"Impacts …

C. …Development proposals should address the following impacts:

1) Visual Impacts..

d) …Proposals resulting in harm will require clear and convincing justification, demonstrating that alternatives have been explored and

that there are clear public benefits that outweigh that harm. The buildings should positively contribute to the character of the area…

g) …buildings should not cause adverse reflected glare…

3) …environmental impact

a) wind, daylight, sunlight penetration and temperature conditions around the building(s) and neighbourhood must be carefully considered and not compromise comfort and the enjoyment of open spaces, including water spaces, around the building"

E1.2.15 The Greater London Authority's Housing Supplementary Planning Guidance (Ref 11-6), published March 2016 ('the Mayor of London's SPG') states the following with regard to daylight and sunlight amenity;

"**Daylight and Sunlight**
Standard 32- All homes should provide for direct sunlight to enter at least one habitable room for part of the day. Living areas and kitchen dining spaces should preferably receive direct sunlight."

E1.2.16 The document continues at paragraphs 2.3.45 to 2.3.47

"...Daylight enhances residents' enjoyment of an interior and reduces the energy needed to provide light for everyday activities, while controlled sunlight can help to meet part of the winter heating requirement. Sunlight is particularly desirable in living areas and kitchen dining spaces. The risk of overheating should be taken into account when designing for sunlight alongside the need to ensure appropriate levels of privacy. In addition to the above standards, BRE good practice guidelines and methodology can be used to assess the levels of daylight and sunlight achieved within new developments..."

"Where direct sunlight cannot be achieved in line with Standard 32, developers should demonstrate how the daylight standards proposed within a scheme and individual units will achieve good amenity for residents. They should also demonstrate how the design has sought to optimise the amount of daylight and amenity available to residents, for example, through the design, colour and landscaping of surrounding buildings and spaces within a development."

"*BRE guidelines on assessing daylight and sunlight should be applied sensitively to higher density development in London, particularly in central and urban settings, recognising the London Plan's strategic approach to optimise housing output (Policy 3.4) and the need to accommodate additional housing supply in locations with good accessibility suitable for higher density development (Policy 3.3). Quantitative standards on daylight and sunlight should not be applied rigidly, without carefully considering the location and context and standards experienced in broadly comparable housing typologies in London".*

E1.2.17 The document also states at paragraph 1.3.45 in relation to 'Standards for privacy, daylight and sunlight';

"*Policy 7.6Bd requires new development to avoid causing 'unacceptable harm' to the amenity of surrounding land and buildings, particularly in relation to*

privacy and overshadowing and where tall buildings are proposed. An appropriate degree of flexibility needs to be applied when using BRE guidelines to assess the daylight and sunlight impacts of new development on surrounding properties, as well as within new developments themselves. Guidelines should be applied sensitively to higher density development, especially in opportunity areas, town centres, large sites and accessible locations, where BRE advice suggests considering the use of alternative targets. This should take into account local circumstances; the need to optimise housing capacity; and scope for the character and form of an area to change over time"

E1.2.18 The document continues at paragraph 1.3.46;

"The degree of harm on adjacent properties and the daylight targets within a proposed scheme should be assessed drawing on broadly comparable residential typologies within the area and of a similar nature across London. Decision makers should recognise that fully optimising housing potential on large sites may necessitate standards which depart from those presently experienced but which still achieve satisfactory levels of residential amenity and avoid unacceptable harm."

Local Policy

E1.2.19 Paragraph 5.22 of Westminster City Council's City Plan (November 2016) under subheading 'Health, Safety and Well Being' summarises the Council's stance on the safeguarding of neighbouring amenity with new development;

"It is recognised that new development in Westminster is likely to have some impact on residents and businesses, both in terms of the construction period and post construction.

New development should take measures to minimise noise, light, urban heat island effect, and air pollution, to acceptable levels and maintain or improve the amenity for neighbours by addressing issues of privacy, overlooking, natural light, enclosure, and disturbance. These detailed matters will be dealt with in detail in City Management policy."

E1.2.20 Westminster's UDP, adopted on 24 January 2007 contains the following policy guidance under Chapter 9 – Environment:

Policy Env 13: Protecting Amenities, Daylight and Sunlight and Environmental Quality

(d) The City Council will ensure that both new and replacement accommodation, particularly residential, receives adequate daylight and sunlight. The City Council will seek improvements where opportunities arise, particularly in cases where the existing conditions are sub-standard.

(e) The City Council will normally resist proposals which result in a material loss of daylight/sunlight, particularly to existing dwellings and educational buildings. In cases where the resulting level is unacceptable, permission will be refused.

(f) Developments should not result in a significant increase in the sense of

enclosure or overlooking, or cause unacceptable overshadowing, particularly on gardens, public open space or on adjoining buildings, whether in residential or public use.

Policy Application

9.228 *The City Council wishes to protect and improve amenities for residents, workers and visitors. That will include maintaining and improving the amount of daylight and sunlight reaching buildings, particularly housing. Individual applications will therefore be assessed to ensure that they do not result in a material loss of sunlight and daylight. (See also paragraph 9.7 on energy-saving). New buildings should also be designed to ensure that future occupants will enjoy adequate levels of daylight and sunlight.*

9.229 *Although the policies are primarily designed with regard to residential accommodation, the City Council may apply them to other uses, such as schools and other activities where loss of daylight/sunlight in particular may prejudice the present use of the premises. Recommended standards for daylight and sunlight for residential accommodation are set out in the Building Research Establishment (BRE) publication, 'Site layout planning for daylight and sunlight', issued in 1991, which also gives guidance on privacy, gardens and open space. The City Council will normally aim to ensure that there is a predominantly daylit appearance for habitable rooms to residential buildings. Therefore, minimum daylight values are normally unacceptable. There are many residential properties in Westminster which fall well below the recommendations made in the BRE document. In these situations, where principle habitable rooms such as bedsits, living rooms, studies or kitchens are affected, the City Council may find any loss of light unacceptable.*

9.230 *Particular attention will need to be paid to the positioning of new windows both in existing and proposed buildings as well as of roof terraces and balconies. The acceptability of development which may result in problems of overlooking and loss of privacy for neighbours, will be dependent upon a detailed assessment of the orientation, proximity and access arrangements of adjoining properties. Policies in Chapter 10: Urban Design and Conservation, will apply.*

E1.2.21 Westminster City Council's draft City Plan 2019-2040 (as submitted to the Secretary of State in November 2019) will, once adopted, replace the above current City Plan policies and saved UPD policies. In relation to daylight and sunlight amenity, the draft City Plan 2019-2040 states the following under Spatial Strategy Policy 7;

"7. Managing development for Westminster's people

Development will be neighbourly by:

A. Protecting and where appropriate enhancing amenity, by preventing

unacceptable impacts in terms of daylight and sunlight, sense of enclosure, overshadowing, privacy and overlooking."

E1.2.22 The policy guidance goes on to state;

"7.1 / Westminster is already densely developed. As the city grows, detrimental impacts on existing users of the area must be avoided. It is imperative that design solutions are found to avoid negative impacts associated with further growth. By adopting the principle of neighbourly development, we expect development to make a positive contribution to the quality and function of the local area. We will take a balanced approach that considers the specific location and context as well as the merits of each proposal including the wider benefits a scheme can deliver, against impacts on the surrounding area.

7.2 / The principles of neighbourly development contained in this policy apply to all applications. Opportunities to enhance the quality of the local area might differ for developments depending on scale and typology, and we may therefore apply relevant criteria flexibly."

E1.2.23 Under subheading 'Amenity Impacts', the policy guidance goes on to state;

"7.3 / Negative effects on amenity should be minimised as they can impact on quality of life. Provision of good indoor daylight and sunlight levels is important for health and well-being and to decrease energy consumption through reduced need for artificial heating and lighting. Overshadowing affects the quality or operation of adjacent buildings and can negatively impact on the use of public and private open space for recreation, rest and play. Positioning, scale and orientation of buildings as well as the incorporation of design measures should be considered to minimise overshadowing and overlooking and ensure adequate levels of privacy. Even when there may be no material loss of daylight or sunlight, new developments should prevent unacceptable increases in the sense of enclosure."

Other Relevant Policy, Standards and Guidance

E1.2.24 The Building Research Establishment, Site Layout Planning for Daylight and Sunlight: A guide to good practice 2011 ('BRE guide') has developed a series of tests to determine whether daylight levels within existing buildings surrounding new developments will satisfy a range of daylighting criteria.

E1.2.25 The introduction to the BRE guide states;

"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, store rooms, circulation areas and garages need not be analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include, schools, hospitals, hotels and hostels, small workshops and some offices."

E1.2.26 Section 3.1 para 2 of the BRE guide states:

"In housing, the main requirement for sunlight is in living rooms, where it is valued at any time of day, but especially in the afternoon. Sunlight is also

required in conservatories. It is deemed as less important in bedrooms and in kitchens, where people prefer it in the morning rather than the afternoon."

E1.2.27 The BRE guide assessment methodology and guidance for assessing impact is set out in full in this methodology appendix.

E1.2.28 The British Standards Institution, Code of Practice for Daylighting ('BS8206-2') 2008. BS8206-2 provides technical data to inform the numerical recommendations to which the BRE guide refers. The BS8206-2 states in relation to orientation and sunlight amenity;

"The degree of satisfaction is related to the expectation of sunlight. If a room is necessarily north facing the building is in a densely built urban area, the absence of sunlight is more acceptable than when its exclusion seems arbitrary. It is the duration of sunlight in an interior, rather than its intensity or size of the sunny patch, which correlates best with the occupant's satisfaction."

E1.2.29 The Society of Light and Lighting of the Chartered Institute of Building Services Engineers (CIBSE) publication LG10: Daylighting –a guide for designers ('LG10') also provides technical data to inform the numerical recommendations to which the BRE guide refers.

E1.3 Baseline Conditions

E1.3.1 The following information was used to determine the baseline conditions for the purpose of assessing the environmental effects of the Proposed Development;

- 3d laser scan survey produced by Greenhatch
- 3d Revit Base Model by AStudio Architects
- Ordnance Survey and Zmapping data included in the above
- Site visits undertaken on 7 November 2019 and 29 January 2020
- Desktop based site observation from aerial photography and Google street-view imagery
- Online research using publicly accessible information sources (including but not limited to the LPA's planning portal and Zoopla) for floorplans of existing neighbouring buildings and recent neighbouring developments.
- Land registry searches for existing neighbouring buildings

E1.3.2 From the information outlined above, the baseline conditions were identified to include the **application s**ite in its pre-demolition state and the surrounding buildings and structures and are likely to remain at the projected implementation date of the Proposed Development.

E1.3.3 BRE guidance recommends that a neighbouring property need not be assessed for daylight and sunlight amenity impacts if located at a distance greater than three times the height of new neighbouring development, measured from the centre of the lowest existing window.

E1.3.4 A 3D computer model was created to replicate the baseline conditions using the information detailed above. Under the BRE guidance above, neighbouring properties at a distance greater than 175.8 metres from the Site would not require assessment (with the tallest element of the proposed development measuring at 59.65 metres above ground level, and assuming a lowest centre point of a neighbouring window at 1.05m above ground level). However, the

BRE recommended methodology is primarily suited to a single proposed building on a development site, rather than a masterplan. Applying a radius of 175.8 metres from a central point in the Site would therefore be unsuitable in this instance, and instead **a distance of** 175.8 metres **has been measured** from the easte**rn and western boundary of the application s**ite. This resulted in an inclusion area that is approximately equal to a radius of 220m metres **from a central location on the application s**ite.

E1.3.5 Within this area, sensitive receptors were identified based firstly on use and property type; BRE guidance predominately applies to residential properties but allows for commercial properties to be considered if a specific requirement for daylight and sunlight amenity can be demonstrated.

E1.3.6 As a preliminary test for daylight and sunlight amenity effects, the following BRE guidance was applied to residential properties (and properties with a reasonable expectation of daylight and sunlight amenity) within the radius from the centre of the application site;

"If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building from the centre of the lowest window, subtends an angle of more than 25 degrees to the horizontal, then the diffuse daylighting of the existing building may be adversely affected."

E1.3.7 The following existing neighbouring properties listed in Error! Reference source not found. below (along with their position in relation to the application site) were therefore identified as sensitive receptors for potential impacts;

Table 1: Sensitive receptors

Name/address of building	Assumed use	Position in relation to the development
The Rising Sun Ph	Mixed-use	West
42 Ebury Bridge Road	Residential	West
40 Ebury Bridge Road	Residential	West
38 Ebury Bridge Road	Residential	West
36 Ebury Bridge Road	Residential	West
34 Ebury Bridge Road	Residential	West
32 Ebury Bridge Road	Residential	West
30 Ebury Bridge Road	Residential	West
28 Ebury Bridge Road	Residential	West
26 Ebury Bridge Road	Residential	West
24 Ebury Bridge Road	Residential	West
22 Ebury Bridge Road	Residential	West
20 Ebury Bridge Road	Residential	West
10 Ebury Bridge Road	Commercial	North West
Fountain Court	Residential	North
Consort Rise House (199-203 Buckingham Palace Road)	Mixed-use	North
1 Ebury Bridge Road	Residential	North
Cheylesmore House	Residential	South
Peabody Avenue Estate	Residential	East
Moore House, Grosvenor Riverside	Residential	South

E1.3.7.1 Chelsea Barracks, a phased neighbouring development that is currently under construction, will contain residential units that have not been identified as potential sensitive receptors due to their distance from the development site. For the purpose of the daylight and sunlight assessment the outline massing (and detail design, where submitted and approved) has been included as built out within the baseline to represents the likely conditions at the planned time of implementation of the Proposed Development and is considered as the more suitable setting by which to assess the magnitude of change.

E1.3.8 With regard to potential overshadowing effects on neighbouring external open space, the amenity space within the recent Grosvenor Riverside development to the south of the Site was identified as having requirement for sunlight amenity but not identified as a potential sensitive receptor in the baseline conditions due to being positioned wholly to the south of the Site. Due to its orientation, this

space will not be adversely affected in terms of sunlight and as such no further assessment is required.

E1.3.9 The locations of these potential sensitive receptors are labelled in Figure 1 below. The existing and demolished buildings on the Site are shown in green.

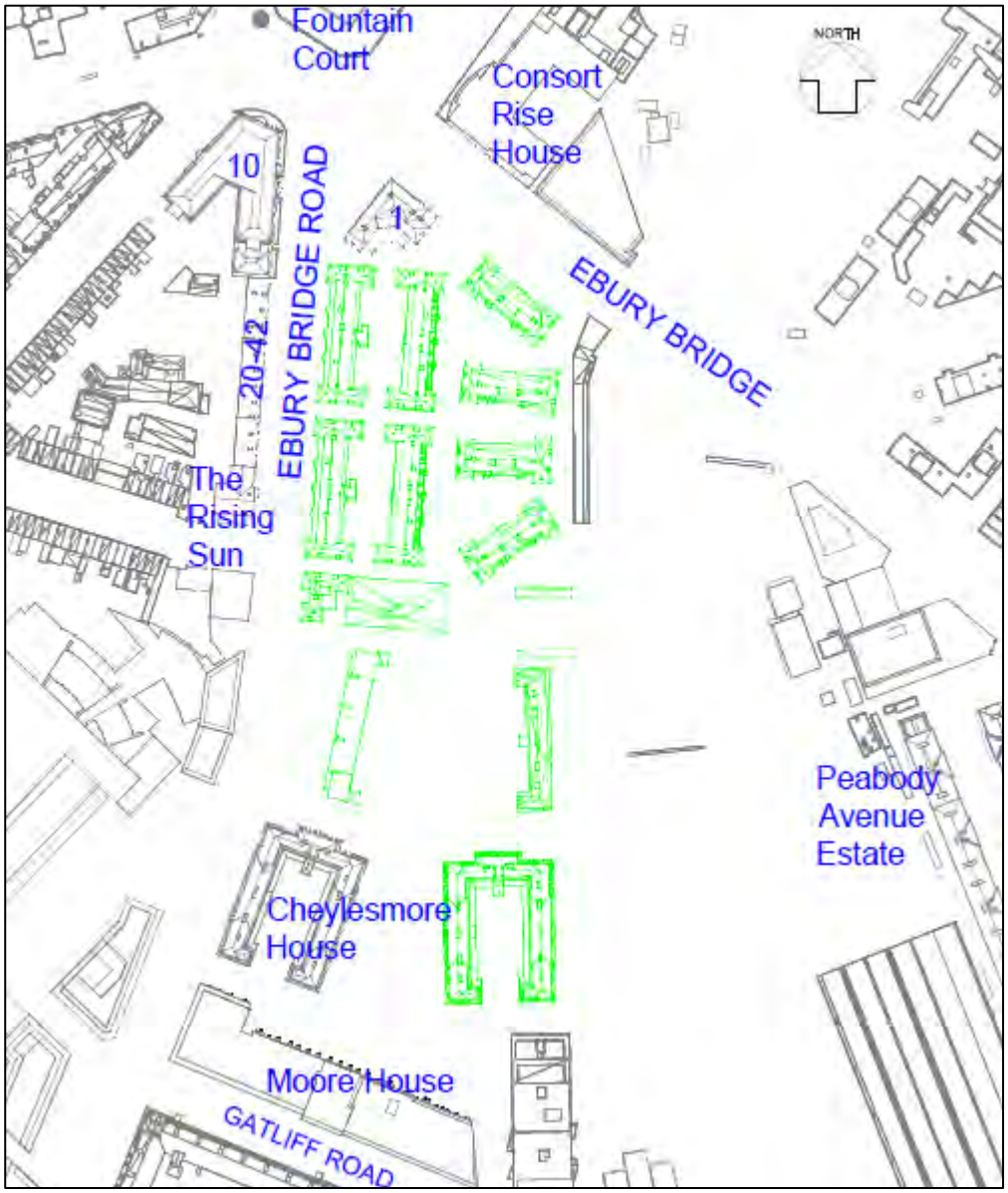


Figure 1: Location plan of baseline conditions and sensitive receptors

E1.3.10 With the baseline area defined and potential sensitive receptors identified, the assessment of the baseline environmental conditions in relation to daylight and sunlight amenity has followed BRE recommended assessment methodology, using bespoke industry-recognised daylight and sunlight analysis software and the aforementioned 3D computer model to undertake the following testing;

E1.3.11 Vertical Sky Component (VSC)

- VSC is a measure of illuminance at a point on a vertical plane (taken as the centre of the main window in a habitable room) as a ratio of illuminance on a horizontal plane from an unobstructed sky, expressed as a percentage.

The BRE guide advises that a VSC equal to or greater than 27% should allow enough skylight to reach the existing window.

- All windows serving habitable space that face towards the Proposed Development Site within the sensitive receptors identified were assessed for daylight amenity using the VSC test.

E1.3.12 Daylight Distribution (DD)

- DD measures the area of a habitable room that has access to visible sky at working plane height. The point at which visible sky can no longer be seen is plotted as a 'no sky line' contour.
- The BRE guide advises that areas beyond the no sky line usually appear dark and gloomy compared to the rest of the room. It is considered that if a significant area of the room is beyond the no sky line (normally more than 20%) than the distribution of the daylight in the room will look poor. It follows that a room with access to visible sky across at least 80% of the area will have good distribution of daylight and, is thereby applied as the benchmark.
- All habitable rooms served by windows facing towards the Proposed Development Site within the sensitive receptors identified were assessed for daylight amenity using the DD test. BRE guidance suggests that DD analysis should be undertaken where the layout and room use is known, however following consultation with the Council, we have included DD analysis where room layouts are not known, using assumed layouts based on our reasonable assumptions and expertise.

E1.3.13 Average Daylight Factor (ADF)

- ADF measures the average illuminance at working plane height within a habitable room (taking into account internal reflectance) as a ratio of illuminance on a horizontal plane from unobstructed sky, expressed as a percentage.
- The BRE guide advises that an ADF of 5% will provide a predominately day-lit appearance without electric lighting (2% with supplementary electric lighting). ADFs in excess of 6% can lead to overheating issues in summer and excessive heat-loss in winter.
- It is recommended that if supplementary electric lighting is provided, a minimum value of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms should be attained. For ease, these minimum values are hereby referred to as 'target values' throughout this chapter. The documents advise that rooms with multiple uses, such as Living / Kitchen / Dining Rooms (referred to as 'LKDs' throughout this chapter), the highest value for the given uses should apply to the room.
- Room layouts, glazing specifications and internal reflectance values are usually required for the ADF assessment; all of which are factors outside the applicant's control. As such, the BRE guide advises against undertaking ADF assessment for existing neighbouring buildings, except for where the building is proposed but not yet built. The BRE guide states;

  "Use of the ADF for loss of light to existing buildings is not generally recommended. The use of the ADF as a criterion tends to penalise well-

daylit existing buildings, because they can take a much bigger and closer obstruction and still remain above the minimum ADFs recommended in BS8206-2. Because BS8206-2 quotes a number of recommended ADF values for different qualities of daylight provision, such a reduction in light would still constitute a loss of amenity to the rooms. Conversely if the ADF in an existing building were only just over the recommended minimum, even a tiny reduction in light from a new development would cause it to go below the minimum, restricting what could be built nearby." (F6 and F7)

- Appendix F of the BRE Report clarifies the situations when meeting a set ADF target value with a new development in place could be appropriate as a criterion for loss of light. These are:
- (i) where the existing building is one of a series of new buildings that are being built one after another, and each building has been designed as part of the larger group
- (ii) as a special case of (i), where the existing building is proposed but not built. A typical situation might be where the neighbouring building has received planning permission but not yet been constructed
- (iii) where the developer of the new building also owns the existing nearby building and proposes to carry out improvements to the existing building (e.g. by increasing window sizes) to compensate for the loss of light.
- (iv) where the developer of the new building also owns the existing nearby buildings and the affected rooms are either unoccupied or would be occupied by different people following construction of the new building" (F8)
- No sensitive receptors meeting the above criteria were identified and therefore ADF testing has not been undertaken, in-line with BRE guidance

E1.3.14 Annual Probable Sunlight Hours (APSH)

- APSH measures the average total number of sunlight hours received at a point (taken as the centre of the main window in a habitable room) across the year.
- The BRE guide advises that a reasonably sun-lit appearance will be achieved if at least 25% of annually available sunlight hours can be achieved (at least 5% of which during the winter months) by a window facing with 90 degrees of due south. The BRE guide notes that the above is unlikely to be achieved by north or predominately east / west facing windows.
- All windows serving habitable space that face towards the Proposed Development Site and are orientated within 90 degrees of due south within the sensitive receptors identified were assessed for sunlight amenity using the APSH test.

E1.3.15 Sunlight Amenity to Outdoor Spaces

- The BRE guide advises testing sunlight amenity to an area of an outdoor private or public amenity space by determining the area that receives at least 2 hours of direct sunlight on March 21st.
- March 21st (the equinox) is the date recommended by the BRE guide to represent an overall 'all-year-round' effect. It is recommended that at least half of an outdoor space should achieve at least 2 hours of sunlight on this

date. Additional testing can be undertaken on 21st June and 21st December (summer and winter solstice) to present a best and worst-case scenario.

- Neighbouring outdoor amenity spaces identified with a potential to be affected by the proposed development are located at ground floor and 2nd floor level within 1 Ebury Bridge Road, and ground floor at Cheylesmore House.
- The BRE Guidelines suggest that where large buildings are proposed which may affect a number of gardens or open spaces, it is useful and illustrative to plot a shadow plan to show the location of shadows at different times of the day and year. This is typically undertaken at hourly intervals across daylight hours on 21st March and 21 June.
- The BRE guidelines give no numerical criteria for determining the significance of transient overshadowing, and this is based on visual inspection of the image-based results and professional judgement.

E1.3.16 It should be noted that the BRE recommended numerical targets for all tests detailed above were prepared primarily for use in low-density suburban environments and should therefore be used flexibly when dealing with a town centre site, where such values are often unachievable in a more built-up location. This is recognised in the BRE Guide, which demonstrates that lower target values are typically expected by occupants in such areas, using the example of a historic city centre mews building (where the building typology and street layout typically allows for a maximum VSC value of 18% to be achieved).

E1.4 Assessment Methodology

Construction effects

E1.4.1 Construction effects on daylight and sunlight amenity have been scoped out.

Existence effects

E1.4.2 In order to determine any sensitive receptors located on the periphery of the Site that may be subject to adverse environmental impacts arising from the existence effects of the proposed development, the BRE recommended 25-degree rule was adopted in the first instance.

E1.4.3 The existence effects of the Proposed Development on those sensitive receptors listed in the table at paragraph E1.3.7 have been established by modelling the proposed development into the Baseline 3D model (to replace the existing and demolished buildings within the application site) using the following sources of information;

- 3d model of the proposed development ‘200521_Ebury_Massing’ by Astudio Architects received on 21 May 2020
- Plans, Sections and Elevations of the Proposed Development in drawing issue ‘200214_Arup_GA issue’ by Astudio Architects received on 18 February 2020.
- Updated plan drawings of the Proposed Development received by Astudio Architects on 20 May 2020

E1.4.4 The Proposed Development within the 3D computer model comprises the detailed design for Blocks 7 and 8, and the 'illustrative scheme' for the outline element of the proposed development (for approval of access and scale, with all other matters reserved). This is to allow a degree of flexibility at detailed design stage with regards to layout, landscape and appearance of the proposed blocks, whilst ensuring that effects no greater than those stated in this chapter can result from all possible design configurations within these parameters.

E1.4.5 The existence conditions are shown in Figure 2 below. The proposed development on the site is shown in red.

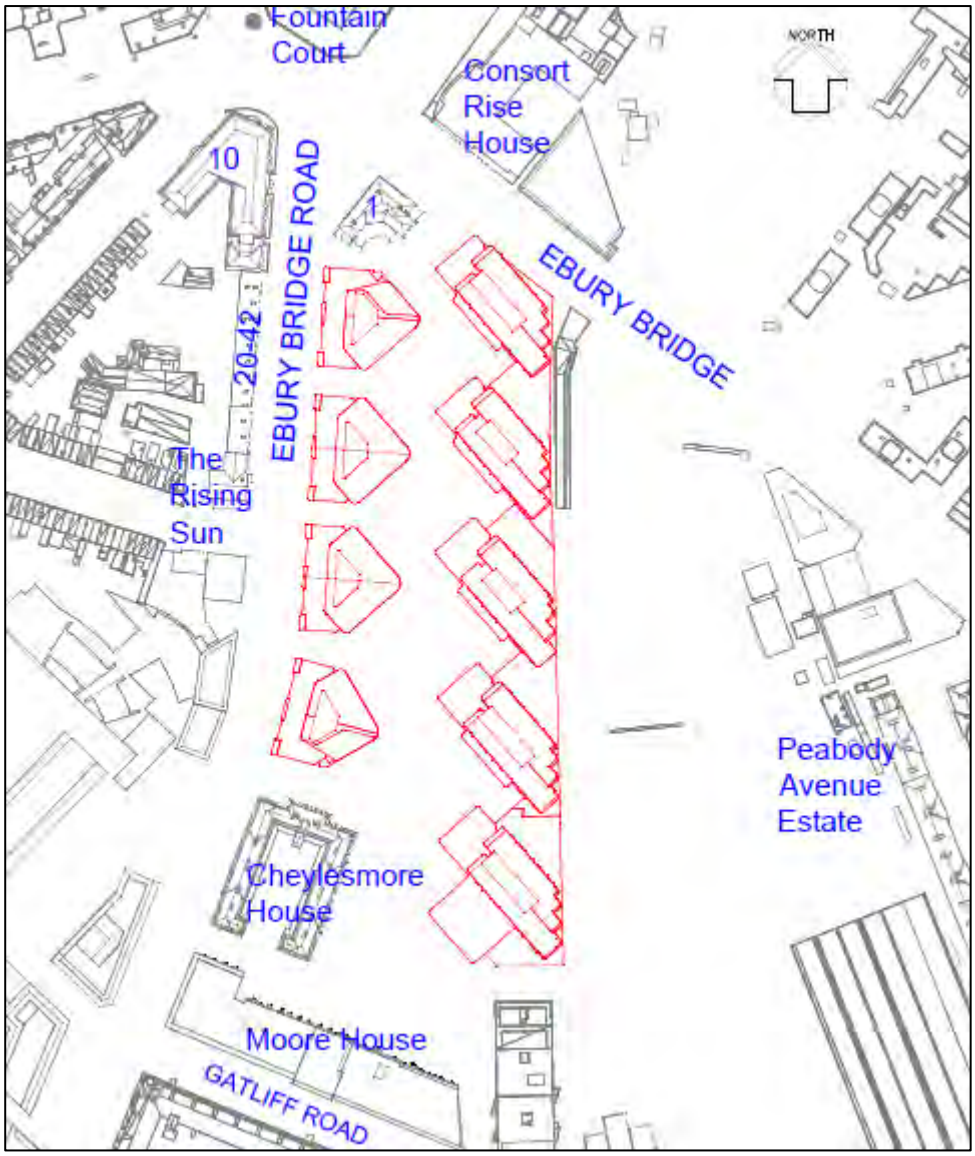


Figure 2: Location plan of existence conditions

E1.4.6 The environmental conditions of the sensitive receptors in the Existence conditions were determined using bespoke software to undertake repeat assessments of those detailed in the baseline methodology. Applying the BRE absolute targets (as detailed in Baseline Methodology) to the existence

conditions provides a like-for-like comparison with the baseline conditions, by which to review the effects of the proposed development in the first instance.

E1.4.7 It was then established whether impacts would occur by applying the BRE guide recommended criteria set out below;

Adverse daylight effects are unlikely to occur if;

- a VSC of at least 27% (or not less than 0.8 times the former value) is retained, and;
- where room layouts are known, the retained working plane area with visible sky access is no less than 0.8 times the former value.

Adverse sunlight effects are unlikely to occur if;

- the window is orientated within 90 degrees of due north, or
- an APSH of at least 25% (or not less than 0.8 times the former value) is retained, at least 5% of which should occur during the winter months, or
- the APSH is reduced by no more than 4%.
- The area of outdoor amenity space receiving at least 2 hours of sunlight on 21 March remains above 50% (or not less than 0.8 times the former value)

E1.4.8 As detailed in the baseline methodology, the BRE guide does not recommend applying the ADF assessment in addition to the VSC and DD daylight tests for existing neighbouring buildings, and therefore ADF tests have not been undertaken.

E1.4.9 Where impacts are identified, the significance of effects are considered. In classifying the significance of effects, the BRE guide provides no numerical guidance beyond the recommended target values and relative reduction factors. Instead, the BRE guide states *"the assessment of impact will depend on a number of factors, and there is no simple rule of thumb that can be applied"*. The guidelines provided by the BRE guide in Appendix I 'Environmental Impact Assessments" for determining the significance of effects on neighbouring daylight and sunlight amenity are as follows;

Where the loss of skylight or sunlight fully meets the guidelines in this book (BRE guide) the impact is assessed as negligible or minor adverse. Where the loss of light is well within the guidelines, or only a small number of windows or limited area of open space lose light, a classification of negligible impact is more appropriate. Where the loss of light is only just within the guidelines, and a larger number of windows or open space area are affected, a minor adverse impact would be more appropriate.

Where the loss of skylight or sunlight does not meet the guidelines in this book, the impact is assessed as minor, moderate or major adverse. Factors tending towards a minor adverse impact include:

- only a small number of windows or limited area of open space are affected
- the loss of light is only marginally outside the guidelines
- an affected room has other sources of skylight or sunlight
- the affected building or open space only has a low level requirement for skylight or sunlight
- there are particular reasons why an alternative, less stringent, guideline should be applied

Factors tending towards a major adverse impact include:

- a large number of windows or large area of open space are affected
- the loss of light is substantially outside the guidelines
- all the windows in a particular property are affected"
- the affected indoor or outdoor spaces have a particularly strong requirement for skylight or sunlight, eg a living room in a dwelling or a children's playground.

Beneficial impacts occur when there is a significant increase in the amount of skylight or sunlight reaching an existing building where it is required, or in the amount of sunlight reaching an open space. Beneficial impacts should be worked out using the same principles as adverse impacts.

E1.4.10 Research was undertaken for EIA qualifying recent developments in the borough to provide examples of numerical parameters adopted to assess the significance of effects. The following applications where reviewed:

- 16-11562-FULL, the redevelopment of 14-17 Paddington Green, London: the significance criteria adopted to assess the significance of daylight and sunlight amenity effects arising from this development are shown in Error! Reference source not found. below.
- 10/10496/OUT, demolition of existing former barracks buildings and warehouse (Dove Walk) in connection with the redevelopment of the site for mixed use purposes comprising residential (a maximum of 448 units), sports centre and retail (the Chelsea Barracks Scheme). The submitted daylight and sunlight ES Chapter does not specify numerical significance criteria adopted (beyond the BRE criteria), but instead states the following;

  "15.34 The interpretation of the daylight and sunlight results must be viewed in terms of the quantum of lost or gained, not purely upon the percentage of change. The percentage value may well be misleading, particularly where the baseline values are small. In these situations, a small change in the quantum of light could represent a high percentage change in the overall figure, implying that there was a significant change in daylight where as in reality the difference is negligible. The assessment criteria specified within the BRE Guidance only suggests where a change in daylight will be noticeable to the occupants, it does not further define impacts beyond this.

  15.35 Impacts beyond the levels suggested by the BRE Guidance have been defined as adverse or beneficial; and minor, moderate or major using professional judgement."

Table 2: Application 16-11562-FULL significance criteria

Effect	Criteria		
	Daylight	**Sunlight**	**Overshadowing**
Negligible	A VSC value of 27% or greater, or a reduction in VSC between 0% and 20% of its existing value. An NSL value of 50% or greater, or a reduction in NSL between 0% and 20% of its existing value.	An APSH value of 25% or greater with at least 5% APSH recieved during the winter months, or a reduction in APSH between 0% and 20% of its existing value.	Area of amenity that receives 2 hours of direct sunlight on 21st March: 50% - 59%
Minor Adverse	A VSC value of less than 27% and a reduction in VSC between 20% and 35% of its existing value. An NSL value of less than 50% and a reduction in NSL between 20% and 30% of its existing value.	A total APSH of less than 25% and a reduction in APSH between 20% and 35% of its existing value. A winter APSH of less than 5% and a reduction in winter APSH between 20% and 35% of its existing value.	Area of amenity that receives 2 hours of direct sunlight on 21st March: 40% - 49%
Moderate Adverse	A VSC value of less than 27% and a reduction in VSC between 35% and 50% of its existing value. An NSL value of less than 50% and a reduction in NSL between 35% and 50% of its existing value.	A total APSH of less than 25% and a reduction in APSH between 35% and 50% of its existing value. A winter APSH of less than 5% and a reduction in winter APSH between 35% and 50% of its existing value.	Area of amenity that receives 2 hours of direct sunlight on 21st March: 30% - 39%
Major Adverse	A VSC value of less than 27% and a reduction in VSC greater than 50% of its existing value. An NSL value of less than 50% and a reduction in NSL greater than 50% of its existing value.	A total APSH of less than 25% and a reduction in APSH of more than 50% of its existing value. A winter APSH of less than 5% and a reduction in winter APSH of more than 50% of its existing value.	Area of amenity that receives 2 hours of direct sunlight on 21st March: <30%

E1.4.11 From the BRE guidance and research data above, it is clear that classification of impacts needs to take into account not just relative reduction, but quantum loss and retained absolute value in addition (as small quantum losses can manifest as disproportionately large percentage reductions, when values are low).

E1.4.12 Therefore a two-tiered approach has been established and applied:

1) impacts are first considered against a set of numerical parameters formulated based on BRE guidance and professional judgement to establish an initial view on significance of effects

2) impacts are then viewed against qualitative paraments set out in Appendix I of the BRE Guide (as per paragraph E1.4.9), with factors such as room use and number of affected rooms per property considered to form an overall conclusion on the significance of effects. To reach overall conclusions as to significance of effects on this basis, reasonable assumptions as to room uses and property extents have been made, based on external observation and information available on WCC's online planning database and / or estate agent particulars and leaseplans.

E1.4.13 Based on BRE guidance above and professional judgement (and having regard to the daylight and sunlight parameters applied within other recent EIA qualifying developments within the borough, as above) a set of parameters have

been formulated by which to determine the first-stage significance of effects (where BRE guide target values are not achieved), as set out below.

E1.4.14 VSC assessment

- Impacts are considered negligible if;
  - The retained VSC remains above 27% or;
  - within 0.8 times the baseline value
- Impacts are considered minor adverse if;
  - the relative VSC value, expressed as a ratio, is between 0.7 or 0.8 times the baseline value, or;
  - the absolute VSC value remains greater than 20%, or;
  - the absolute VSC value is not reduced by more than 5%, compared to the baseline value .
- Impacts are considered moderate adverse if;
  - the relative VSC value, expressed as a ratio, is between 0.6 or 0.7 times the baseline value, or;
  - the absolute VSC value remains greater than 15%, or;
  - the absolute VSC value is not reduced by more than 10%, compared to the baseline value
- Impacts are considered major adverse if;
  - the relative VSC value, expressed as a ratio, is less than 0.6 times the baseline value, or;
  - the absolute VSC value retained is less than 15%, or;
  - the absolute VSC value is reduced by more than 10%, compared to the baseline value

E1.4.15 As BRE guidance notes, the assessment of impact is dependent on a number of factors and as such, variations of the above can occur and are considered on a case by case basis.

E1.4.16 DD assessment

- Impacts are considered negligible if;
  - The retained DD remains above 80% or;
  - within 0.8 times the baseline value
- Impacts are considered minor adverse if;
  - the DD value, expressed as a ratio, is between 0.7 or 0.8 times the baseline value, or;
  - over 70% of the room area continues to retain access to visible sky, or;
  - the room area with access to visible sky is reduced by no more than 1 sqm.
- Impacts are considered moderate adverse if;
  - the DD value, expressed as a ratio, is between 0.6 or 0.7 times the baseline value, or;
  - over half (50%) of the room area continues to retain access to visible sky, or;
  - the room area with access to visible sky is reduced by no more than 5 sqm.
- Impacts are considered major adverse if;

- the retained DD value, expressed as a ratio, is less than 0.6 times the baseline value, or;
- less than half (50%) of the room area continues to retain access to visible sky, or;
- the room area with access to visible sky is reduced by more than 5 sqm

1.1.1 As with the VSC test, variations of the above can occur and are considered on a case by case basis, taking into account room use amongst other factors.

1.1.2 APSH assessment

- Impacts are considered negligible if;
  - The retained APSH remains above 25% (with 5% of APSH occurring in the winter months) or within 0.8 times the annual or winter sun baseline values, or;
  - there is a reduction equal to or less than 4% APSH
- Impacts are considered minor adverse if;
  - the APSH value, expressed as a ratio, is between 0.7 or 0.8 times the baseline value, or;
  - the APSH value achieved remains greater than 20%, or;
  - there is a reduction equal to or less than 5% APSH
- Impacts are considered moderate adverse if;
  - the APSH value, expressed as a ratio, is between 0.6 or 0.7 times the baseline value, or;
  - the APSH value achieved remains greater than 15%, or;
  - there is a reduction equal to or less than 10% APSH
- Impacts are considered major adverse if;
  - the APSH value, expressed as a ratio, is less than 0.6 times the baseline value, or;
  - the APSH value achieved is less than 15%, or;
  - there is a reduction more than 10% APSH
- Again, variations of the above can occur and are considered on a case by case basis.

E1.4.17 Once the assessment data is processed according to the above numerical parameters, the second stage of the two-tiered approach of determining significance of effects will apply for impacts identified as moderate or major adverse (and therefore those impacts potentially giving rise to significance adverse effects). As noted in paragraph E1.4.12, factors such as room use and number of affected rooms within a property will be taking into account; for example, bedrooms and kitchens are considered to have a lesser requirement for sunlight amenity by the BRE guide and therefore 'moderate' or 'major' adverse impacts to such rooms would be considered '**not significant adverse**' if the main living room within the property would remain unaffected or experience negligible to minor adverse impacts.

E1.4.18 Beneficial impacts, if occurring, would be classified as the inverse of the above for each test, as per the equivalent increase in retained daylight and sunlight values compared to the baseline conditions.

E1.4.19 In summary, impacts that satisfy the criteria for '**minor'** impacts as above will be classified as beneficial or adverse effects that are not significant. Impacts that

satisfy the criteria for **'moderate' or** 'major' impacts, as above, will be classified as beneficial or adverse effects that are significant. Where no change in daylight and sunlight levels are identified or impacts that satisfy the BRE guide criteria for 'negligible' impacts, as above, will be classified as Neutral.

E1.4.20 The significance of effects arising from impacts on sensitive receptors is therefore categorised as neutral, not significant beneficial, not significant adverse, significant beneficial or significant adverse.

Operational effects

E1.4.21 Operational effects on daylight and sunlight amenity have been scoped out.

Cumulative effects

E1.4.22 Neighbouring developments that have obtained planning permission but have not yet been implemented (or are under construction) have been considered within the baseline and existence conditions (for the reasons set out in the respective sections) and repeat assessment to determine cumulative effects for such developments is therefore not required.

E1.4.23 The potential cumulative effects of any development applications in the area that have been submitted but are pending determination have been considered both in terms of potential future cumulative effects with the Proposed Development on neighbouring daylight and sunlight amenity, and as potential future sensitive receptors in themselves, should they be approved, built out and occupied before completion of the proposed development.

E1.4.24 Review of submitted developments within the 220m radius of the development site, as determined in the baseline methodology, has been undertaken using the planning portals of Westminster City Council, Royal Borough of Kensington and Chelsea and London Borough of Wandsworth. With the exception of the Chelsea Barracks development (which has been included in the 'baseline' and 'existence' assessments), it is considered that there are no pending development applications within this area capable of producing cumulative daylight and sunlight amenity impacts with the proposed development, nor are there any pending development applications that could be considered potential future sensitive receptors prior to completion of the proposed development.

E1.5 Assumptions and limitations

Assumptions

E1.5.1 Where internal arrangement data obtained from the local planning database has been used, further external observation has been undertaken to establish, where possible, whether the planning information correctly reflects the internal conditions. However, access to neighbouring properties has not been obtained to verify the internal dimensions, and such layouts should be treated as assumed.

E1.5.2 The assessment undertaken within this chapter has been undertaken by preparing a 3D computer model of the site and surrounding buildings and analysing the effect of the Proposed Development on the daylight and sunlight amenity enjoyed by the neighbouring buildings using bespoke software. The assessment is based on a visual inspection, the information detailed in the methodology

section and estimates of relevant distances, dimensions and levels which are as accurate as the circumstances allow.

E1.5.3 In the existence conditions the Proposed Development for the outline element of the application is based on an illustrative scheme; with detail design matters reserved. Any reduction in scale and massing of the illustrative scheme at detail design stage may result in an overstatement of significance of effects in this chapter. However, as noted elsewhere, this approach should ensure the development coming forward at detail design stage will remain within the parameters of the massing assessed.

Limitations

E1.5.4 The neighbouring properties identified as sensitive receptors have not been accessed internally and have only been viewed from street level. As such, the assessment of the layouts within these properties is reliant on publicly available information and has not been verified as accurate or correct.

E1.5.5 The large Chelsea Barracks site to the west of the application site is undergoing significant regeneration, with outline and detail planning consent obtained for various phases of the development. These schemes are represented within the assessment environment by 3D models, which again are based solely on publicly available documents, which have not been verified as correct or accurate by external measured survey as they are not yet built or complete.

Comparable Development

E1.5.6 The aforementioned Chelsea Barracks phased development, which is currently under construction, is of similar size and scale to the Ebury Bridge Renewal site, and could be considered a precedent by which to compare the proposed development.

E1.5.7 It is understood that approval was granted in 2011 for the outline scheme under application number 10/10496/OUT, comprising redevelopment of the site for mixed use purposes, including provision of up to 448 residential units. The daylight and sunlight assessment, undertaken by Gordon Ingram Associates, was submitted as part of the Environmental Impact Assessment. It is understood, from review of documents uploaded on Westminter City Council's online planning database, that an ES chapter including details of the daylight and sunlight amenity assessment was submitted in December 2010, and was subsequently updated and resubmitted in April 2011 following scheme amendments. In the revised EIA, the daylight and sunlight amenity chapter is referenced as one of two chapters that did not require a full update following the design amendments, with the data submitted in the 2010 chapter still applicable. The original 2010 chapter does not appear to be available for download, however, the effects of this development on neighbouring daylight and sunlight are summarised in the non-technical summary as being negligible to minor adverse, and minor to moderate adverse for overshadowing of external amenity spaces. It should be noted that the above effects are summarised for a 'Hybrid Baseline' which, based on the description provided, appears to assess the effects of the development against notional site conditions comprising "*assumed buildings along Ebury Bridge Road and Pimlico Road which reflect the height and massing of the residential receptors on the opposite sides of these roads*" to counter the 'underdeveloped' nature of the existing and pre-demolition site

conditions. The assessment findings of the latter baselines vs the proposed development are not summarised in the non-technical summary, but are shown in the tables below, taken from the amended ES chapter dated April 2011.

Amended Scheme

Amended Scheme - Total Number of VSC Compliant Windows		
Current Existing Baseline	**Pre-Demolition Baseline**	**Hybrid Baseline**
1262 of 1392 (91%)	1272 of 1392 (91%)	1389 of 1392 (99%)

Amended Scheme

Original Scheme - Total Number of APSH Compliant Windows		
Current Existing Baseline	**Pre-Demolition Baseline**	**Hybrid Baseline**
686 of 747 (92%)	695 of 747 (93%)	714 of 747 (96%)

Figure 3: Chelsea Barracks Daylight and Sunlight ES Chapter Extract

E1.5.8 Taking the 'Pre-Demolition Baseline' data as the nearest comparable to our own assessment (which assesses the proposed development against the Ebury Bridge Road Estate in its pre-demolition conditions), the tables in Figure 3 above show BRE compliance rates of 91% for VSC (daylight) and 93% for APSH (sunlight). It can be seen in the table that the overall sample size of assessed windows is significantly greater, with a total of 1392 windows assessed for VSC and 747 windows assessed for APSH (compared to our sample sizes of 430 and 225 respectively). Percentages aside, *Figure 3* shows that 120 windows were found to transgress BRE criteria for VSC, as would 52 windows for APSH. These numbers are comparable with our findings for the Ebury Bridge Estate Renewal, with 143 windows below BRE guidance for VSC and 34 windows for APSH.

E1.5.9 From initial review of the VSC data appended to the April ES Chapter, the adverse VSC impacts to the 120 affected windows vary in significance; the VSC reductions are, for the most part, minor to moderate, but reductions of up to 63% VSC (with a VSC of 29% reduced to 10%, as an example) are shown to occur within Chelsea Gate. Similar review of DD data shows that LKDs within Moore House at Grosvenor Waterside (then referred to as 'Building A' were found to experience reductions in DD of up to 58%, and DD reductions of up for 64% were found to occur within 1-120 Gatliff Close.

E1.5.10 The officers report, prepared for planning committee held on 20 June 2011, at paragraph 6.4.1 ' Daylight and Sunlight' under subheading 'Amenity' summarises the daylight, sunlight and overshadowing impacts per property, referencing Policy ENV13 and BRE guidelines and stating where impacts beyond BRE recommended numerical criteria are considered material (albeit the reductions cited above are not stated numerically, but referred to as 'greater than 20% reduction'). Impacts are compared alongside the notional 'mirror' assessment, for which impacts beyond BRE recommendations still occur, but to a lesser extent.

E1.5.11 The daylight and sunlight section of the reports concludes as follows;

"Conclusions regarding daylight and sunlight
It must be acknowledged that a high density development in an urbanised area is unlikely to be carried out without some impact on adjoining occupiers…

…Whilst there are technical breaches of the BRE guidance, principally on Ebury Bridge Road, it would be difficult to develop, even to an identical height, without some impact on these windows."

E1.5.12 In relation to sunlight amenity impacts, the officers report states;

"Generally, these windows already have a low amount on sunlight in winter and in such situations, it is difficult for further development to take place without breaching BRE guidelines...it is not considered that breaches to winter sunlight to a relatively small number of windows surrounding the site would be sufficient justification to require revisions to the bulk and scale of the proposed buildings."

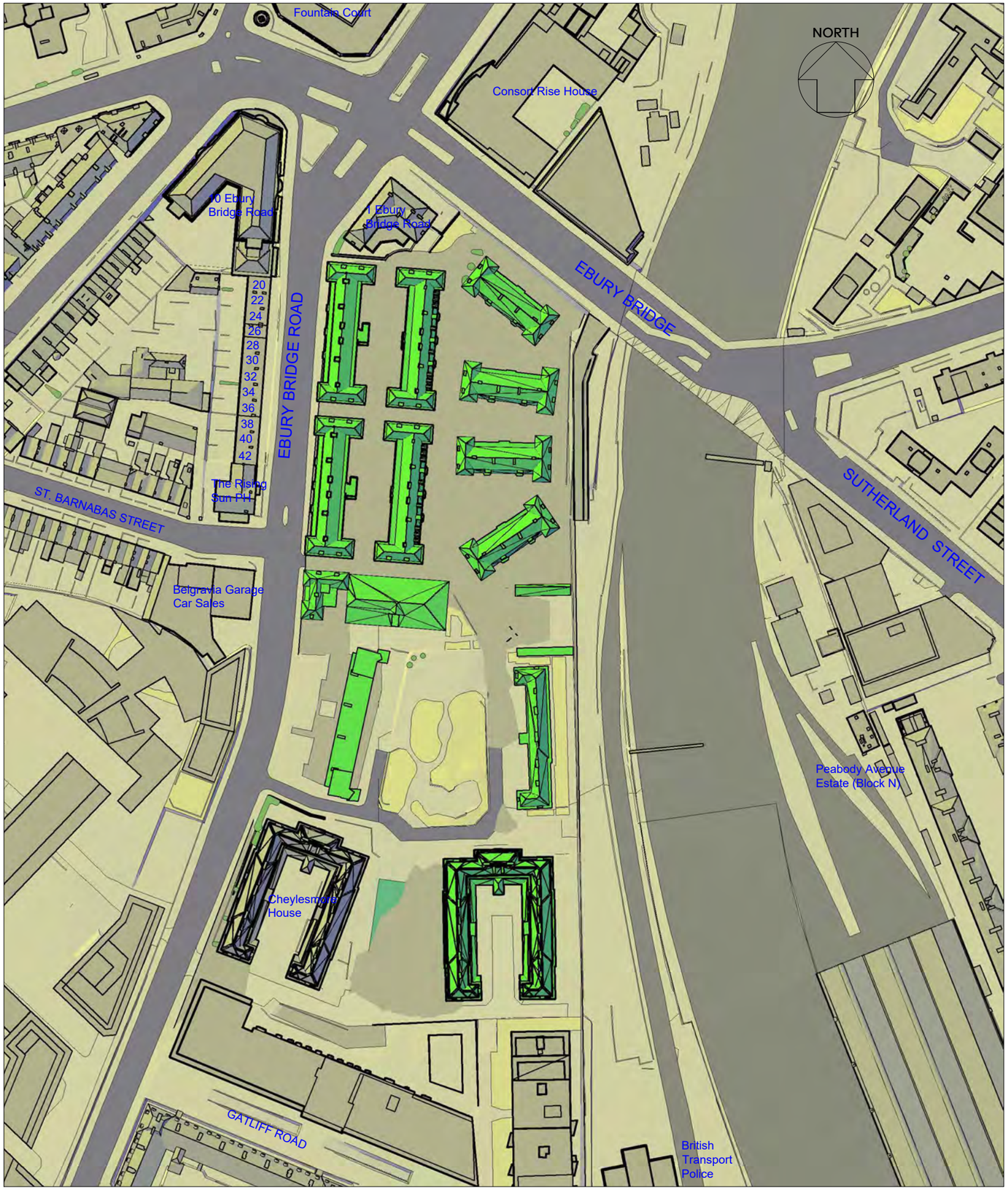
E1.5.13 The report concludes the following at paragraph 6.4.9 'Summary of Amenity Impact';

"…the overall impact in terms of the daylight and sunlight received by neighbouring properties is considered acceptable in the context of ENV13 and the BRE guidance."

E1.5.14 Committee minutes note that objections were received with reference to 'key issues of concern' (contentious heights noted), but confirm resolution to grant permission (subject to 106 agreement and referral to the Mayor of London) with no further mention of daylight and sunlight amenity.

E1.5.15 The Chelsea Barracks scheme has been included in its approved outline form within our assessment in order to assess a 'worst-case' cumulative assessment. The reserved matters application for the phase located closest to the Ebury Bridge Renewal estate has not yet been submitted / approved, and therefore we have not assessed any potential daylight and sunlight amenity effects of the proposed development on the Chelsea Barracks scheme. Given the distance between the two sites, it is considered that the proposed development would not adversely affect and sunlight amenity for future occupants on this site, particularly as both sites are likely to come forward in close succession.

E2 Daylight and sunlight availability results



Existing Site Plan

SOURCES OF INFORMATION:

WESTMINSTER CITY COUNCIL
141012 - EBURY BRIDGE ESTATE.DWG
Received 03 November 2014

GREENHATCH
20998 - 3D.DWG
Received 02 December 2014

ASTUDIO ARCHITECTS
190830_Base Model_3200_Context.dwg
Received 30 August 2019

200521_Ebury_Massing
Received 21 May 2020

Astudio Stage 3 Drawings
Received 13 March 2020

B7-B8 Lower, B7-B8 Upper
Received 20 May 2020

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CLIENT
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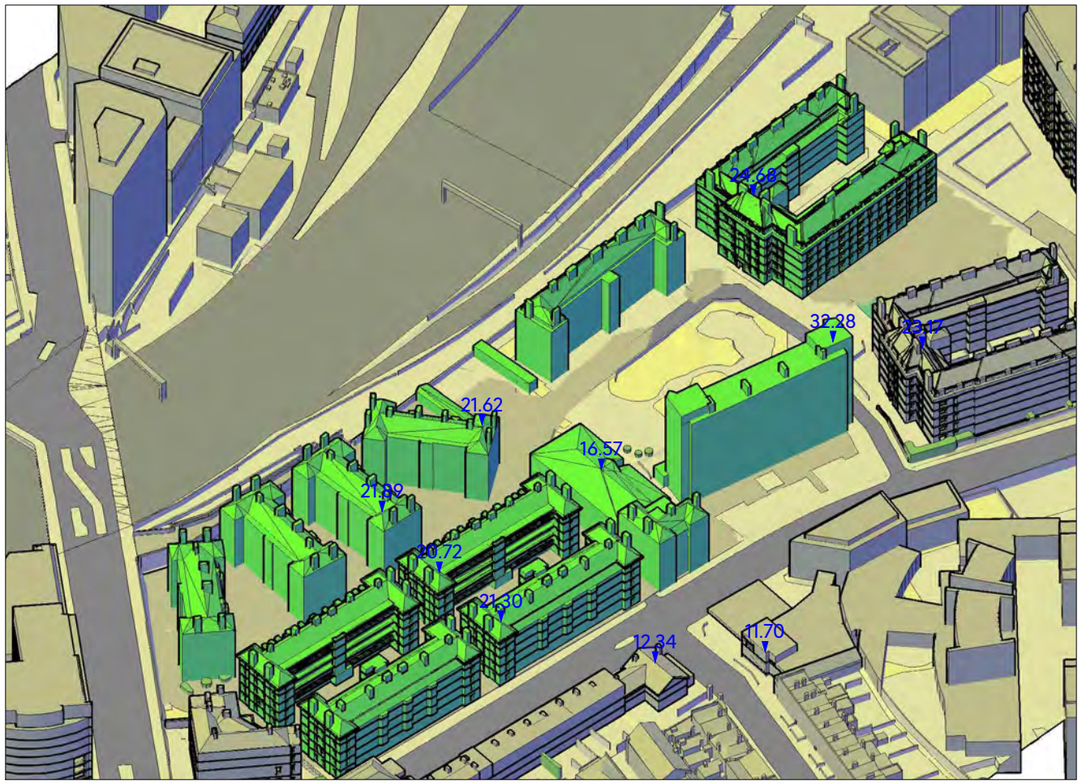
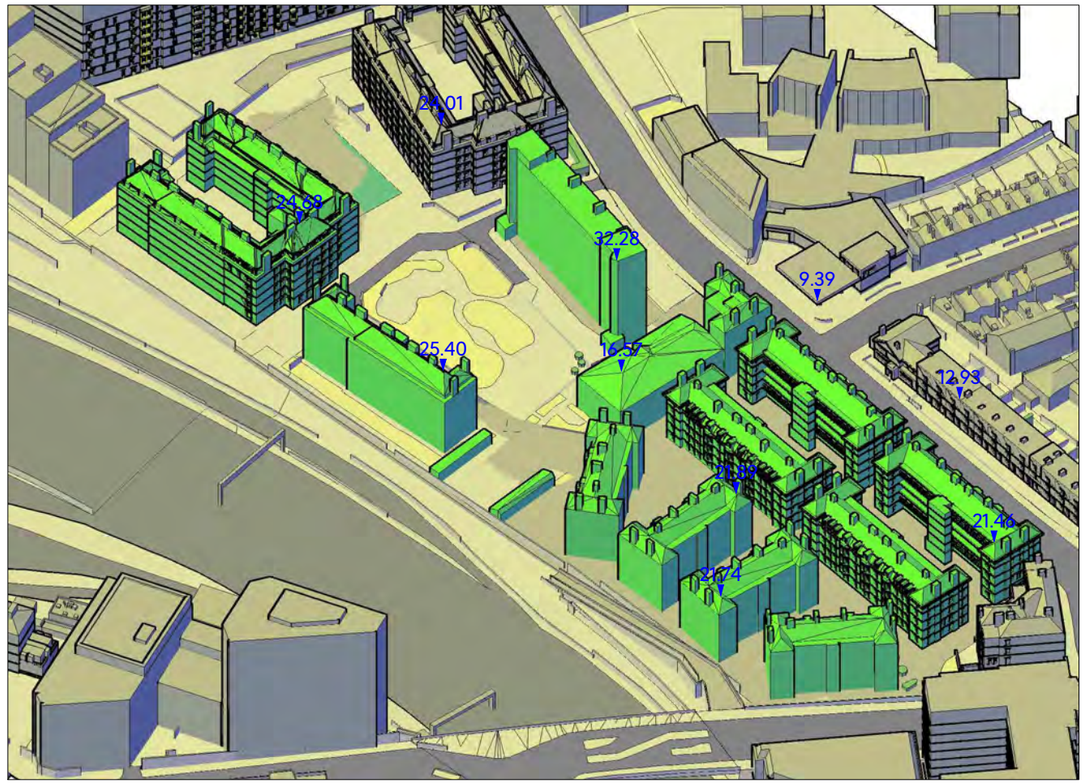


3D Context View - View from Northwest (Existing)



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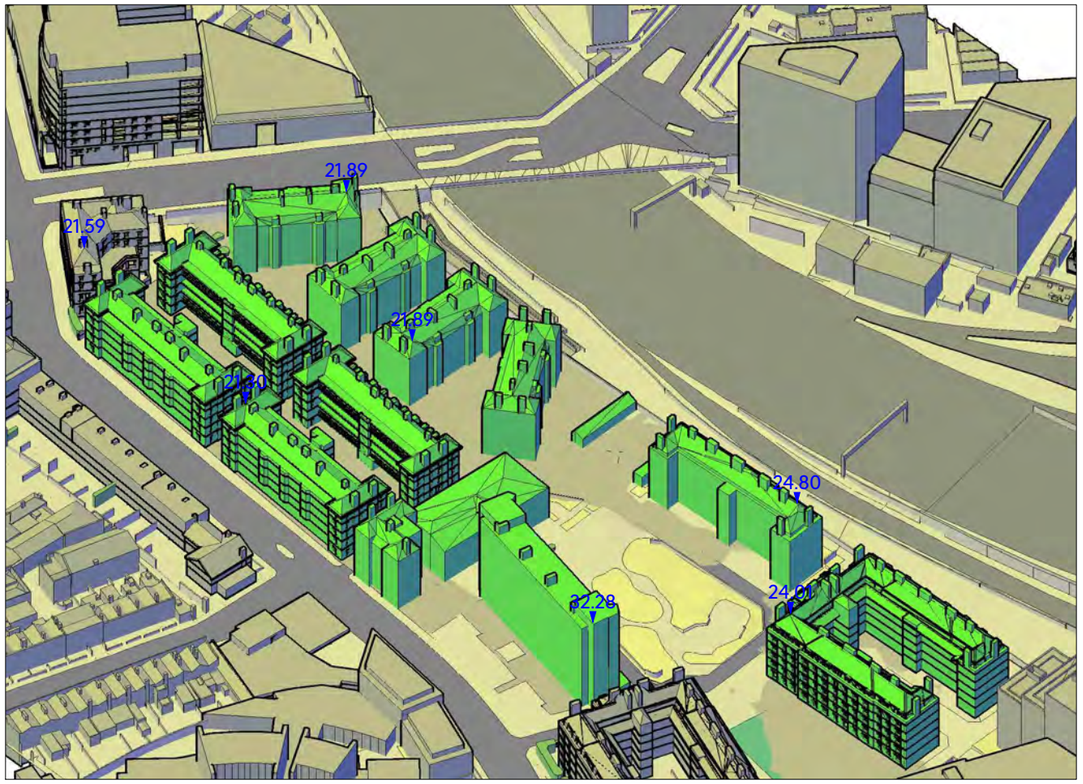

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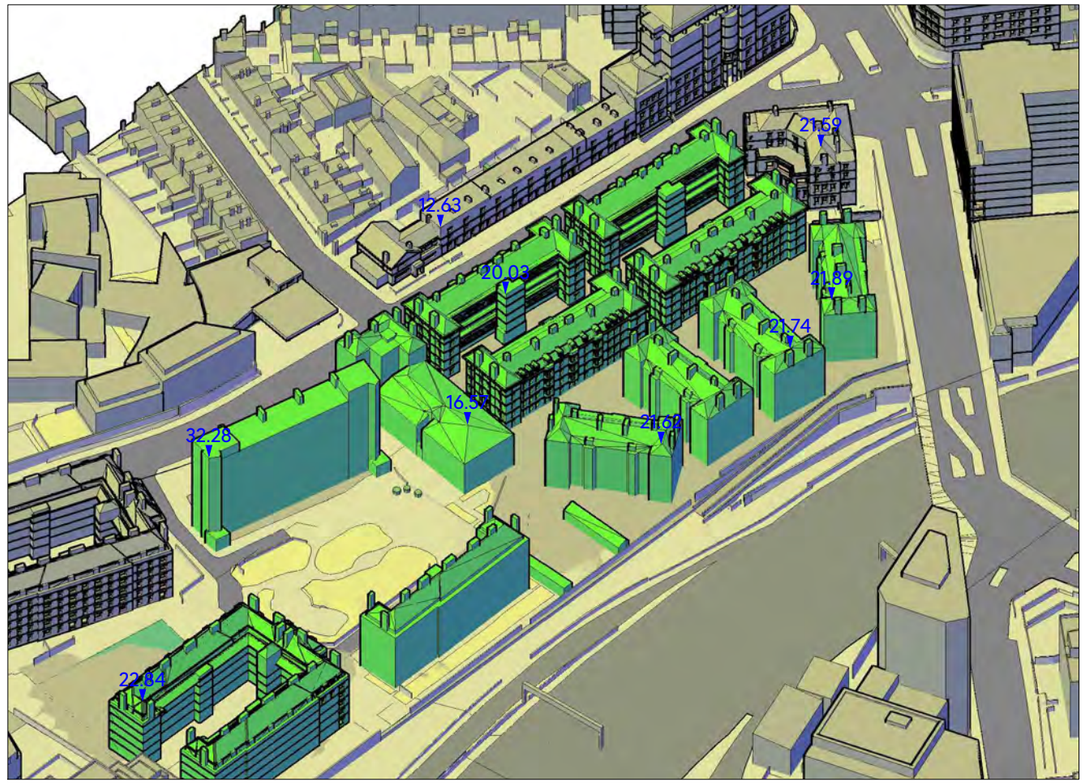

3D Context View - View from Southeast (Existing)

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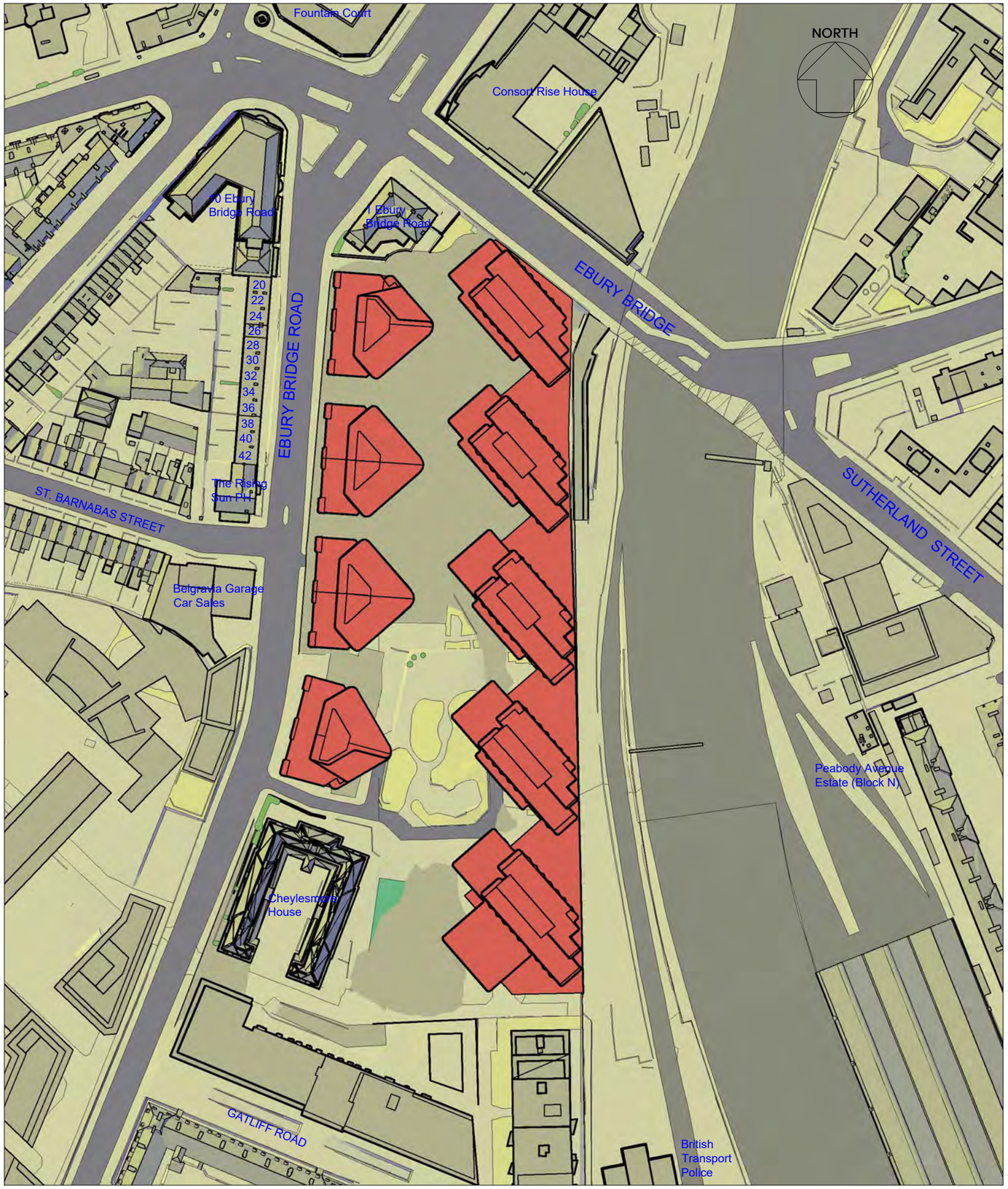

Proposed Site Plan

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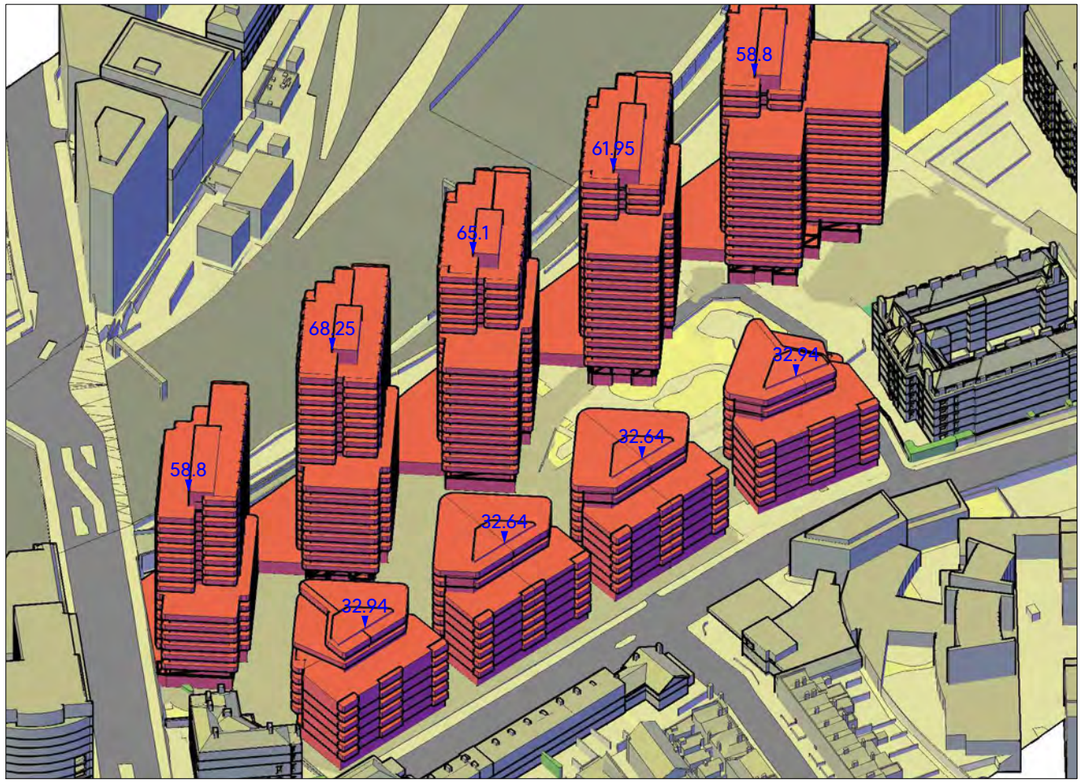
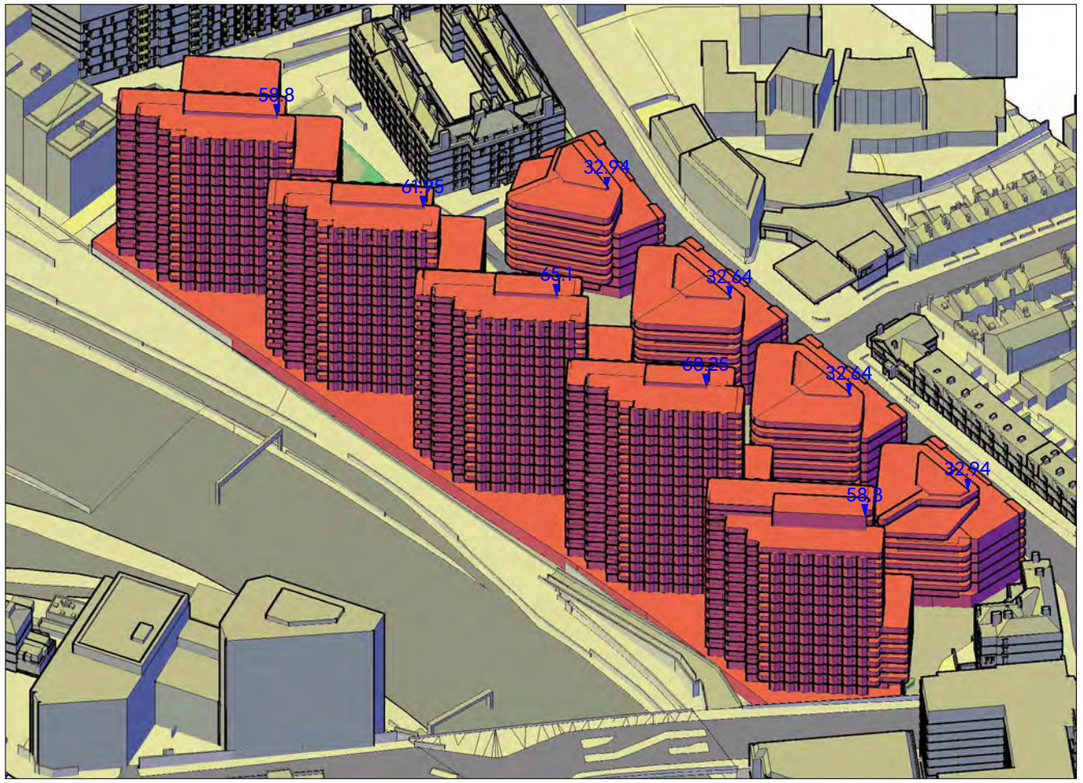


3D Context View - View from Northwest (Proposed)



3D Context View - View from Northeast (Proposed)

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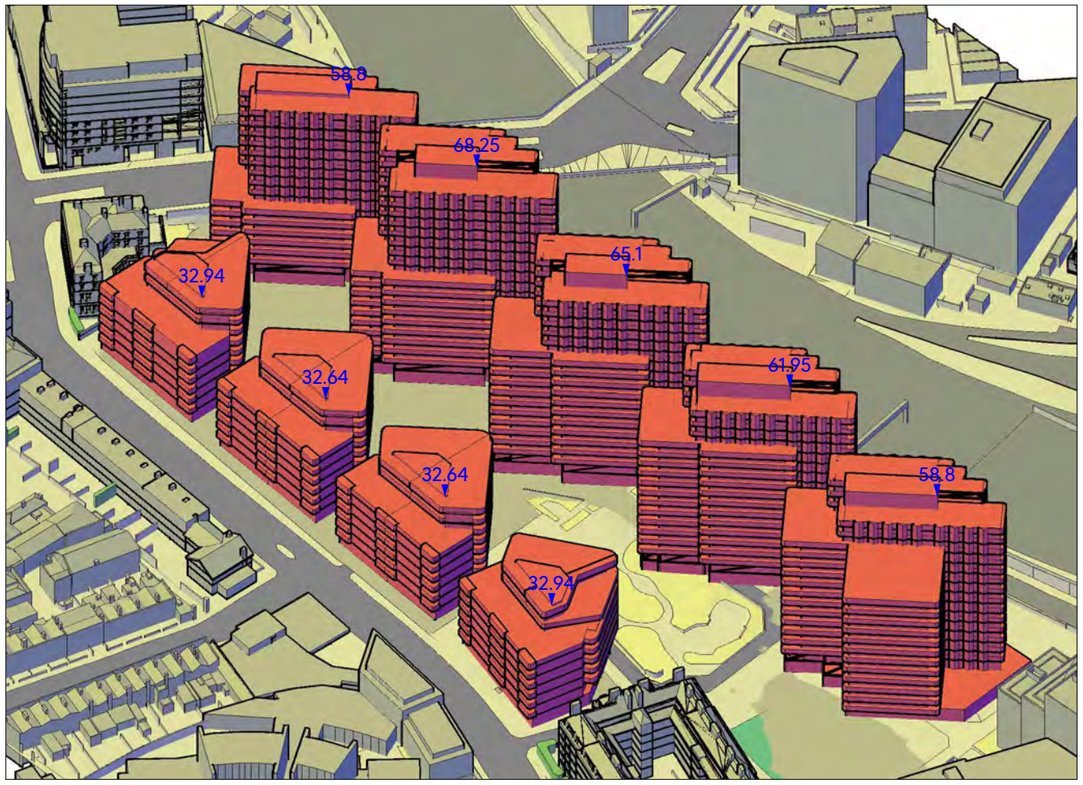

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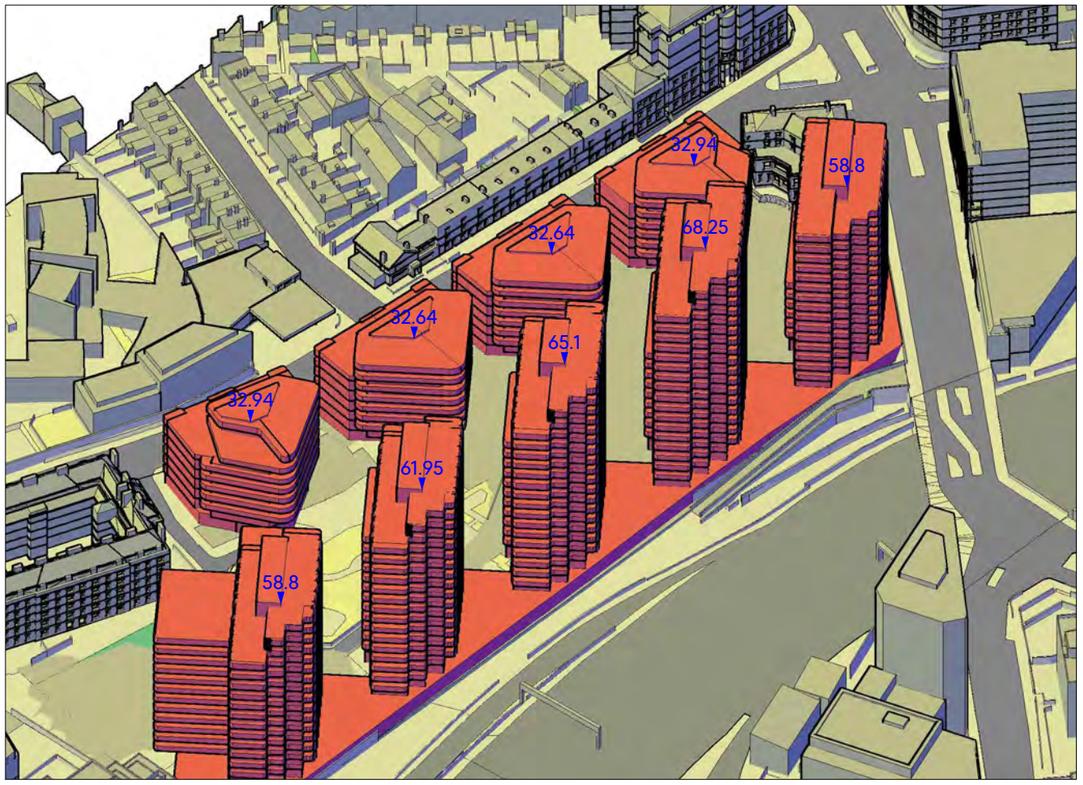

3D Context View - View from Southeast (Proposed)

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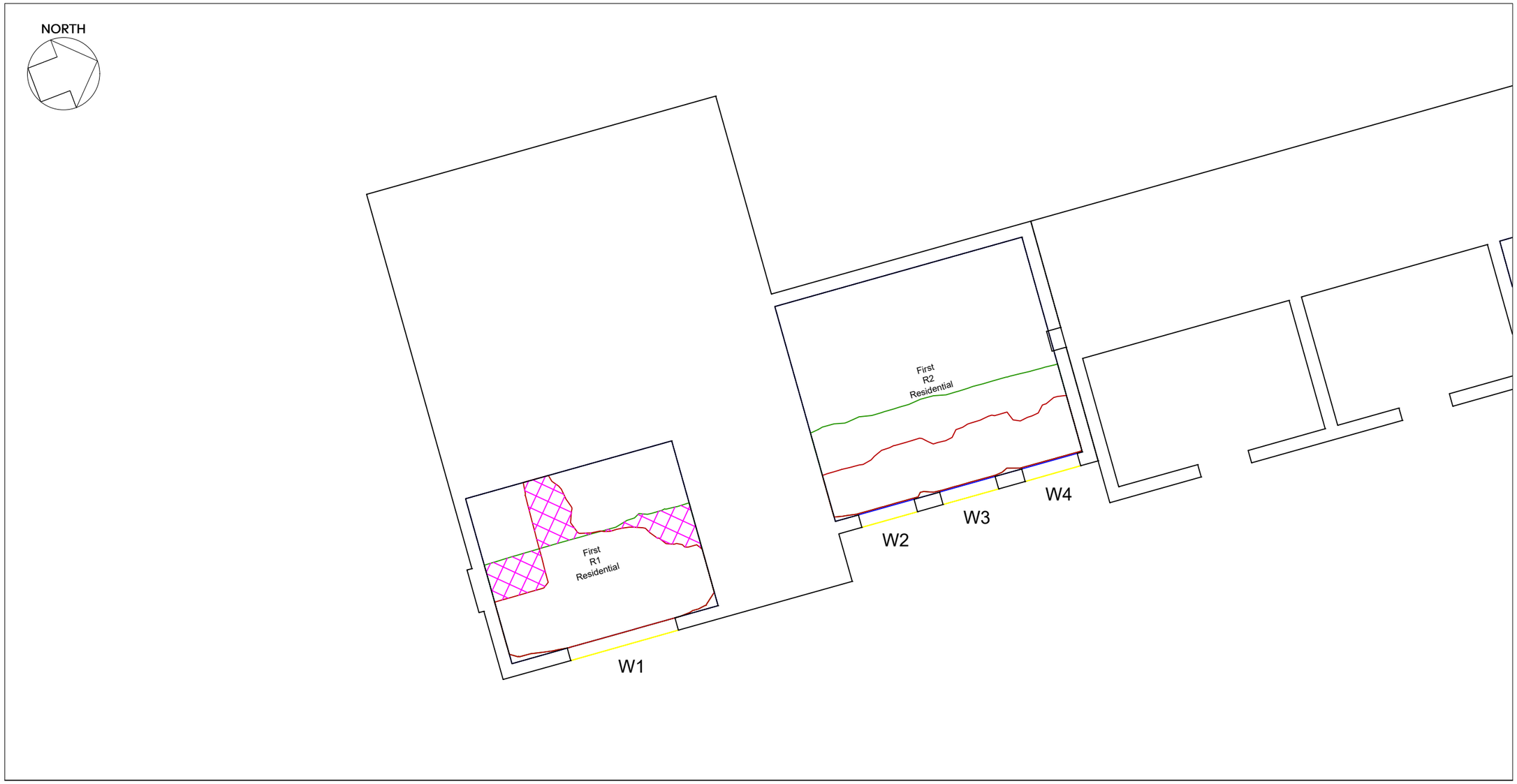
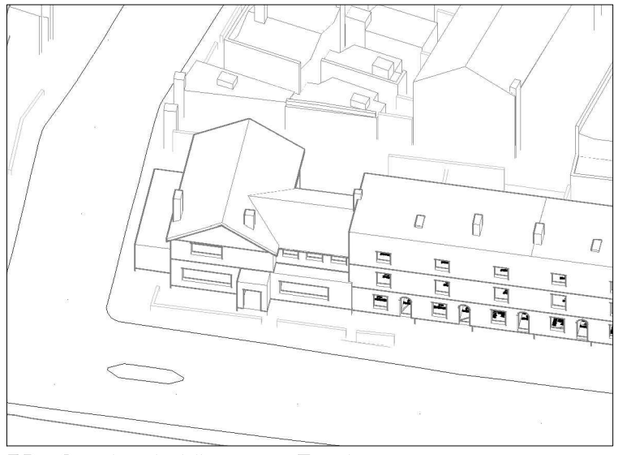
81848_CTXT_04	1

E2.2 Window/room reference drawings



The Rising Sun PH - First Floor



3D Context View – East

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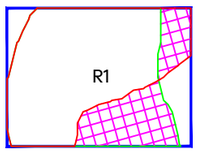

- Existing contour
- Proposed contour
- Area of loss/gain
- Subject room

Plan View

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WESTMINSTER CITY COUNCIL

141012 - EBURY BRIDGE ESTATE.DWG
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20998 - 3D.DWG
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ASTUDIO ARCHITECTS

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B7-B8 Lower, B7-B8 Upper
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HOLLIS SHALL BE INFORMED IN WRITING OF ANY DISCREPANCIES.
ALL DIMENSIONS ARE IN METERS ONLY

TITLE

Daylight Distribution Contours
Room and Window Referencing Plans
The Rising Sun PH

CLIENT

Ove Arup and Partners Ltd

PROJECT

Ebury Bridge Estate
Ebury Bridge Road
London SW1W 8RU

DRAWN BY	CHECKED
LT	SM
SCALE	**DATE**
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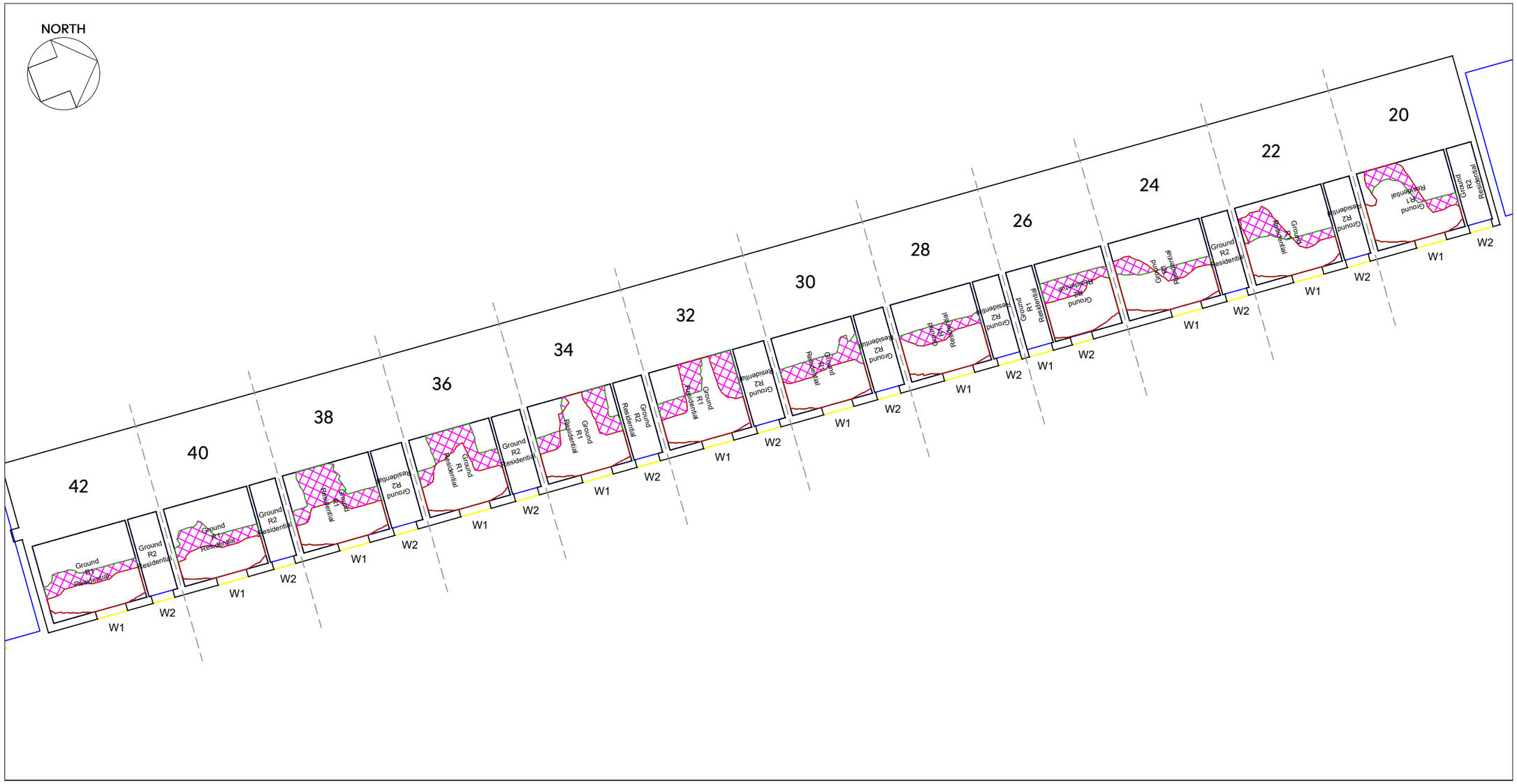
81848_DD_01	1



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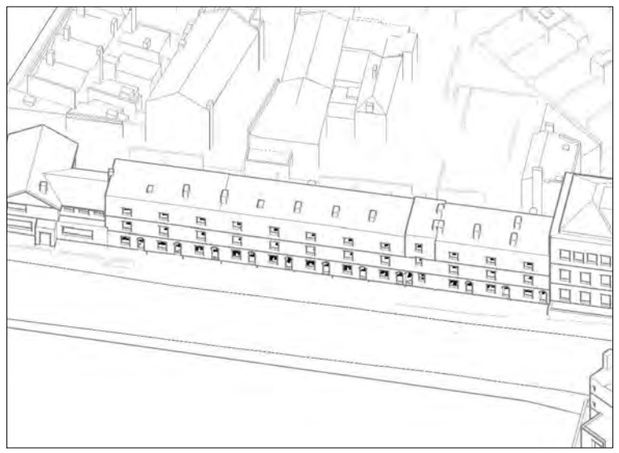

3D Context View – East

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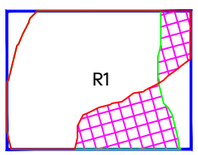

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Plan View

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TITLE

Daylight Distribution Contours
Room and Window Referencing Plans
20-42 Ebury Bridge Road

CLIENT

Ove Arup and Partners Ltd

PROJECT

Ebury Bridge Estate
Ebury Bridge Road
London SW1W 8RU

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SCALE	**DATE**
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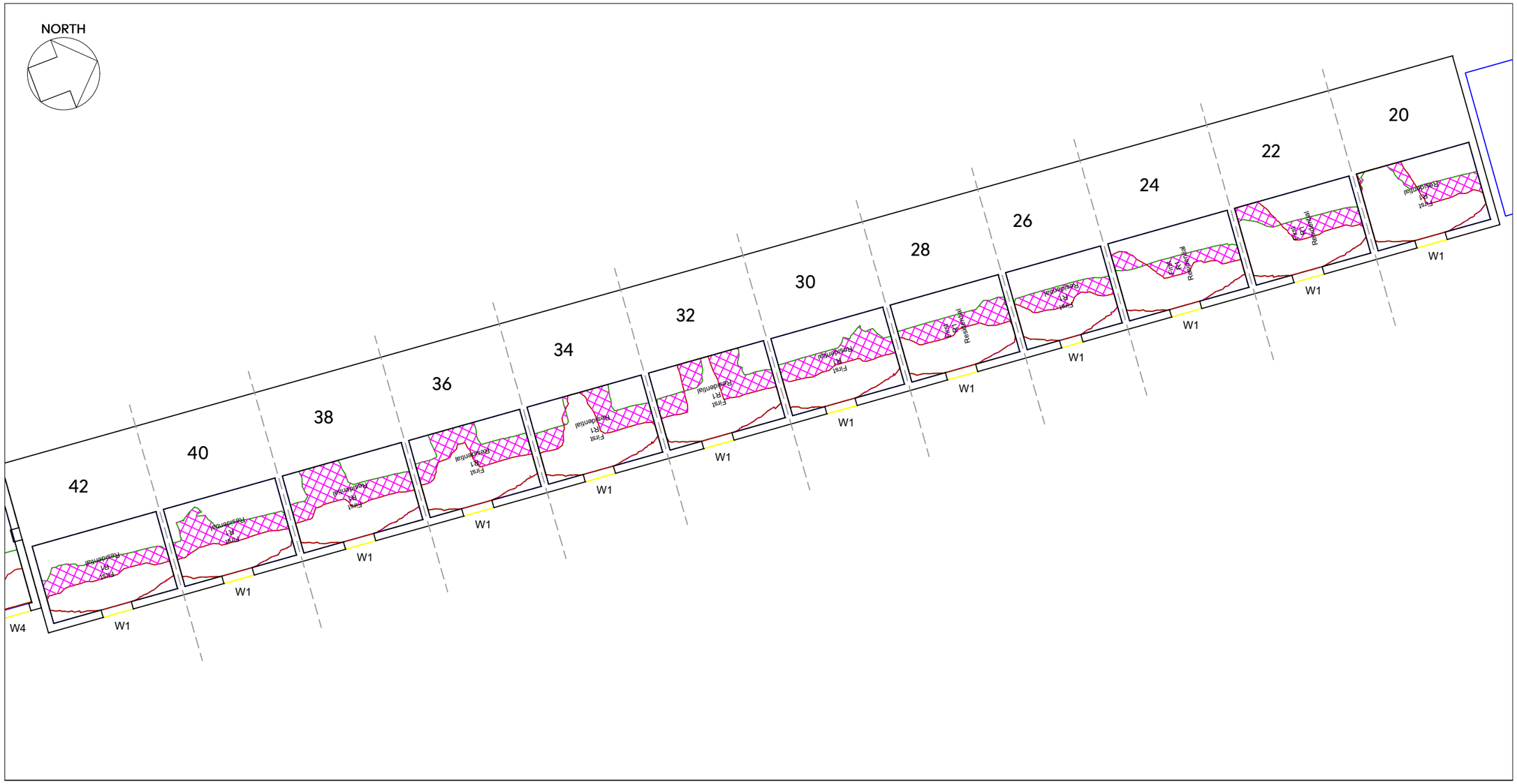
DRAWING NO.	RELEASE NO.
81848_DD_02	1



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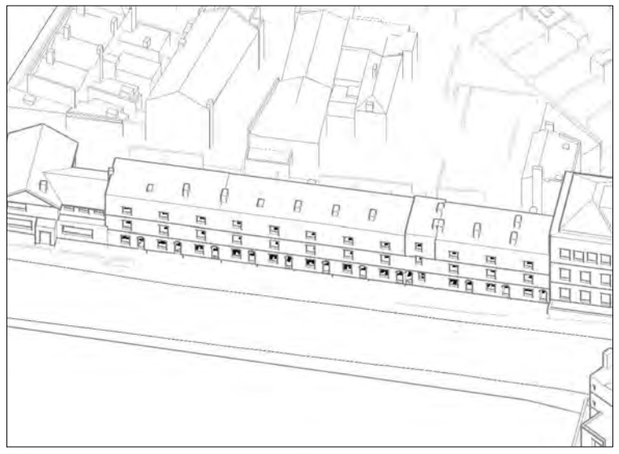

3D Context View – East

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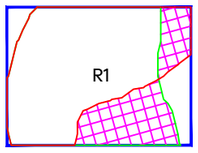

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20-42 Ebury Bridge Road

CLIENT

Ove Arup and Partners Ltd

PROJECT

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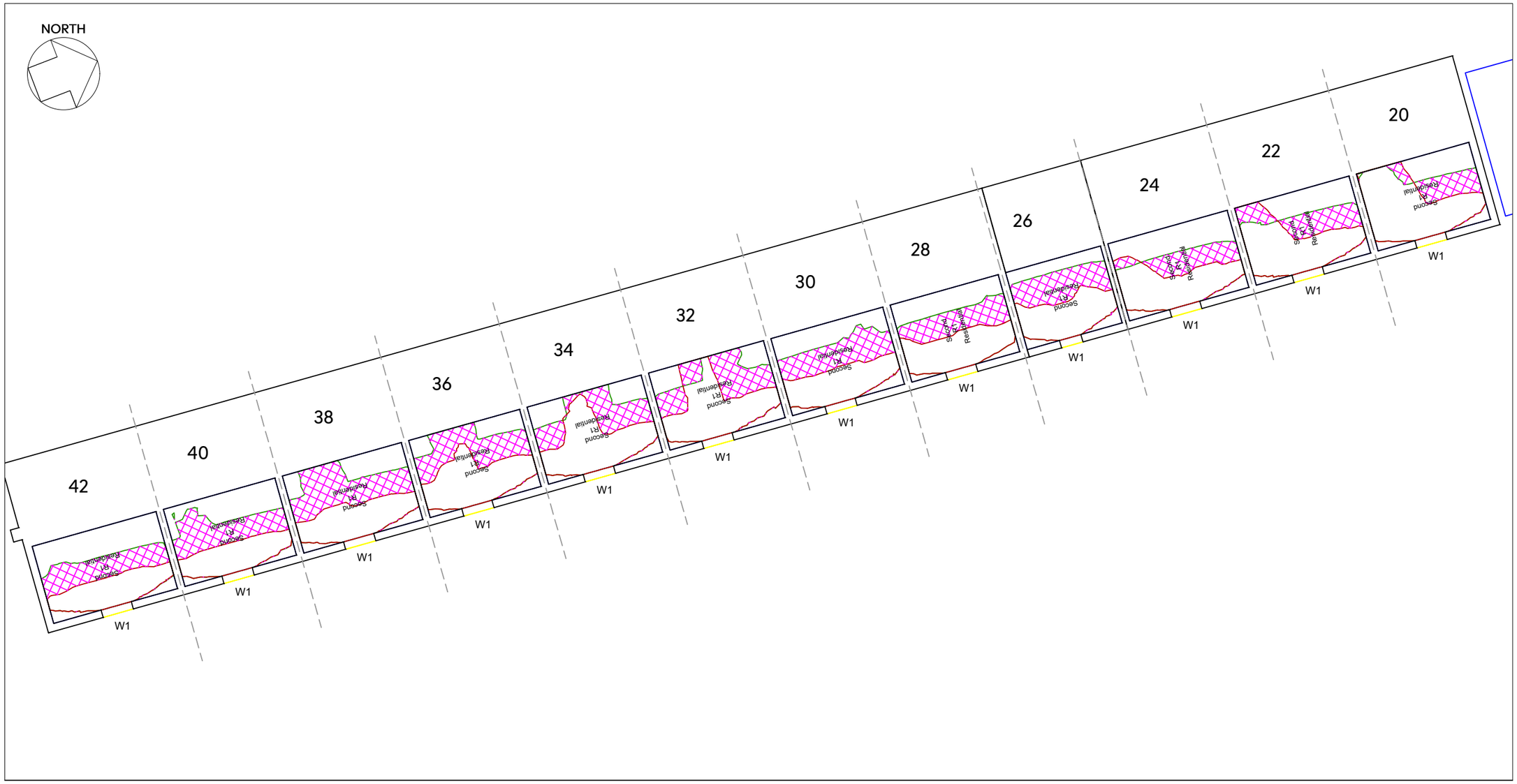
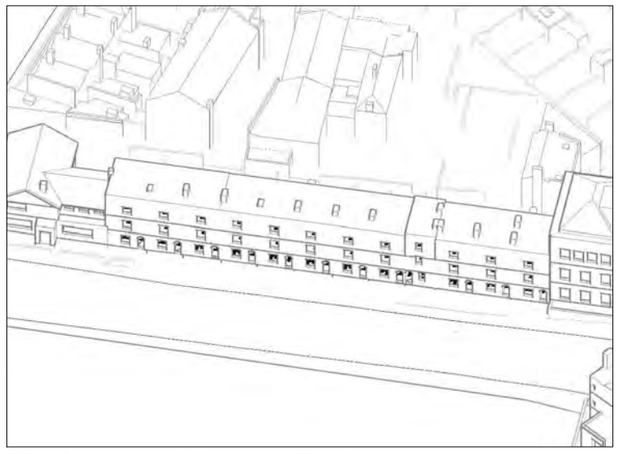


1 Ebury Bridge Road - Second Floor



3D Context View – East

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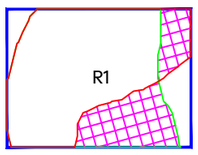

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20-42 Ebury Bridge Road

CLIENT

Ove Arup and Partners Ltd

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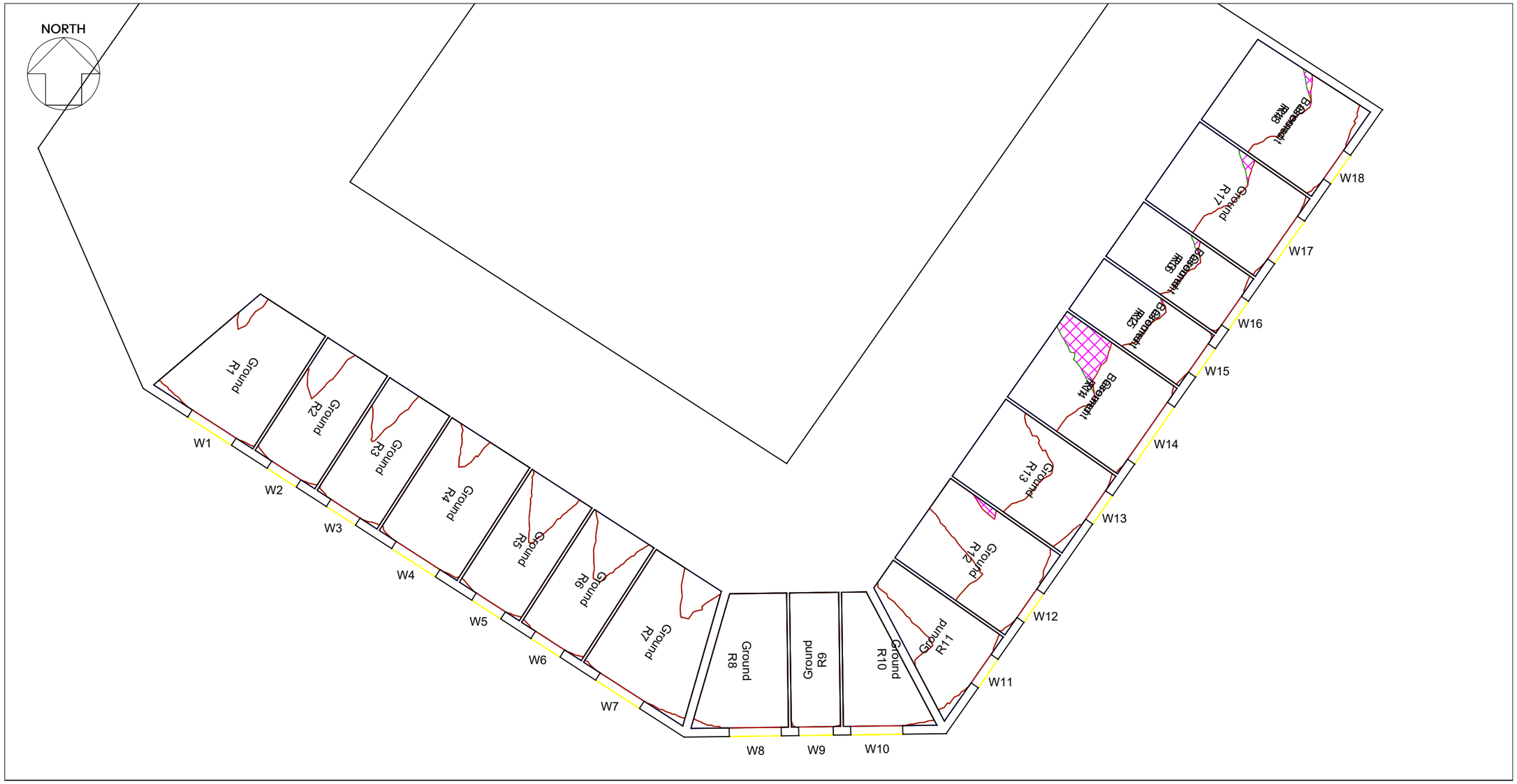
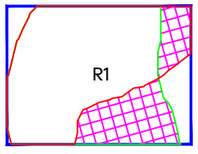


Fountain Court - Ground Floor

3D Context View – South East

KEY



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Plan View

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TITLE

Daylight Distribution Contours
Room and Window Referencing Plans
Fountain Court

CLIENT

Ove Arup and Partners Ltd

PROJECT

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Ebury Bridge Road
London SW1W 8RU

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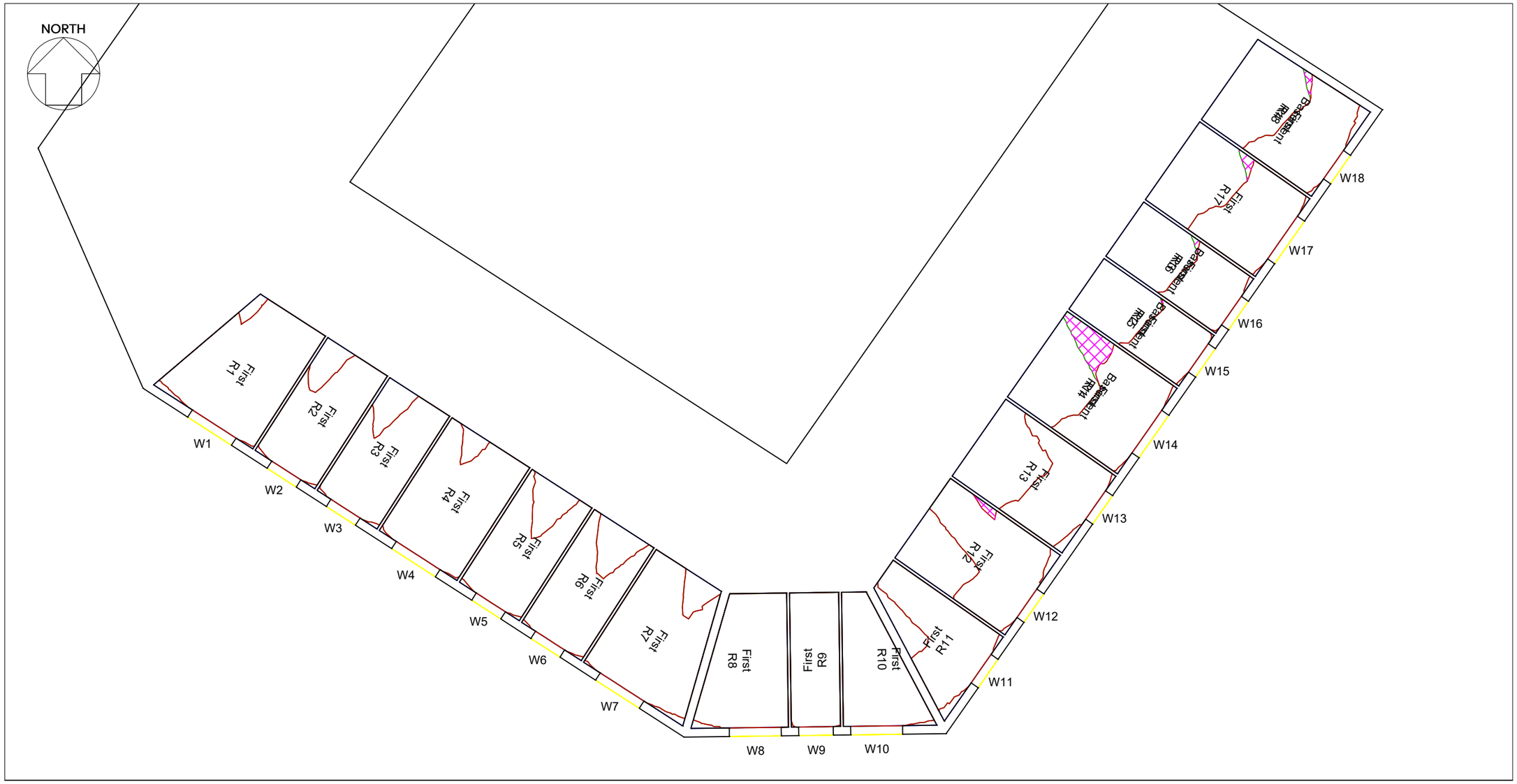

Fountain Court - First Floor

3D Context View – South East

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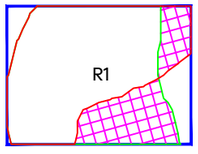

- Existing contour
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Plan View

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TITLE

Daylight Distribution Contours
Room and Window Referencing Plans
Fountain Court

CLIENT

Ove Arup and Partners Ltd

PROJECT

Ebury Bridge Estate
Ebury Bridge Road
London SW1W 8RU

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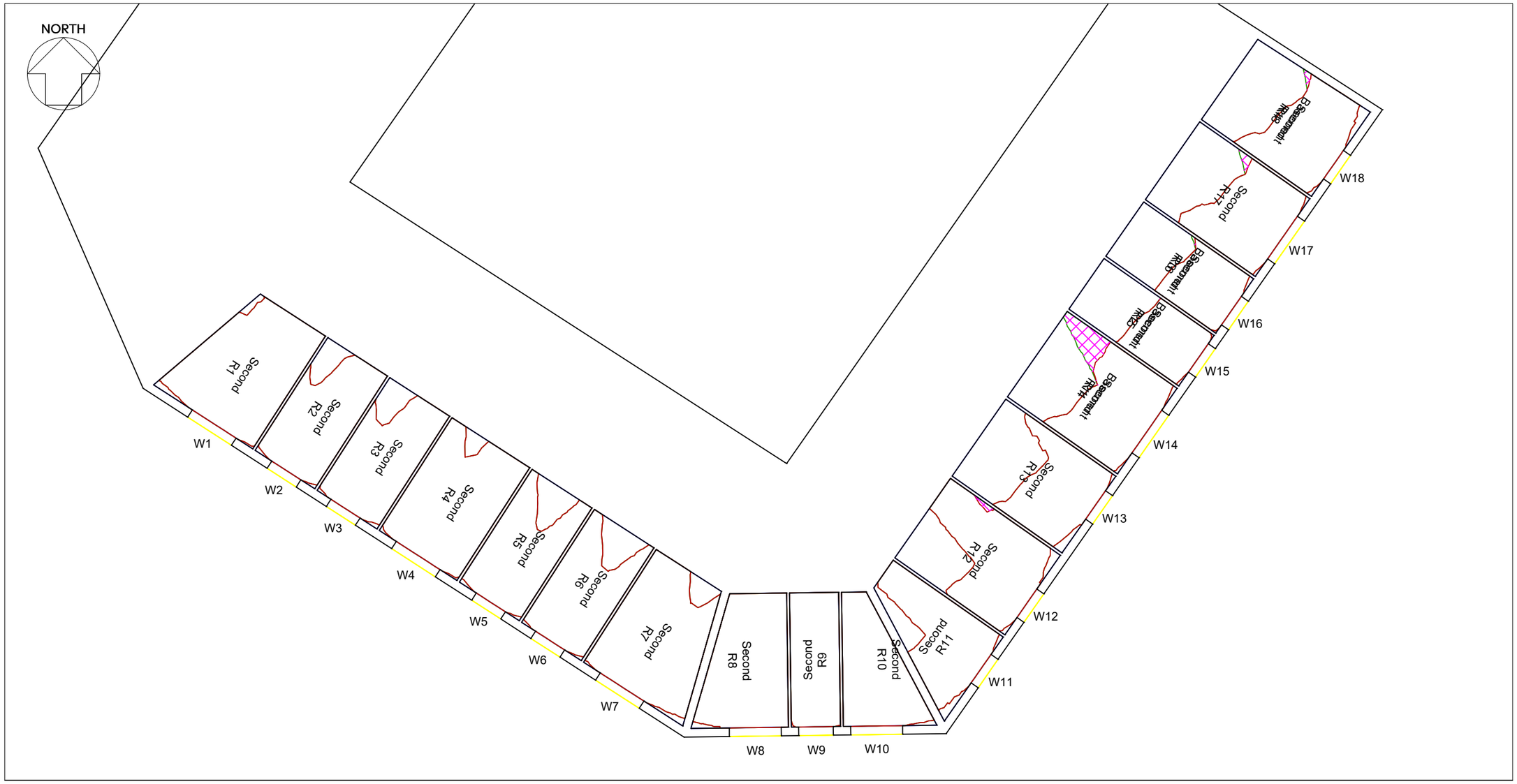
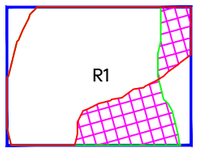


Fountain Court - Second Floor

3D Context View – South East

KEY



- Existing contour
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Plan View

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TITLE

Daylight Distribution Contours
Room and Window Referencing Plans
Fountain Court

CLIENT

Ove Arup and Partners Ltd

PROJECT

Ebury Bridge Estate
Ebury Bridge Road
London SW1W 8RU

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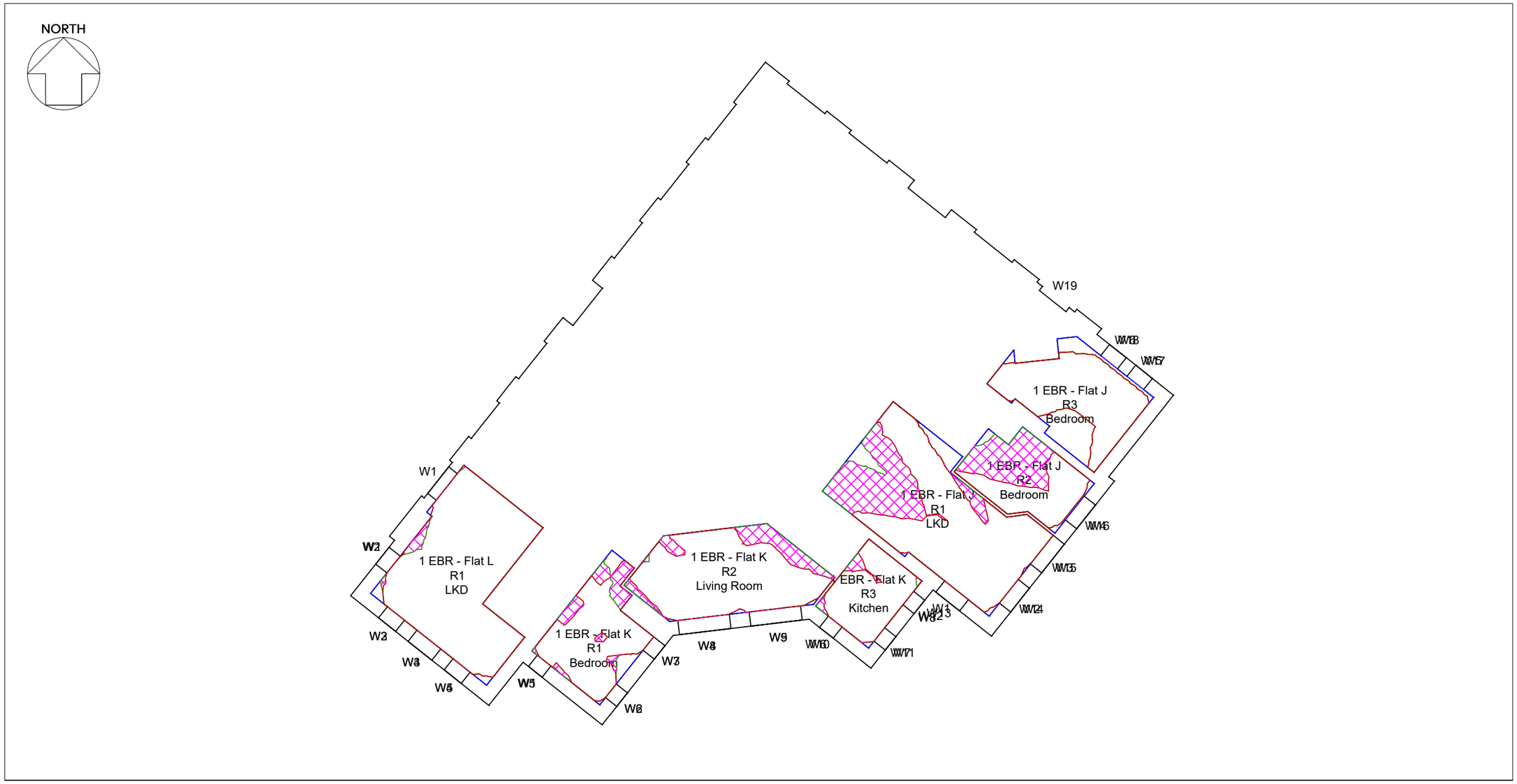
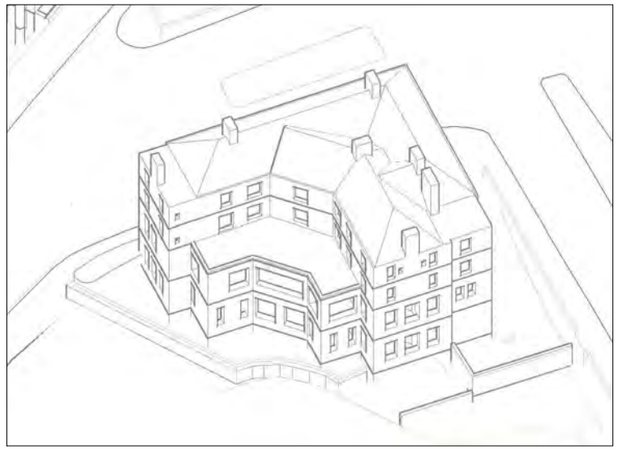


1 Ebury Bridge Road - Ground Floor



3D Context View – South East

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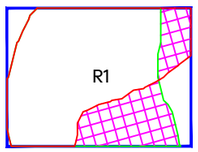

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Plan View

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TITLE

Daylight Distribution Contours
Room and Window Referencing Plans
1 Ebury Bridge Road

CLIENT

Ove Arup and Partners Ltd

PROJECT

Ebury Bridge Estate
Ebury Bridge Road
London SW1W 8RU

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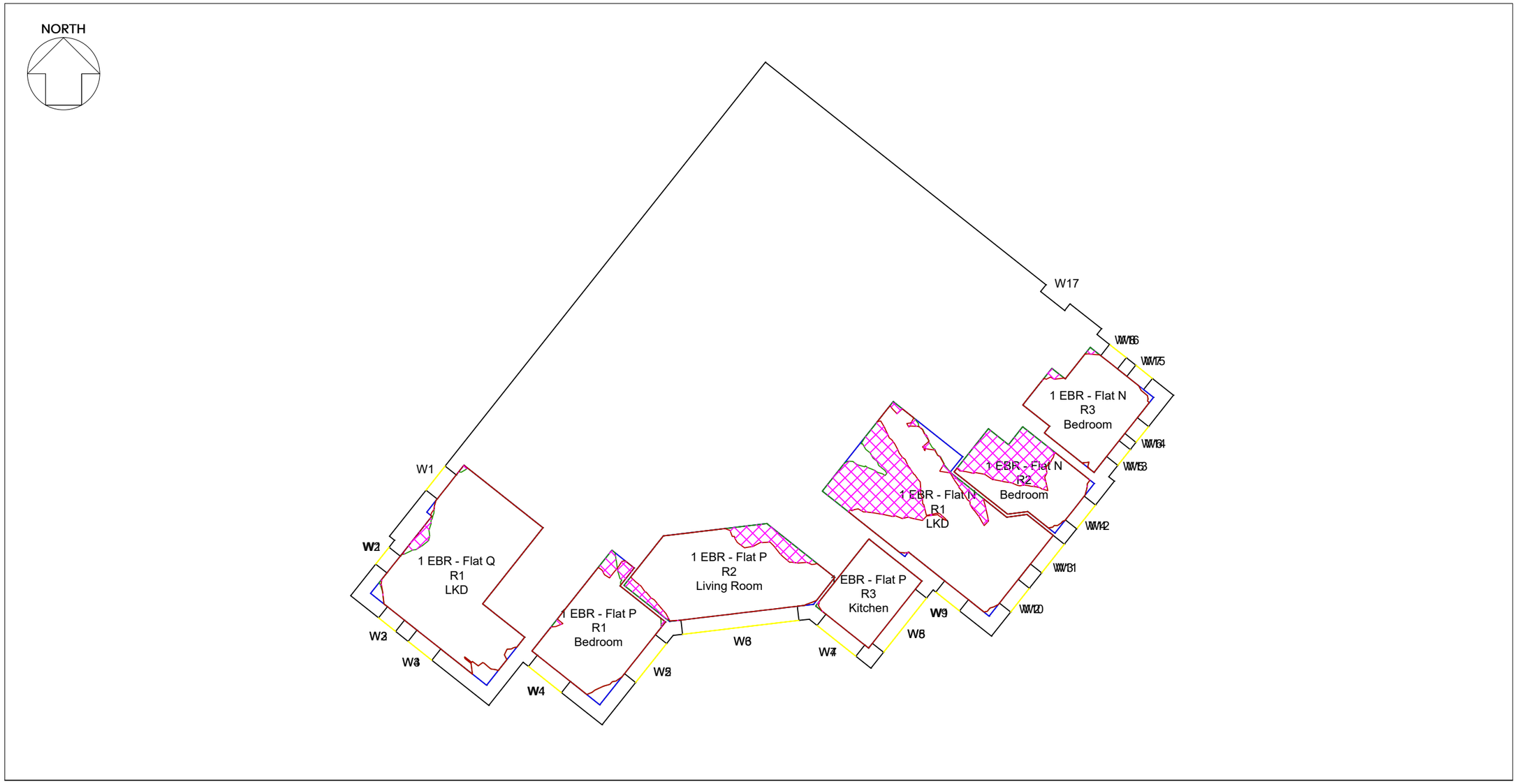
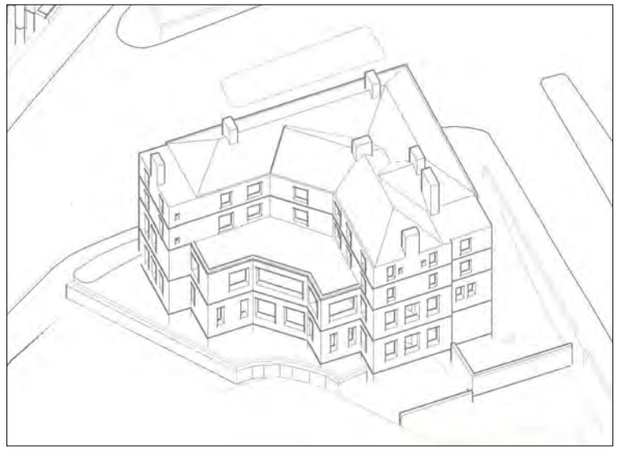


1 Ebury Bridge Road - First Floor



3D Context View – South East

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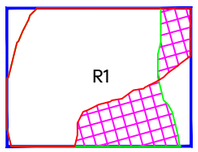

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Plan View

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Room and Window Referencing Plans
1 Ebury Bridge Road

CLIENT

Ove Arup and Partners Ltd

PROJECT

Ebury Bridge Estate
Ebury Bridge Road
London SW1W 8RU

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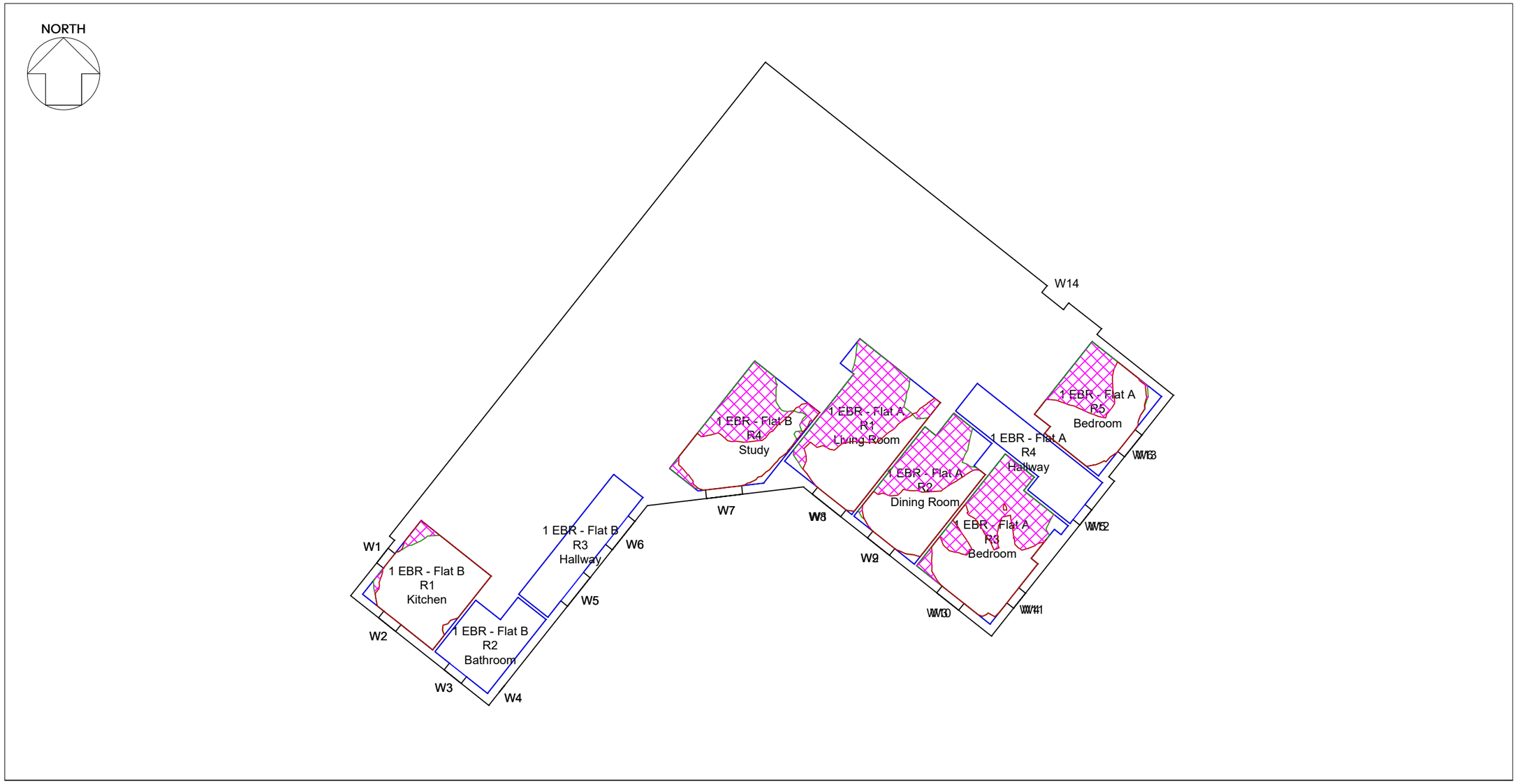
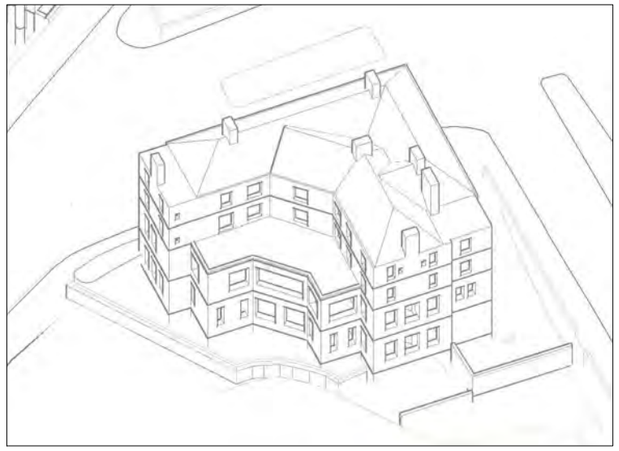
81848_DD_09	1



1 Ebury Bridge Road - Second Floor



3D Context View – South East

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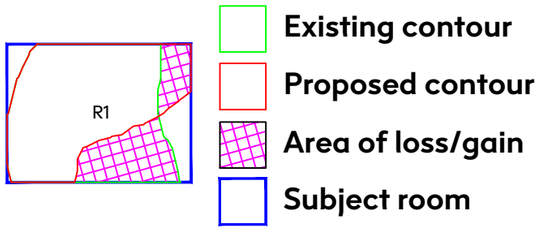

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1 Ebury Bridge Road

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PROJECT

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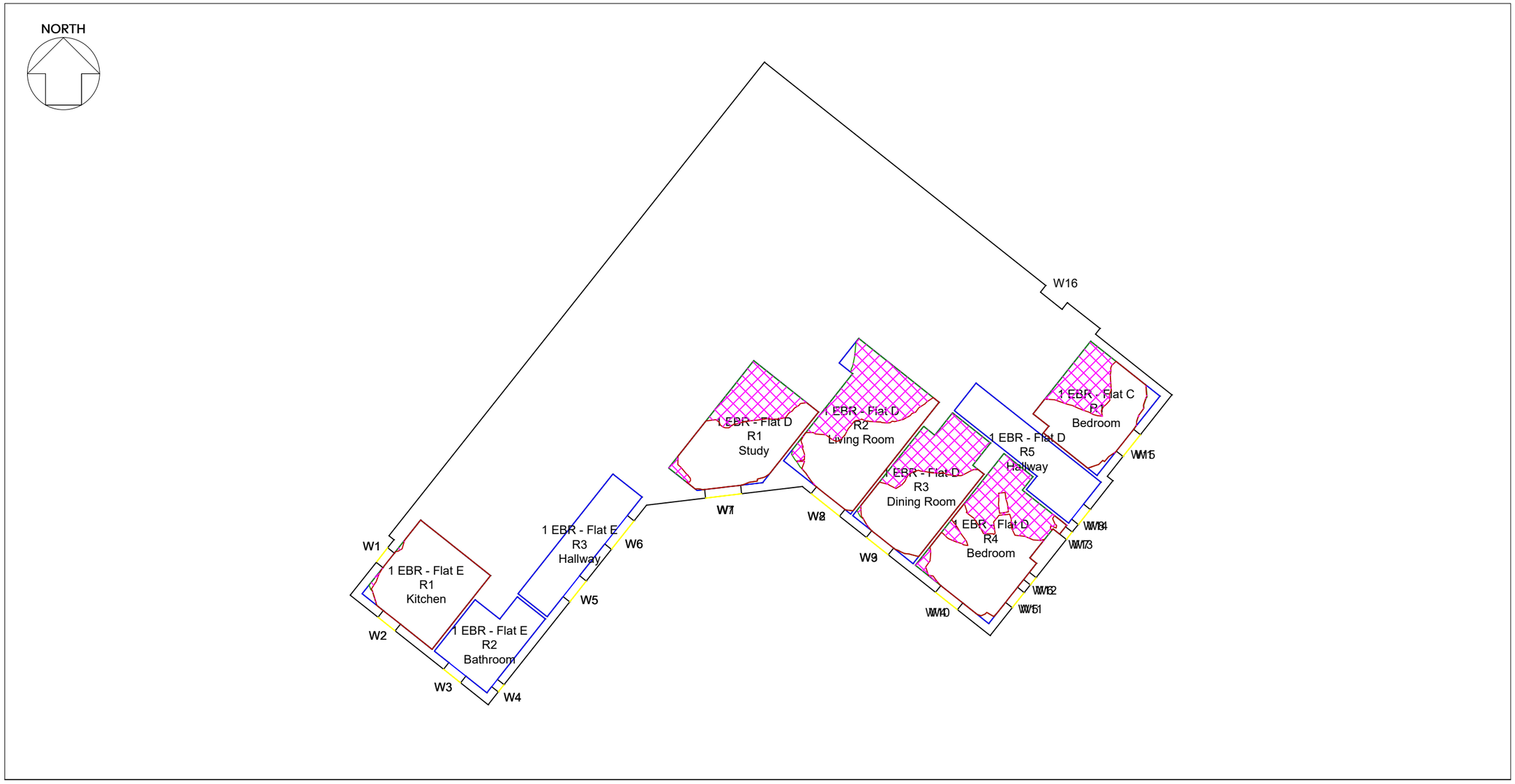

1 Ebury Bridge Road - Third Floor

3D Context View – South East

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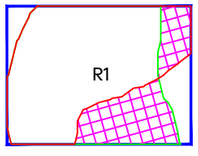

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1 Ebury Bridge Road

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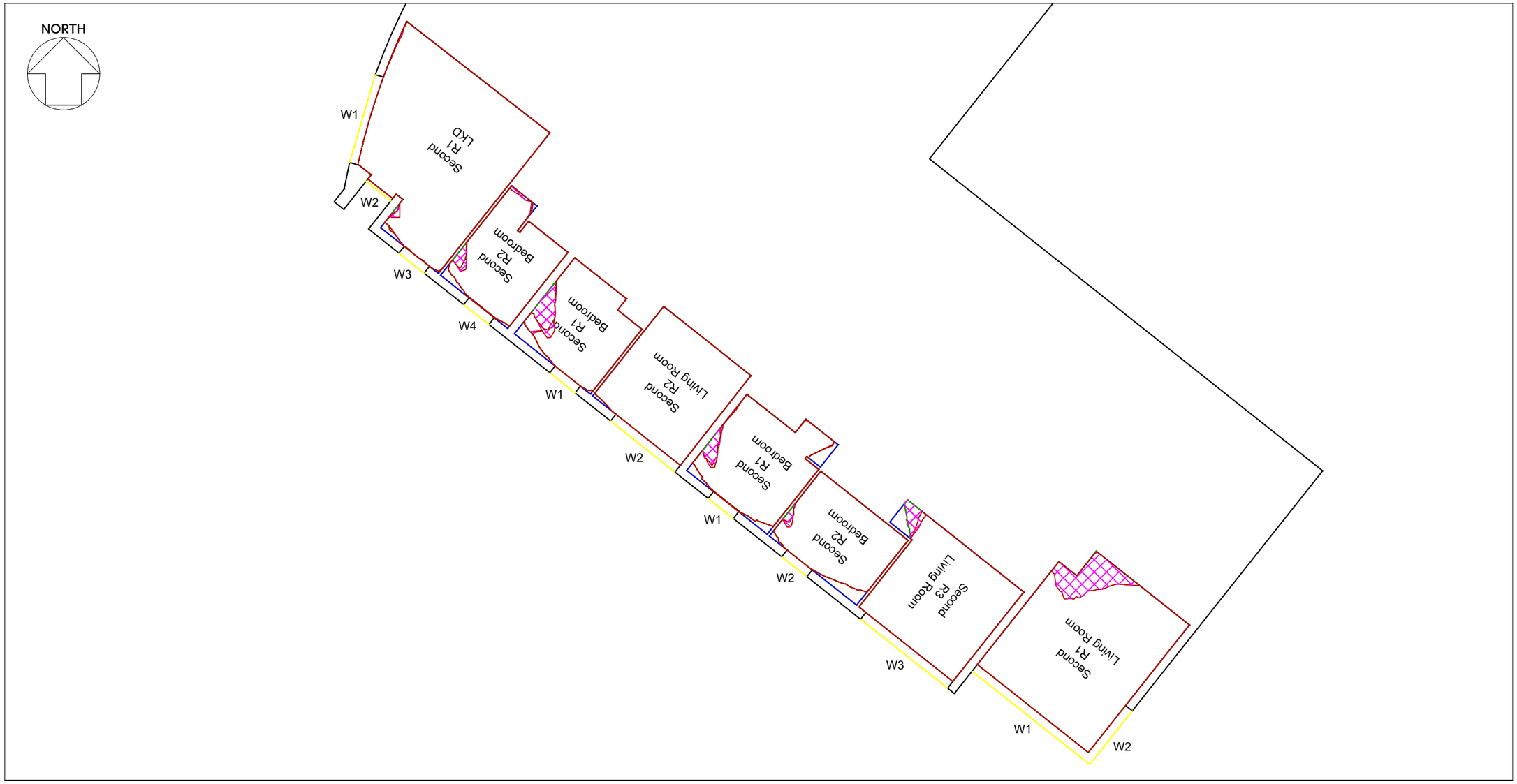
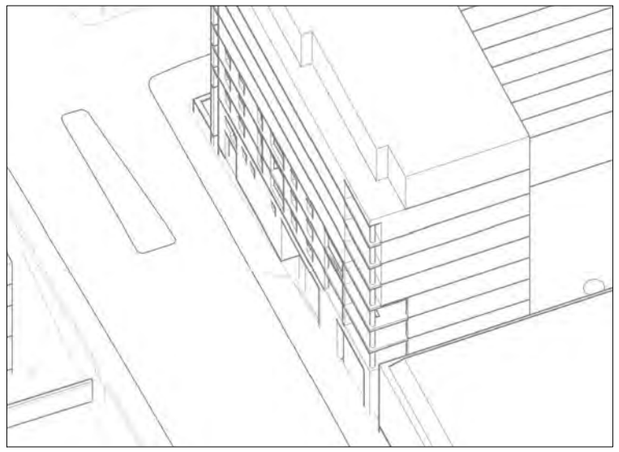
81848_DD_11	1



Consort Rise House - Second Floor



3D Context View – South East

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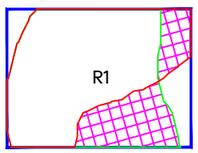

- Existing contour
- Proposed contour
- Area of loss/gain
- Subject room

Plan View

SOURCES OF INFORMATION:

WESTMINSTER CITY COUNCIL

141012 - EBURY BRIDGE ESTATE.DWG
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ASTUDIO ARCHITECTS

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TITLE

Daylight Distribution Contours
Room and Window Referencing Plans
Consort Rise House

CLIENT

Ove Arup and Partners Ltd

PROJECT

Ebury Bridge Estate
Ebury Bridge Road
London SW1W 8RU

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Consort Rise House - Third Floor

3D Context View – South East

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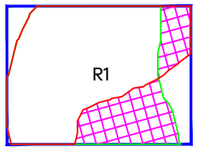

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Plan View

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Consort Rise House

CLIENT

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PROJECT

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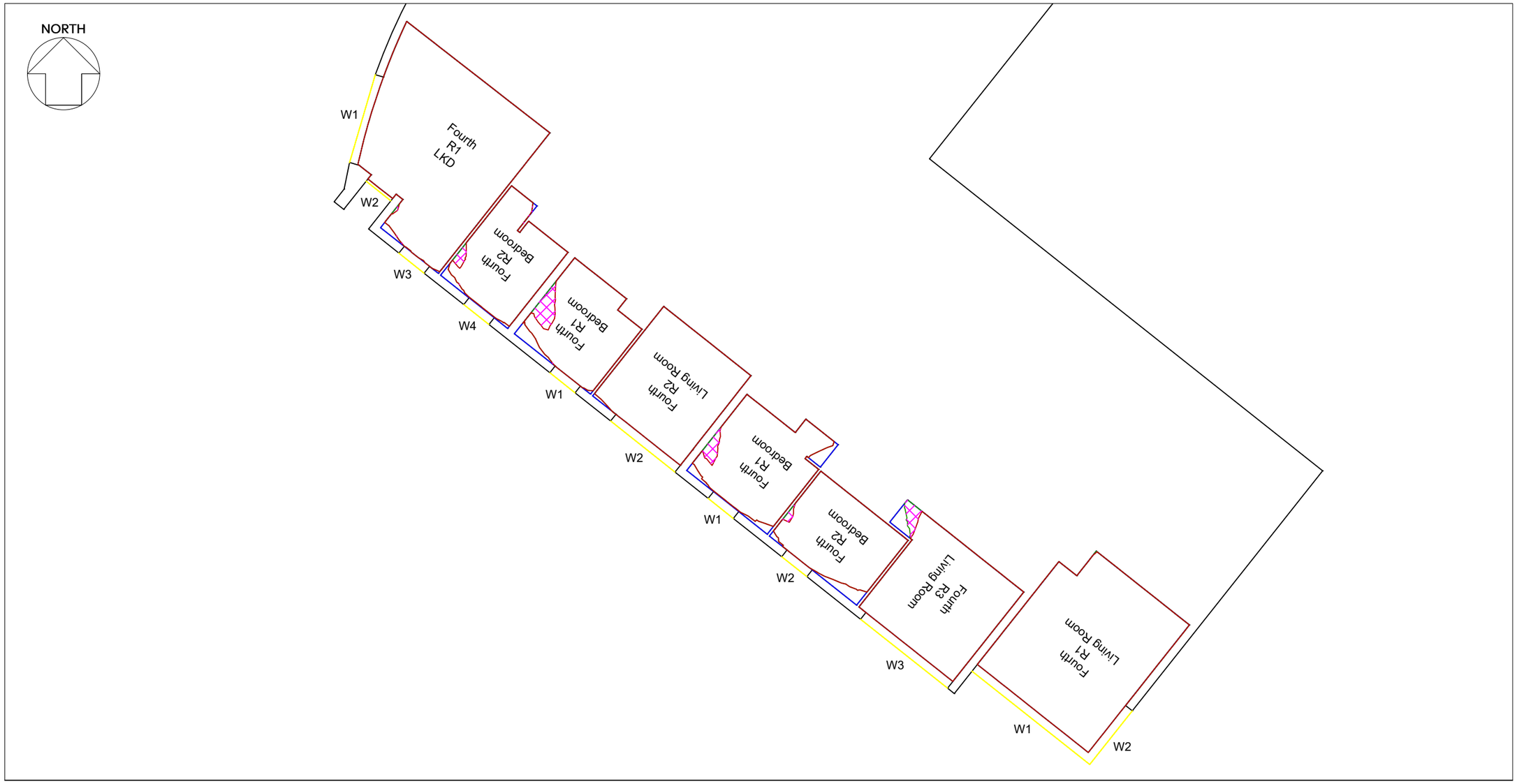
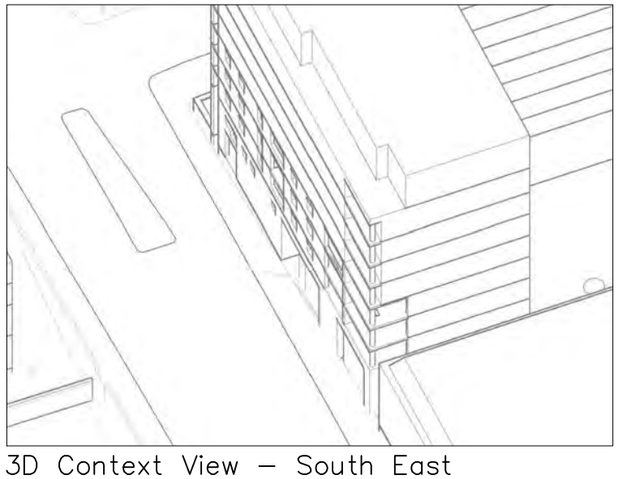


Consort Rise House - Fourth Floor



3D Context View – South East

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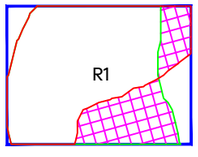

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Plan View

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Consort Rise House

CLIENT

Ove Arup and Partners Ltd

PROJECT

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Ebury Bridge Road
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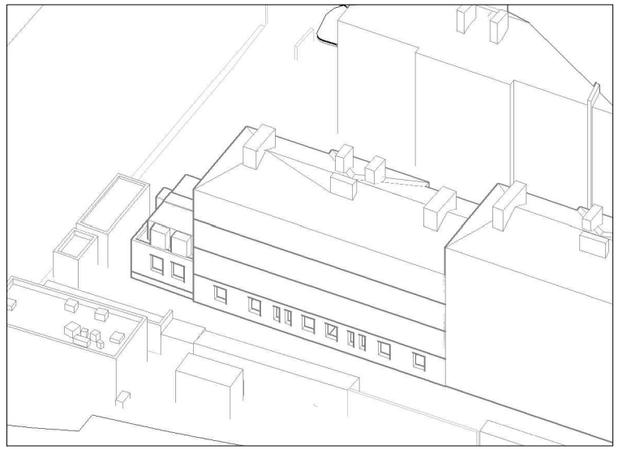
Peabody Estate - Ground Floor



3D Context View – East

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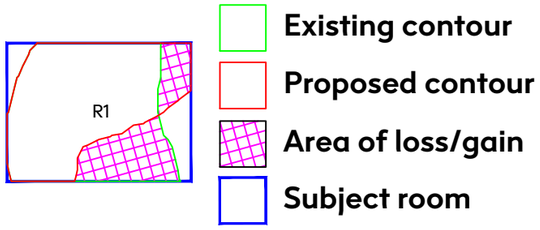

Plan View

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TITLE

Daylight Distribution Contours
Room and Window Referencing Plans
Peabody Estate

CLIENT

Ove Arup and Partners Ltd

PROJECT

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Ebury Bridge Road
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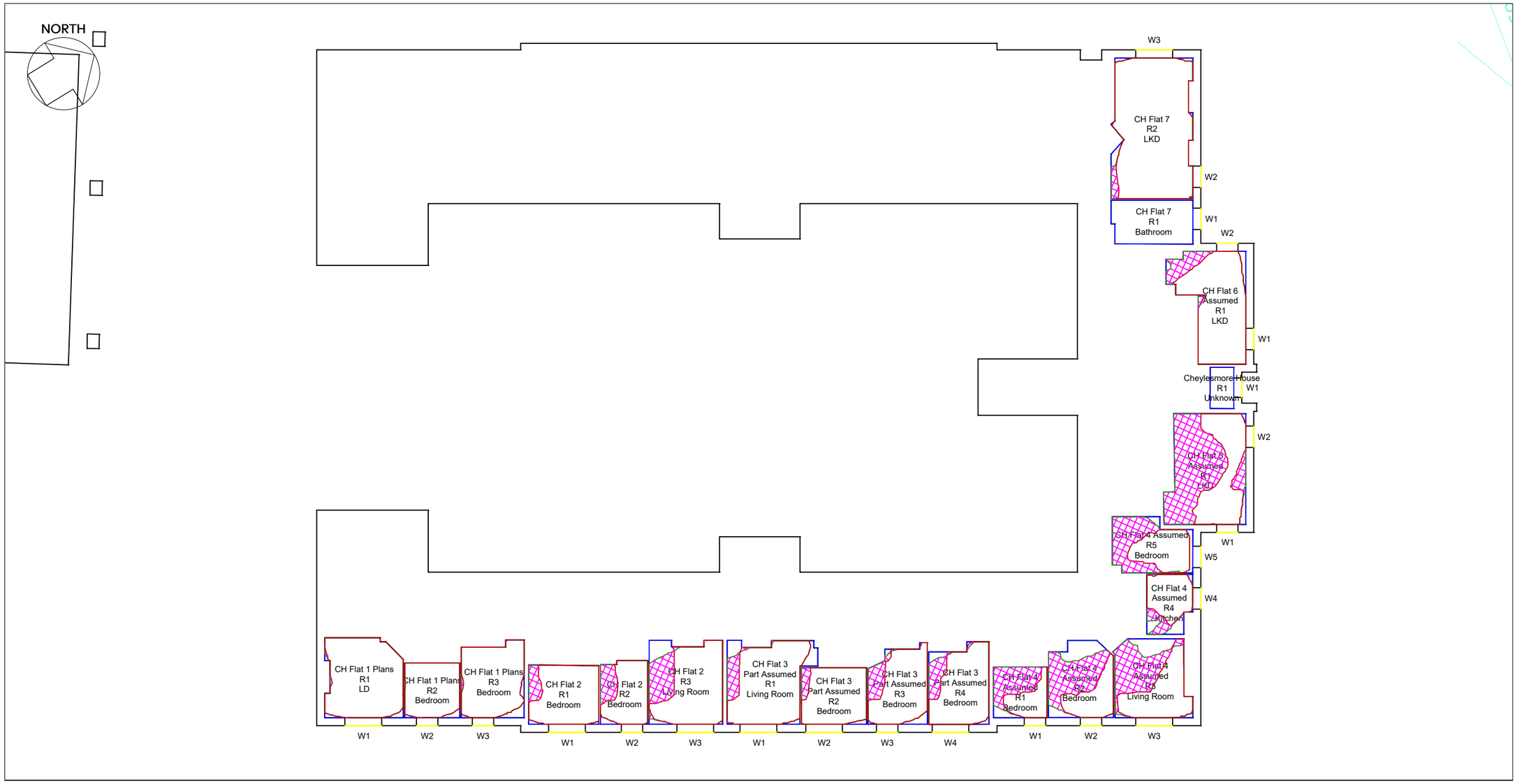
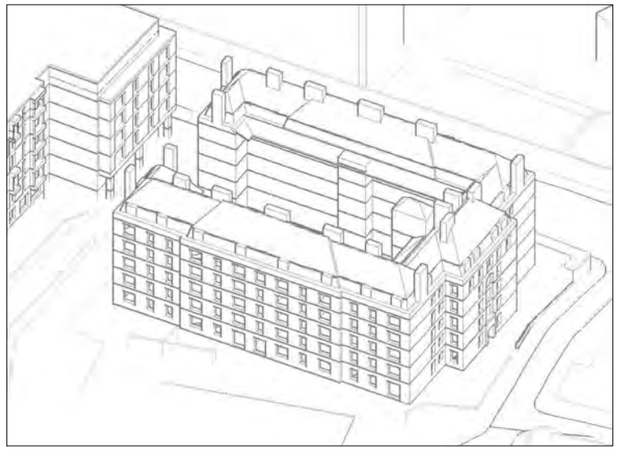


Cheylesmore House - Ground Floor



3D Context View – West

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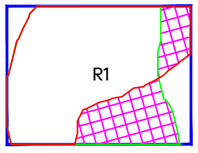

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CLIENT

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PROJECT

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Ebury Bridge Road
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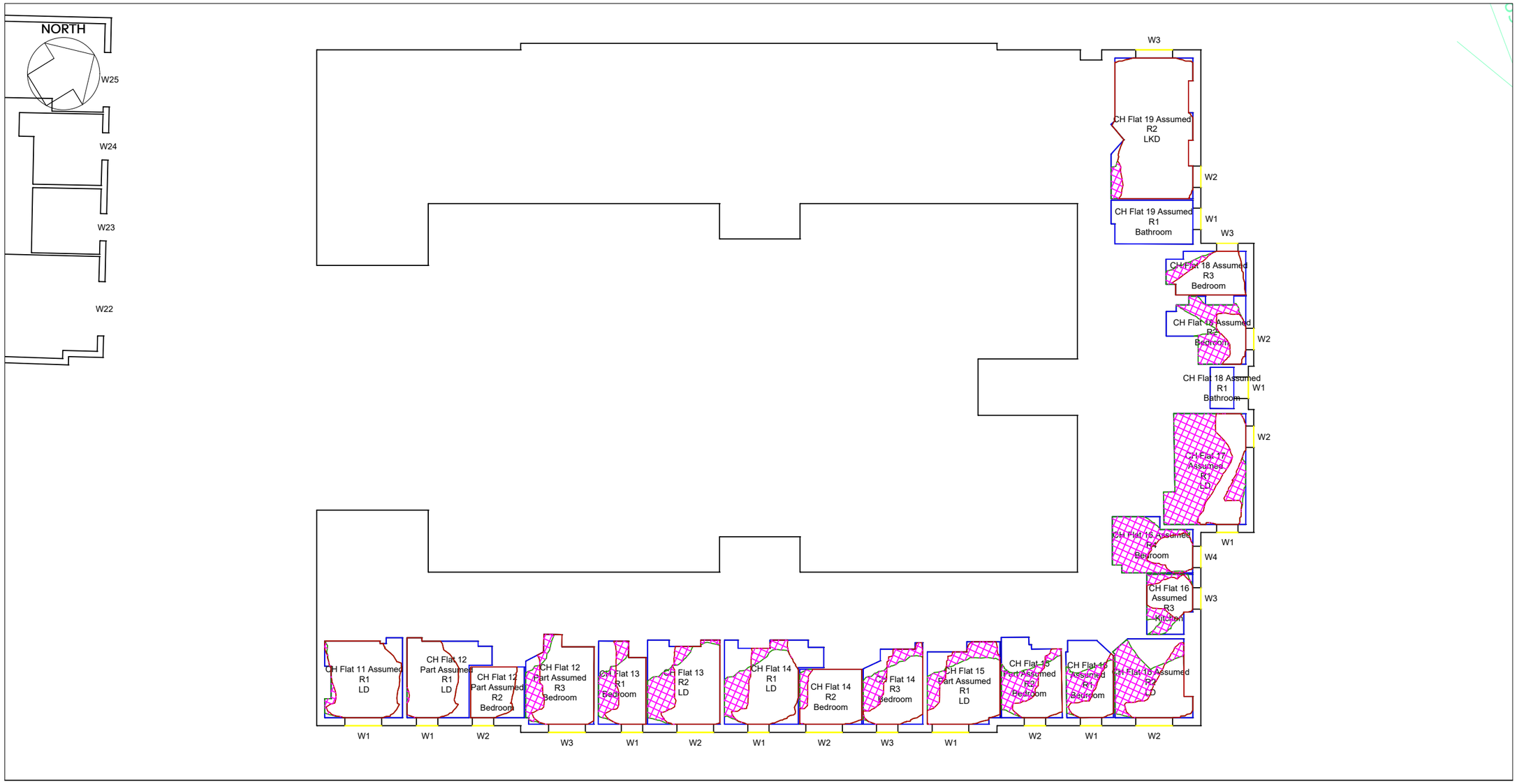
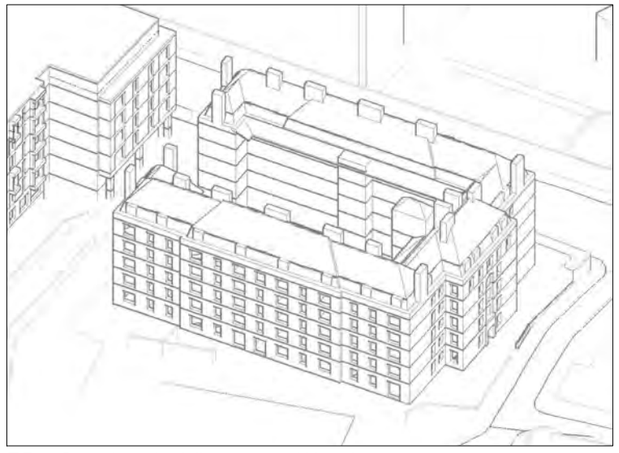


Cheylesmore House - First Floor



3D Context View – West

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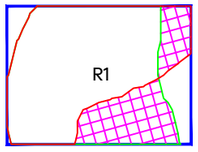

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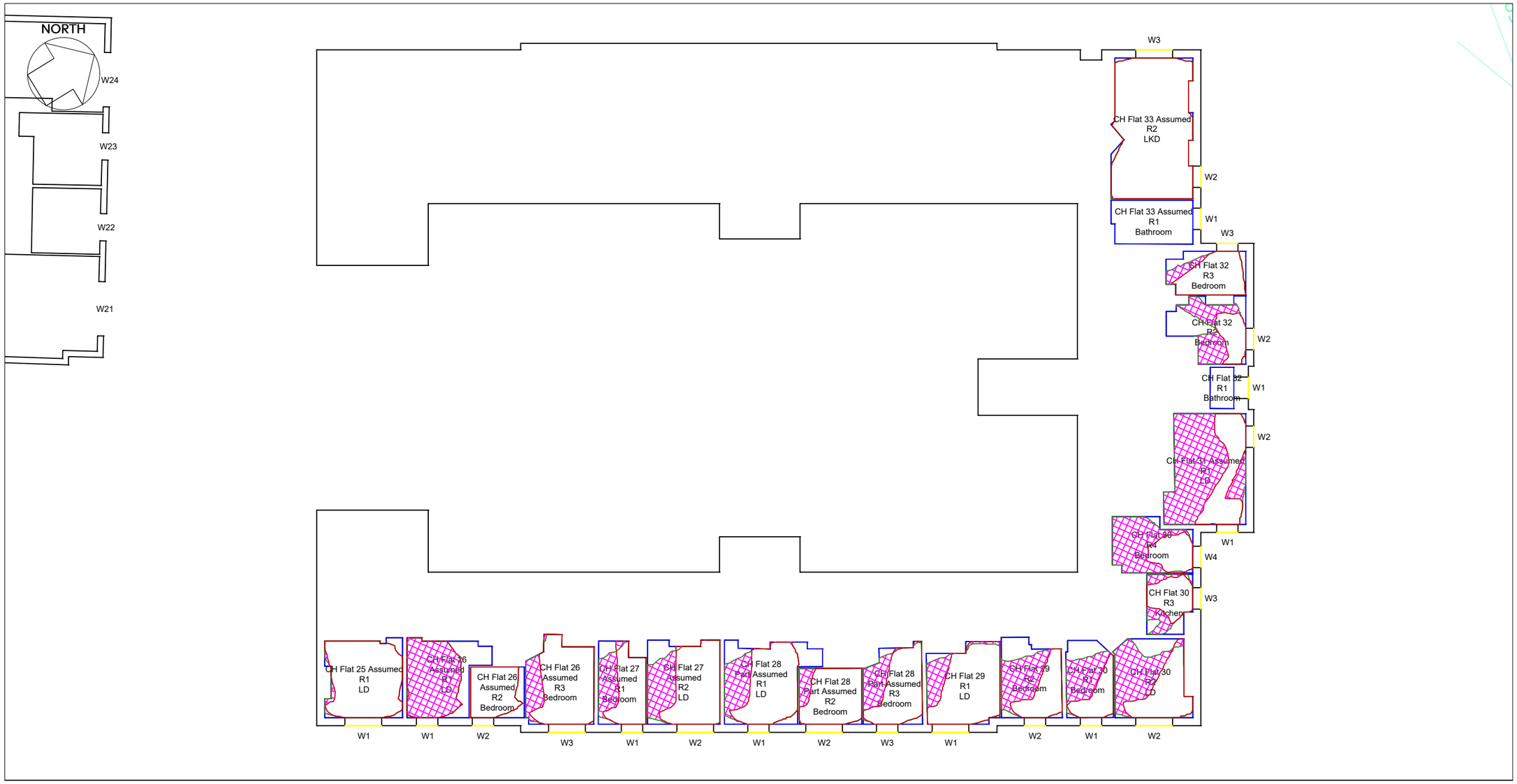
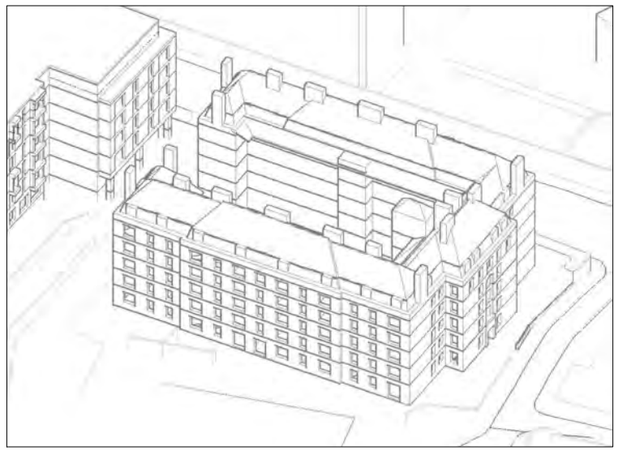


Cheylesmore House - Second Floor



3D Context View – West

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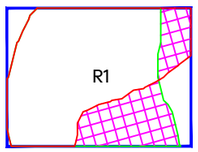

- Existing contour
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Cheylesmore House

CLIENT

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PROJECT

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Ebury Bridge Road
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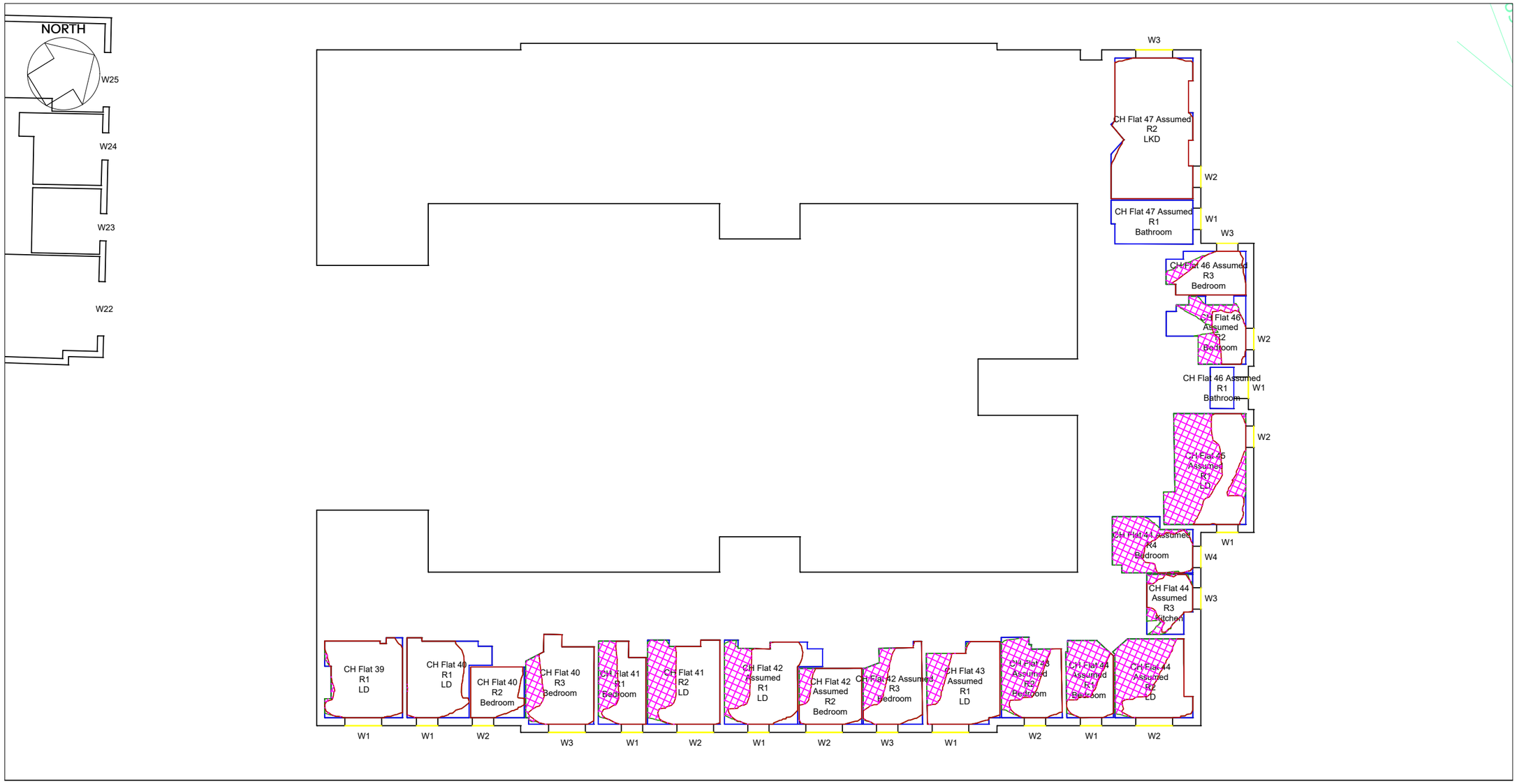
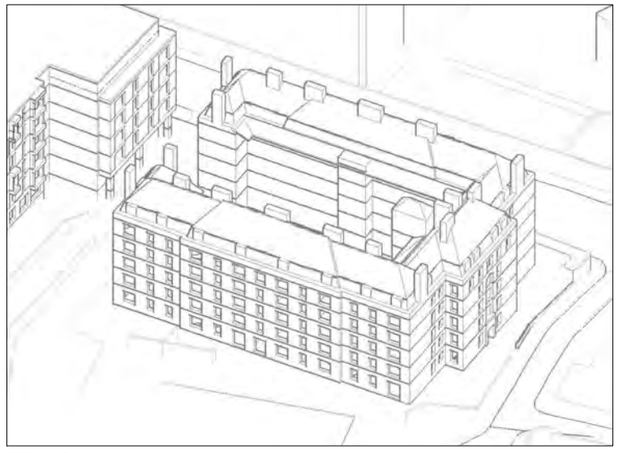


Cheylesmore House - Third Floor



3D Context View – West

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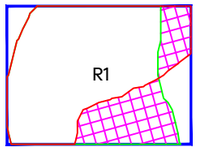

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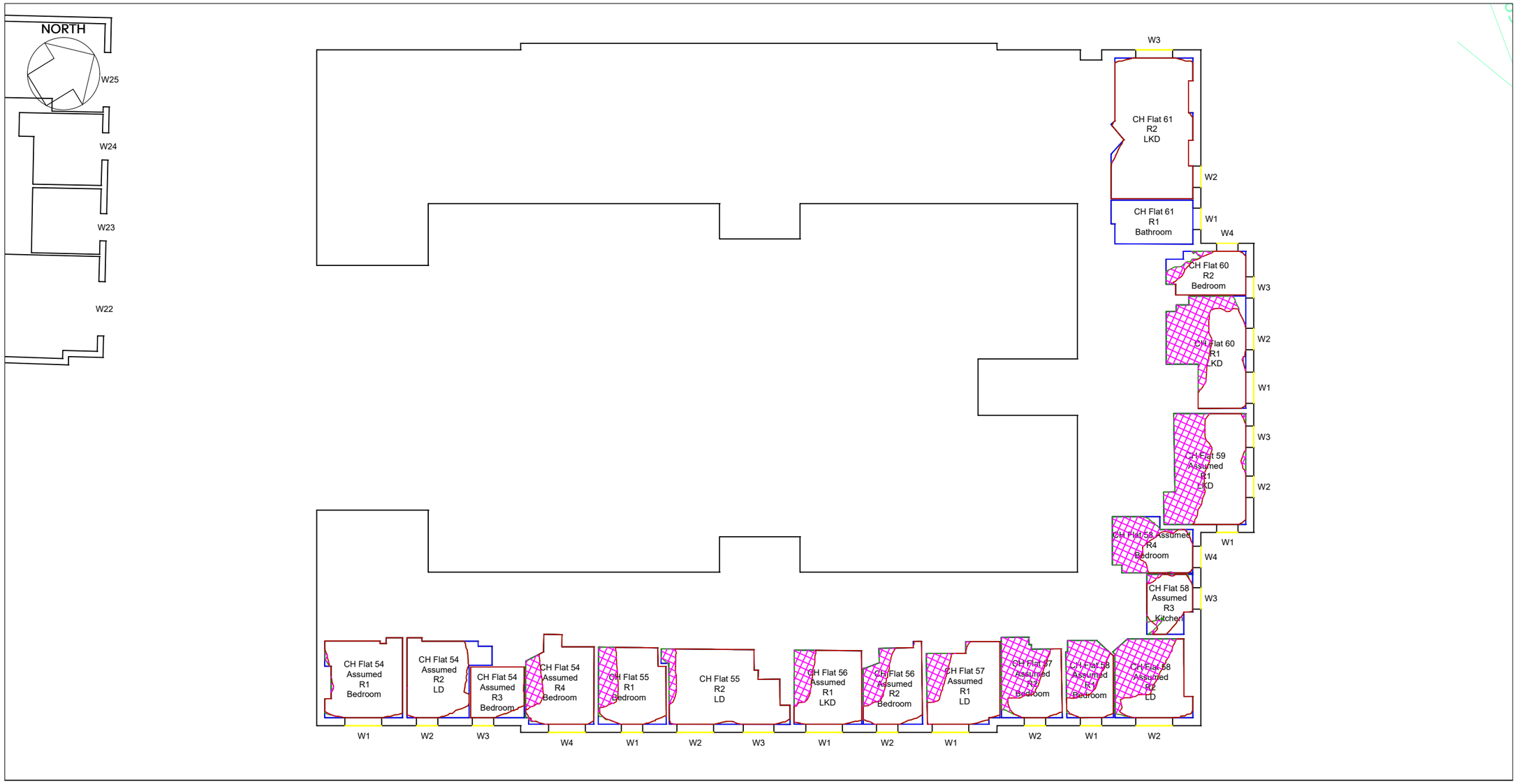
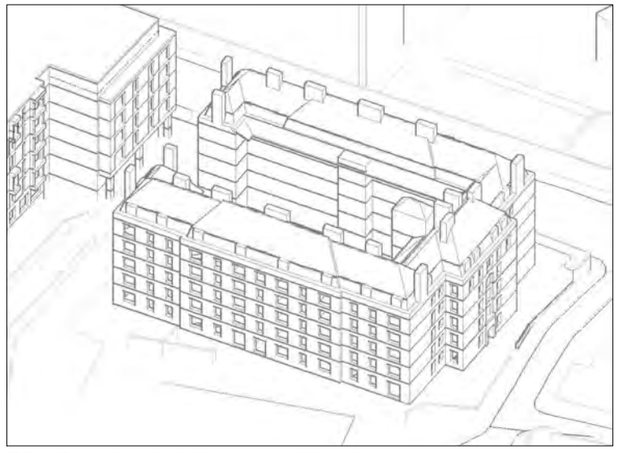


Cheylesmore House - Fourth Floor



3D Context View – West

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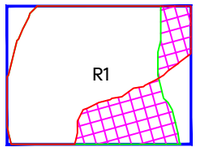

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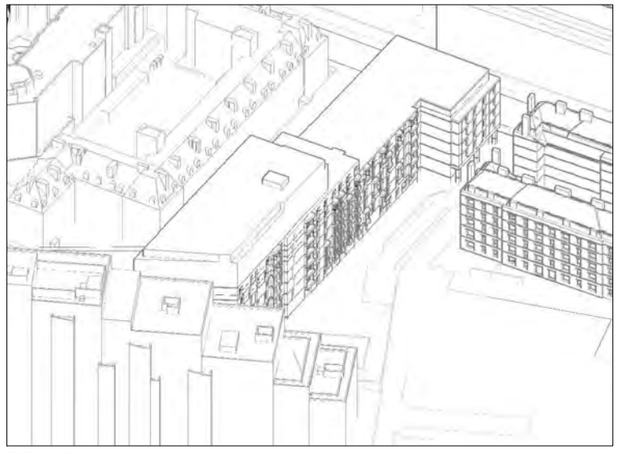
Moore House, Grosvenor Waterside - Ground Floor



3D Context View – West

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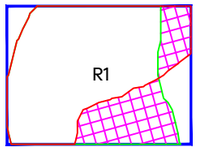

- Existing contour
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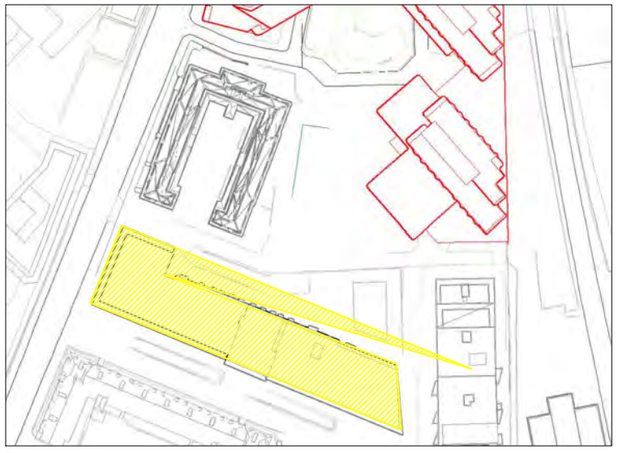

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TITLE

Daylight Distribution Contours
Room and Window Referencing Plans
Moore House

CLIENT

Ove Arup and Partners Ltd

PROJECT

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Ebury Bridge Road
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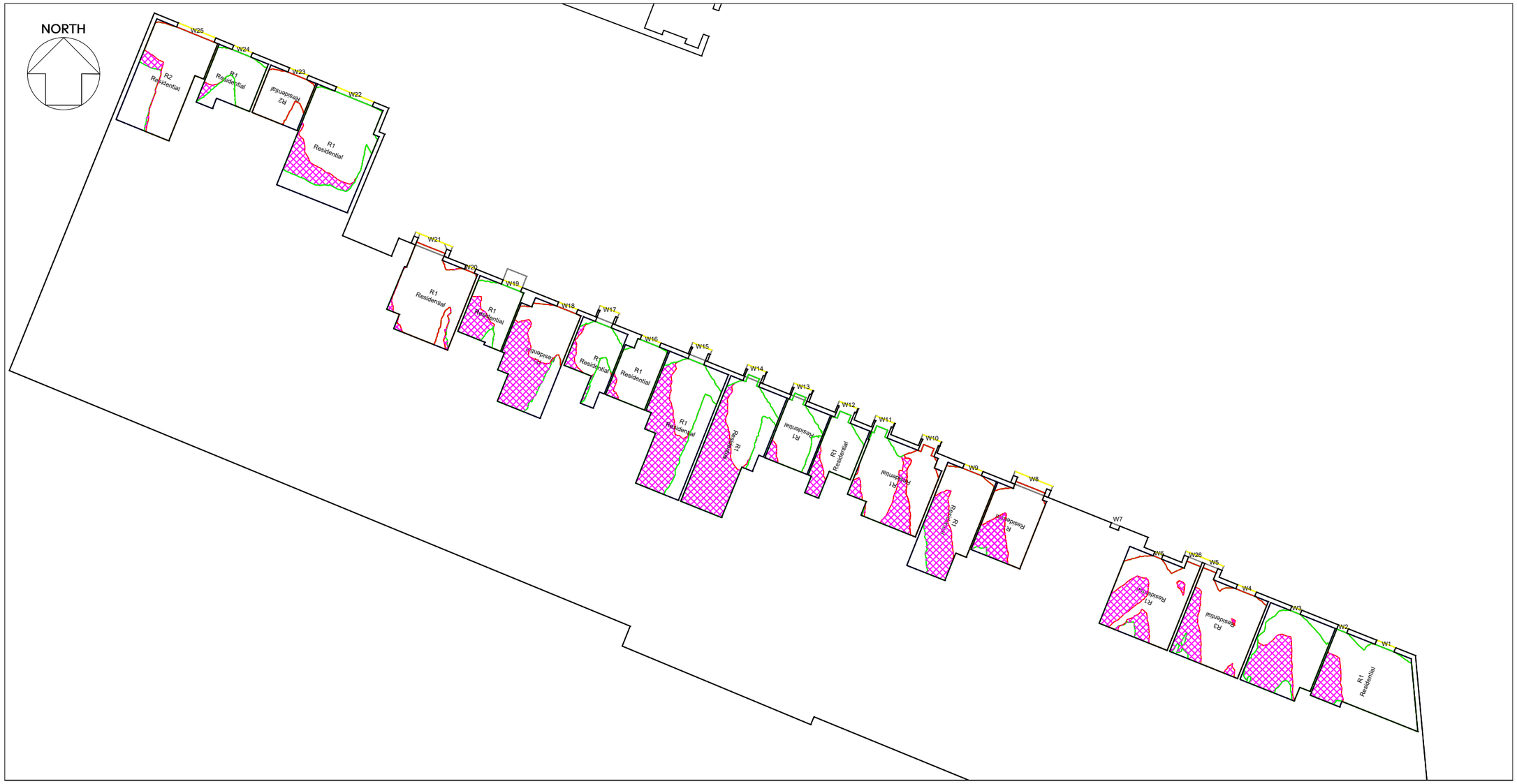
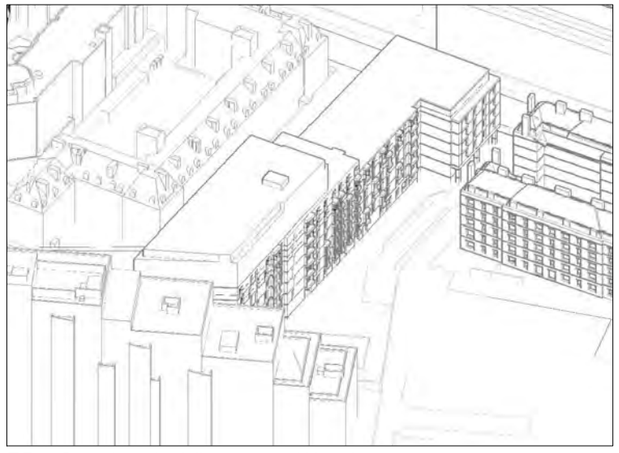
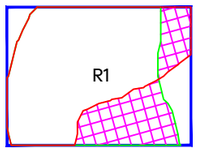


Moore House, Grosvenor Waterside - First Floor



3D Context View – West

KEY



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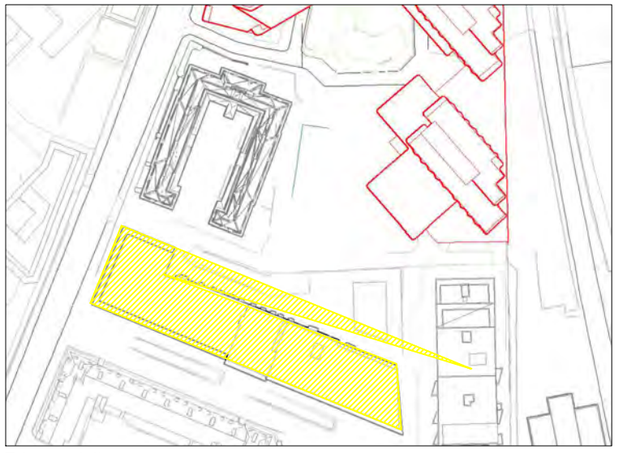

Plan View

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Daylight Distribution Contours
Room and Window Referencing Plans
Moore House

CLIENT

Ove Arup and Partners Ltd

PROJECT

Ebury Bridge Estate
Ebury Bridge Road
London SW1W 8RU

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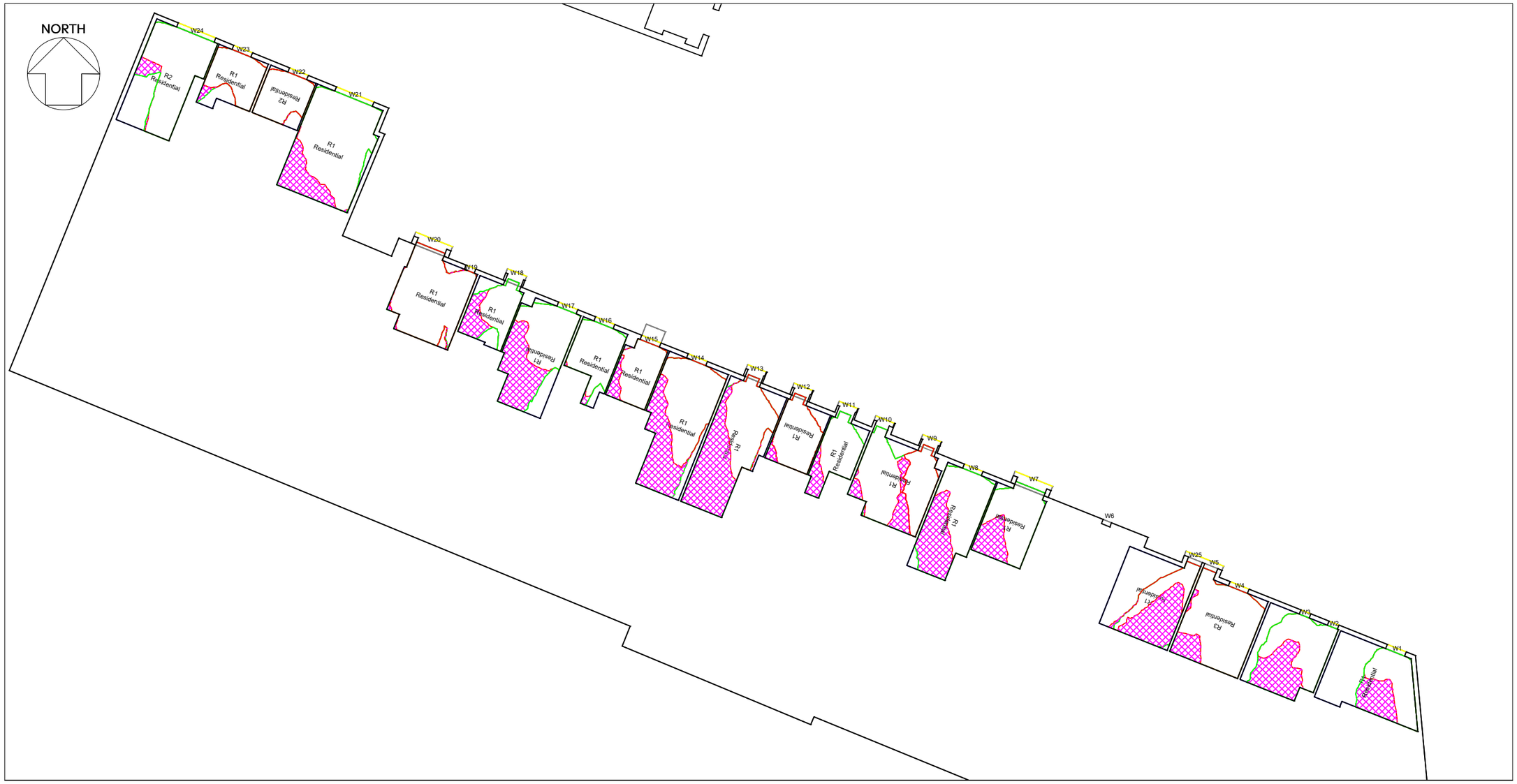
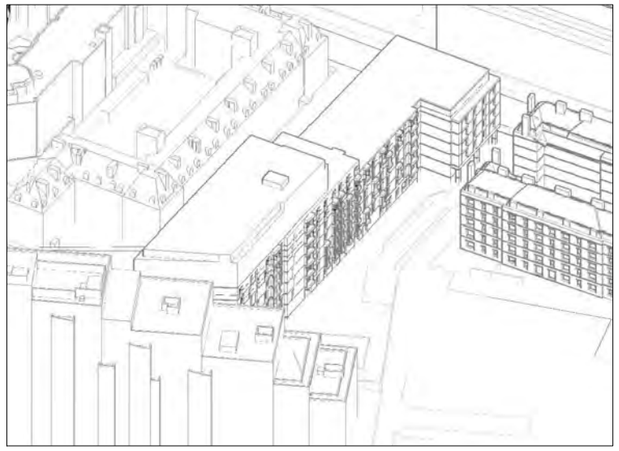
81848_DD_22	1



Moore House, Grosvenor Waterside - Second Floor



3D Context View – West

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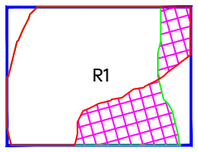

- Existing contour
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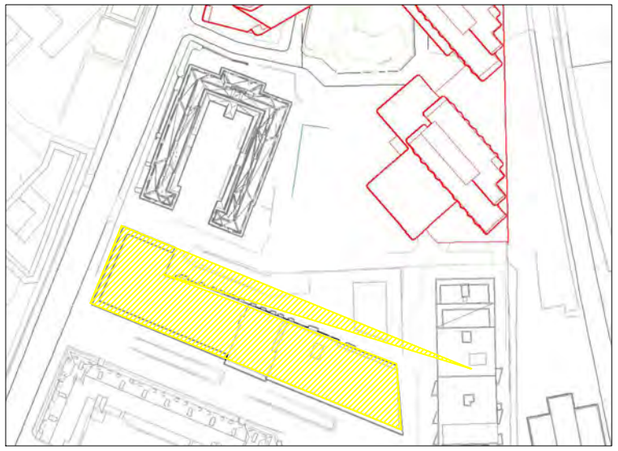

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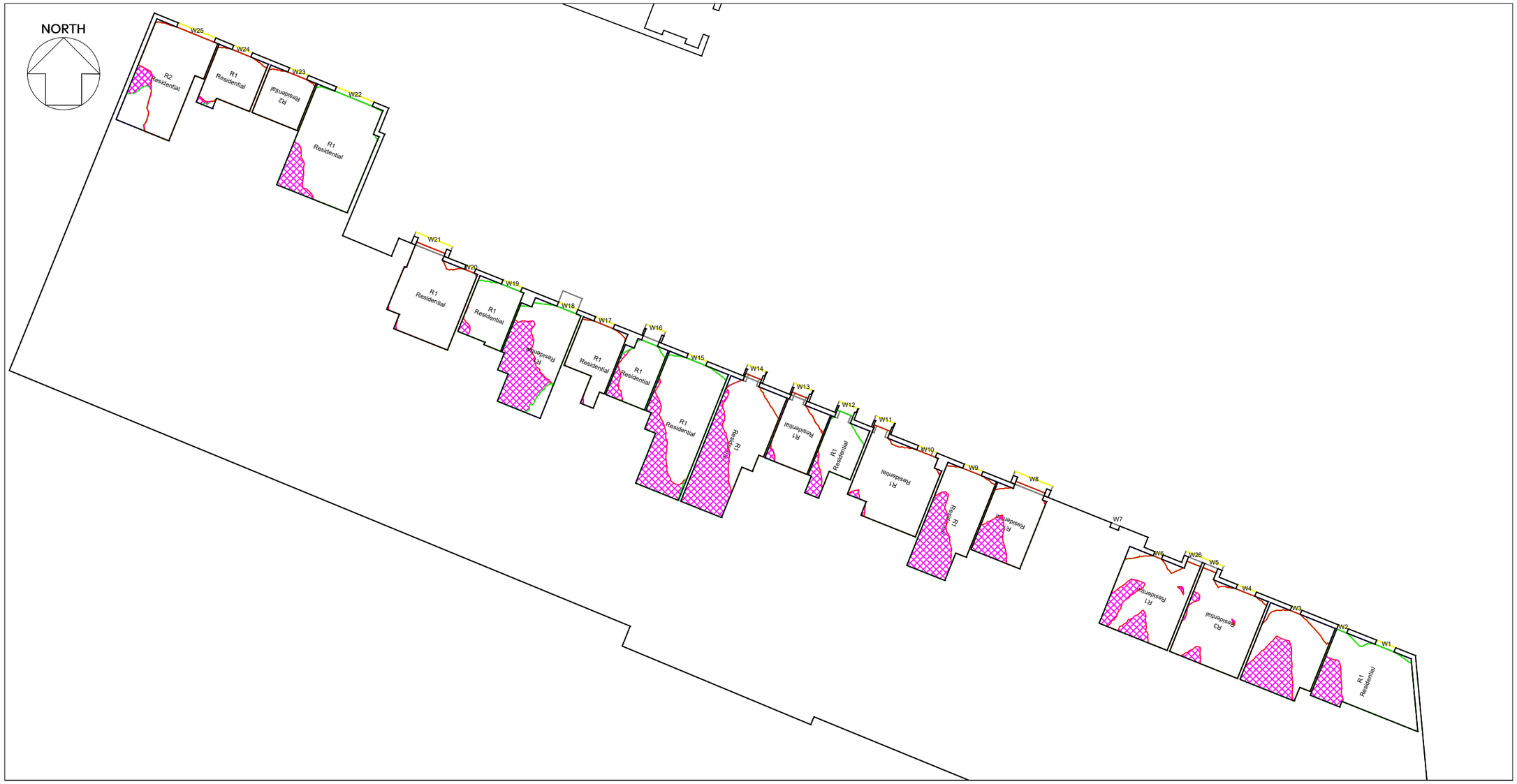
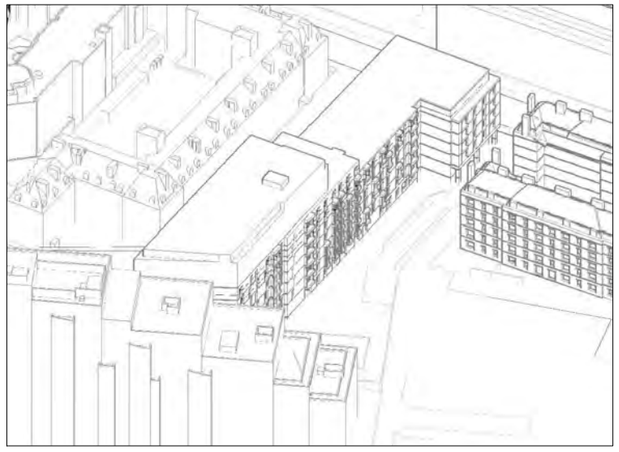


Moore House, Grosvenor Waterside - Third Floor



3D Context View – West

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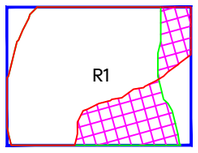

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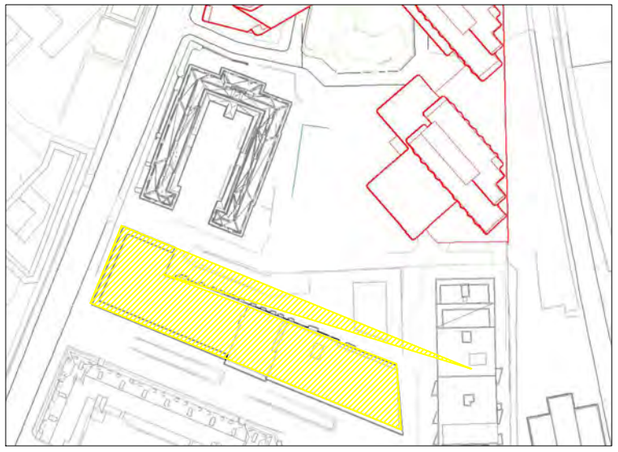

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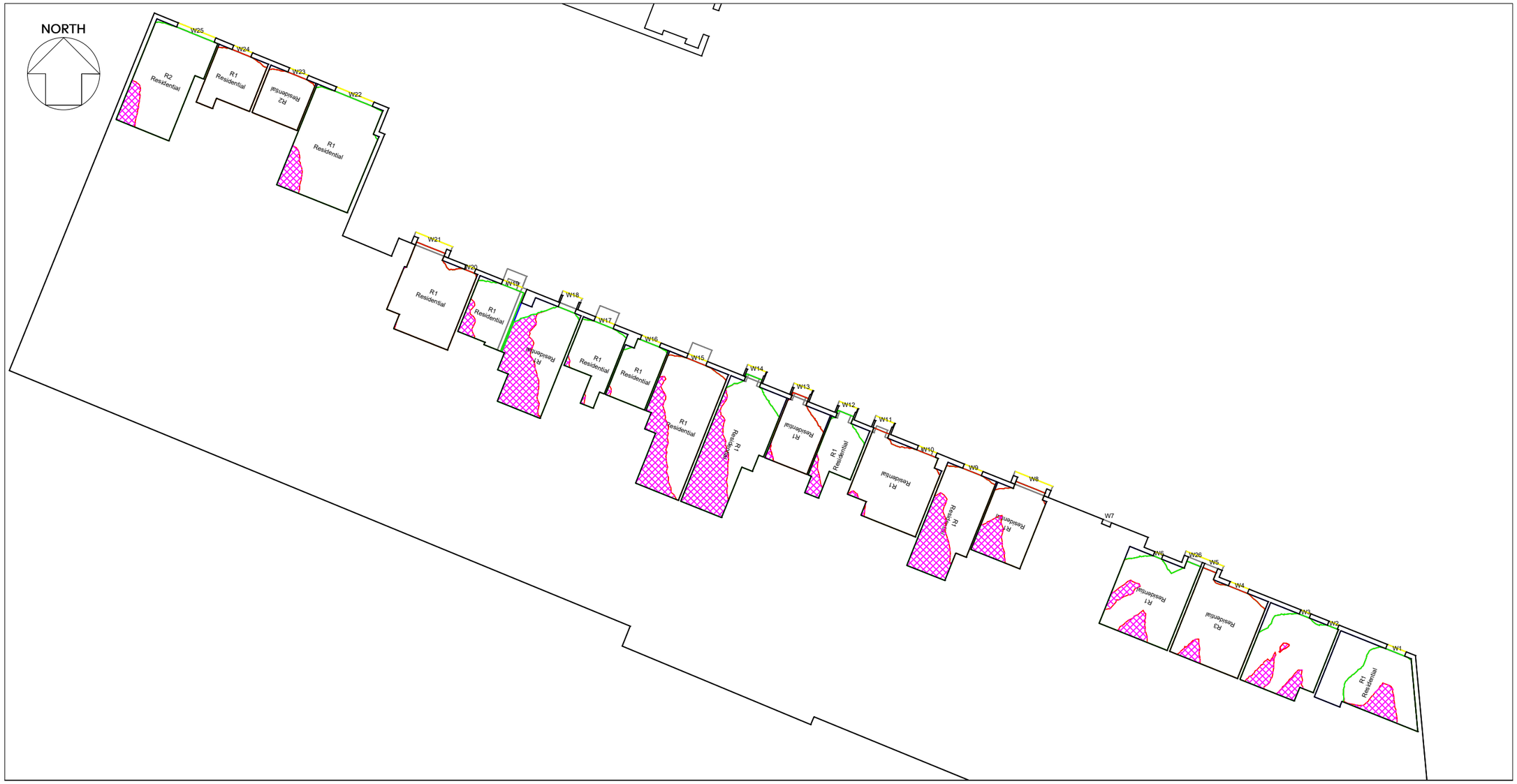
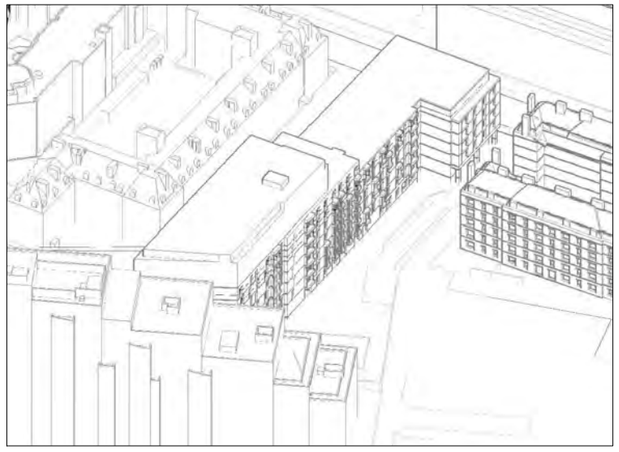


Moore House, Grosvenor Waterside - Fourth Floor



3D Context View – West

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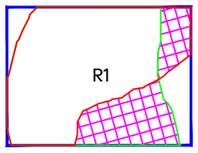

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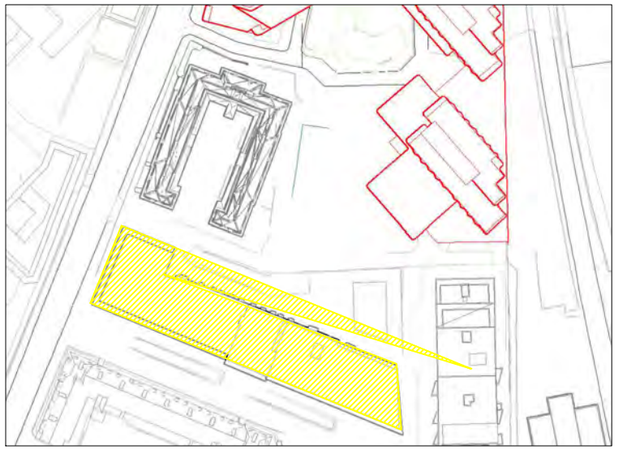

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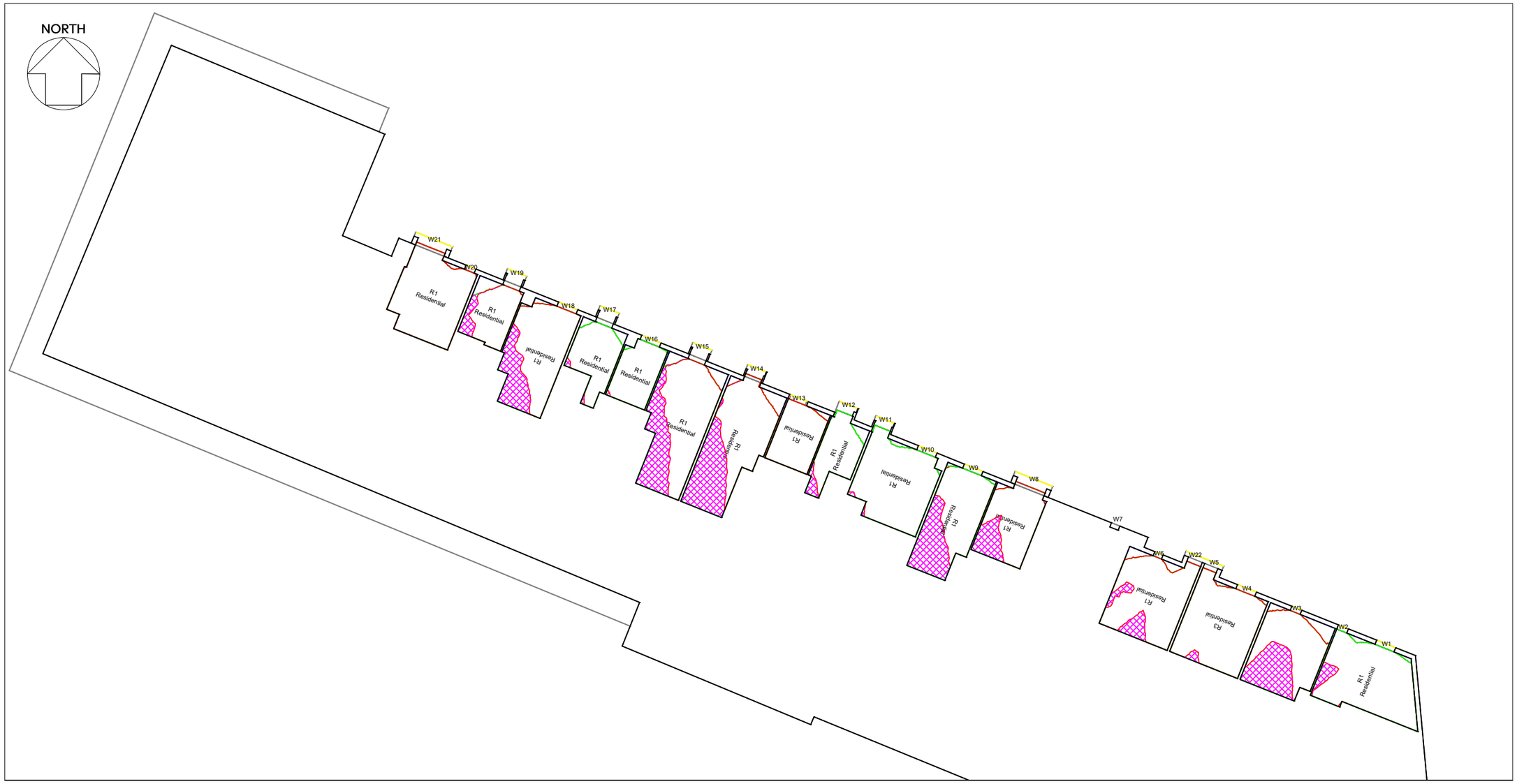
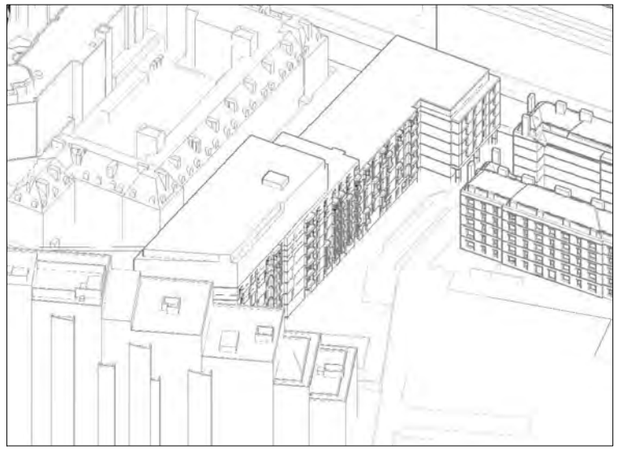


Moore House, Grosvenor Waterside - Fifth Floor



3D Context View – West

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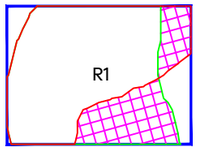

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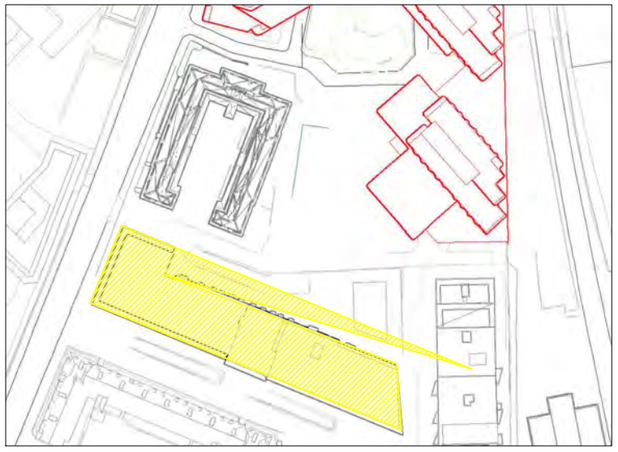

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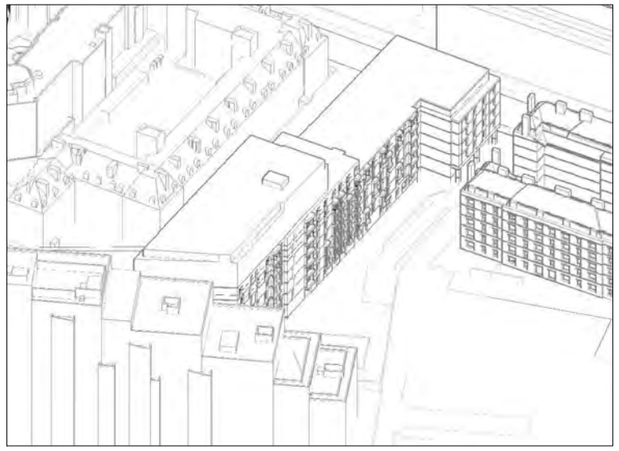
Moore House, Grosvenor Waterside - Sixth Floor



3D Context View – West

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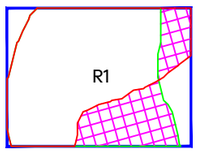

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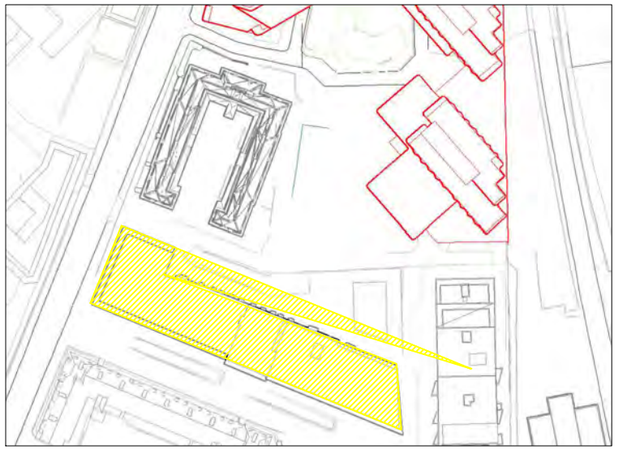

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81848_DD_27	1

E2.3 Daylight Study

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
The Rising Sun Ph					
First	W1	23.79	18.77	0.79	No
First	W2	11.80	7.16	0.61	No
First	W3	13.36	8.02	0.60	No
First	W4	12.22	7.21	0.59	No
20 Ebury Bridge Road					
Ground	W1	22.29	20.13	0.90	Yes
First	W1	24.77	22.01	0.89	Yes
Second	W1	27.44	23.95	0.87	Yes
22 Ebury Bridge Road					
Ground	W1	21.84	18.58	0.85	Yes
First	W1	24.38	20.46	0.84	Yes
Second	W1	27.11	22.38	0.83	Yes
24 Ebury Bridge Road					
Ground	W1	21.56	17.73	0.82	Yes
First	W1	24.14	19.66	0.81	Yes
Second	W1	26.93	21.54	0.80	Yes
26 Ebury Bridge Road					
Ground	W2	21.82	17.69	0.81	Yes
First	W1	24.83	19.82	0.80	Yes
Second	W1	27.55	21.59	0.78	No
28 Ebury Bridge Road					
Ground	W1	21.32	17.09	0.80	Yes
First	W1	24.00	18.97	0.79	No
Second	W1	26.88	20.86	0.78	No
30 Ebury Bridge Road					
Ground	W1	21.16	16.86	0.80	Yes
First	W1	23.85	18.69	0.78	No
Second	W1	26.79	20.57	0.77	No
32 Ebury Bridge Road					
Ground	W1	21.39	17.20	0.80	Yes
First	W1	24.08	19.01	0.79	No
Second	W1	26.98	20.88	0.77	No
34 Ebury Bridge Road					
Ground	W1	22.10	17.20	0.78	No
First	W1	24.66	19.07	0.77	No
Second	W1	27.46	20.93	0.76	No
36 Ebury Bridge Road					
Ground	W1	22.18	17.00	0.77	No
First	W1	24.83	18.99	0.76	No
Second	W1	27.63	20.86	0.75	No
38 Ebury Bridge Road					
Ground	W1	21.26	16.45	0.77	No
First	W1	24.05	18.49	0.77	No
Second	W1	26.97	20.40	0.76	No
40 Ebury Bridge Road					
Ground	W1	20.74	16.14	0.78	No
First	W1	23.57	18.22	0.77	No
Second	W1	26.55	20.25	0.76	No
42 Ebury Bridge Road					
Ground	W1	20.64	16.04	0.78	No
First	W1	23.50	18.18	0.77	No
Second	W1	26.47	20.27	0.77	No
Fountain Court					

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
Ground	W1	29.02	28.14	0.97	Yes
Ground	W2	29.35	28.41	0.97	Yes
Ground	W3	29.45	28.47	0.97	Yes
Ground	W4	29.24	28.23	0.97	Yes
Ground	W5	29.26	28.19	0.96	Yes
Ground	W6	29.02	27.93	0.96	Yes
Ground	W7	28.84	27.71	0.96	Yes
Ground	W8	28.72	26.57	0.92	Yes
Ground	W9	28.77	26.56	0.92	Yes
Ground	W10	28.77	26.50	0.92	Yes
Ground	W11	24.47	22.27	0.91	Yes
Ground	W12	23.83	21.66	0.91	Yes
Ground	W13	22.88	20.83	0.91	Yes
Ground	W14	22.35	20.65	0.92	Yes
Ground	W15	22.01	20.68	0.94	Yes
Ground	W16	21.82	20.72	0.95	Yes
Ground	W17	21.69	20.86	0.96	Yes
Ground	W18	21.63	21.02	0.97	Yes
First	W1	30.71	29.76	0.97	Yes
First	W2	30.94	29.93	0.97	Yes
First	W3	31.00	29.95	0.97	Yes
First	W4	30.98	29.87	0.96	Yes
First	W5	30.80	29.63	0.96	Yes
First	W6	30.59	29.38	0.96	Yes
First	W7	30.44	29.18	0.96	Yes
First	W8	30.29	27.89	0.92	Yes
First	W9	30.32	27.88	0.92	Yes
First	W10	30.30	27.80	0.92	Yes
First	W11	26.04	23.70	0.91	Yes
First	W12	25.41	23.13	0.91	Yes
First	W13	24.51	22.36	0.91	Yes
First	W14	24.00	22.22	0.93	Yes
First	W15	23.68	22.27	0.94	Yes
First	W16	23.50	22.33	0.95	Yes
First	W17	23.38	22.49	0.96	Yes
First	W18	23.32	22.66	0.97	Yes
Second	W1	32.38	31.39	0.97	Yes
Second	W2	32.51	31.45	0.97	Yes
Second	W3	32.52	31.41	0.97	Yes
Second	W4	32.49	31.32	0.96	Yes
Second	W5	32.32	31.07	0.96	Yes
Second	W6	32.15	30.84	0.96	Yes
Second	W7	32.01	30.63	0.96	Yes
Second	W8	31.83	29.23	0.92	Yes
Second	W9	31.86	29.20	0.92	Yes
Second	W10	31.81	29.09	0.91	Yes
Second	W11	27.66	25.18	0.91	Yes
Second	W12	27.06	24.67	0.91	Yes
Second	W13	26.22	23.99	0.91	Yes
Second	W14	25.74	23.88	0.93	Yes
Second	W15	25.43	23.96	0.94	Yes
Second	W16	25.26	24.03	0.95	Yes
Second	W17	25.15	24.21	0.96	Yes
Second	W18	25.09	24.40	0.97	Yes

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
Crh - Flat 9					
Second	W1	20.88	12.10	0.58	No
Second	W2	16.58	12.60	0.76	No
Crh - Flat 10					
Second	W1	33.18	26.43	0.80	Yes
Second	W2	33.36	25.72	0.77	No
Second	W3	33.31	24.33	0.73	No
Crh - Flat 11					
Second	W1	32.73	27.80	0.85	Yes
Second	W2	32.94	27.08	0.82	Yes
Crh - Flat 12					
Second	W1	29.65	29.64	1.00	Yes
Second	W2	8.14	8.03	0.99	Yes
Second	W3	32.70	29.15	0.89	Yes
Second	W4	32.65	28.55	0.87	Yes
Crh - Flat 20					
Third	W1	23.21	13.70	0.59	No
Third	W2	33.59	28.38	0.85	Yes
Crh - Flat 21					
Third	W1	35.10	28.17	0.80	Yes
Third	W2	35.25	27.41	0.78	Yes
Third	W3	35.16	25.89	0.74	No
Crh - Flat 22					
Third	W1	34.48	29.38	0.85	Yes
Third	W2	34.65	28.64	0.83	Yes
Crh - Flat 23					
Third	W1	31.10	31.08	1.00	Yes
Third	W2	9.39	9.12	0.97	Yes
Third	W3	34.71	30.86	0.89	Yes
Third	W4	34.68	30.35	0.88	Yes
Crh - Flat 31					
Fourth	W1	24.84	14.90	0.60	No
Fourth	W2	37.35	31.97	0.86	Yes
Crh - Flat 32					
Fourth	W1	36.85	29.86	0.81	Yes
Fourth	W2	36.95	29.05	0.79	Yes
Fourth	W3	36.88	27.45	0.74	Yes
Crh - Flat 33					
Fourth	W1	36.58	31.35	0.86	Yes
Fourth	W2	36.68	30.61	0.83	Yes
Crh - Flat 34					
Fourth	W1	32.76	32.72	1.00	Yes
Fourth	W2	10.39	9.92	0.96	Yes
Fourth	W3	36.49	32.43	0.89	Yes
Fourth	W4	36.51	32.02	0.88	Yes
1 Ebr - Flat L					
Ground	W1	21.38	21.38	1.00	Yes
Ground	W2	20.25	20.25	1.00	Yes
Ground	W3	15.73	19.82	1.26	Yes
Ground	W4	13.40	18.03	1.35	Yes
Ground	W5	11.20	16.00	1.43	Yes
1 Ebr - Flat K					
Ground	W1	3.64	4.20	1.15	Yes
Ground	W2	17.48	9.36	0.54	No

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
Ground	W3	15.97	8.53	0.53	No
Ground	W4	15.13	7.61	0.50	No
Ground	W5	14.76	8.38	0.57	No
Ground	W6	13.91	8.54	0.61	No
Ground	W7	13.27	8.04	0.61	No
Ground	W8	9.20	6.44	0.70	No
1 Ebr - Flat J					
Ground	W1	9.11	5.65	0.62	No
Ground	W2	19.57	11.70	0.60	No
Ground	W3	21.31	12.18	0.57	No
Ground	W4	22.72	13.02	0.57	No
Ground	W5	19.77	19.35	0.98	Yes
Ground	W6	19.40	19.02	0.98	Yes
1 Ebr - Flat Q					
First	W1	24.88	24.88	1.00	Yes
First	W2	23.31	23.31	1.00	Yes
First	W3	20.40	23.03	1.13	Yes
First	W4	17.85	21.18	1.19	Yes
1 Ebr - Flat P					
First	W1	7.82	8.56	1.09	Yes
First	W2	22.83	11.93	0.52	No
First	W3	21.94	11.37	0.52	No
First	W4	20.81	13.80	0.66	No
First	W5	15.88	8.20	0.52	No
1 Ebr - Flat N					
First	W1	14.30	9.55	0.67	No
First	W2	24.19	13.52	0.56	No
First	W3	25.67	14.03	0.55	No
First	W4	26.85	14.89	0.55	No
First	W5	27.78	16.05	0.58	No
First	W6	28.55	16.92	0.59	No
First	W7	22.13	21.74	0.98	Yes
First	W8	21.71	21.36	0.98	Yes
1 Ebr - Flat B					
Second	W1	25.89	25.89	1.00	Yes
Second	W2	25.41	25.86	1.02	Yes
Second	W7	27.67	16.67	0.60	No
1 Ebr - Flat A					
Second	W1	25.83	19.03	0.74	No
Second	W2	27.78	20.57	0.74	No
Second	W3	27.59	20.59	0.75	No
Second	W4	28.83	15.29	0.53	No
Second	W6	31.38	18.04	0.58	No
1 Ebr - Flat E					
Third	W1	28.11	28.11	1.00	Yes
Third	W2	30.51	28.35	0.93	Yes
1 Ebr - Flat D					
Third	W1	33.62	20.93	0.62	No
Third	W2	31.94	24.49	0.77	No
Third	W3	33.21	25.00	0.75	No
Third	W4	32.82	24.06	0.73	No
Third	W5	33.09	16.91	0.51	No
Third	W6	33.23	16.97	0.51	No
Third	W7	33.76	17.64	0.52	No

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
1 Ebr - Flat C					
Third	W1	34.09	19.37	0.57	No
Ch Flat 1 Plans					
Ground	W1	24.01	19.92	0.83	Yes
Ground	W2	24.30	19.93	0.82	Yes
Ground	W3	24.29	19.67	0.81	Yes
Ch Flat 2					
Ground	W1	24.72	19.39	0.78	No
Ground	W2	24.80	18.93	0.76	No
Ground	W3	24.54	18.22	0.74	No
Ch Flat 3 Part Assumed					
Ground	W1	24.54	17.63	0.72	No
Ground	W2	24.79	17.14	0.69	No
Ground	W3	24.77	16.51	0.67	No
Ground	W4	24.83	15.89	0.64	No
Ch Flat 4 Assumed					
Ground	W1	25.02	14.95	0.60	No
Ground	W2	25.40	14.59	0.57	No
Ground	W3	25.43	13.89	0.55	No
Ground	W4	23.73	11.56	0.49	No
Ground	W5	20.06	9.27	0.46	No
Ch Flat 5 Assumed					
Ground	W1	17.19	6.91	0.40	No
Ground	W2	23.49	11.88	0.51	No
Ch Flat 6 Assumed					
Ground	W1	23.30	11.75	0.50	No
Ground	W2	18.63	15.61	0.84	Yes
Ch Flat 7					
Ground	W2	21.18	14.58	0.69	No
Ground	W3	30.51	30.43	1.00	Yes
Ch Flat 11 Assumed					
First	W1	25.89	21.41	0.83	Yes
Ch Flat 12 Part Assumed					
First	W1	26.21	21.37	0.82	Yes
First	W2	26.22	21.05	0.80	Yes
First	W3	26.69	20.72	0.78	No
Ch Flat 13					
First	W1	26.80	20.21	0.75	No
First	W2	26.84	19.63	0.73	No
Ch Flat 14					
First	W1	26.87	19.00	0.71	No
First	W2	26.87	18.31	0.68	No
First	W3	26.89	17.66	0.66	No
Ch Flat 15 Part Assumed					
First	W1	26.95	17.02	0.63	No
First	W2	27.09	16.02	0.59	No
Ch Flat 16 Assumed					
First	W1	27.47	15.66	0.57	No
First	W2	27.75	15.08	0.54	No
First	W3	24.80	13.08	0.53	No
First	W4	20.84	10.38	0.50	No
Ch Flat 17 Assumed					
First	W1	18.28	7.68	0.42	No
First	W2	24.75	13.82	0.56	No

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
Ch Flat 18 Assumed					
First	W2	24.56	13.74	0.56	No
First	W3	19.90	17.06	0.86	Yes
Ch Flat 19 Assumed					
First	W2	22.71	16.61	0.73	No
First	W3	32.99	32.91	1.00	Yes
Ch Flat 25 Assumed					
Second	W1	27.78	22.99	0.83	Yes
Ch Flat 26 Assumed					
Second	W1	28.13	22.89	0.81	Yes
Second	W2	28.14	22.51	0.80	Yes
Second	W3	28.65	22.11	0.77	No
Ch Flat 27 Assumed					
Second	W1	28.79	21.57	0.75	No
Second	W2	28.86	20.95	0.73	No
Ch Flat 28 Part Assumed					
Second	W1	28.91	20.29	0.70	No
Second	W2	28.95	19.56	0.68	No
Second	W3	28.99	18.87	0.65	No
Ch Flat 29					
Second	W1	29.07	18.19	0.63	No
Second	W2	29.16	17.15	0.59	No
Ch Flat 30					
Second	W1	29.55	16.78	0.57	No
Second	W2	29.81	16.18	0.54	No
Second	W3	25.95	14.81	0.57	No
Second	W4	21.65	11.63	0.54	No
Ch Flat 31 Assumed					
Second	W1	19.46	8.63	0.44	No
Second	W2	25.76	15.94	0.62	No
Ch Flat 32					
Second	W2	25.71	16.02	0.62	No
Second	W3	21.11	18.55	0.88	Yes
Ch Flat 33 Assumed					
Second	W2	24.32	18.88	0.78	No
Second	W3	34.91	34.83	1.00	Yes
Ch Flat 39					
Third	W1	29.69	24.60	0.83	Yes
Ch Flat 40					
Third	W1	30.03	24.43	0.81	Yes
Third	W2	30.05	24.00	0.80	Yes
Third	W3	30.57	23.54	0.77	No
Ch Flat 41					
Third	W1	30.73	22.96	0.75	No
Third	W2	30.83	22.31	0.72	No
Ch Flat 42 Assumed					
Third	W1	30.92	21.62	0.70	No
Third	W2	30.99	20.87	0.67	No
Third	W3	31.07	20.15	0.65	No
Ch Flat 43 Assumed					
Third	W1	31.16	19.44	0.62	No
Third	W2	31.20	18.36	0.59	No
Ch Flat 44 Assumed					
Third	W1	31.59	17.98	0.57	No

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
Third	W2	31.83	17.38	0.55	No
Third	W3	27.48	17.04	0.62	No
Third	W4	22.72	13.28	0.58	No
Ch Flat 45 Assumed					
Third	W1	21.07	9.99	0.47	No
Third	W2	26.86	18.37	0.68	No
Ch Flat 46 Assumed					
Third	W2	26.97	18.60	0.69	No
Third	W3	22.69	20.51	0.90	Yes
Ch Flat 47 Assumed					
Third	W2	26.35	21.78	0.83	Yes
Third	W3	36.62	36.56	1.00	Yes
Ch Flat 54 Assumed					
Fourth	W1	31.55	26.23	0.83	Yes
Fourth	W2	31.89	25.99	0.81	Yes
Fourth	W3	31.93	25.54	0.80	Yes
Fourth	W4	32.41	24.98	0.77	No
Ch Flat 55					
Fourth	W1	32.59	24.37	0.75	No
Fourth	W2	32.71	23.69	0.72	No
Fourth	W3	32.82	22.98	0.70	No
Ch Flat 56 Assumed					
Fourth	W1	32.94	22.21	0.67	No
Fourth	W2	33.03	21.48	0.65	No
Ch Flat 57 Assumed					
Fourth	W1	33.13	20.75	0.63	No
Fourth	W2	33.18	19.68	0.59	No
Ch Flat 58 Assumed					
Fourth	W1	33.56	19.28	0.57	No
Fourth	W2	33.76	18.65	0.55	No
Fourth	W3	30.18	20.59	0.68	No
Fourth	W4	25.70	17.01	0.66	No
Ch Flat 59 Assumed					
Fourth	W1	24.56	13.19	0.54	No
Fourth	W2	28.83	20.93	0.73	No
Fourth	W3	28.07	21.04	0.75	No
Ch Flat 60					
Fourth	W1	27.85	21.20	0.76	No
Fourth	W2	28.32	21.44	0.76	No
Fourth	W3	28.46	21.90	0.77	No
Fourth	W4	26.00	24.28	0.93	Yes
Ch Flat 61					
Fourth	W2	29.46	25.82	0.88	Yes
Fourth	W3	37.82	37.78	1.00	Yes
Moore House					
Ground	W1	24.65	18.66	0.76	No
Ground	W2	24.80	18.80	0.76	No
Ground	W3	21.78	15.80	0.73	No
Ground	W4	24.37	18.52	0.76	No
Ground	W17	22.09	16.19	0.73	No
Ground	W16	23.73	17.90	0.75	No
Ground	W5	28.53	22.70	0.80	Yes
Ground	W6	25.67	19.87	0.77	No
Ground	W7	25.00	19.25	0.77	No

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
Ground	W8	26.24	20.58	0.78	No
Ground	W9	25.33	19.86	0.78	No
Ground	W10	24.63	19.31	0.78	No
Ground	W11	21.96	17.12	0.78	No
Ground	W12	24.87	20.81	0.84	Yes
Ground	W13	23.55	20.51	0.87	Yes
Ground	W14	22.23	19.88	0.89	Yes
Ground	W15	15.02	13.17	0.88	Yes
First	W1	22.78	16.89	0.74	No
First	W2	24.73	18.44	0.75	No
First	W3	26.37	19.94	0.76	No
First	W4	27.09	20.63	0.76	No
First	W5	28.64	22.08	0.77	No
First	W26	29.01	22.51	0.78	No
First	W6	26.34	20.03	0.76	No
First	W8	30.91	24.60	0.80	Yes
First	W9	30.31	24.17	0.80	Yes
A01-16	W10	31.32	25.15	0.80	Yes
A01-16	W11	31.37	25.30	0.81	Yes
A01-17	W12	31.33	25.33	0.81	Yes
A01-18	W13	31.18	25.28	0.81	Yes
A01-19	W14	30.91	25.15	0.81	Yes
A01-20	W15	30.45	24.91	0.82	Yes
A01-21	W16	29.33	24.09	0.82	Yes
A01-22	W17	29.00	24.04	0.83	Yes
A01-23	W18	27.44	23.20	0.85	Yes
A01-24	W19	20.76	17.64	0.85	Yes
First	W20	24.40	21.96	0.90	Yes
First	W21	23.20	21.29	0.92	Yes
First	W22	23.07	22.23	0.96	Yes
First	W23	21.76	20.85	0.96	Yes
First	W24	21.56	21.06	0.98	Yes
First	W25	23.60	23.27	0.99	Yes
Second	W1	24.29	18.10	0.75	No
Second	W2	27.23	20.52	0.75	No
Second	W3	28.24	21.45	0.76	No
Second	W4	28.85	22.04	0.76	No
Second	W5	30.72	23.80	0.77	No
Second	W25	31.04	24.21	0.78	No
Second	W7	32.74	26.11	0.80	Yes
A02-15	W8	32.26	25.86	0.80	Yes
A02-16	W9	33.08	26.68	0.81	Yes
A02-16	W10	33.14	26.87	0.81	Yes
A02-17	W11	33.12	26.95	0.81	Yes
A02-18	W12	33.02	26.97	0.82	Yes
A02-19	W13	32.82	26.94	0.82	Yes
A02-20	W14	31.86	26.28	0.82	Yes
A02-21	W15	26.37	21.04	0.80	Yes
A02-22	W16	30.83	25.88	0.84	Yes
A02-23	W17	30.22	25.94	0.86	Yes
A02-24	W18	29.20	25.94	0.89	Yes
Second	W19	27.25	24.58	0.90	Yes
Second	W20	25.88	23.70	0.92	Yes
Second	W21	26.41	25.00	0.95	Yes

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
Second	W22	25.23	23.75	0.94	Yes
Second	W23	25.04	24.15	0.96	Yes
Second	W24	26.70	26.13	0.98	Yes
Third	W1	27.14	20.43	0.75	No
Third	W2	29.16	22.17	0.76	No
Third	W3	30.75	23.69	0.77	No
Third	W4	31.29	24.27	0.78	No
Third	W5	32.78	25.64	0.78	No
Third	W26	33.06	25.99	0.79	No
Third	W6	29.68	22.86	0.77	No
Third	W8	34.52	27.65	0.80	Yes
Third	W9	34.23	27.65	0.81	Yes
Third	W10	34.01	27.58	0.81	Yes
Third	W11	34.85	28.45	0.82	Yes
Third	W12	34.84	28.58	0.82	Yes
Third	W13	34.78	28.67	0.82	Yes
Third	W14	34.67	28.74	0.83	Yes
Third	W15	33.69	28.08	0.83	Yes
Third	W16	34.24	28.79	0.84	Yes
Third	W17	32.74	27.75	0.85	Yes
Third	W18	27.42	23.01	0.84	Yes
Third	W19	31.61	28.11	0.89	Yes
Third	W20	30.39	27.41	0.90	Yes
Third	W21	29.00	26.31	0.91	Yes
Third	W22	30.14	27.91	0.93	Yes
Third	W23	29.34	27.16	0.93	Yes
Third	W24	29.29	27.82	0.95	Yes
Third	W25	30.46	29.45	0.97	Yes
Fourth	W1	29.08	22.19	0.76	No
Fourth	W2	31.89	24.73	0.78	No
Fourth	W3	32.77	25.60	0.78	No
Fourth	W4	32.93	25.86	0.79	No
Fourth	W5	34.74	27.55	0.79	Yes
Fourth	W26	34.97	27.83	0.80	Yes
Fourth	W6	31.29	24.40	0.78	No
Fourth	W8	36.19	29.22	0.81	Yes
Fourth	W9	35.83	29.18	0.81	Yes
Fourth	W10	35.62	29.14	0.82	Yes
Fourth	W11	36.44	30.01	0.82	Yes
Fourth	W12	36.44	30.18	0.83	Yes
Fourth	W13	36.40	30.34	0.83	Yes
Fourth	W14	36.36	30.50	0.84	Yes
Fourth	W15	30.29	24.76	0.82	Yes
Fourth	W16	35.46	30.14	0.85	Yes
Fourth	W17	29.94	24.88	0.83	Yes
Fourth	W18	35.86	31.17	0.87	Yes
Fourth	W19	29.21	25.30	0.87	Yes
Fourth	W20	32.96	29.25	0.89	Yes
Fourth	W21	32.64	29.06	0.89	Yes
Fourth	W22	33.89	30.77	0.91	Yes
Fourth	W23	33.70	30.75	0.91	Yes
Fourth	W24	33.91	31.67	0.93	Yes
Fourth	W25	34.49	32.74	0.95	Yes
Fifth	W1	32.15	25.24	0.79	No

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
Fifth	W2	33.87	26.84	0.79	No
Fifth	W3	35.08	28.09	0.80	Yes
Fifth	W4	35.24	28.32	0.80	Yes
Fifth	W5	36.53	29.47	0.81	Yes
Fifth	W22	36.72	29.69	0.81	Yes
Fifth	W6	32.77	25.98	0.79	No
Fifth	W8	37.59	30.75	0.82	Yes
Fifth	W9	37.25	30.75	0.83	Yes
Fifth	W10	37.28	30.96	0.83	Yes
Fifth	W11	37.80	31.54	0.83	Yes
Fifth	W12	37.82	31.72	0.84	Yes
Fifth	W13	37.13	31.33	0.84	Yes
Fifth	W14	37.83	32.11	0.85	Yes
Fifth	W15	37.83	32.36	0.86	Yes
Fifth	W16	37.37	32.16	0.86	Yes
Fifth	W17	37.93	32.79	0.86	Yes
Fifth	W18	37.13	32.29	0.87	Yes
Fifth	W19	37.53	33.03	0.88	Yes
Fifth	W20	35.98	31.71	0.88	Yes
Fifth	W21	36.40	32.23	0.89	Yes
Sixth	W1	34.14	27.66	0.81	Yes
Sixth	W2	36.14	29.55	0.82	Yes
Sixth	W3	36.70	30.13	0.82	Yes
Sixth	W4	36.41	29.92	0.82	Yes
Sixth	W5	37.94	31.29	0.82	Yes
Sixth	W15	38.06	31.44	0.83	Yes
Sixth	W6	34.30	27.89	0.81	Yes
Sixth	W8	38.60	32.16	0.83	Yes
Sixth	W9	38.37	32.26	0.84	Yes
Sixth	W10	38.68	32.73	0.85	Yes
Sixth	W11	38.72	32.94	0.85	Yes
Sixth	W12	38.74	33.11	0.85	Yes
Sixth	W13	38.75	33.25	0.86	Yes
Sixth	W14	38.80	33.43	0.86	Yes
Peabody Avenue					
Ground	W1	32.70	27.17	0.83	Yes
Ground	W2	33.21	27.73	0.83	Yes
Peabody Avenue Estate (Block N)					
Ground	W1	33.57	28.47	0.85	Yes
Ground	W2	34.27	28.83	0.84	Yes
Ground	W3	34.54	29.09	0.84	Yes
Ground	W4	34.64	29.21	0.84	Yes
Ground	W5	34.75	29.34	0.84	Yes
Ground	W6	34.93	29.54	0.85	Yes
Ground	W7	35.01	29.65	0.85	Yes
Ground	W8	35.03	29.71	0.85	Yes
Ground	W9	35.04	29.80	0.85	Yes
Ground	W10	35.03	29.95	0.86	Yes

Floor Ref.	Room Ref.	Room Use	Existing SQ M	Proposed SQ M	Times Former Value	% Loss	BRE Compliant
The Rising Sun Ph							
First	R1	Living Room	12.0	11.2	0.93	7	YES
First	R2	Bedroom	12.7	7.2	0.57	43	NO
20 Ebury Bridge Road							
Ground	R1	Living Room	6.2	6.9	1.12	-12	YES
First	R1	Bedroom	9.9	8.8	0.88	12	YES
Second	R1	Bedroom	10.5	8.8	0.84	16	YES
22 Ebury Bridge Road							
Ground	R1	Living Room	4.9	5.8	1.18	-18	YES
First	R1	Bedroom	8.9	7.8	0.88	12	YES
Second	R1	Bedroom	9.4	7.7	0.82	18	YES
24 Ebury Bridge Road							
Ground	R1	Living Room	5.6	5.5	0.99	1	YES
First	R1	Bedroom	8.4	7.0	0.82	18	YES
Second	R1	Bedroom	9.1	6.6	0.72	28	NO
26 Ebury Bridge Road							
Ground	R2	Living Room	5.9	4.2	0.7	30	NO
First	R1	Bedroom	7.0	4.5	0.64	36	NO
Second	R1	Bedroom	9.2	5.1	0.56	44	NO
28 Ebury Bridge Road							
Ground	R1	Living Room	5.8	4.3	0.74	26	NO
First	R1	Bedroom	8.6	5.5	0.64	36	NO
Second	R1	Bedroom	9.4	5.4	0.58	42	NO
30 Ebury Bridge Road							
Ground	R1	Living Room	6.2	4.1	0.66	34	NO
First	R1	Bedroom	9.1	5.3	0.58	42	NO
Second	R1	Bedroom	9.8	5.2	0.53	47	NO
32 Ebury Bridge Road							
Ground	R1	Living Room	7.6	6.4	0.84	16	YES
First	R1	Bedroom	10.4	7.6	0.74	26	NO
Second	R1	Bedroom	11.0	7.6	0.69	31	NO
34 Ebury Bridge Road							
Ground	R1	Living Room	8.2	6.2	0.75	25	NO
First	R1	Bedroom	10.6	7.3	0.68	32	NO
Second	R1	Bedroom	11.2	7.1	0.63	37	NO
36 Ebury Bridge Road							
Ground	R1	Living Room	8.0	5.1	0.64	36	NO
First	R1	Bedroom	10.8	6.7	0.62	38	NO
Second	R1	Bedroom	11.4	6.5	0.57	43	NO
38 Ebury Bridge Road							
Ground	R1	Living Room	7.8	4.3	0.55	45	NO
First	R1	Bedroom	10.7	5.7	0.53	47	NO
Second	R1	Bedroom	11.3	5.4	0.48	52	NO
40 Ebury Bridge Road							
Ground	R1	Living Room	5.8	3.6	0.62	38	NO
First	R1	Bedroom	8.6	4.7	0.54	46	NO
Second	R1	Bedroom	9.1	4.4	0.49	51	NO
42 Ebury Bridge Road							
Ground	R1	Living Room	5.8	3.8	0.66	34	NO
First	R1	Bedroom	8.6	5.1	0.59	41	NO
Second	R1	Bedroom	9.1	4.8	0.52	48	NO
Fountain Court							
Ground	R1	Living Room	15.3	15.3	1	0	YES
Ground	R2	Bedroom	9.9	9.9	1	0	YES

Floor Ref.	Room Ref.	Room Use	Existing SQ M	Proposed SQ M	Times Former Value	% Loss	BRE Compliant
Ground	R3		9.8	9.8	1	0	YES
Ground	R4		14.3	14.3	1	0	YES
Ground	R5		9.3	9.3	1	0	YES
Ground	R6	Kitchen	9.2	9.2	1	0	YES
Ground	R7	Living Room	14.5	14.5	1	0	YES
Ground	R8		12.6	12.6	1	0	YES
Ground	R9	Kitchen	8.1	8.1	1	0	YES
Ground	R10	Living Room	9.6	9.6	1	0	YES
Ground	R11	Living Room	9.3	9.3	1	0	YES
Ground	R12	Bedroom	11.0	10.8	0.98	2	YES
Ground	R13	Bedroom	7.7	7.7	1	0	YES
Ground	R14	Living Room	11.5	9.1	0.79	21	NO
Ground	R15	Kitchen	4.5	4.4	1	0	YES
Ground	R16		4.8	4.8	0.98	2	YES
Ground	R17	Living Room	7.9	7.7	0.97	3	YES
Ground	R18	Bedroom	7.7	7.5	0.98	2	YES
First	R1	Living Room	15.4	15.4	1	0	YES
First	R2	Bedroom	10.0	10.0	1	0	YES
First	R3	Bedroom	9.9	9.9	1	0	YES
First	R4	Bedroom	14.4	14.4	1	0	YES
First	R5		9.6	9.6	1	0	YES
First	R6	Kitchen	9.4	9.4	1	0	YES
First	R7	Living Room	14.6	14.6	1	0	YES
First	R8		12.6	12.6	1	0	YES
First	R9	Kitchen	8.1	8.1	1	0	YES
First	R10	Living Room	9.6	9.6	1	0	YES
First	R11	Living Room	9.4	9.4	1	0	YES
First	R12	Bedroom	11.1	10.9	0.98	2	YES
First	R13	Bedroom	8.0	8.0	1	0	YES
First	R14	Bedroom	10.6	9.0	0.85	15	YES
First	R15	Kitchen	4.7	4.7	1	0	YES
First	R16		5.1	5.0	0.98	2	YES
First	R17	Living Room	8.3	8.1	0.97	3	YES
First	R18	Bedroom	8.1	7.9	0.98	2	YES
Second	R1	Living Room	15.7	15.7	1	0	YES
Second	R2	Bedroom	10.3	10.3	1	0	YES
Second	R3	Bedroom	10.3	10.3	1	0	YES
Second	R4	Bedroom	14.6	14.6	1	0	YES
Second	R5		10.0	10.0	1	0	YES
Second	R6	Kitchen	9.9	9.9	1	0	YES
Second	R7	Living Room	15.1	15.1	1	0	YES
Second	R8		12.6	12.6	1	0	YES
Second	R9	Kitchen	8.1	8.1	1	0	YES
Second	R10	Living Room	9.6	9.6	1	0	YES
Second	R11	Living Room	9.6	9.6	1	0	YES
Second	R12	Bedroom	11.5	11.4	0.99	1	YES
Second	R13	Bedroom	8.6	8.6	1	0	YES
Second	R14	Bedroom	11.2	9.8	0.88	12	YES
Second	R15	Kitchen	5.3	5.3	1	0	YES
Second	R16		5.7	5.6	1	0	YES
Second	R17	Living Room	9.2	9.1	0.98	2	YES
Second	R18	Bedroom	9.0	8.9	0.99	1	YES
Crh - Flat 9							
Second	R1	Living Room	27.4	25.0	0.91	9	YES

Floor Ref.	Room Ref.	Room Use	Existing SQ M	Proposed SQ M	Times Former Value	% Loss	BRE Compliant
Crh - Flat 10							
Second	R1	Bedroom	12.3	11.8	0.96	4	YES
Second	R2	Bedroom	10.7	10.6	0.98	2	YES
Second	R3	Living Room	17.4	16.9	0.97	3	YES
Crh - Flat 11							
Second	R1	Bedroom	10.6	9.6	0.91	9	YES
Second	R2	Living Room	15.6	15.6	1	0	YES
Crh - Flat 12							
Second	R1	LKD	31.2	31.1	1	0	YES
Second	R2	Bedroom	10.5	10.2	0.97	3	YES
Crh - Flat 20							
Third	R1	Living Room	27.4	26.8	0.98	2	YES
Crh - Flat 21							
Third	R1	Bedroom	12.3	11.9	0.96	4	YES
Third	R2	Bedroom	10.7	10.6	0.99	1	YES
Third	R3	Living Room	17.4	17.0	0.97	3	YES
Crh - Flat 22							
Third	R1	Bedroom	10.6	9.7	0.92	8	YES
Third	R2	Living Room	15.6	15.6	1	0	YES
Crh - Flat 23							
Third	R1	LKD	31.2	31.1	1	0	YES
Third	R2	Bedroom	10.5	10.3	0.98	2	YES
Crh - Flat 31							
Fourth	R1	Living Room	27.4	27.4	1	0	YES
Crh - Flat 32							
Fourth	R1	Bedroom	12.3	11.9	0.97	3	YES
Fourth	R2	Bedroom	10.7	10.6	0.99	1	YES
Fourth	R3	Living Room	17.4	17.0	0.98	2	YES
Crh - Flat 33							
Fourth	R1	Bedroom	10.6	9.8	0.93	7	YES
Fourth	R2	Living Room	15.6	15.6	1	0	YES
Crh - Flat 34							
Fourth	R1	LKD	31.2	31.2	1	0	YES
Fourth	R2	Bedroom	10.5	10.3	0.98	2	YES
1 Ebr - Flat L							
Ground	R1	LKD	22.1	22.5	1.01	-1	YES
1 Ebr - Flat K							
Ground	R1	Bedroom	9.5	9.2	0.97	3	YES
Ground	R2	Living Room	17.0	14.6	0.86	14	YES
Ground	R3	Kitchen	7.0	6.6	0.94	6	YES
1 Ebr - Flat J							
Ground	R1	LKD	24.8	17.9	0.72	28	NO
Ground	R2	Bedroom	9.4	5.0	0.53	47	NO
Ground	R3	Bedroom	10.5	10.5	1	0	YES
1 Ebr - Flat Q							
First	R1	LKD	21.6	22.1	1.02	-2	YES
1 Ebr - Flat P							
First	R1	Bedroom	11.3	11.2	0.99	1	YES
First	R2	Living Room	17.1	15.0	0.87	13	YES
First	R3	Kitchen	7.1	7.1	1	0	YES
1 Ebr - Flat N							
First	R1	LKD	24.8	17.5	0.7	30	NO
First	R2	Bedroom	9.6	5.1	0.54	46	NO
First	R3	Bedroom	10.2	10.0	0.98	2	YES

Floor Ref.	Room Ref.	Room Use	Existing SQ M	Proposed SQ M	Times Former Value	% Loss	BRE Compliant
1 Ebr - Flat B							
Second	R1	Kitchen	9.5	9.9	1.04	-4	YES
Second	R4	Bedroom	11.2	6.5	0.58	42	NO
1 Ebr - Flat A							
Second	R1	Living Room	14.1	6.5	0.46	54	NO
Second	R2	Kitchen	11.6	6.1	0.53	47	NO
Second	R3	Bedroom	14.4	7.8	0.54	46	NO
Second	R5	Bedroom	10.2	6.5	0.64	36	NO
1 Ebr - Flat E							
Third	R1	Kitchen	10.2	10.1	0.99	1	YES
1 Ebr - Flat D							
Third	R1	Bedroom	12.5	8.2	0.66	34	NO
Third	R2	Living Room	15.1	8.0	0.53	47	NO
Third	R3	Kitchen	12.3	7.5	0.61	39	NO
Third	R4	Bedroom	14.8	9.2	0.62	38	NO
1 Ebr - Flat C							
Third	R1	Bedroom	10.3	6.8	0.66	34	NO
Ch Flat 1 Plans							
Ground	R1	LD	14.1	14.1	0.99	1	YES
Ground	R2	Bedroom	7.2	7.2	1	0	YES
Ground	R3	Bedroom	10.6	10.6	0.99	1	YES
Ch Flat 2							
Ground	R1	Bedroom	10.1	9.1	0.9	10	YES
Ground	R2	Bedroom	7.1	5.6	0.79	21	NO
Ground	R3	Living Room	13.5	10.7	0.8	20	YES
Ch Flat 3 Part Assumed							
Ground	R1	Living Room	14.2	13.0	0.91	9	YES
Ground	R2	Bedroom	8.9	8.3	0.93	7	YES
Ground	R3	Bedroom	10.0	8.5	0.86	14	YES
Ground	R4	Bedroom	10.8	9.5	0.88	12	YES
Ch Flat 4 Assumed							
Ground	R1	Bedroom	6.3	2.9	0.47	53	NO
Ground	R2	Bedroom	9.4	4.1	0.43	57	NO
Ground	R3	Living Room	12.0	7.1	0.59	41	NO
Ground	R4	Kitchen	5.4	4.5	0.84	16	YES
Ground	R5	Bedroom	9.3	5.1	0.55	45	NO
Ch Flat 5 Assumed							
Ground	R1	LKD	20.0	8.5	0.43	57	NO
Ch Flat 6 Assumed							
Ground	R1	LKD	15.7	13.8	0.88	12	YES
Ch Flat 7							
Ground	R2	LKD	26.2	25.6	0.98	2	YES
Ch Flat 11 Assumed							
First	R1	LD	12.6	12.3	0.97	3	YES
Ch Flat 12 Part Assumed							
First	R1	LD	8.8	8.8	0.99	1	YES
First	R2	Bedroom	5.3	5.3	1	0	YES
First	R3	Bedroom	12.1	10.8	0.89	11	YES
Ch Flat 13							
First	R1	Bedroom	7.0	5.6	0.8	20	YES
First	R2	LD	11.5	9.4	0.82	18	YES
Ch Flat 14							
First	R1	LD	10.5	9.2	0.87	13	YES
First	R2	Bedroom	8.3	7.5	0.91	9	YES

Floor Ref.	Room Ref.	Room Use	Existing SQ M	Proposed SQ M	Times Former Value	% Loss	BRE Compliant
First	R3	Bedroom	8.2	7.5	0.91	9	YES
Ch Flat 15 Part Assumed							
First	R1	LD	10.6	11.1	1.05	-5	YES
First	R2	Bedroom	7.3	4.5	0.62	38	NO
Ch Flat 16 Assumed							
First	R1	Bedroom	5.7	3.2	0.56	44	NO
First	R2	LD	10.6	5.9	0.56	44	NO
First	R3	Kitchen	5.3	3.6	0.67	33	NO
First	R4	Bedroom	9.5	3.3	0.34	66	NO
Ch Flat 17 Assumed							
First	R1	LD	19.9	6.1	0.31	69	NO
Ch Flat 18 Assumed							
First	R2	Bedroom	6.8	2.6	0.38	62	NO
First	R3	Bedroom	6.8	5.8	0.85	15	YES
Ch Flat 19 Assumed							
First	R2	LKD	26.1	25.2	0.97	3	YES
Ch Flat 25 Assumed							
Second	R1	LD	13.4	13.1	0.97	3	YES
Ch Flat 26 Assumed							
Second	R1	LD	9.6	9.5	1	0	YES
Second	R2	Bedroom	5.7	5.7	1	0	YES
Second	R3	Bedroom	13.0	10.8	0.83	17	YES
Ch Flat 27 Assumed							
Second	R1	Bedroom	8.1	5.5	0.68	32	NO
Second	R2	LD	13.1	9.3	0.71	29	NO
Ch Flat 28 Part Assumed							
Second	R1	LD	12.8	9.4	0.74	26	NO
Second	R2	Bedroom	8.5	7.4	0.87	13	YES
Second	R3	Bedroom	9.9	7.3	0.74	26	NO
Ch Flat 29							
Second	R1	LD	12.9	11.0	0.86	14	YES
Second	R2	Bedroom	9.0	4.5	0.49	51	NO
Ch Flat 30							
Second	R1	Bedroom	7.0	3.3	0.47	53	NO
Second	R2	LD	11.9	6.2	0.52	48	NO
Second	R3	Kitchen	5.4	3.8	0.71	29	NO
Second	R4	Bedroom	9.5	3.5	0.37	63	NO
Ch Flat 31 Assumed							
Second	R1	LD	20.0	6.6	0.33	67	NO
Ch Flat 32							
Second	R2	Bedroom	6.9	2.8	0.42	58	NO
Second	R3	Bedroom	6.8	5.8	0.86	14	YES
Ch Flat 33 Assumed							
Second	R2	LKD	26.3	26.3	1	0	YES
Ch Flat 39							
Third	R1	LD	13.9	13.7	0.98	2	YES
Ch Flat 40							
Third	R1	LD	10.4	10.4	1	0	YES
Third	R2	Bedroom	6.0	6.0	1	0	YES
Third	R3	Bedroom	13.0	10.9	0.84	16	YES
Ch Flat 41							
Third	R1	Bedroom	8.8	5.6	0.64	36	NO
Third	R2	LD	14.3	9.4	0.66	34	NO
Ch Flat 42 Assumed							

Floor Ref.	Room Ref.	Room Use	Existing SQ M	Proposed SQ M	Times Former Value	% Loss	BRE Compliant
Third	R1	LD	13.9	9.8	0.71	29	NO
Third	R2	Bedroom	8.5	7.5	0.88	12	YES
Third	R3	Bedroom	10.2	7.5	0.73	27	NO
Ch Flat 43 Assumed							
Third	R1	LD	13.5	11.1	0.82	18	YES
Third	R2	Bedroom	10.6	4.6	0.44	56	NO
Ch Flat 44 Assumed							
Third	R1	Bedroom	8.5	3.5	0.41	59	NO
Third	R2	LD	13.5	6.4	0.47	53	NO
Third	R3	Kitchen	5.4	4.4	0.82	18	YES
Third	R4	Bedroom	9.5	4.0	0.42	58	NO
Ch Flat 45 Assumed							
Third	R1	LD	20.2	7.7	0.38	62	NO
Ch Flat 46 Assumed							
Third	R2	Bedroom	6.9	3.6	0.52	48	NO
Third	R3	Bedroom	6.9	6.0	0.87	13	YES
Ch Flat 47 Assumed							
Third	R2	LKD	26.3	26.3	1	0	YES
Ch Flat 54 Assumed							
Fourth	R1	Bedroom	14.1	13.9	0.99	1	YES
Fourth	R2	LD	11.0	11.0	1	0	YES
Fourth	R3	Bedroom	6.3	6.3	1	0	YES
Fourth	R4	Bedroom	13.0	11.1	0.85	15	YES
Ch Flat 55							
Fourth	R1	Bedroom	12.0	9.3	0.77	23	NO
Fourth	R2	LD	19.2	18.1	0.94	6	YES
Ch Flat 56 Assumed							
Fourth	R1	LKD	12.2	9.8	0.81	19	YES
Fourth	R2	Bedroom	10.2	7.6	0.74	26	NO
Ch Flat 57 Assumed							
Fourth	R1	LD	13.5	11.2	0.83	17	YES
Fourth	R2	Bedroom	10.7	4.8	0.45	55	NO
Ch Flat 58 Assumed							
Fourth	R1	Bedroom	8.5	3.6	0.43	57	NO
Fourth	R2	LD	13.5	6.6	0.49	51	NO
Fourth	R3	Kitchen	5.5	5.2	0.96	4	YES
Fourth	R4	Bedroom	9.6	4.5	0.47	53	NO
Ch Flat 59 Assumed							
Fourth	R1	LKD	20.4	11.0	0.54	46	NO
Ch Flat 60							
Fourth	R1	LKD	17.3	9.3	0.54	46	NO
Fourth	R2	Bedroom	7.3	6.4	0.88	12	YES
Ch Flat 61							
Fourth	R2	LKD	26.3	26.3	1	0	YES
Moore House							
A00-01	R1	LKD	25.0	19.8	0.79	21	NO
A00-01	R2	Bedroom	11.1	10.5	0.95	5	YES
A00-02	R1	Bedroom	10.9	9.3	0.85	15	YES
A00-02	R2	LKD	26.7	20.0	0.75	25	NO
A00-03	R1	LKD	29.2	22.1	0.76	24	NO
A00-03	R2	Bedroom	10.5	10.0	0.95	5	YES
A00-03	R3	Bedroom	13.7	12.5	0.91	9	YES
A00-04	R1	Bedroom	10.1	8.1	0.8	20	YES
A00-04	R2	Bedroom	15.7	9.9	0.63	37	NO

Floor Ref.	Room Ref.	Room Use	Existing SQ M	Proposed SQ M	Times Former Value	% Loss	BRE Compliant
A00-04	R3	Bedroom	7.6	5.5	0.72	28	NO
A00-04	R4	LKD	20.7	20.0	0.97	3	YES
A00-05	R1	Unknown	19.0	15.3	0.81	19	YES
A00-05	R2	Unknown	26.3	22.4	0.85	15	YES
A00-05	R3	Unknown	24.5	19.7	0.8	20	YES
A01-12	R1	Living Room	28.1	23.3	0.83	17	YES
A01-12	R2	Bedroom	20.9	12.1	0.58	42	NO
A01-12	R3	Bedroom	26.4	20.7	0.78	22	NO
A01-13	R1	Living Room	25.3	17.9	0.7	30	NO
A01-14	R1	Living Room	17.3	12.6	0.73	27	NO
A01-15	R1	Bedroom	21.7	13.1	0.6	40	NO
A01-16	R1	Studio	26.5	20.8	0.78	22	NO
A01-17	R1	Studio	11.3	8.9	0.79	21	NO
A01-18	R1	Studio	10.9	10.1	0.93	7	YES
A01-19	R1	Studio	27.8	12.0	0.43	57	NO
A01-20	R1	Studio	25.2	10.6	0.42	58	NO
A01-21	R1	Studio	11.4	10.7	0.94	6	YES
A01-22	R1	Studio	9.3	7.8	0.84	16	YES
A01-23	R1	Studio	23.2	11.1	0.48	52	NO
A01-24	R1	Studio	11.9	8.0	0.67	33	NO
A01-25	R1	LKD	23.9	23.6	0.99	1	YES
A01-26	R1	LKD	29.1	23.4	0.8	20	YES
A01-26	R2	Bedroom	9.3	9.3	1	0	YES
A01-27	R1	Bedroom	9.9	9.2	0.93	7	YES
A01-27	R2	LKD	21.6	20.2	0.94	6	YES
A02-12	R1	LKD	15.6	9.8	0.63	37	NO
A02-12	R2	Bedroom	21.6	12.8	0.59	41	NO
A02-12	R3	Bedroom	26.9	23.6	0.88	12	YES
A02-13	R1	LKD	16.0	6.3	0.39	61	NO
A02-14	R1	LKD	17.6	12.8	0.72	28	NO
A02-15	R1	Bedroom	23.4	13.5	0.58	42	NO
A02-16	R1	Studio	26.3	21.9	0.84	16	YES
A02-17	R1	Studio	11.3	9.1	0.8	20	YES
A02-18	R1	Studio	12.1	11.4	0.95	5	YES
A02-19	R1	Studio	29.5	14.6	0.49	51	NO
A02-20	R1	Studio	31.2	18.9	0.61	39	NO
A02-21	R1	Studio	11.4	9.9	0.87	13	YES
A02-22	R1	Studio	12.2	11.8	0.97	3	YES
A02-23	R1	Studio	23.8	12.6	0.53	47	NO
A02-24	R1	Studio	10.8	7.1	0.66	34	NO
A02-25	R1	LKD	24.6	24.5	1	0	YES
A02-26	R1	LKD	35.5	28.5	0.8	20	YES
A02-26	R2	Bedroom	9.8	9.8	1	0	YES
A02-27	R1	Bedroom	10.5	10.0	0.95	5	YES
A02-27	R2	LKD	22.6	21.0	0.93	7	YES
A03-12	R1	LKD	28.4	23.7	0.84	16	YES
A03-12	R2	Bedroom	22.9	13.8	0.6	40	NO
A03-12	R3	Bedroom	27.0	25.7	0.95	5	YES
A03-13	R1	LKD	26.2	20.5	0.78	22	NO
A03-14	R1	LKD	17.6	13.0	0.74	26	NO
A03-15	R1	Bedroom	24.1	13.9	0.57	43	NO
A03-16	R1	Studio	27.1	26.7	0.99	1	YES
A03-17	R1	Studio	11.4	9.5	0.83	17	YES
A03-18	R1	Studio	12.2	11.8	0.97	3	YES

Floor Ref.	Room Ref.	Room Use	Existing SQ M	Proposed SQ M	Times Former Value	% Loss	BRE Compliant
A03-19	R1	Studio	30.8	17.0	0.55	45	NO
A03-20	R1	Studio	33.1	24.1	0.73	27	NO
A03-21	R1	Studio	11.1	9.6	0.86	14	YES
A03-22	R1	Studio	12.9	12.9	0.99	1	YES
A03-23	R1	Studio	25.0	12.3	0.49	51	NO
A03-24	R1	Studio	12.6	12.0	0.95	5	YES
A03-25	R1	LKD	25.3	25.3	1	0	YES
A03-26	R1	LKD	36.0	31.9	0.89	12	YES
A03-26	R2	Bedroom	10.8	10.8	1	0	YES
A03-27	R1	Bedroom	12.5	12.3	0.98	2	YES
A03-27	R2	LKD	24.7	22.8	0.92	8	YES
A04-12	R1	LKD	18.1	14.5	0.8	20	YES
A04-12	R2	Bedroom	24.3	20.2	0.83	17	YES
A04-12	R3	Bedroom	26.9	25.6	0.95	5	YES
A04-13	R1	LKD	26.2	22.5	0.86	14	YES
A04-14	R1	LKD	17.6	13.3	0.76	24	NO
A04-15	R1	Bedroom	24.1	14.4	0.6	40	NO
A04-16	R1	Studio	26.9	26.6	0.99	1	YES
A04-17	R1	Studio	11.5	9.8	0.85	15	YES
A04-18	R1	Studio	12.3	12.0	0.98	2	YES
A04-19	R1	Studio	30.8	17.8	0.58	42	NO
A04-20	R1	Studio	33.2	23.7	0.71	29	NO
A04-21	R1	Studio	11.4	11.2	0.99	1	YES
A04-22	R1	Studio	13.0	12.7	0.98	2	YES
A04-23	R1	Studio	25.1	12.4	0.49	51	NO
A04-24	R1	Studio	12.6	11.1	0.88	12	YES
A04-25	R1	LKD	25.4	25.4	1	0	YES
A04-26	R1	LKD	36.0	32.9	0.91	9	YES
A04-26	R2	Bedroom	10.8	10.8	1	0	YES
A04-27	R1	Bedroom	12.7	12.7	1	0	YES
A04-27	R2	LKD	28.9	26.0	0.9	10	YES
A05-12	R1	LKD	28.5	27.1	0.95	5	YES
A05-12	R2	Bedroom	23.1	14.5	0.63	37	NO
A05-12	R3	Bedroom	27.1	26.6	0.98	2	YES
A05-13	R1	LKD	26.2	23.2	0.88	12	YES
A05-14	R1	LKD	17.7	13.7	0.78	22	NO
A05-15	R1	Bedroom	24.1	15.2	0.63	37	NO
A05-16	R1	Studio	27.1	26.9	0.99	1	YES
A05-17	R1	Studio	11.5	10.5	0.91	9	YES
A05-18	R1	Studio	12.5	12.5	1	0	YES
A05-19	R1	Studio	30.9	19.1	0.62	38	NO
A05-20	R1	Studio	31.8	21.8	0.69	31	NO
A05-21	R1	Studio	11.4	11.3	0.99	1	YES
A05-22	R1	Studio	12.3	12.1	0.98	2	YES
A05-23	R1	Studio	26.7	19.4	0.73	27	NO
A05-24	R1	Studio	11.6	9.8	0.85	15	YES
A05-25	R1	LKD	25.5	25.5	1	0	YES
A06-12	R1	LKD	21.7	18.8	0.87	13	YES
A06-12	R2	Bedroom	23.9	22.0	0.92	8	YES
A06-12	R3	Bedroom	27.0	25.9	0.96	4	YES
A06-13	R1	LKD	26.3	23.9	0.91	9	YES
A06-14	R1	LKD	17.6	14.0	0.8	20	YES
A06-15	R1	Bedroom	24.1	16.0	0.66	34	NO
A06-16	R1	LKD	26.6	26.6	1	0	YES

Floor Ref.	Room Ref.	Room Use	Existing SQ M	Proposed SQ M	Times Former Value	% Loss	BRE Compliant
A06-17	R1	Bedroom	11.5	11.4	0.99	1	YES
A06-18	R1	Bedroom	12.5	12.5	1	0	YES
A06-19	R1	LKD	0.0	0.0	1	0	YES
Peabody Avenue							
Ground	R1	Unknown	20.7	20.3	0.98	2	YES
Peabody Avenue Estate (Block N)							
Ground	R1	Unknown	14.7	13.1	0.89	11	YES
Ground	R2	Unknown	16.9	16.4	0.97	3	YES
Ground	R3	Unknown	13.7	13.1	0.96	4	YES
Ground	R4	Unknown	13.6	13.1	0.96	4	YES
Ground	R5	Unknown	16.9	16.2	0.96	4	YES
Ground	R6	Unknown	15.3	13.8	0.9	10	YES

E2.4 Sunlight Study

Floor Ref.	Window Ref.	Existing Winter %	Existing Annual %	Proposed Winter %	Proposed Annual %	Winter Times Former Value	Annual Times Former Value	BRE Compliant
The Rising Sun Ph								
First	W1	9	33	7	27	0.78	0.82	YES
First	W2	0	15	0	7	1.00	0.47	NO
First	W3	3	19	2	10	0.67	0.53	NO
First	W4	6	21	3	11	0.50	0.52	NO
20 Ebury Bridge Road								
Ground	W1	7	30	7	25	1.00	0.83	YES
First	W1	9	36	7	29	0.78	0.81	YES
Second	W1	10	39	7	30	0.70	0.77	YES
22 Ebury Bridge Road								
Ground	W1	7	30	6	23	0.86	0.77	NO
First	W1	9	36	7	27	0.78	0.75	YES
Second	W1	11	40	7	28	0.64	0.70	YES
24 Ebury Bridge Road								
Ground	W1	7	30	7	25	1.00	0.83	YES
First	W1	9	36	7	27	0.78	0.75	YES
Second	W1	11	40	7	28	0.64	0.70	YES
26 Ebury Bridge Road								
Ground	W2	8	30	7	25	0.88	0.83	YES
First	W1	9	36	8	28	0.89	0.78	YES
Second	W1	11	41	7	28	0.64	0.68	YES
28 Ebury Bridge Road								
Ground	W1	8	30	7	26	0.88	0.87	YES
First	W1	8	35	7	27	0.88	0.77	YES
Second	W1	10	39	7	28	0.70	0.72	YES
30 Ebury Bridge Road								
Ground	W1	7	30	7	25	1.00	0.83	YES
First	W1	8	34	7	27	0.88	0.79	YES
Second	W1	11	40	7	28	0.64	0.70	YES
32 Ebury Bridge Road								
Ground	W1	7	28	6	22	0.86	0.79	NO
First	W1	8	34	7	28	0.88	0.82	YES
Second	W1	12	41	7	29	0.58	0.71	YES
34 Ebury Bridge Road								
Ground	W1	7	32	6	23	0.86	0.72	NO
First	W1	9	36	7	27	0.78	0.75	YES
Second	W1	11	43	7	29	0.64	0.67	YES
36 Ebury Bridge Road								
Ground	W1	7	30	6	23	0.86	0.77	NO
First	W1	9	38	7	27	0.78	0.71	YES
Second	W1	11	40	7	28	0.64	0.70	YES
38 Ebury Bridge Road								
Ground	W1	7	30	6	22	0.86	0.73	NO
First	W1	8	33	7	27	0.88	0.82	YES
Second	W1	11	42	7	28	0.64	0.67	YES
40 Ebury Bridge Road								
Ground	W1	7	30	6	23	0.86	0.77	NO
First	W1	8	35	7	27	0.88	0.77	YES
Second	W1	11	40	7	28	0.64	0.70	YES
42 Ebury Bridge Road								
Ground	W1	7	30	6	23	0.86	0.77	NO
First	W1	8	35	6	26	0.75	0.74	YES
Second	W1	11	40	7	28	0.64	0.70	YES

Floor Ref.	Window Ref.	Existing Winter %	Existing Annual %	Proposed Winter %	Proposed Annual %	Winter Times Former Value	Annual Times Former Value	BRE Compliant
Fountain Court								
Ground	W1	18	63	14	59	0.78	0.94	YES
Ground	W2	17	63	13	59	0.76	0.94	YES
Ground	W3	21	67	16	62	0.76	0.93	YES
Ground	W4	20	65	15	60	0.75	0.92	YES
Ground	W5	19	65	15	61	0.79	0.94	YES
Ground	W6	18	64	14	60	0.78	0.94	YES
Ground	W7	16	62	14	60	0.88	0.97	YES
Ground	W8	19	65	17	63	0.89	0.97	YES
Ground	W9	19	63	17	61	0.89	0.97	YES
Ground	W10	19	62	16	59	0.84	0.95	YES
Ground	W11	18	43	14	39	0.78	0.91	YES
Ground	W12	17	40	14	37	0.82	0.93	YES
Ground	W13	17	42	13	38	0.76	0.90	YES
Ground	W14	16	42	12	38	0.75	0.90	YES
Ground	W15	14	41	11	38	0.79	0.93	YES
Ground	W16	14	42	11	39	0.79	0.93	YES
Ground	W17	13	42	11	40	0.85	0.95	YES
Ground	W18	13	43	11	41	0.85	0.95	YES
First	W1	20	66	17	63	0.85	0.95	YES
First	W2	19	65	16	62	0.84	0.95	YES
First	W3	21	68	17	64	0.81	0.94	YES
First	W4	20	68	16	64	0.80	0.94	YES
First	W5	19	67	15	63	0.79	0.94	YES
First	W6	18	66	14	62	0.78	0.94	YES
First	W7	20	68	16	64	0.80	0.94	YES
First	W8	21	70	18	67	0.86	0.96	YES
First	W9	21	68	18	65	0.86	0.96	YES
First	W10	20	67	17	64	0.85	0.96	YES
First	W11	19	47	15	43	0.79	0.91	YES
First	W12	18	46	14	42	0.78	0.91	YES
First	W13	17	46	13	42	0.76	0.91	YES
First	W14	16	45	13	42	0.81	0.93	YES
First	W15	14	44	12	42	0.86	0.95	YES
First	W16	14	46	12	44	0.86	0.96	YES
First	W17	13	45	11	43	0.85	0.96	YES
First	W18	13	46	11	44	0.85	0.96	YES
Second	W1	22	69	19	66	0.86	0.96	YES
Second	W2	21	69	18	66	0.86	0.96	YES
Second	W3	22	70	19	67	0.86	0.96	YES
Second	W4	22	72	18	68	0.82	0.94	YES
Second	W5	20	70	17	67	0.85	0.96	YES
Second	W6	21	71	18	68	0.86	0.96	YES
Second	W7	20	70	17	67	0.85	0.96	YES
Second	W8	21	73	18	70	0.86	0.96	YES
Second	W9	22	73	19	70	0.86	0.96	YES
Second	W10	21	71	18	68	0.86	0.96	YES
Second	W11	19	52	16	49	0.84	0.94	YES
Second	W12	18	50	15	47	0.83	0.94	YES
Second	W13	17	51	14	48	0.82	0.94	YES
Second	W14	16	51	13	48	0.81	0.94	YES
Second	W15	14	50	12	48	0.86	0.96	YES
Second	W16	14	50	12	48	0.86	0.96	YES

Floor Ref.	Window Ref.	Existing Winter %	Existing Annual %	Proposed Winter %	Proposed Annual %	Winter Times Former Value	Annual Times Former Value	BRE Compliant
Second	W17	13	49	11	47	0.85	0.96	YES
Second	W18	13	50	11	48	0.85	0.96	YES
Crh - Flat 9								
Second	W1	20	47	5	29	0.25	0.62	YES
Second	W2	10	32	0	12	0.00	0.38	NO
Crh - Flat 10								
Second	W1	24	71	12	56	0.50	0.79	YES
Second	W2	23	70	10	54	0.43	0.77	YES
Second	W3	22	69	10	52	0.45	0.75	YES
Crh - Flat 11								
Second	W1	22	70	12	59	0.55	0.84	YES
Second	W2	22	69	12	56	0.55	0.81	YES
Crh - Flat 12								
Second	W2	7	14	6	13	0.86	0.93	YES
Second	W3	23	71	12	58	0.52	0.82	YES
Second	W4	23	71	13	59	0.57	0.83	YES
Crh - Flat 20								
Third	W1	23	50	10	34	0.43	0.68	YES
Third	W2	21	67	7	45	0.33	0.67	YES
Crh - Flat 21								
Third	W1	25	73	15	61	0.60	0.84	YES
Third	W2	25	73	13	58	0.52	0.79	YES
Third	W3	26	74	12	55	0.46	0.74	YES
Crh - Flat 22								
Third	W1	23	71	13	60	0.57	0.85	YES
Third	W2	25	73	15	61	0.60	0.84	YES
Crh - Flat 23								
Third	W2	7	15	7	15	1.00	1.00	YES
Third	W3	23	71	15	62	0.65	0.87	YES
Third	W4	23	71	13	60	0.57	0.85	YES
Crh - Flat 31								
Fourth	W1	24	51	11	35	0.46	0.69	YES
Fourth	W2	24	70	10	48	0.42	0.69	YES
Crh - Flat 32								
Fourth	W1	26	74	15	61	0.58	0.82	YES
Fourth	W2	26	74	14	59	0.54	0.80	YES
Fourth	W3	27	75	13	56	0.48	0.75	YES
Crh - Flat 33								
Fourth	W1	26	74	17	64	0.65	0.86	YES
Fourth	W2	25	73	16	63	0.64	0.86	YES
Crh - Flat 34								
Fourth	W2	8	16	8	16	1.00	1.00	YES
Fourth	W3	26	74	19	67	0.73	0.91	YES
Fourth	W4	25	73	17	64	0.68	0.88	YES
1 Ebr - Flat L								
Ground	W3	3	26	7	29	2.33	1.12	YES
Ground	W4	1	18	5	24	5.00	1.33	YES
Ground	W5	1	14	6	25	6.00	1.79	YES
1 Ebr - Flat K								
Ground	W1	2	11	2	8	1.00	0.73	YES
Ground	W2	6	25	2	8	0.33	0.32	NO
Ground	W3	8	32	2	10	0.25	0.31	NO
Ground	W4	7	29	2	12	0.29	0.41	NO

Floor Ref.	Window Ref.	Existing Winter %	Existing Annual %	Proposed Winter %	Proposed Annual %	Winter Times Former Value	Annual Times Former Value	BRE Compliant
Ground	W5	6	27	1	16	0.17	0.59	NO
Ground	W6	7	28	2	17	0.29	0.61	NO
Ground	W7	4	30	2	14	0.50	0.47	NO
Ground	W8	2	24	1	13	0.50	0.54	NO
1 Ebr - Flat J								
Ground	W1	4	27	1	14	0.25	0.52	NO
Ground	W2	1	36	1	17	1.00	0.47	NO
Ground	W3	2	41	2	21	1.00	0.51	NO
Ground	W4	5	47	2	25	0.40	0.53	NO
1 Ebr - Flat Q								
First	W3	7	40	9	37	1.29	0.93	YES
First	W4	5	33	7	32	1.40	0.97	YES
1 Ebr - Flat P								
First	W1	3	19	3	16	1.00	0.84	YES
First	W2	9	42	2	15	0.22	0.36	NO
First	W3	9	49	1	24	0.11	0.49	NO
First	W4	8	41	3	28	0.38	0.68	NO
First	W5	5	40	1	16	0.20	0.40	NO
1 Ebr - Flat N								
First	W1	5	34	2	23	0.40	0.68	NO
First	W2	2	45	1	21	0.50	0.47	NO
First	W3	6	50	2	25	0.33	0.50	NO
First	W4	9	54	3	29	0.33	0.54	NO
First	W5	10	51	4	27	0.40	0.53	NO
First	W6	13	57	4	31	0.31	0.54	NO
1 Ebr - Flat B								
Second	W2	10	50	10	47	1.00	0.94	YES
Second	W7	17	58	4	34	0.24	0.59	NO
1 Ebr - Flat A								
Second	W1	19	58	2	38	0.11	0.66	NO
Second	W2	15	58	2	41	0.13	0.71	NO
Second	W3	13	56	4	39	0.31	0.70	NO
Second	W4	12	57	2	24	0.17	0.42	NO
Second	W6	19	63	6	34	0.32	0.54	YES
1 Ebr - Flat E								
Third	W2	16	58	10	51	0.63	0.88	YES
1 Ebr - Flat D								
Third	W1	24	79	7	50	0.29	0.63	YES
Third	W2	21	63	7	47	0.33	0.75	YES
Third	W3	24	67	6	45	0.25	0.67	YES
Third	W4	23	67	6	46	0.26	0.69	YES
Third	W5	17	62	4	29	0.24	0.47	NO
Third	W6	19	64	5	31	0.26	0.48	YES
Third	W7	21	66	5	31	0.24	0.47	YES
1 Ebr - Flat C								
Third	W1	22	67	7	37	0.32	0.55	YES
Ch Flat 1 Plans								
Ground	W1	1	37	1	36	1.00	0.97	YES
Ground	W2	1	36	1	35	1.00	0.97	YES
Ground	W3	3	38	3	37	1.00	0.97	YES
Ch Flat 2								
Ground	W1	5	40	5	36	1.00	0.90	YES
Ground	W2	5	39	6	36	1.20	0.92	YES

Floor Ref.	Window Ref.	Existing Winter %	Existing Annual %	Proposed Winter %	Proposed Annual %	Winter Times Former Value	Annual Times Former Value	BRE Compliant
Ground	W3	6	40	7	35	1.17	0.88	YES
Ch Flat 3 Part Assumed								
Ground	W1	7	41	8	34	1.14	0.83	YES
Ground	W2	8	41	8	33	1.00	0.80	YES
Ground	W3	9	42	9	33	1.00	0.79	YES
Ground	W4	9	42	9	32	1.00	0.76	YES
Ch Flat 4 Assumed								
Ground	W1	9	40	9	28	1.00	0.70	YES
Ground	W2	8	40	9	28	1.13	0.70	YES
Ground	W3	8	39	9	27	1.13	0.69	YES
Ch Flat 5 Assumed								
Ground	W1	0	12	0	0	1.00	0.00	NO
Ch Flat 11 Assumed								
First	W1	1	38	1	36	1.00	0.95	YES
Ch Flat 12 Part Assumed								
First	W1	3	40	3	38	1.00	0.95	YES
First	W2	7	43	7	41	1.00	0.95	YES
First	W3	8	43	8	39	1.00	0.91	YES
Ch Flat 13								
First	W1	9	44	10	39	1.11	0.89	YES
First	W2	9	44	10	38	1.11	0.86	YES
Ch Flat 14								
First	W1	9	44	10	37	1.11	0.84	YES
First	W2	9	43	9	34	1.00	0.79	YES
First	W3	9	44	9	34	1.00	0.77	YES
Ch Flat 15 Part Assumed								
First	W1	10	44	10	33	1.00	0.75	YES
First	W2	10	42	10	29	1.00	0.69	YES
Ch Flat 16 Assumed								
First	W1	12	46	11	30	0.92	0.65	YES
First	W2	13	50	13	32	1.00	0.64	YES
Ch Flat 17 Assumed								
First	W1	0	15	0	0	1.00	0.00	NO
Ch Flat 25 Assumed								
Second	W1	4	44	4	40	1.00	0.91	YES
Ch Flat 26 Assumed								
Second	W1	7	46	7	42	1.00	0.91	YES
Second	W2	8	47	8	40	1.00	0.85	YES
Second	W3	10	47	10	41	1.00	0.87	YES
Ch Flat 27 Assumed								
Second	W1	10	47	10	40	1.00	0.85	YES
Second	W2	9	44	10	38	1.11	0.86	YES
Ch Flat 28 Part Assumed								
Second	W1	9	45	10	37	1.11	0.82	YES
Second	W2	11	47	11	36	1.00	0.77	YES
Second	W3	12	47	12	37	1.00	0.79	YES
Ch Flat 29								
Second	W1	14	49	14	37	1.00	0.76	YES
Second	W2	12	46	12	31	1.00	0.67	YES
Ch Flat 30								
Second	W1	15	51	14	34	0.93	0.67	YES
Second	W2	15	54	14	35	0.93	0.65	YES
Ch Flat 31 Assumed								

Floor Ref.	Window Ref.	Existing Winter %	Existing Annual %	Proposed Winter %	Proposed Annual %	Winter Times Former Value	Annual Times Former Value	BRE Compliant
Second	W1	0	15	0	1	1.00	0.07	NO
Ch Flat 39								
Third	W1	7	48	7	43	1.00	0.90	YES
Ch Flat 40								
Third	W1	9	49	9	44	1.00	0.90	YES
Third	W2	10	50	10	43	1.00	0.86	YES
Third	W3	12	52	12	43	1.00	0.83	YES
Ch Flat 41								
Third	W1	12	52	13	43	1.08	0.83	YES
Third	W2	13	53	14	43	1.08	0.81	YES
Ch Flat 42 Assumed								
Third	W1	13	53	14	41	1.08	0.77	YES
Third	W2	16	56	15	41	0.94	0.73	YES
Third	W3	15	54	15	40	1.00	0.74	YES
Ch Flat 43 Assumed								
Third	W1	15	54	15	38	1.00	0.70	YES
Third	W2	13	49	13	32	1.00	0.65	YES
Ch Flat 44 Assumed								
Third	W1	16	54	15	37	0.94	0.69	YES
Third	W2	16	56	15	36	0.94	0.64	YES
Ch Flat 45 Assumed								
Third	W1	1	18	0	2	0.00	0.11	NO
Ch Flat 54 Assumed								
Fourth	W1	10	51	10	46	1.00	0.90	YES
Fourth	W2	12	53	12	48	1.00	0.91	YES
Fourth	W3	14	55	14	47	1.00	0.85	YES
Fourth	W4	15	56	15	47	1.00	0.84	YES
Ch Flat 55								
Fourth	W1	15	56	16	46	1.07	0.82	YES
Fourth	W2	15	56	16	46	1.07	0.82	YES
Fourth	W3	16	56	15	42	0.94	0.75	YES
Ch Flat 56 Assumed								
Fourth	W1	16	58	15	41	0.94	0.71	YES
Fourth	W2	16	57	15	40	0.94	0.70	YES
Ch Flat 57 Assumed								
Fourth	W1	17	58	17	41	1.00	0.71	YES
Fourth	W2	15	56	14	37	0.93	0.66	YES
Ch Flat 58 Assumed								
Fourth	W1	17	57	15	38	0.88	0.67	YES
Fourth	W2	18	59	16	40	0.89	0.68	YES
Ch Flat 59 Assumed								
Fourth	W1	1	25	0	9	0.00	0.36	NO
Peabody Avenue								
Ground	W1	17	53	16	48	0.94	0.91	YES
Ground	W2	17	53	16	47	0.94	0.89	YES
Peabody Avenue Estate (Block N)								
Ground	W1	18	54	17	49	0.94	0.91	YES
Ground	W2	18	55	17	49	0.94	0.89	YES
Ground	W3	18	55	17	49	0.94	0.89	YES
Ground	W4	18	55	17	49	0.94	0.89	YES
Ground	W5	18	56	17	49	0.94	0.88	YES
Ground	W6	18	57	17	49	0.94	0.86	YES
Ground	W7	18	57	17	49	0.94	0.86	YES

Floor Ref.	Window Ref.	Existing		Proposed		Winter Times Former Value	Annual Times Former Value	BRE Compliant
		Winter %	Annual %	Winter %	Annual %			
Ground	W8	18	56	17	49	0.94	0.88	YES
Ground	W9	18	56	17	48	0.94	0.86	YES
Ground	W10	18	57	17	49	0.94	0.86	YES

E2.5 Overshadowing Study

Building Ref	Floor Ref	Amenity Ref	Amenity Area	Existing Lit Area	Proposed Lit Area	Existing %	Proposed %	Pr/Ex	Meets BRE Criteria
1 Ebury Bridge Road - Flat B	Second	A5	25.8	25.8	3.5	99.97%	13.65%	0.14	NO
1 Ebury Bridge Road - Flat A	Second	A6	23.0	23.0	13.4	99.85%	58.09%	0.58	YES
1 Ebury Bridge Road - Flat L	Ground	A1	42.4	11.8	22.3	27.79%	52.65%	1.89	YES
1 Ebury Bridge Road - Flat K	Ground	A2	41.2	11.6	0.0	28.16%	0.00%	0	NO
1 Ebury Bridge Road - Flat J	Ground	A3	36.7	0.1	0.0	0.25%	0.00%	0	NO
Cheylesmore House - Flat 1	Ground	A1	65.5	26.2	26.4	39.94%	40.35%	1.01	YES
Cheylesmore House - Flat 2	Ground	A2	47.8	47.5	47.5	99.38%	99.46%	1	YES
Cheylesmore House - Flat 3	Ground	A3	56.1	56.0	56.0	99.83%	99.84%	1	YES
Cheylesmore House - Flat 4	Ground	A4	112.7	70.1	55.7	62.20%	49.48%	0.8	YES
Cheylesmore House - Flat 5	Ground	A5	38.6	0.0	0.0	0.00%	0.00%	1	YES
Cheylesmore House - Flat 6	Ground	A6	32.7	0.0	0.0	0.00%	0.00%	1	YES

Building Ref	Floor Ref	Amenity Ref	Amenity Area	Existing Lit Area	Proposed Lit Area	Existing %	Proposed %	Pr/Ex	Meets BRE Criteria
1 Ebury Bridge Road - Flat B	Ground	A1	42.4	40.8	39.5	96.10%	93.17%	0.97	YES
1 Ebury Bridge Road - Flat A	Ground	A2	41.2	40.1	35.2	97.41%	85.41%	0.88	YES
1 Ebury Bridge Road - Flat L	Ground	A3	36.7	36.7	36.7	99.98%	99.98%	1	YES
1 Ebury Bridge Road - Flat K	Second	A5	25.8	25.8	25.8	99.96%	99.95%	1	YES
1 Ebury Bridge Road - Flat J	Second	A6	23.0	23.0	23.0	99.84%	99.83%	1	YES
Cheylesmore House - Flat 1	Ground	A1	65.5	65.3	65.2	99.67%	99.60%	1	YES
Cheylesmore House - Flat 2	Ground	A2	47.8	47.5	47.4	99.47%	99.27%	1	YES
Cheylesmore House - Flat 3	Ground	A3	56.1	56.1	56.0	99.87%	99.78%	1	YES
Cheylesmore House - Flat 4	Ground	A4	112.7	112.7	88.8	99.69%	78.30%	0.79	YES
Cheylesmore House - Flat 5	Ground	A5	38.6	38.5	24.5	99.61%	63.52%	0.64	YES
Cheylesmore House - Flat 6	Ground	A6	32.7	30.3	24.5	92.78%	74.91%	0.81	YES
Cheylesmore House - Flat 7	Ground	A7	94.1	89.2	83.4	94.80%	88.65%	0.94	YES

E3 Solar reflected glare assessment

Westminster City Council

Ebury Bridge Renewal

Solar Reflected Glare Assessment

Report Ref

Issue | 5 April 2020

Job number 257461-00

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Contents

1 Executive Summary

A specialist sunlight assessment has been carried out to demonstrate the effects of Ebury Bridge Renewal on the surroundings areas regarding reflected sunlight.

The assessment has been carried out referring to industry guidance, which recommends evaluating the frequency, duration, extent and intensity of sunlight reflections.

The methodology used in the assessment uses 3D computer models and ray tracing software. Assumptions have been made for materials, weather conditions and consider worst case scenarios (no dirt accumulation, permanent sunny conditions).

The surrounding areas have been scrutinised to identify road and rail receptors that could experience reflected sunlight with the following findings:

Receptor	Reflection occurrence	Character and spatial extent of reflections	Recommendations
Ebury Bridge / Sutherland Street (road)	At winter middays, for less than one hour.	Limited to the upper portion of the proposed development and only for observers moving West.	None.
Warwick Way (road)	None.	None.	None.
Ebury Bridge road (road)	None.	None.	None.
Rail tracks towards Victoria Station (rail)	Approximately 3 hours per day during winter and autumn late morning	Intermittent flashes from the left of the direction of travel. Can exceed veiling luminance threshold intermittently.	Deploy anti-glare visors. Engage with Signal sighting engineer.
Rail tracks from Victoria Station (rail)	Approximately 1 hour during summer, at sunrise.	Intermittent flashes in front of the observer. Sunlight behind the observer. Can exceed veiling luminance threshold intermittently.	Deploy anti-glare visors. Engage with Signal sighting engineer.
St Barnabas Street (road)	Approximately 1 hour during spring and summer months afternoons	Intermittent flash in front of the observer. Can exceed veiling luminance threshold when approaching the development.	Deploy anti-glare visors.

It is noted that, being the proposed development residential in nature there are not any available mitigation measures to further reduce the occurrence of reflections, nor to reduce their intensities. In fact, window sizes and glass specification have

been optimised to provide the maximum amount of daylight and reduce solar gains and reflections to a minimum.

As the building design cannot be optimised without impacting its own function (smaller windows will reduce daylight), it is recommended that the relevant authorities are made aware of the extent of these reflections and that signal sighting engineers are engaged in this process to develop suitable safety measures.

As the extent of the reflections identified by the assessment is typical of contemporary residential architecture for a city where medium/high rise buildings surround transport infrastructures, it is expected that, in practical terms, the instances of reflected sunlight will be dealt with by using appropriate anti-glare visors. This is common practise when dealing with direct sunlight in any other glare instance, or, alternatively, and specific for rail, by modification of the signal gantries to provide increased contrast and visibility.

2 Introduction

It is considered that the effects of reflected sunlight resultant from the proposed development of Ebury Bridge Renewal should be predicted and understood. The purpose of this study is to investigate whether these sunlight reflections can be experienced by the train drivers or road users in the areas surrounding the site.

The study determines the location and duration of sunlight reflections from the proposed buildings. The study uses 3D simulations to predict the temporal and geometrical pattern of reflection of sunlight. All results of the assessment are collected in Appendix 7.

The report refers to industry guidance. Methodology and relevant assumptions are listed in the report.

Conclusions and recommendations are summarised at the end of the report and, for convenience, in the Executive Summary.

3 Guidance

The study is based on guidance from the following documents:

- BR 209 – Site Layout Planning for Daylight and Sunlight – A guide to good practice: Littlefair, 2011
- Reflectivity – Dealing with rogue reflections – Hassall, 1991

The guidance from BR 209 is that reflected solar glare, defined as solar dazzle, should be evaluated in its scale. This is done by identifying the key locations where this phenomenon could occur and estimating the number of hours in the year in which such areas would receive reflected glare. BR 209 also explains that reflected solar glare, solar dazzle, is only a long-term problem for heavily glazed buildings and can be mitigated by reducing the areas of glazing, reorienting buildings and using vertical or nearly horizontal glazing. BR 209 does not provide any metric to calculate the level of glare/dazzle.

On the other hand, the Hassall document provides a graphical method to estimate disability glare. Once the critical areas are identified (according to BR 209 these are road junctions, adjacent rail tracks where solar reflections could land) the viewing directions of observers are considered with respect to the reflected image of the sun: their angular distance and the luminance of the reflections are used to determine a value of veiling luminance, which is used to define whether disability glare occurs. A threshold of 500cd/sqm is set in the Hassall method as the discriminant between cases where disability glare occurs, however values of veiling luminance in proximity to the threshold should also be carefully evaluated.

The Hassall method uses graphical protractors to predict the entity of glare, considering the reflectance of the materials in buildings surrounding the observer and their position in respect to its line of sight.

The receptors included in the assessment are road users and train drivers located in the proximity of the proposed development and looking at it. These receptors are all considered to be highly sensitive as per BR 209 definition.

4 Methodology and Assumptions

The assessment is based on 3D computer modelling and uses ray tracing software, namely the Radiance ray tracing system, to calculate the path of reflected light from the Sun to the reflective surfaces (the building envelope) and finally to the observer eyes.

4.1 Study area and critical receptors

The first step of the assessment is to determine the study area. For this the reflective surfaces are used to generate a reflection pattern to the areas surrounding the proposed building.

This is achieved by tracing sun angles within summer and winter solstices from the reflective surfaces onto the surrounding terrain and massing. The intersection points of such vectors with the ground and the sounding areas will determine where reflected sunlight is visible from.

This allows identification of the receptors that are potentially affected by reflected sunlight, within the study area. This selection is based on the direction of travel of the observers and the incoming reflected sunlight.

Typically, when directed and reflected sunlight are visible at the same time, within the centre of the view, sunlight is the predominant source of glare and thus these instances can be ignored.

Also, whenever the reflected sunlight hits the observer from a direction very near the side view, at an angle far from the travel direction, the effect of glare will be less severe.

The remaining instances of reflected sunlight, where no direct sunlight is visible, and where the reflected light vector is close to the viewing direction are retained and further considered (within 10° from view centre).

4.2 Hassall Protractors

The second step of the assessment is to trace a series of Hassall protractors for the receptors previously identified.

These diagrams allow identification of the position of reflected sunlight and how this relates to the viewing direction during the receptor travel.

Each image captures the reflected sunlight for the whole year and provides a preliminary estimate of the resulting veiling luminance and its temporal distribution on an annual basis. It is noted the Hassall method defines disability glare with a threshold of 500cd/sqm veiling luminance and the findings are considered in context with the threshold.

Sunpath diagrams showing sun positions that can cause reflections for a given receptor are used to quantify the duration of certain reflections.

4.3 Veiling luminance assessment

The final step is to assess the visual experience of receptors along their travelling direction.

An important discriminant is whether effects of reflections are continuous or intermittent (for example when the observer sees the reflected sunlight interrupted by physical obstructions).

The assessment uses the Radiance ray tracing system to create a set of images which are reviewed, and a commentary provided. These images are processed, and veiling luminance is calculated. A human sensitivity algorithm is applied to the images to approximate the response of the human eye to the effects of glare.

It should be noted that the sensitivity of the results relates to the viewing direction: the veiling luminance calculation uses the square of the angle between viewing direction and sunlight reflection. In simple terms, this means that reflections in front of an observer, close to the viewing direction, have greater impact than those from the side. An observer could adjust the viewing direction to be different than the direction of travel, looking away from a reflection, for example.

Furthermore, the formula does not include for eyewear, sunglasses, anti-glare visors and tinted glass.

4.4 Assumptions

The following assumptions are made in respect to observer position: train driver eye position is set at 2.75m from ground level, car drivers eye position is set at 1.25m from ground level.

The assessment assumes a standard CIE (Commission International De L'Éclairage) clear sky model for all instances. The sun geometry is based on London geographical coordinates (latitude 51.5°N).

The properties of the materials included in the assessment are summarised in the following table and do not account for dirt accumulation.

Surface designation	**Reflectance**
Glazed areas of windows	15%, completely specular
All other surfaces	20%, completely diffuse

Simulations use a detailed envelope model of all proposed building blocks of Ebury Bridge Renewal. The surrounding areas have been acquired from

Zmapping portal of which location of rails, roads and signal gantries have been compared to other online mapping services (Google / Emapsite).

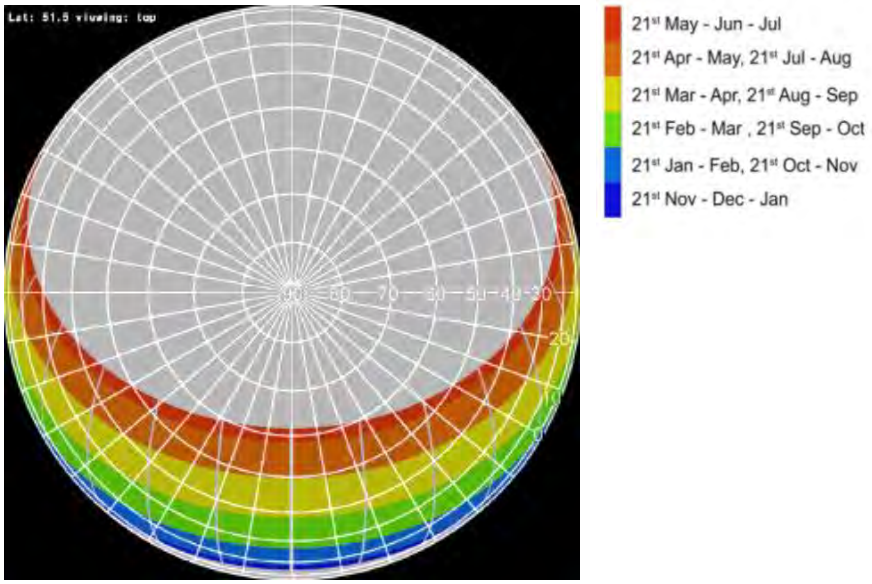

Figure 1 - Sunpath for 51.5° latitude showing the colour coding used to discern months and seasons.

Figure 2 - Site configuration highlighting position of buildings relative to sensitive receptors (road users and rail users)

5 Results

5.1 Preliminary finding, study area and critical receptors

The reflected sunlight from the building can reach several sensitive receptors[1] in the surrounding areas. These are located along the adjacent rail tracks, running north-south, and the adjacent roads: St Barnabas Street, Ebury Bridge, Warwick Way, Ebury Bridge road and Sutherland Street.

The reflected sunlight pattern resulting from the glazed areas of the proposed buildings consists of a series of parallelograms arranged at a distance between each other, mirroring the façade window positions. This is because the size of windows and the opaque areas of façade, the presence of balconies and handrails have the combined effect of splitting the solar reflections into smaller, discrete patterns.

Among the receptors considered, it has been observed that the most critical areas are:

- the approaching route to the proposed development from St Barnabas Street, where a large portion of the glazed areas has the potential to reflect direct sunlight towards a driver in the afternoon in a position which is very close to the line of sight
- the train routes approaching Victoria Station from the south, where the proposed development has the potential to reflect the morning sunlight in winter and autumn.
- The train routes leaving Victoria Station and moving south. Here, low angle reflections during summer mornings will be likely visible and parallel to the travelling direction.

These observers have been further analysed and sunpaths diagrams produced to provide a measure of the yearly duration of reflected sunlight.

All the other observers do not show any reflected sunlight or reflections that are far from observer's line of sight and therefore are not considered critical. For completeness the relevant Hassall protractors are shown in Appendix 7 of the report.

[1] Diagrams showing the extent of reflected sunlight for solstices are collected in Appendix.

5.2 Hassall protractor analysis

The following Hassall protractors and sunpath diagrams demonstrate the extent of reflected sunlight for the critical observer identified:

- St Barnabas Street
- the train routes approaching or leaving Victoria

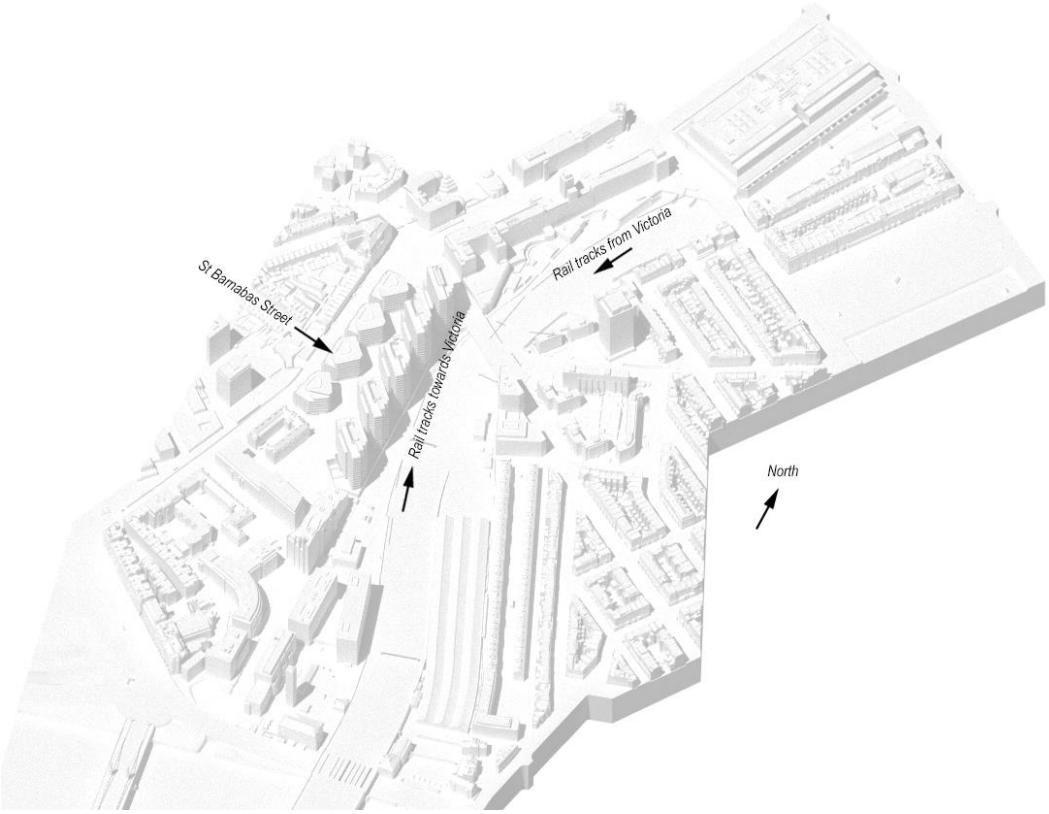

Figure 3 – Location of critical receptors. These are St Barnabas Street and train tracks to and from Victoria Station.

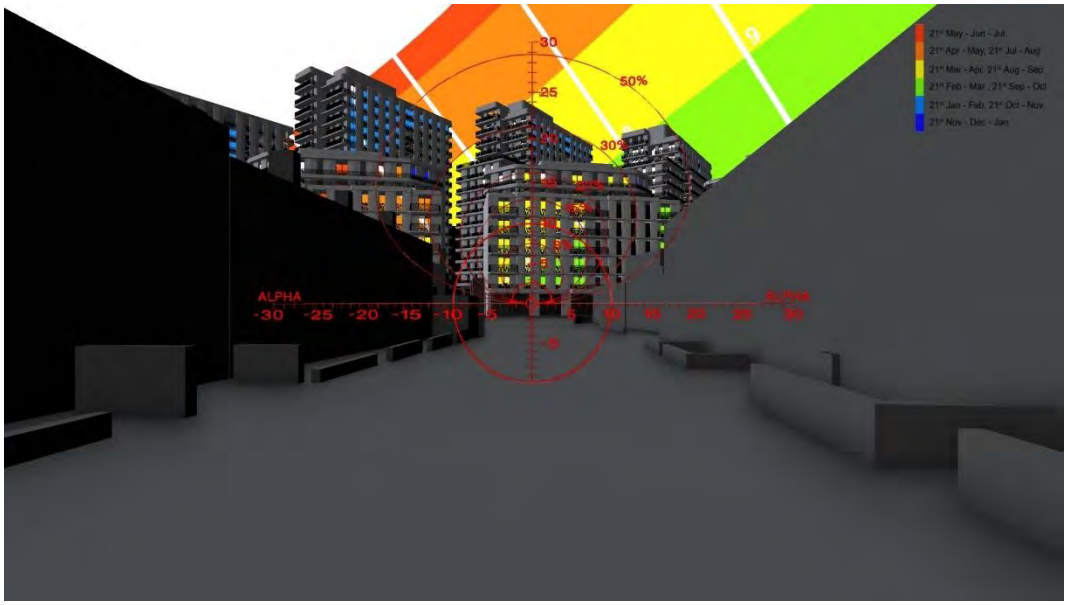

Figure 4 – View approaching development from St Barnabas Street. It can be observed that all windows reflect a portion of sunpath, indicating that at some point during the year this location will receive reflected sunlight. Typical instances will include the spring and summer afternoon and the winter midday. In all scenarios sunlight will be behind the observer or behind other buildings, thus the reflections will be the primary source for glare (if sunlight and its reflections are both visible in proximity to an observer line of sight, the sunlight is always the predominant glare source).

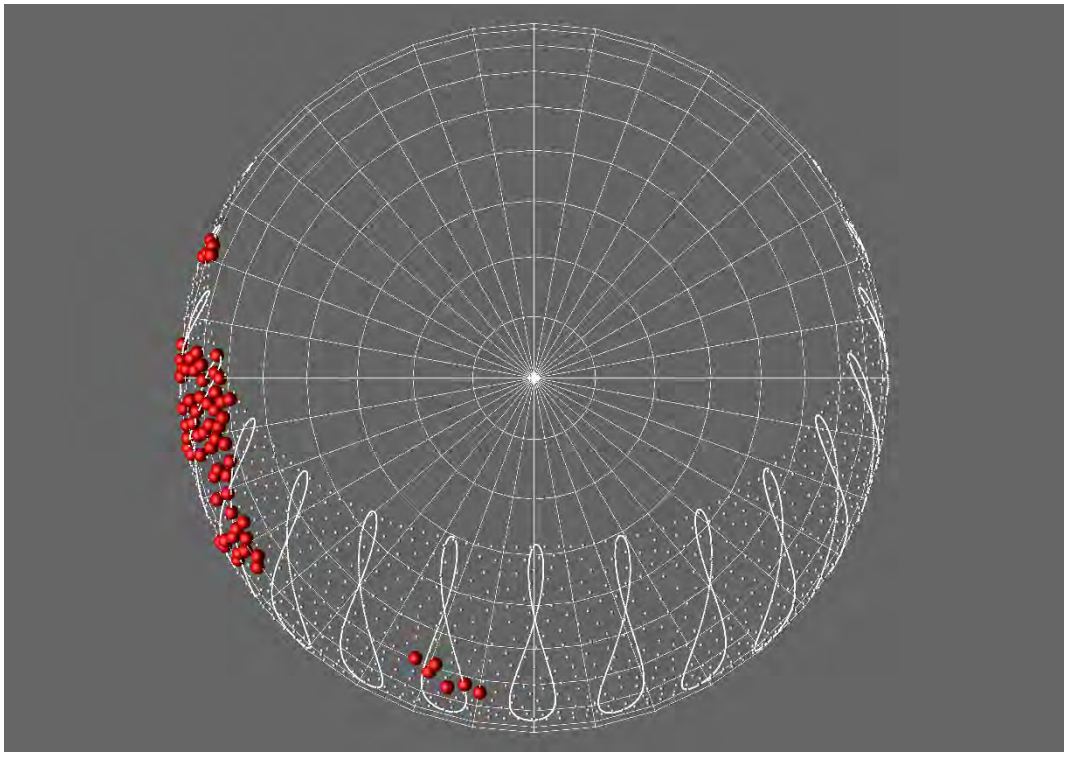

Figure 5 – Sunpath diagram for St Barnabas Street driver view. This shows the temporal extent of reflected sunlight (red dotted solar positions).

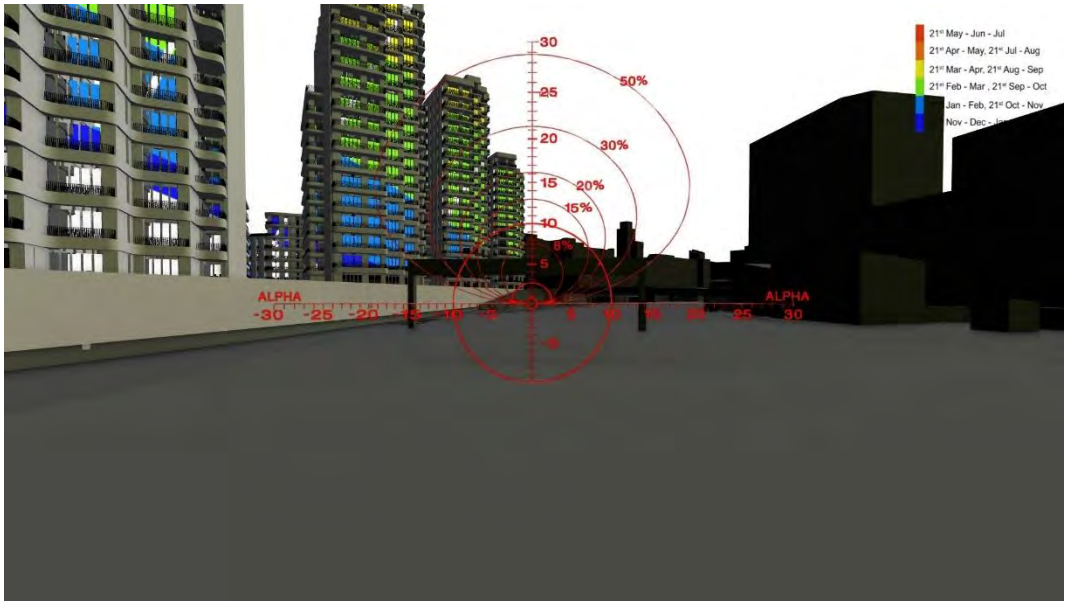

Figure 6 – View from train approaching Victoria Station. It can be observed that the east façades of the proposed development reflect sunlight during winter and autumn mornings. In these instances, reflections have the potential to be the primary source of glare.

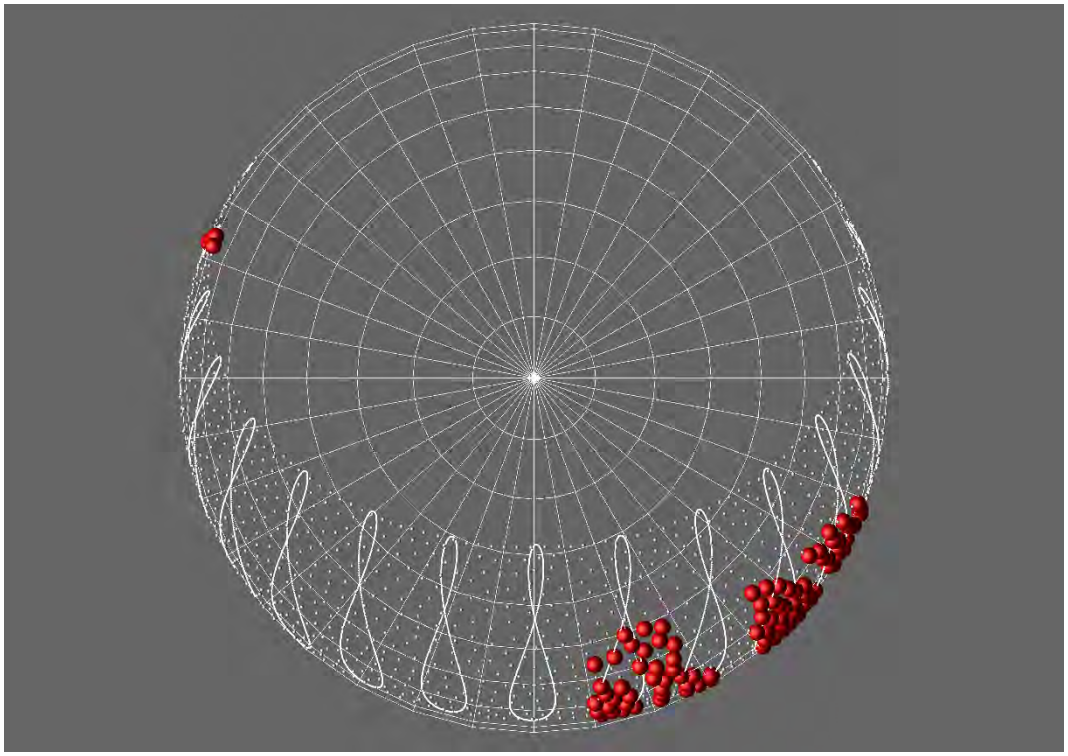

Figure 7 – Sunpath diagram for train approach to Victoria Station towards north. This shows the temporal extent of reflected sunlight (red dotted solar positions).

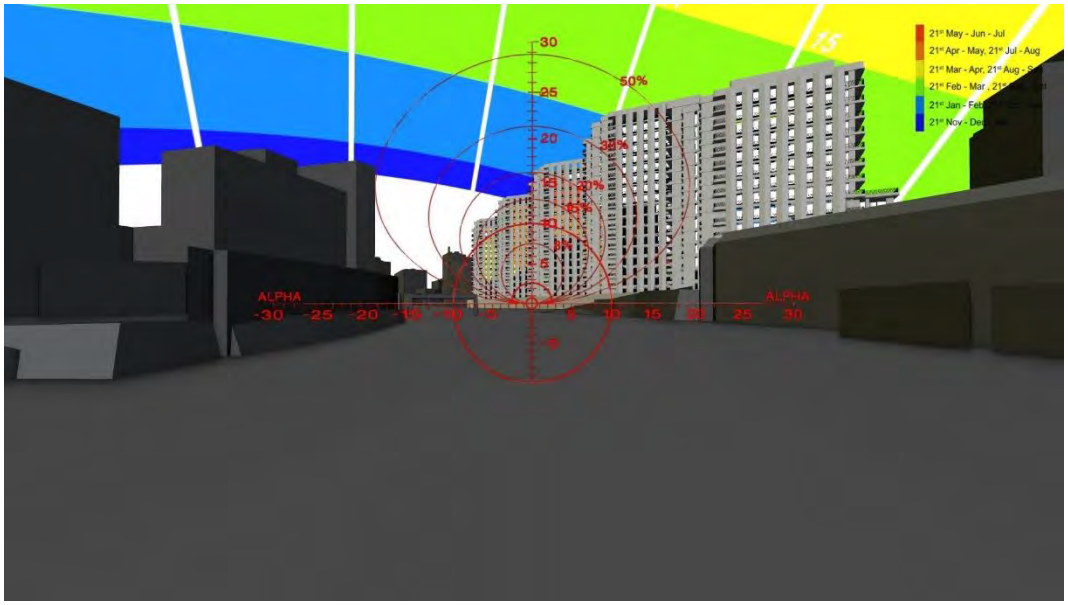

Figure 8 – View from train coming from Victoria Station. It can be observed that the proposed development North East façades reflect sunlight during early summer morning. In these instances, reflections have the potential to be the primary source of glare.

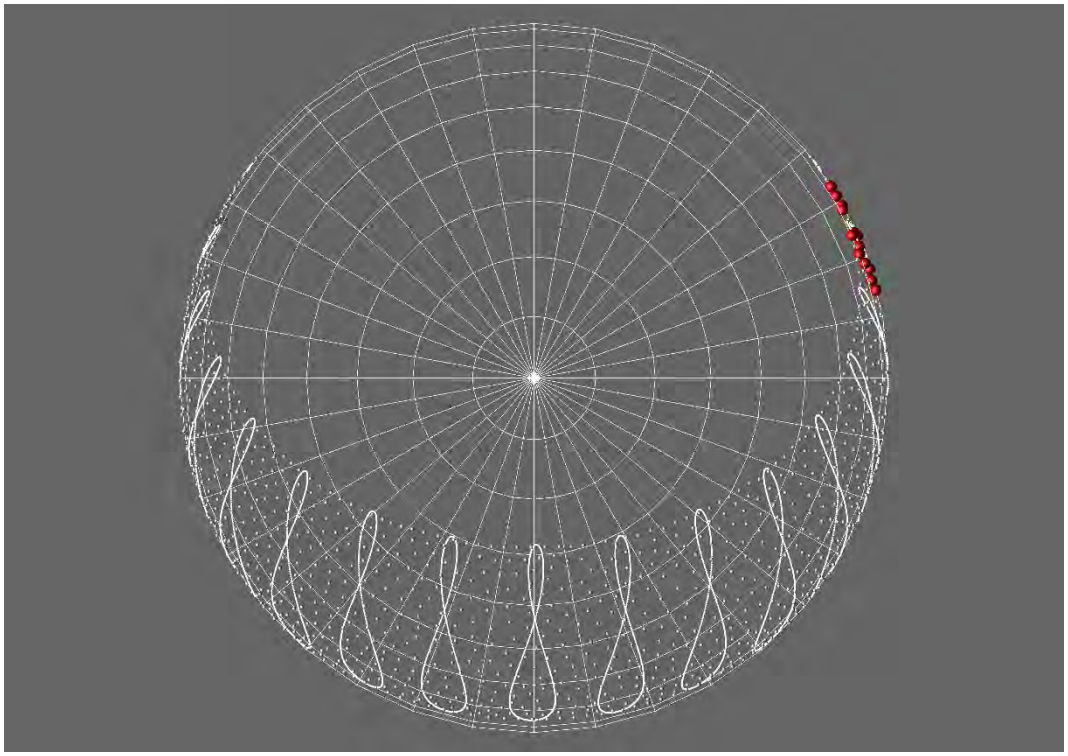

Figure 9 – Sunpath diagram for train leaving from Victoria Station towards south. This shows the temporal extent of reflected sunlight (red dotted solar positions).

5.3 Critical receptors veiling luminance analysis

Veiling luminance analysis is carried out considering the critical receptors and uses worst-case scenario sunlight position (i.e. when this results in a reflected solar image near the focus of the observer viewing direction).

The key plan below shows the location of the receptor path which have been tested, indicating starting and ending positions. The following images summarise findings for critical receptors.

Figure 10 – Key plan for critical receptors veiling luminance analysis

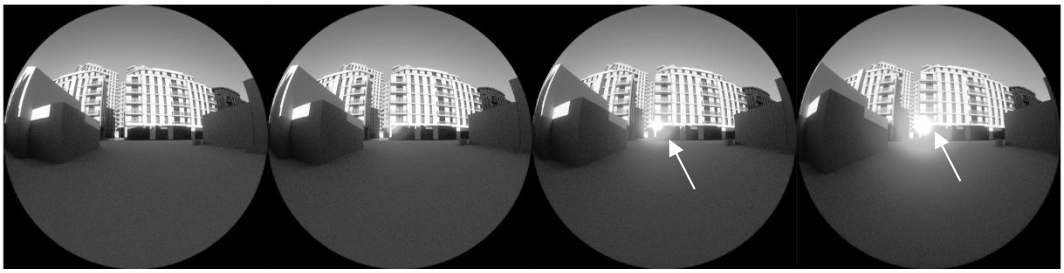

Figure 11 – Stills from image sequence for car driver approaching the proposed development from St Barnabas Street, sun position set for 5 April at 18:00.

With reference to Figure 11, the reflection is visible only on the lowest glazed area at ground floor level. White arrows show the location of the reflection in the images.

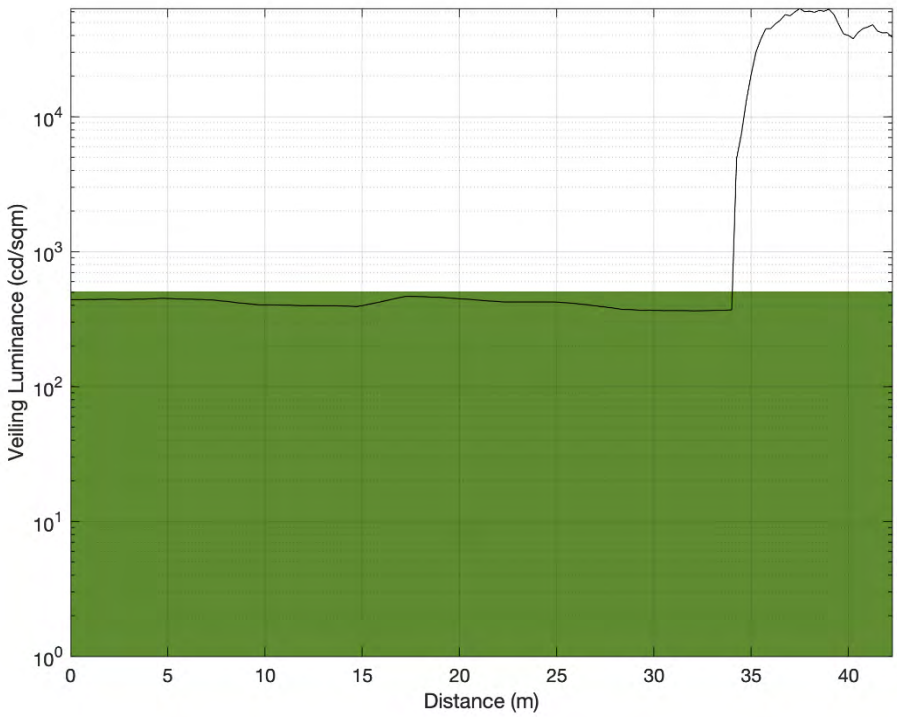

Figure 12 – Veiling luminance profile for car driver approach from St Barnabas Street, 5th April at 18:00. The values are below threshold until the reflection from ground floor glazed areas is visible.

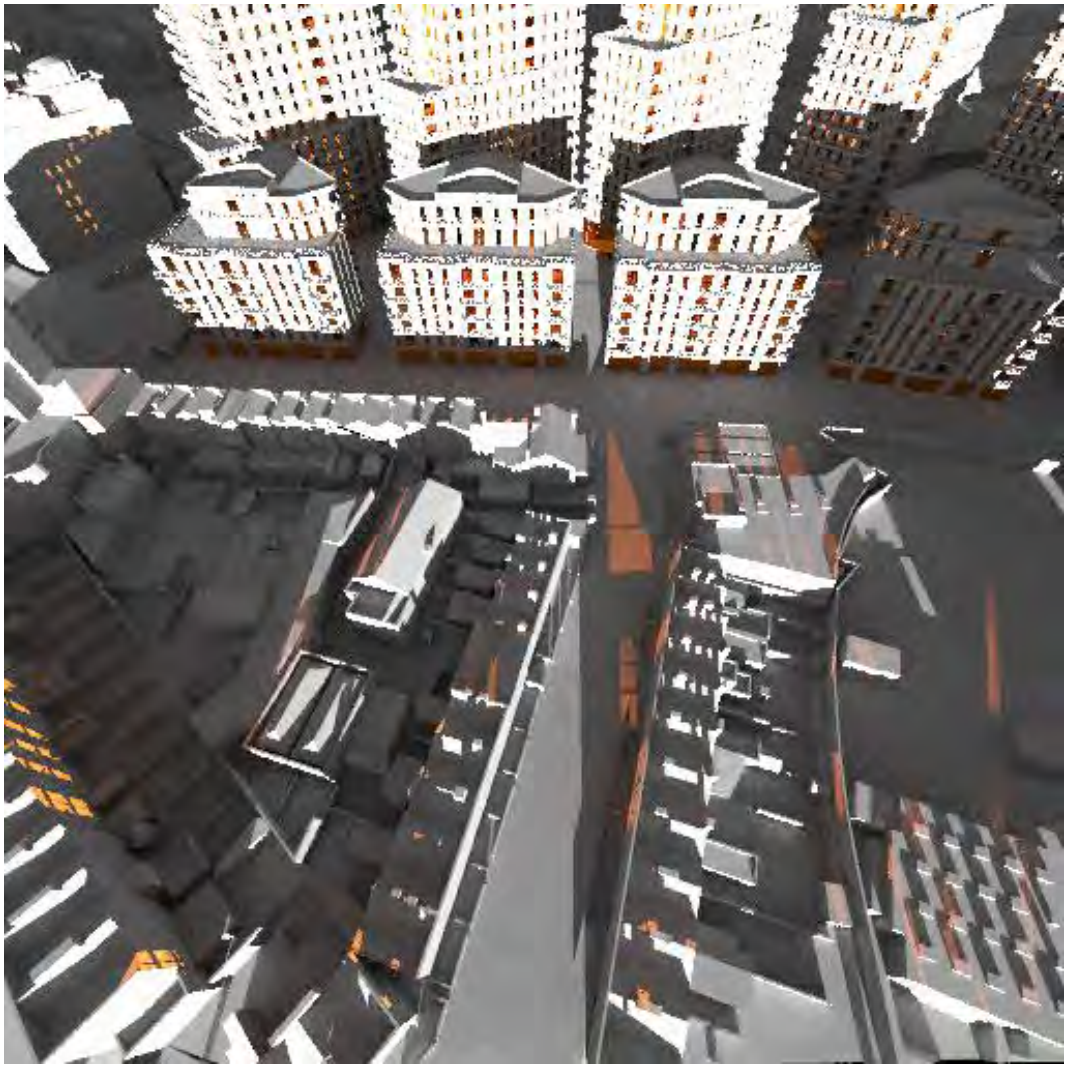

Figure 13 – Reflection pattern at ground level under the solar position used in Figure 11. 5 April at 18:00.

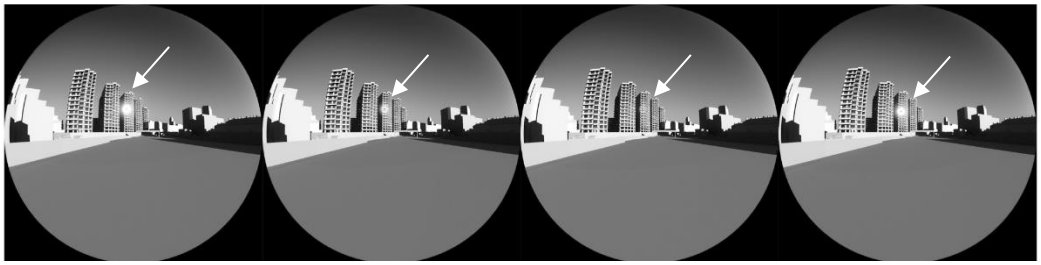

Figure 14 – Stills from image sequence for train driver position in the direction of Victoria Station. Sun position set for 21 February at 8:20. Reflections flash during travel. White arrows indicate reflection position (or lack or).

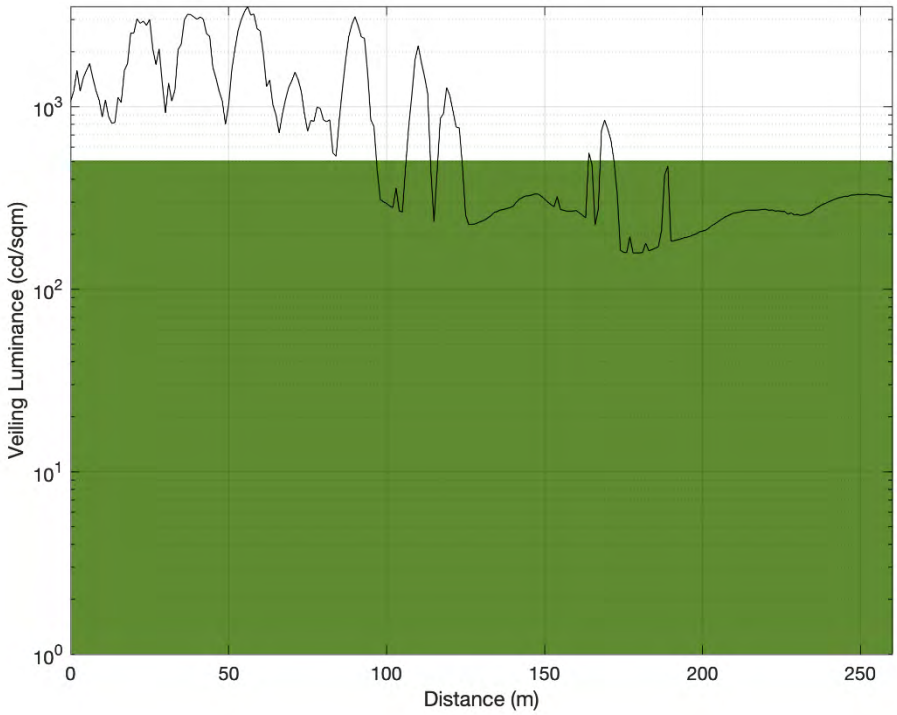

Figure 15 – Veiling luminance profile for train driver in the direction of Victoria Station. Sun position set for 21 February at 8:20. Spikes denote the character of the reflection which is visible from one window to another. Spikes exceed 500 cd/sqm.

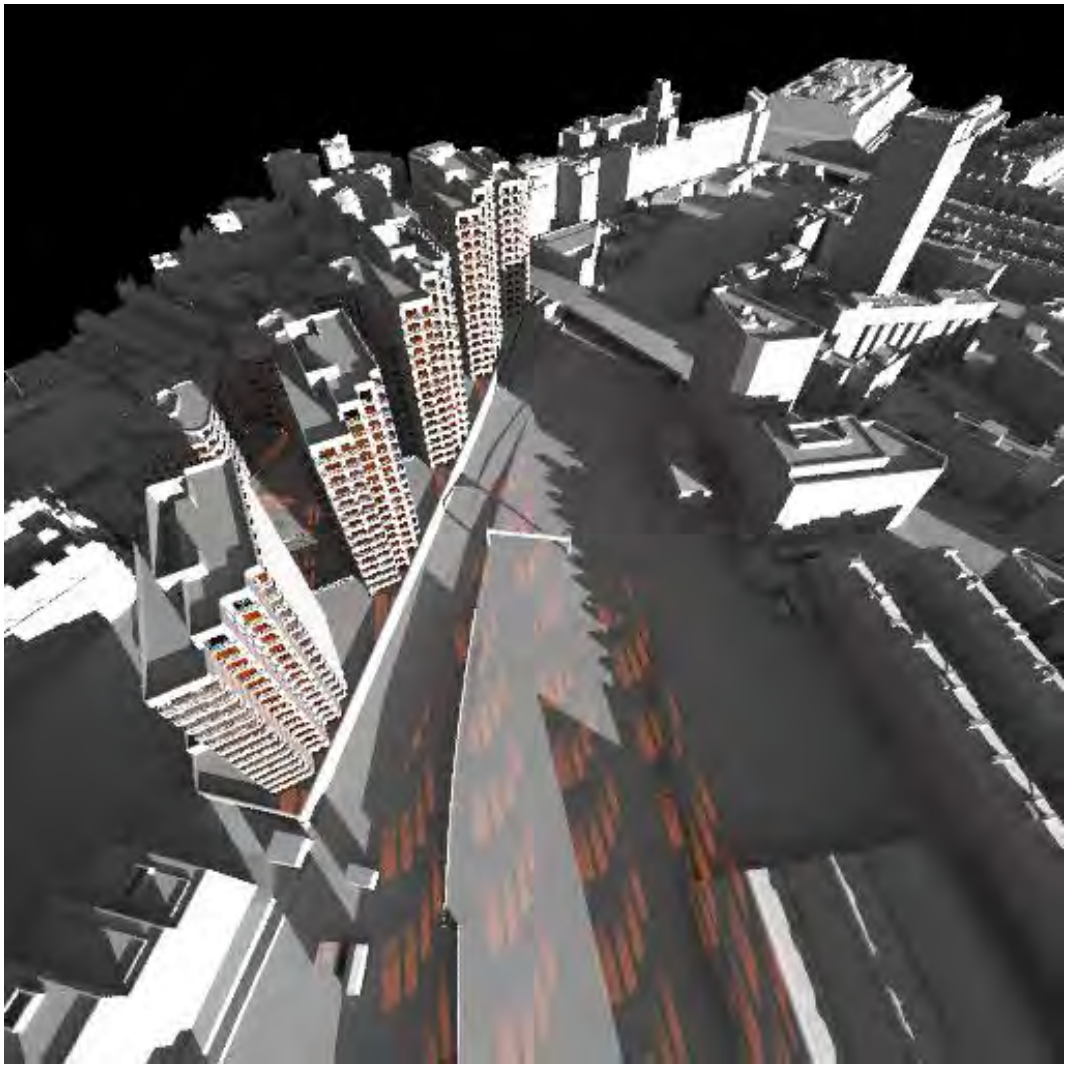

Figure 16 – Reflection pattern at ground level under the solar position used in Figure 14. 21 February at 8:20.

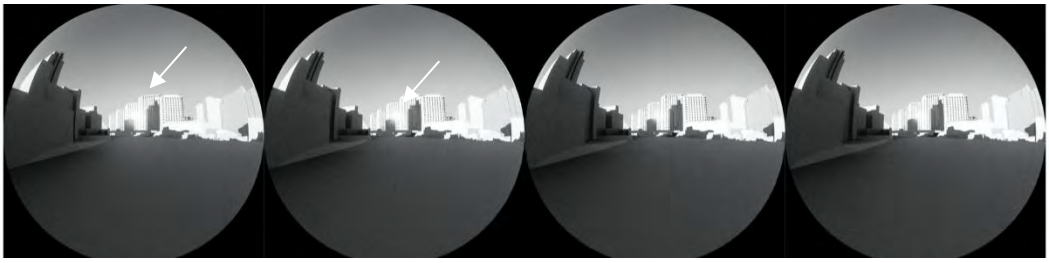

Figure 17 – Stills from image sequence for train driver position leaving from Victoria Station. Sun position set for 20 May at 05:06.

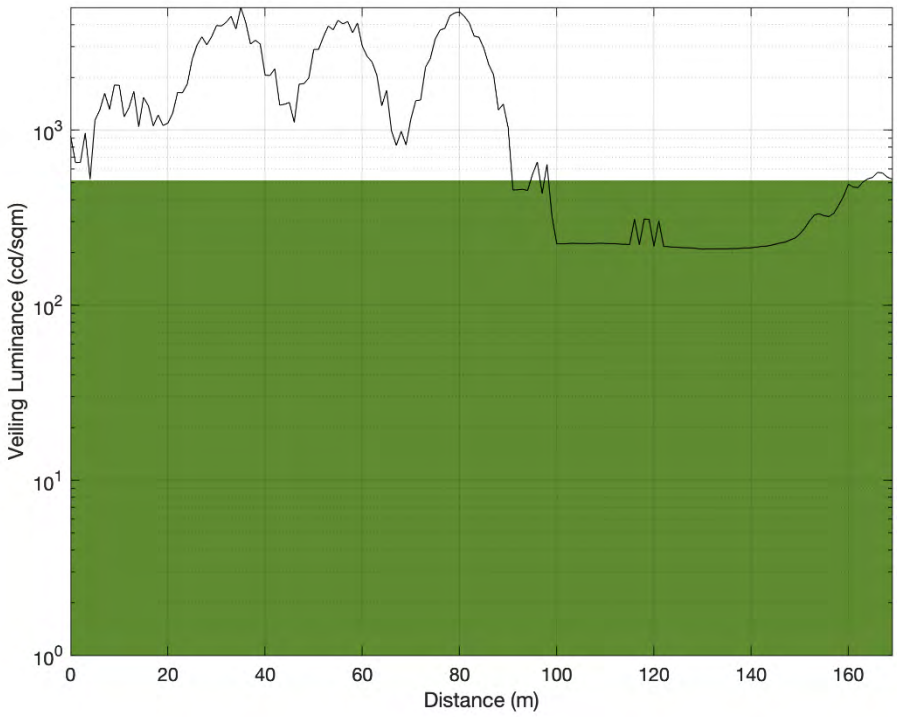

Figure 18 – Veiling luminance profile for train driver leaving from Victoria Station. Sun position set for 20 May at 05:06. Spikes denote the character of the reflection which is visible from one window to another. Spikes exceed 500 cd/sqm.

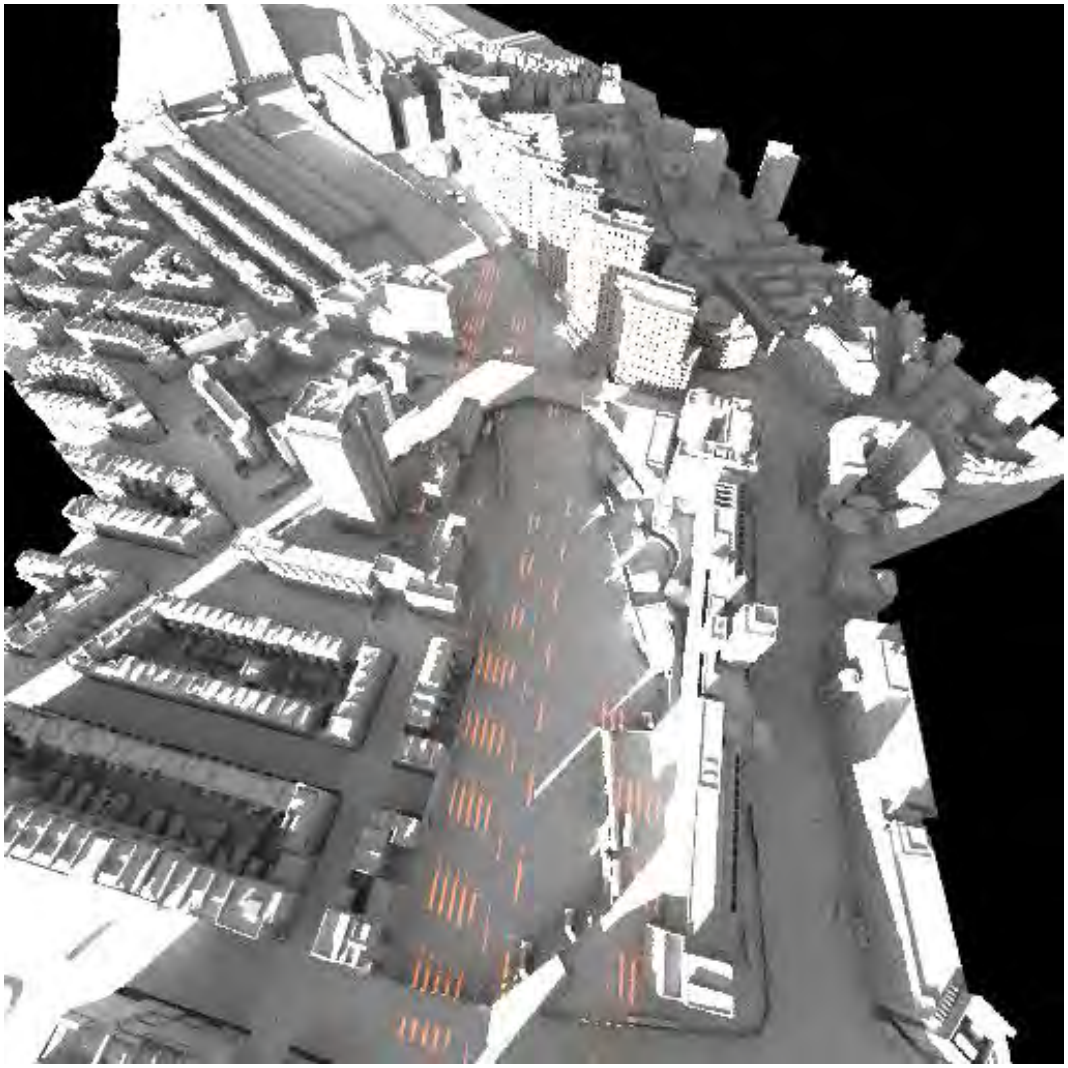

Figure 19 – Reflection pattern at ground level under the same solar position used in Figure 17. 20 May at 05:06.

6 Conclusions, Mitigations and Recommendations

Ebury Bridge Renewal building envelope has the potential to reflect sunlight towards the adjacent roads and rail tracks.

The following receptors are not considered critical as the amount of reflected light is low or only visible in the periphery of the field of view:

- **Ebury Bridge / Sutherland Street**. These receptors will not receive significant amounts of reflected sunlight in both directions of travel. It is unlikely that drivers will experience disability glare from reflected sunlight off the proposed building envelope.
- **Warwick Way.** This receptor will not receive reflected sunlight in the direction of travel. It is unlikely that drivers will experience disability glare from reflected sunlight off the proposed building envelope.
- **Ebury Bridge road.** This receptor will not receive reflected sunlight in both directions of travel. It is unlikely that drivers will experience disability glare from reflected sunlight off the proposed building envelope.

The remaining three receptors, St Barnabas Street and the train journeys towards/from Victoria Station have required further analysis. In these cases, reflected sunlight is visible along the driver path and the reflected image of the sun is very near to the viewing direction. These reflections are experienced as discontinuous flashes, as sunlight is only reflected by the glazed areas of the proposed development which constitute only a portion of its envelope. Disability glare metric has been used to evaluate the effects of such reflections in worst case scenarios confirming the potential of disability glare.

In particular, findings indicate that:

- **Rail tracks towards Victoria Station.** This receptor will receive reflected sunlight from the East elevation of Ebury Bridge Renewal. When experienced, reflections will flash from one window to the next; the value of veiling luminance will spike and exceed guidance, intermittently and for short distances. Sunlight reflections will only be visible during winter and autumn, for approximately 3 hours per day.
- **Rail tracks from Victoria Station.** The summer sunrise will determine the most critical conditions for this receptor, with long reflected sunlight patterns parallel to the tracks. The value of the veiling luminance spikes will exceed guidance. Solar reflections will only be experienced in the early hours of summer for approximately 1 hour a day.
- **St Barnabas Street.** This receptor will receive reflected sunlight from the upper portion of the proposed development and from the West elevation of the low-rise buildings along Ebury Bridge Road. The value of veiling luminance will exceed guidance for low angle reflections. These solar reflections will be visible for approximately 1 hour a day during spring and summer months.

It is noted that, being the proposed development residential in nature there are not any available mitigation measures to further reduce the occurrence of reflections, nor to reduce their intensities. In fact, window sizes and glass specification have been optimised to provide the maximum amount of daylight and reduce solar gains and reflections to a minimum.

As the building design cannot be amended to mitigate reflected sunlight without impacting its own functions (loss of daylight for building users), it is recommended that the relevant authorities are made aware of the extent of these reflections and that signal sighting engineers are engaged in this process.

It is expected that, in practical terms, reflected sunlight will be dealt with by using appropriate anti-glare visors as usually required when dealing with direct sunlight in any other glare instance.

7 Appendix

7.1 Reflection patterns

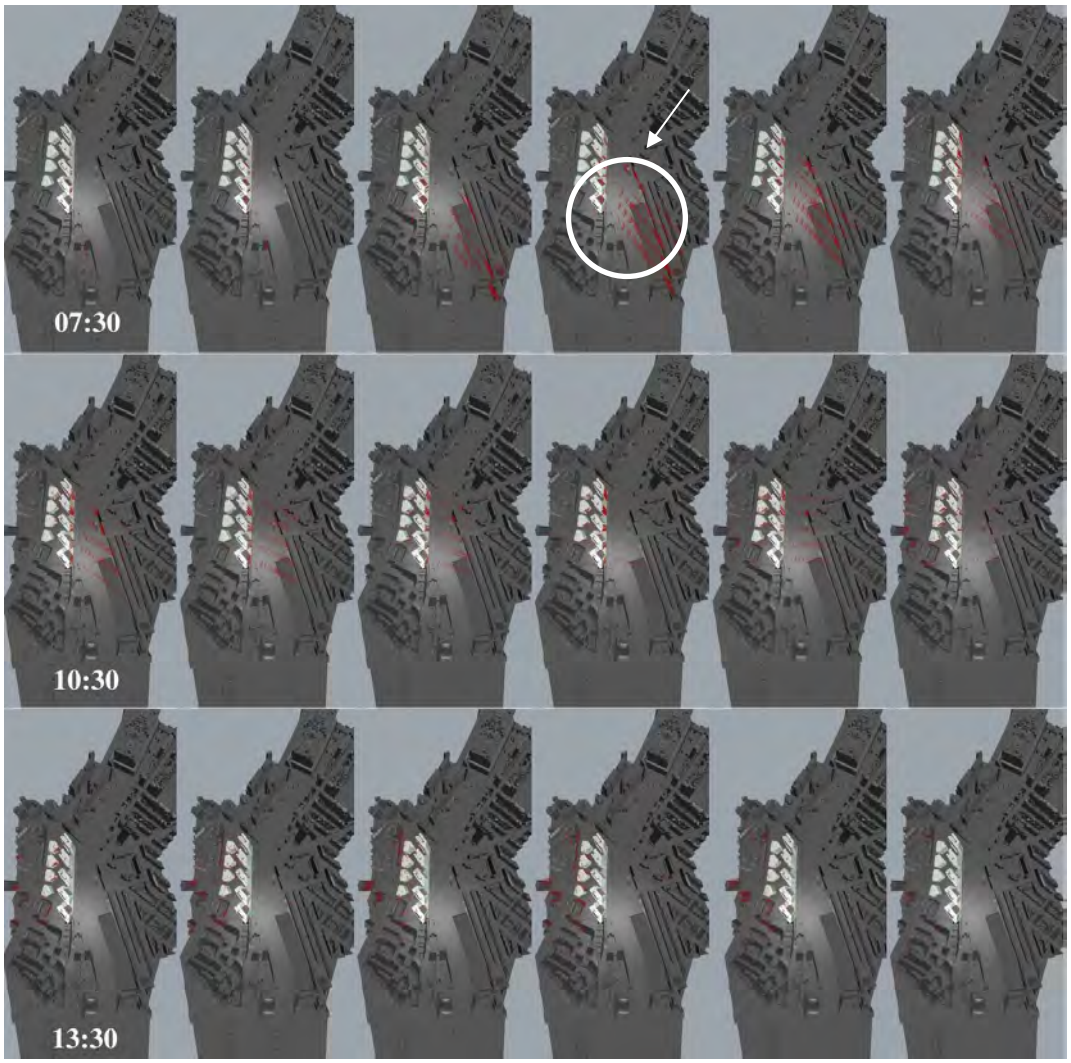

Figure 20 – Reflection patterns for December 21. Arrow demarks critical areas where reflections are parallel to the direction of travel.

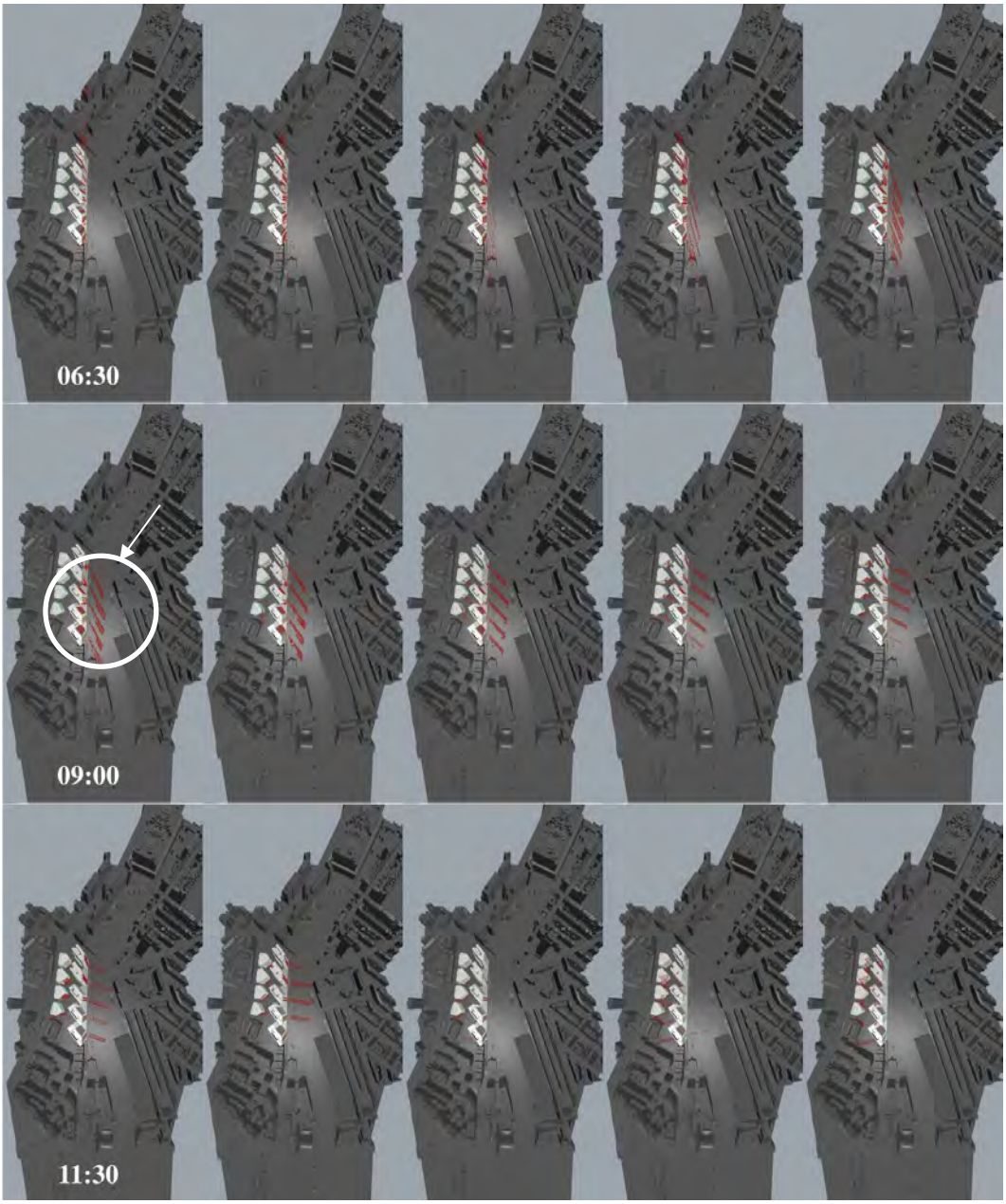

Figure 21 – Reflection patterns for March 21. Arrow demarks critical areas where reflections are parallel to the direction of travel.

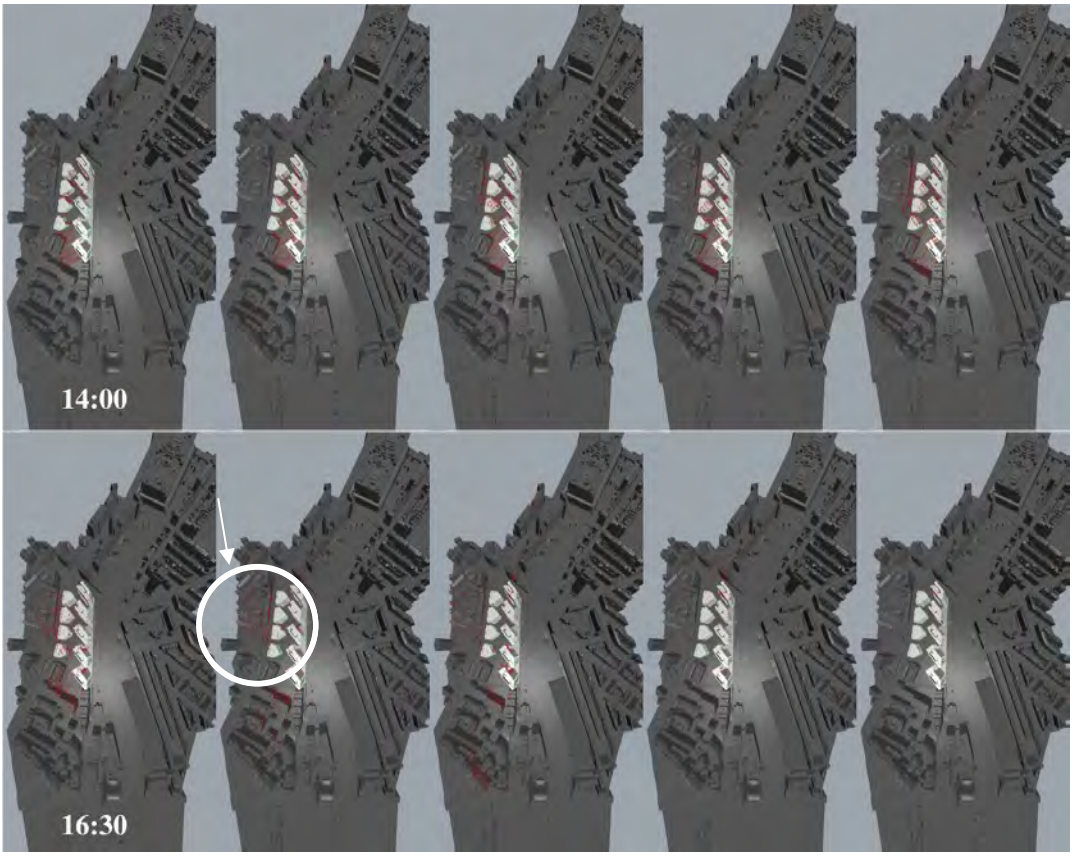

Figure 22 – Reflection patterns for March 21. Arrow demarks critical areas where reflections are parallel to the direction of travel.

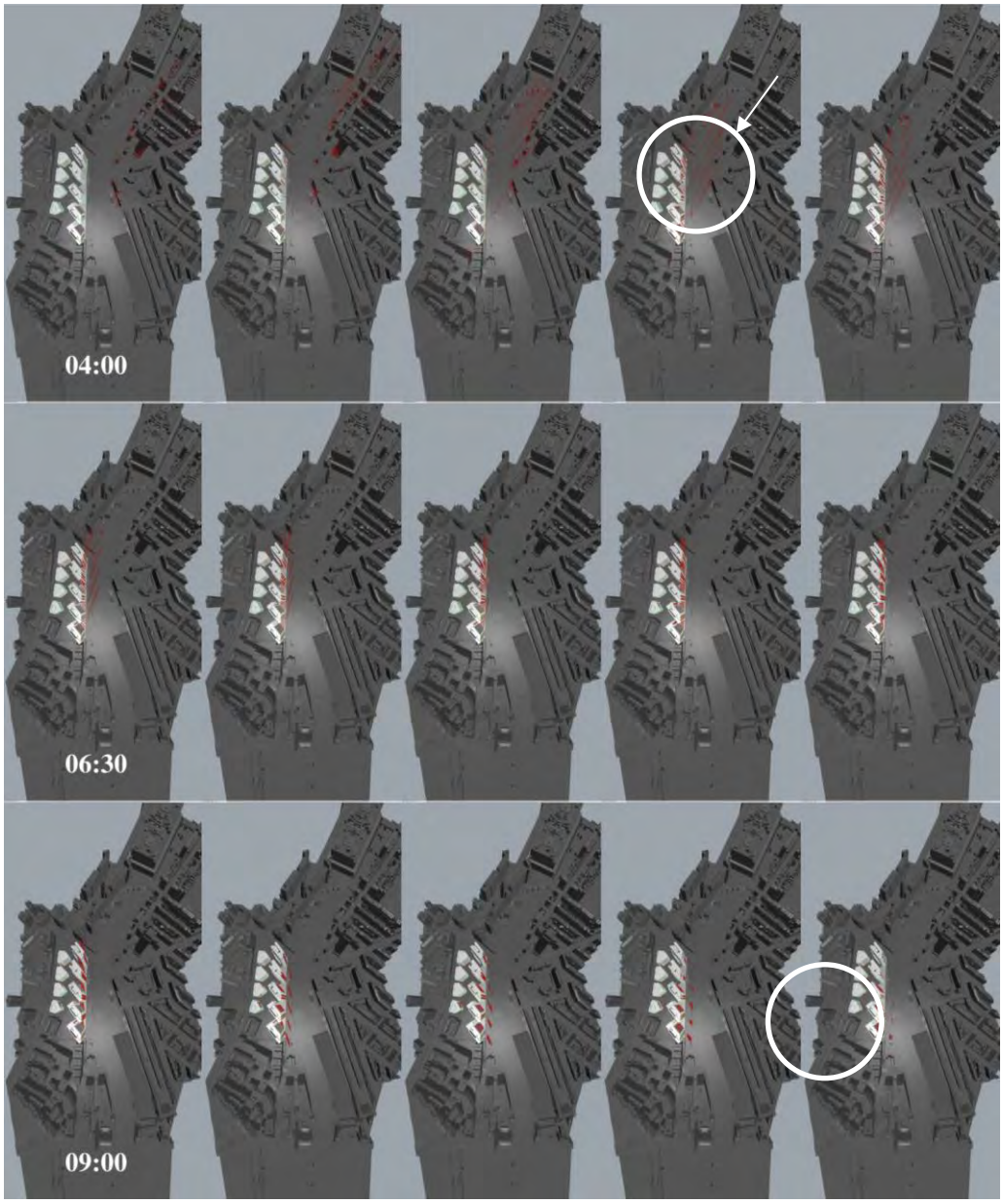

Figure 23 - Reflection pattern for June 21. Arrow demarks critical areas where reflections are parallel to the direction of travel.

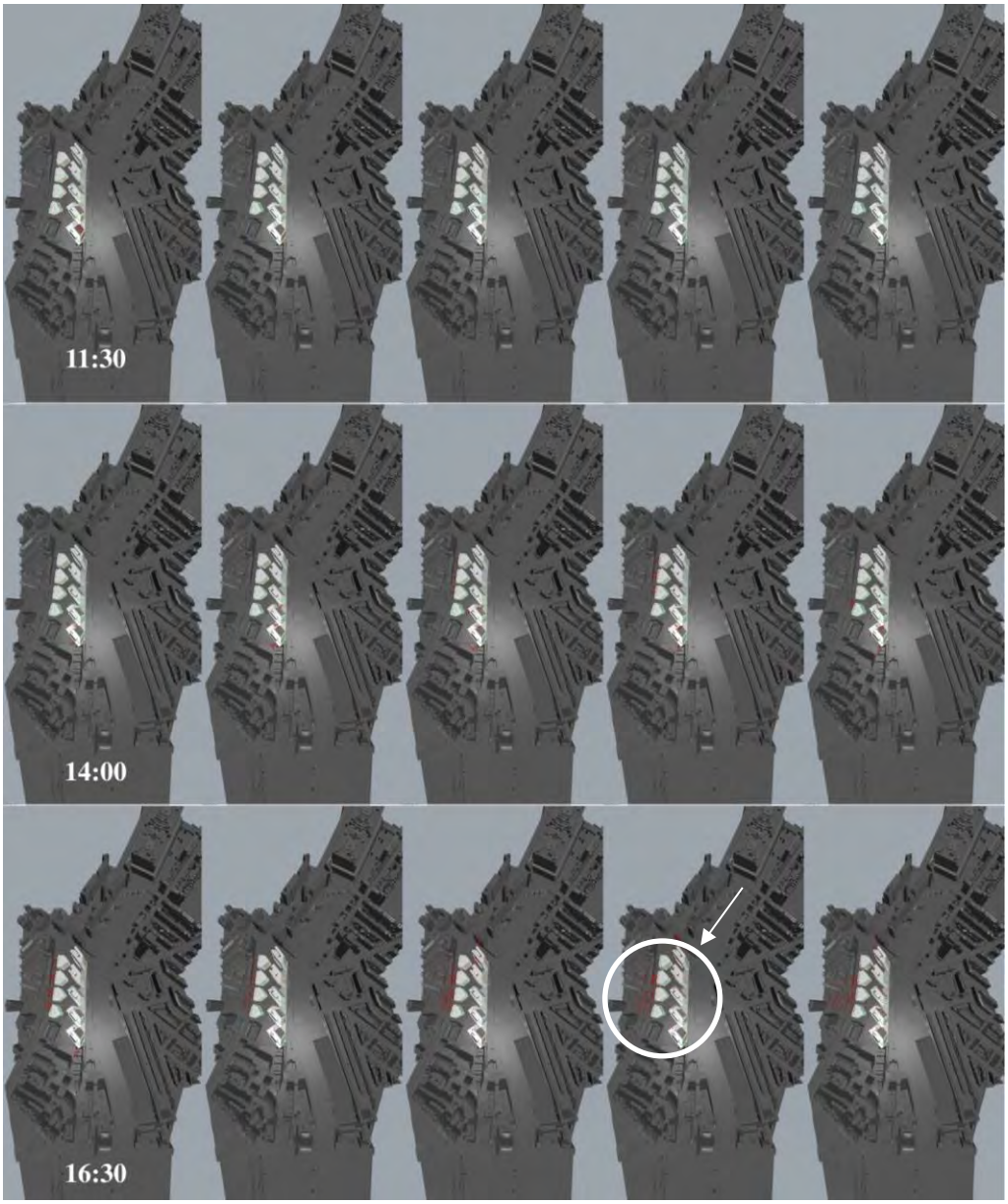

Figure 24 - Reflection pattern for June 21. Arrow demarks critical areas where reflections are parallel to the direction of travel.

7.2 Selected Hassall protractors

The following diagrams show the Hassall protractors for a series of observers located along the route to the receptors included in the assessment. The images are still from animations which are issued as part of the report and that visualise the movement of reflections and the annual distribution for each receptor. Critical receptors have been identified and further assessed for veiling luminance.

Figure 25 – Key map of the study area showing receptors used in the assessment.

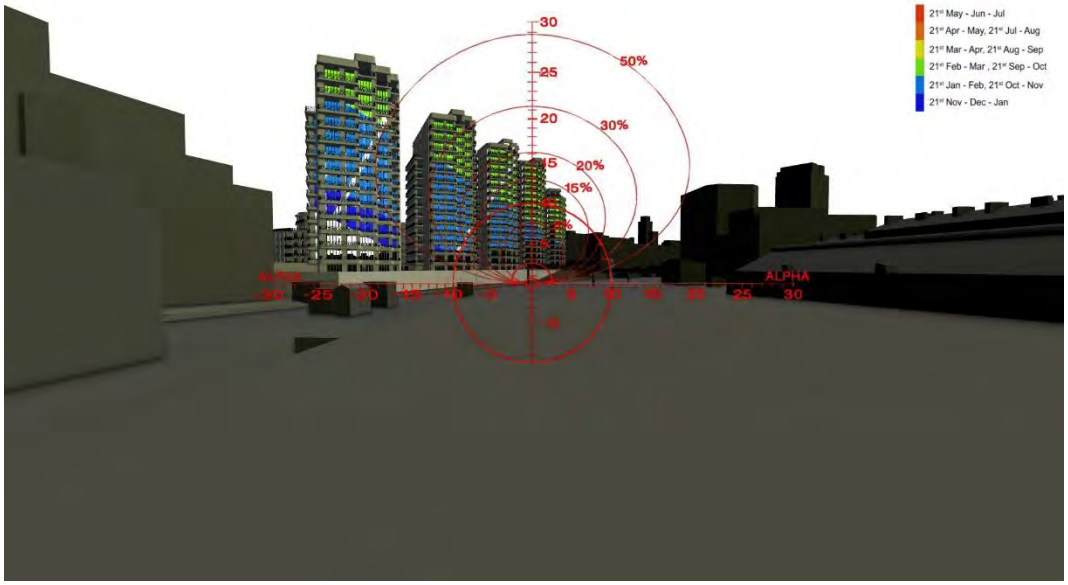

Figure 26 – Rail tracks towards Victoria Station. Given the large portion of reflected sunpath in the central portion of the field of view this receptor has been included for further assessment. Note, a large portion of sunpath refers to the annual duration of the phenomenon, at each instance, the reflected image of the sun will be one and localised on a single window.

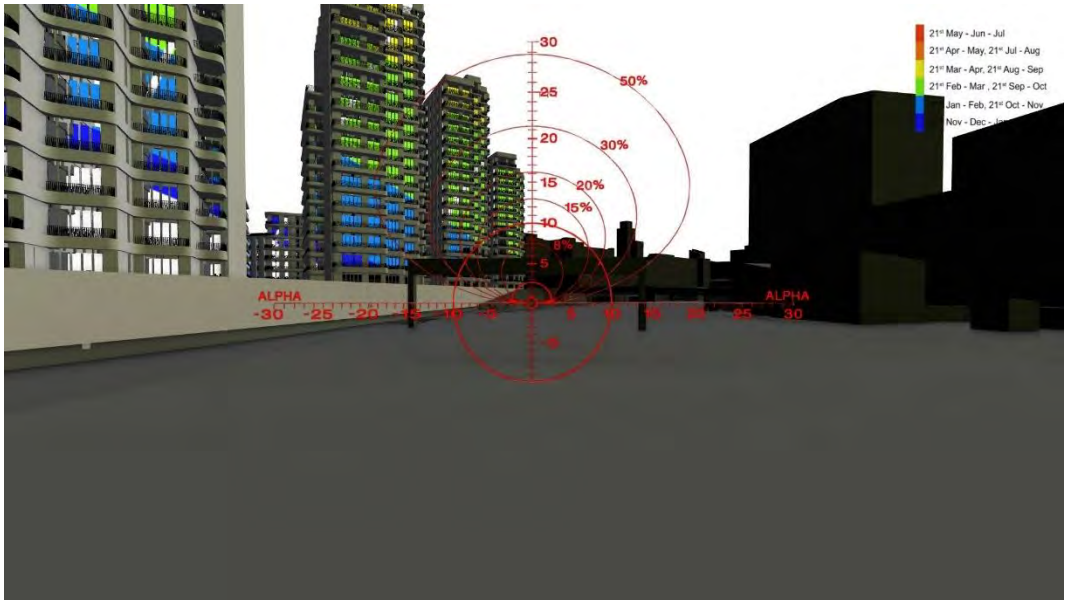

Figure 27 – Rail tracks towards Victoria Station.

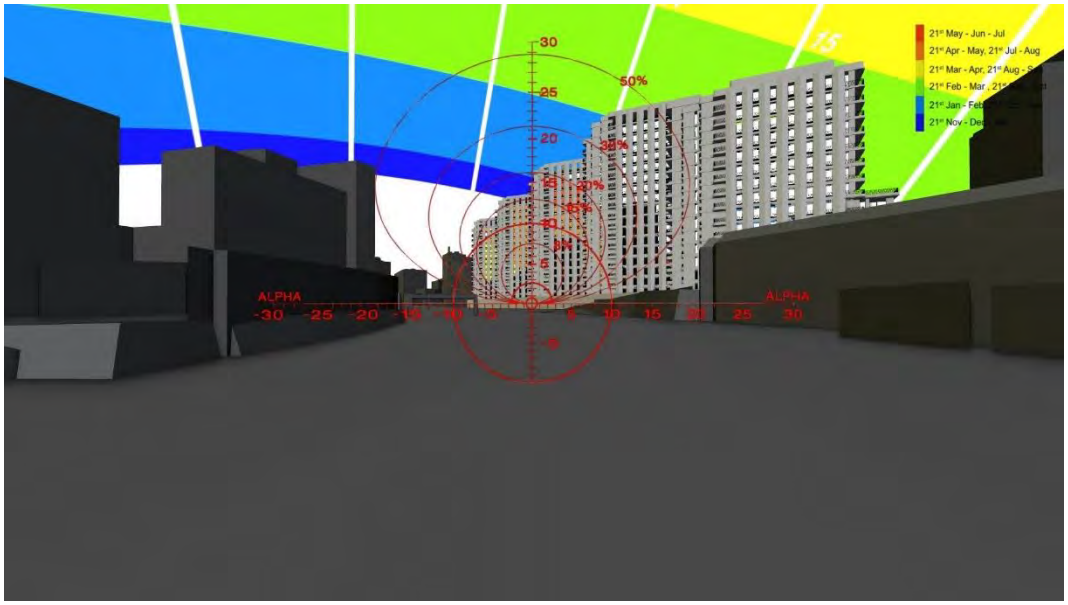

Figure 28 – Rail tracks from Victoria Station. Given the reflected image of the sunpath lies in the central portion of the field of view this receptor has been included for further assessment.

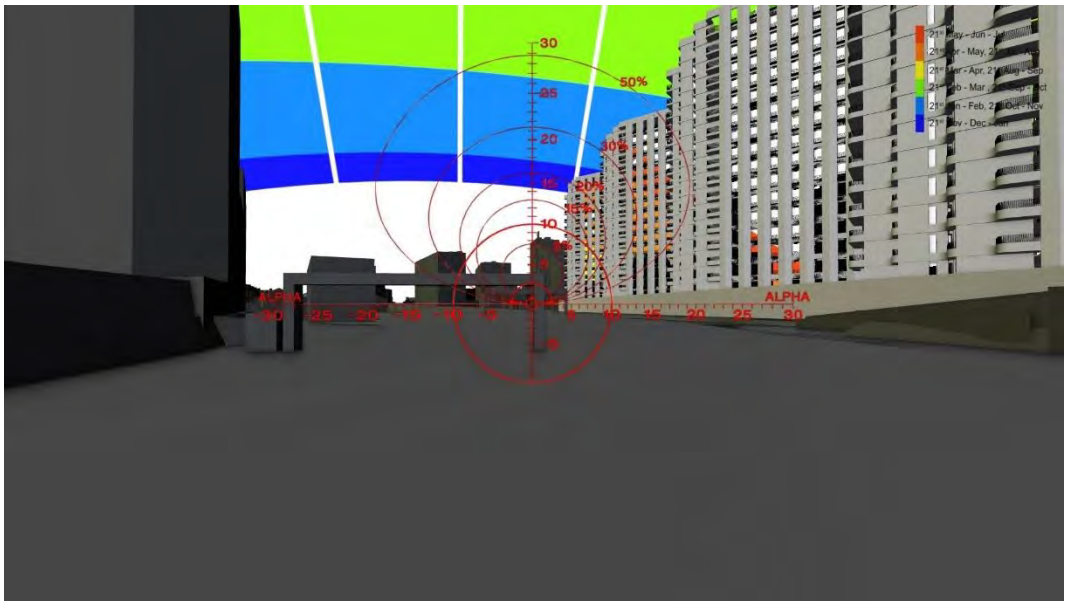

Figure 29 – Rail tracks from Victoria Station.

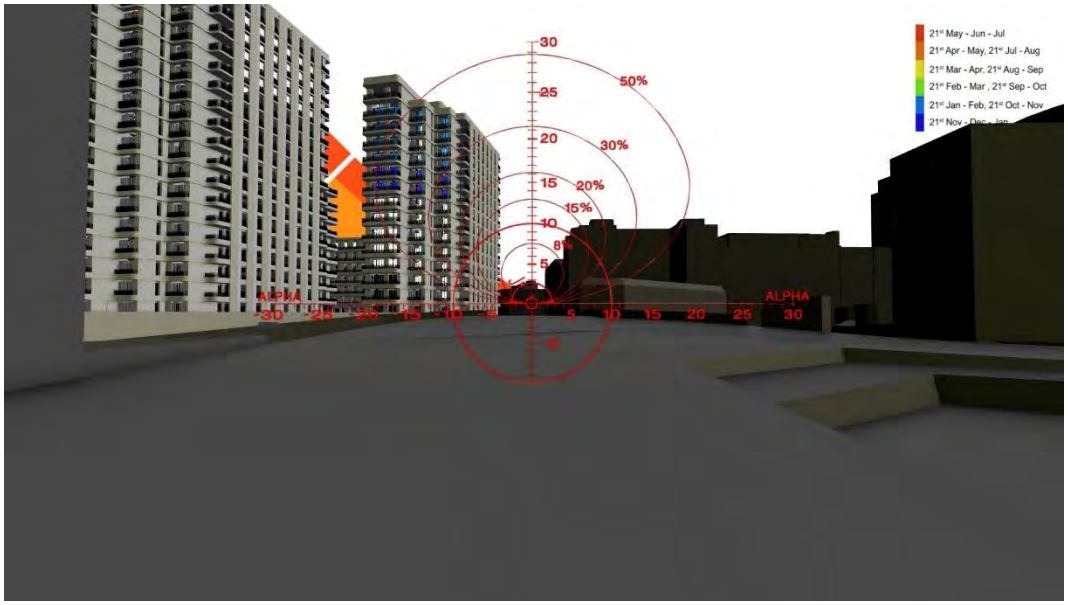

Figure 30 – View on Ebury Bridge going West. No reflections in the central area of the field of view.

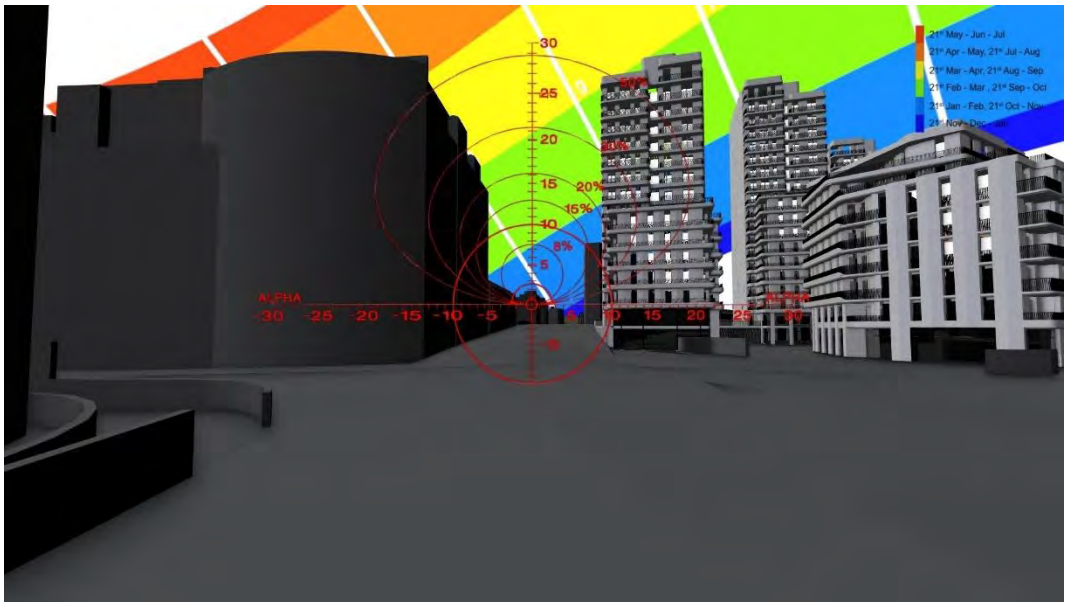

Figure 31 – View on Ebury Bridge going East. No reflections in the central area of the field of view.

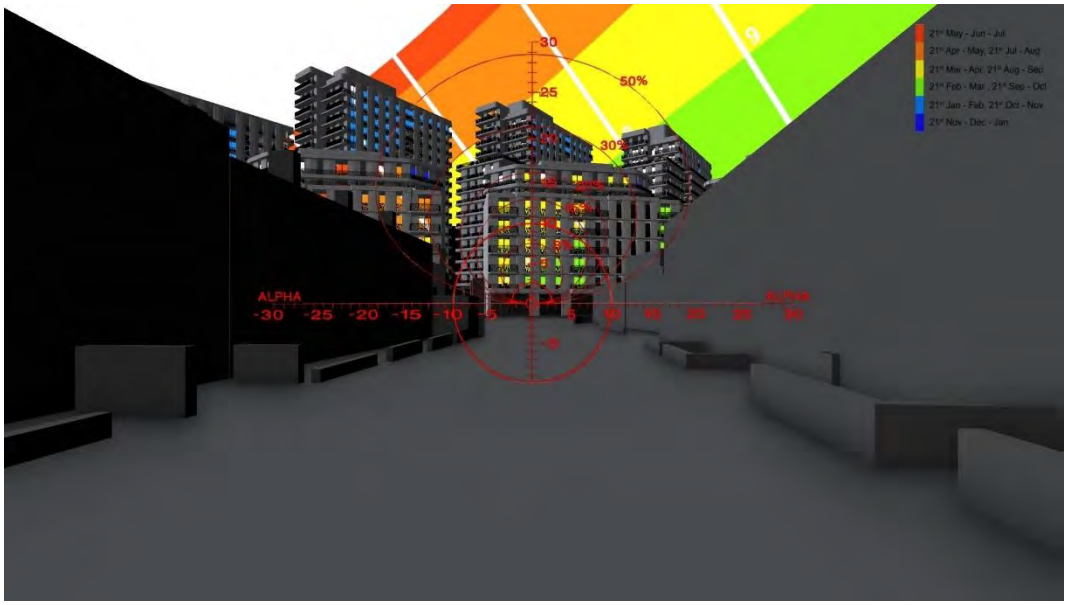

Figure 32 – View from St. Barnabas Street looking East. Given the reflected image of the sunpath lies in the central portion of the field of view this receptor has been included for further assessment.

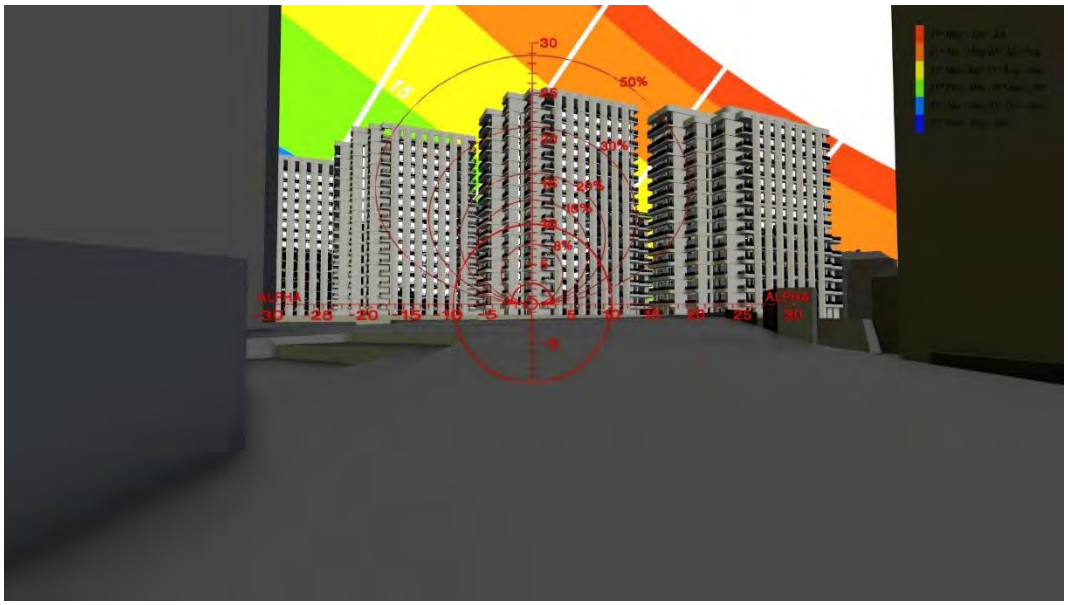

Figure 33 – View from Warwick Way. No reflections in the central area of the field of view.

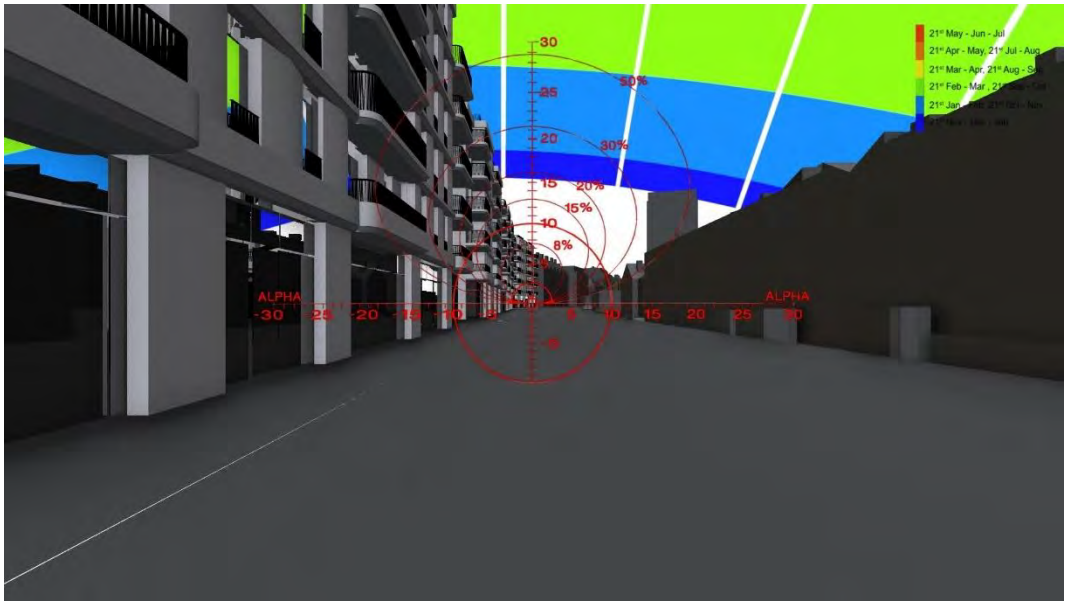

Figure 34 – View along Ebury Bridge Road towards South. No reflections in the central area of the field of view.

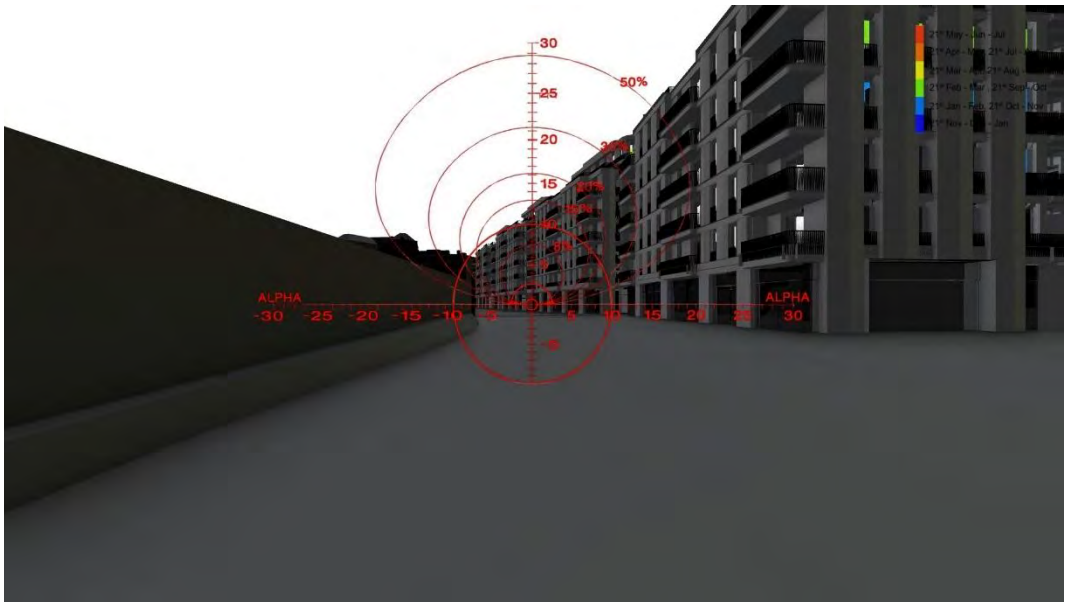

Figure 35 – View along Ebury Bridge Road towards North. No reflections in the central area of the field of view.

E4 Obtrusive lighting assessment

Westminster City Council
Ebury Bridge Renewal
Obtrusive Lighting Assessment

Report Ref

Issue | 27 March 2020

Job number 257461-00

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Contents

1 Executive Summary

An obtrusive lighting assessment has been carried out for the lighting design of Ebury Bridge Renewal Phase 1 proposed design. The assessment considers the effects of electric lighting on the surrounding properties.

The assessment analyses all the parameters included in the relevant guidance, ILP[1] GN01 Guidance Notes for the reduction of obtrusive light: 2020.

The assessment was performed by a combination of lighting calculations and geometric analysis of the photometric data.

In all cases, the results were found to be within the recommended values:

Parameter	Ebury Bridge Renewal Phase 1 performance
Maximum values of vertical illuminance on properties (spill lighting)	Targets are met for all surrounding areas and none of the surrounding receptors (residential windows) exceeds illuminance post/pre- curfew.
Limit for the luminous intensity of bright luminaires	Targets are met for all surrounding areas as the proposed fixtures have low intensity and at the receptor distance, this is well within limit by ILP.
Threshold increment and veiling luminance	Targets are met for all surrounding areas as there is no road adjacent the installation
Maximum values of upward light ratio (ULR) of luminaires	All luminaires meet this requirement with the exception of the BEGA wall mounted decorative fixtures and the fixtures used for the illumination of residential balconies. Bega wall mounted fixtures are located on the side of building entrances. Balcony lighting also uses wall mounted fixtures, however these are are operated by a switch and are off when not in use. In any case the overall performance of the scheme is controlled by the maximum values of upward flux ratio of installation (see following).
Maximum values of upward flux ratio of installation	Given the full cut-off and the good utilisation factor of the luminaires this parameter is well within the required target.
Maximum permitted values of average surface luminance	There is no flood lighting for the buildings, nor significant spill lighting from the proposed luminaires, hence the luminance requirement is met.

[1] Institute of Lighting Professionals

2 Introduction

Obtrusive lighting deriving from the proposed lighting scheme at the Ebury Bridge Renewal site is the topic of this assessment. The assessment uses industry standard guidance and compares the proposed lighting design to the recommended best practise.
This comparison uses:

- Baseline data, collected during a survey of the existing site. This data is consultable in the report appendix.
- Simulation and assessment of the data published as part of the RIBA Stage 3 design documentation.

The report concludes with a summary of findings and recommendations.

3 Baseline data

A baseline data survey has been performed to evaluate the existing lighting conditions at the site. The survey was carried out on the 29th of October 2019.

The results demonstrate that the Ebury Bridge Renewal site sits within a predominantly residential area which can be classed as environmental zone E3.

3.1.1 Existing lighting – immediate surroundings

Figure 1 - Grosvernor Waterside – ca. 6m columns, indirect light, 4000K neutral white light.

Figure 2- Chelsea barracks – 5.5m columns, 4000K neutral white light.

Figure 3 - Ebury Bridge and Ebury Bridge Road – 8m columns, 2800K warm white light.

Figure 4 - Ranelagh Grove – ca. 6m columns, 2800K warm white light.

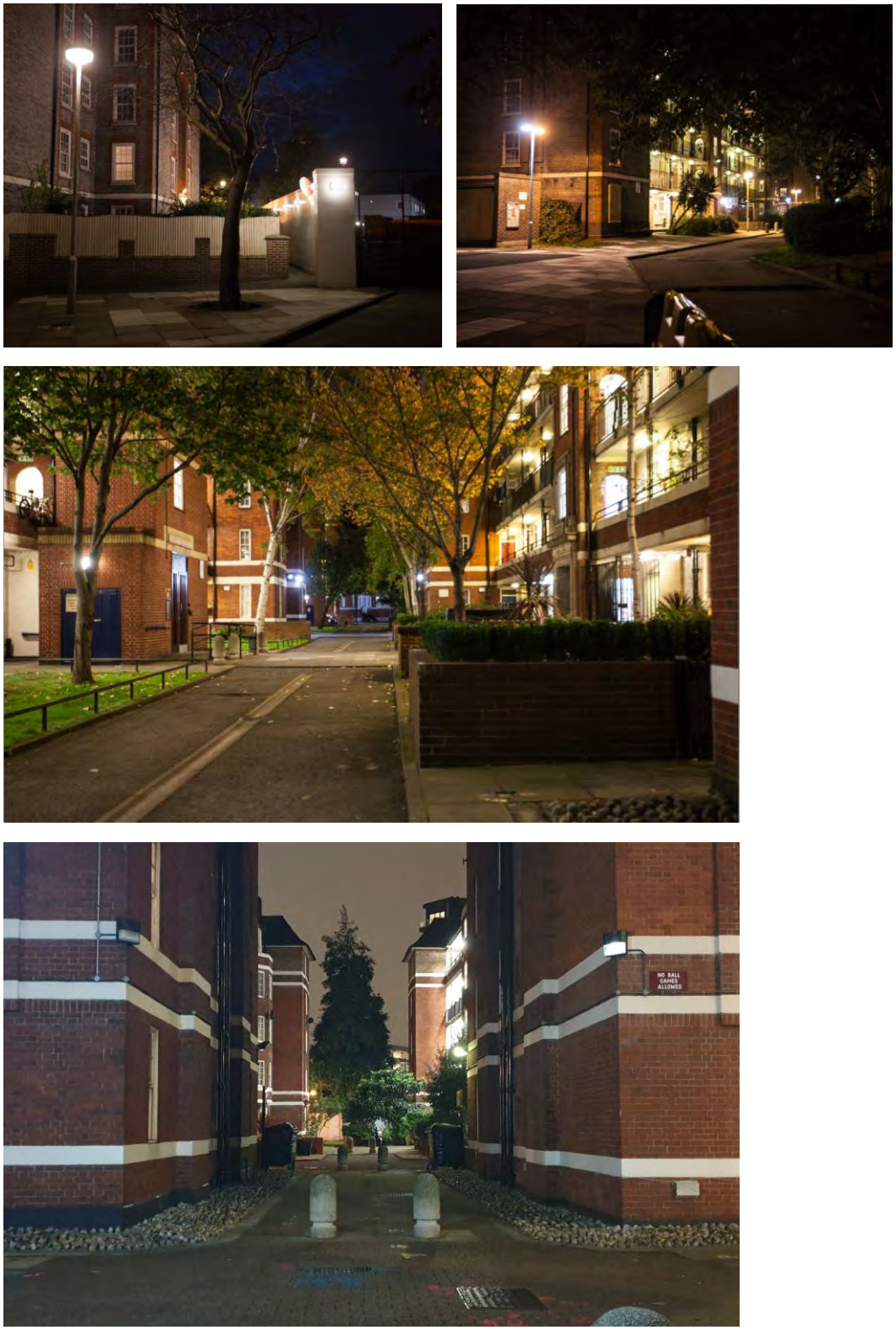

Figure 5 - Existing lighting at the Estate - The current site condition shows a mixture of various colour temperatures and lighting equipment. Wall-mounted luminaires prevail across the Estate.

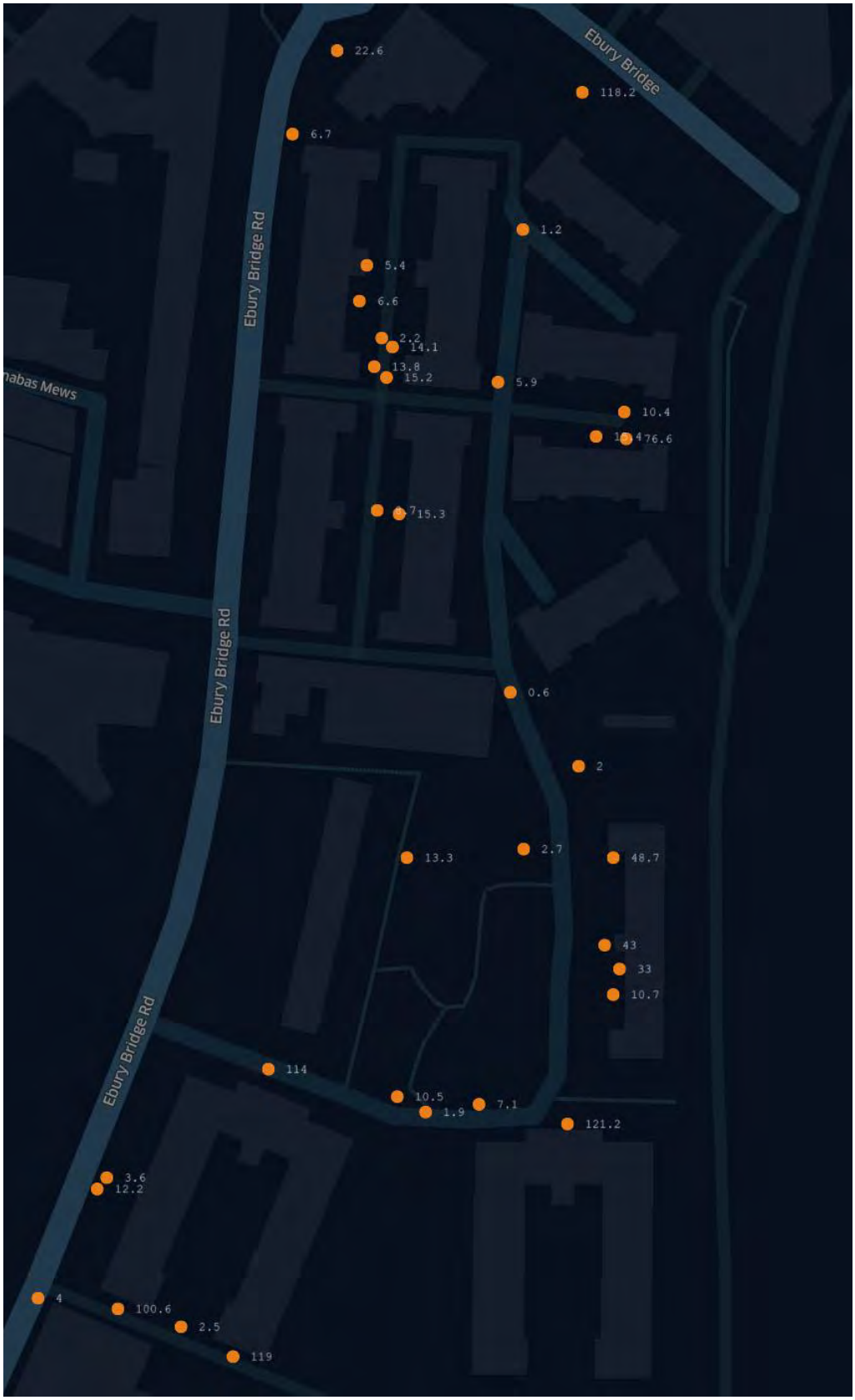

Figure 6 - Survey of existing illuminance levels at ground level. Values range from 100 lux at Ebury Bridge to 1- 10 lux in the middle of the Estate

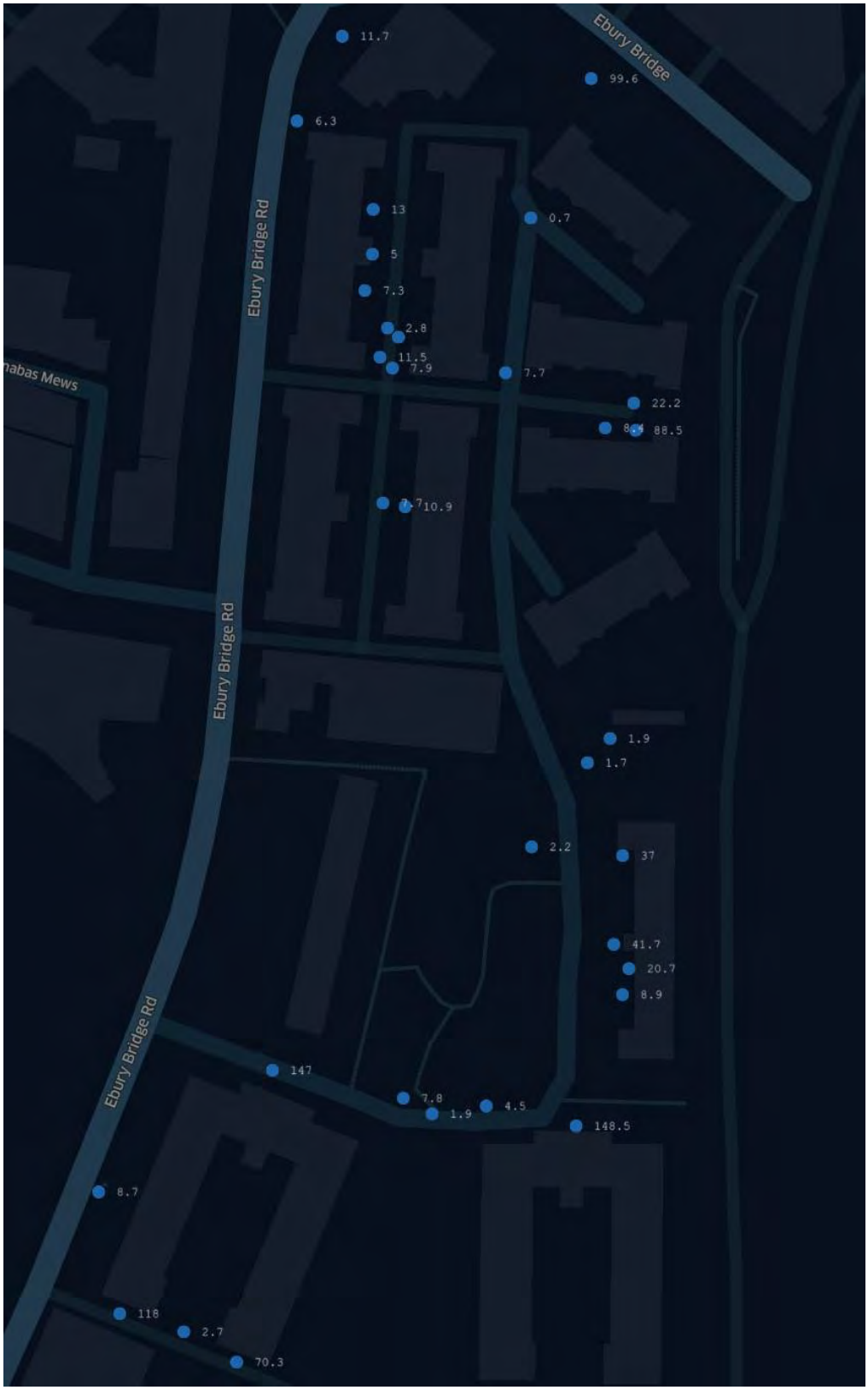

Figure 7 - Survey of existing illuminance levels at 1m, vertical. Values range from 100 lux at Ebury Bridge to 10 lux in the middle of the Estate.

4 Guidance

The guidance used in the preparation of the assessment is based on the document:

ILP GN01 Guidance Notes for the reduction of obtrusive light: 2020

The latest edition of this document has been published in early 2020. This supersedes the earlier edition (GN01:2011) and includes new means to estimate obtrusive lighting which are also consistent with international guidance (CIE 150 :2017 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting installations).

Thus, the assessment has been based on this new edition of the guidance document and not on the earlier edition as initially agreed during the assessment scoping phase. From a practical point of view this means that the assessment is more robust and stringent as requirements have been clarified and enhanced in the new edition of the guidance.

5 Methodology and Assumptions

The scope of the assessment was agreed as follows:

- An obtrusive lighting assessment will be carried out for the operation of Phase 1 (detailed application), but not for the outline application. Design principles submitted with the outline application will seek to avoid obtrusive lighting for Phase 2
- The obtrusive lighting assessment methodology will be based on ILP GN01 Guidance Notes for the reduction of obtrusive light:2011 (and the environmental zone will be E3 corresponding to medium district brightness).

As such the assessment includes the lighting design for Phase 1.

The area where the proposed scheme sites is surrounded by residential properties and by the rail line tracks. Based on the site survey it has been concluded that the area can be considered as medium district brightness environmental zone E3.

The only receptors in the proximity of the installation are the residential windows of Cheylesmore House.

The ILP guidance considers the following parameters.

Parameter	Performance Target	Notes
Maximum values of vertical illuminance on properties (spill lighting)	Pre-curfew: 10 lux Post-curfew 2 lux	This has been included in the assessment, see for details in section 5.
Limit for the luminous intensity of bright luminaires	Based on distance between observer and light source and source projected area a luminous intensity target is	This has been included in the assessment, see for details in section 5.

Parameter	Performance Target	Notes
	provided by ILP GN01 / CIE 150	
Threshold increment and veiling luminance	Based on road classification a target is provided by ILP GN01 and CIE 150.	None of the fixtures is adjacent to a road, thus the threshold increment, and veiling luminance are both zero.
Maximum values of upward light ratio (ULR) of luminaires	<5%	This has been included in the assessment, see for details in section 5.
Maximum values of upward flux ratio of installation	<8 - 12	This has been included in the assessment, see for details in section 5.
Maximum permitted values of average surface luminance	<10 cd/sqm	None of the exterior lighting is used to floodlight the façade, thus the building is lit by spill lighting which is assessed by luminaire intensity and spill lighting.

6 Results

Maximum values of vertical illuminance on properties (spill lighting)

The following diagrams show the location of the proposed luminaires and the surrounding properties. The second diagram shows the distribution of light in respect to these receptors. As it can be seen none of the receptors receives more than 2 lux and therefore all meet the ILP recommendations.

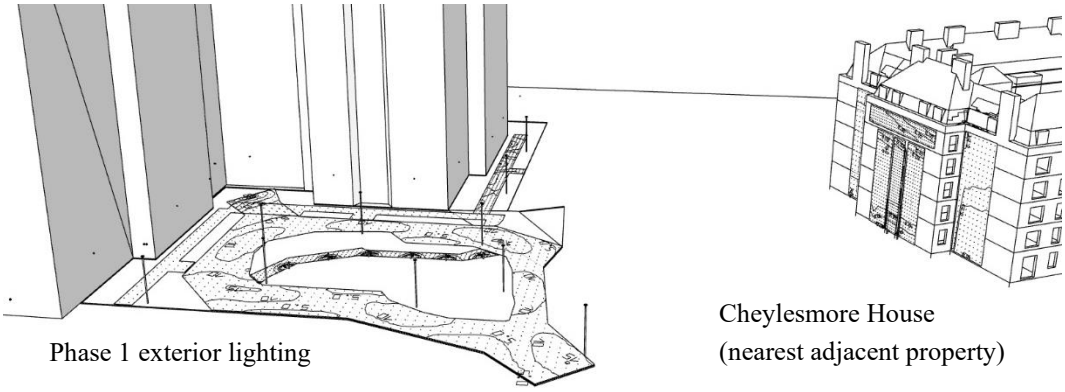

Figure 8 - Relative position of the Phase 1 exterior lighting scheme and the receptors corresponding to the adjacent property.

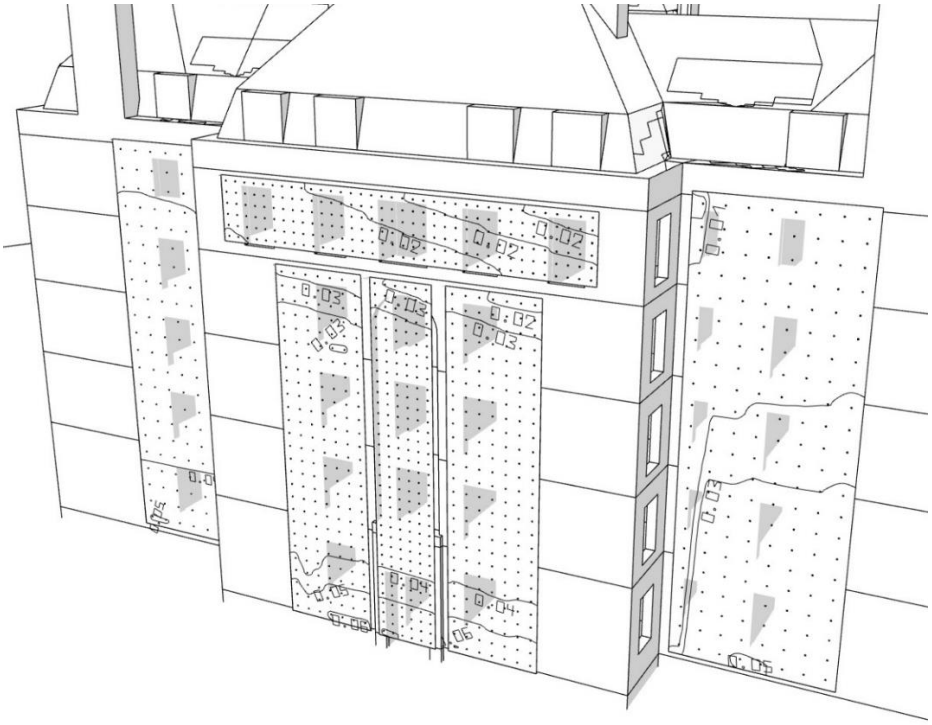

Figure 9 - Vertical illuminance levels for Cheylesmore House. (all values are below 1 lux)

Limit for the luminous intensity of bright luminaires

The following table considers the size of luminaires proposed and their location in respect to residential receptors. Given that the shortest distance between luminaire and receptor (d) is 40.8 m, and the mean diameter of fixtures is within the range 10cm to 20cm, the minimum target value for the limitation of luminous intensity results is:

	Relative intensity limit	**Absolute intensity limit for d = 40.8m**
Pre-curfew	3.8 x d	155 cd
Post-curfew	1.3 x d	53 cd

This is achieved by all the proposed luminaires as shown below.

The diagrams below show the calculation for each luminaire type of the limit angles corresponding to an intensity of 53cd, which is the most restrictive limit. This value is then used into a 3d model to identify the areas of surrounding properties which can see such intensity.

Designation	**Manufacturer**	**Product Name**
1	ERCO	Castor Bollard luminaire 1 x LED 8W warm white
2	iGuzzini	Twilight 31.3W
3	iGuzzini	Lander – Wall 13.6W
4	BEGA	LED 19.8W
5	Delta Light NV	MOMBA LED 930

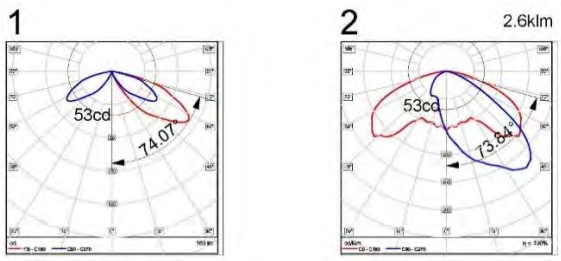

Figure 10 - Calculation of angle corresponding to an intensity of 53cd for luminaires 1 and 2.

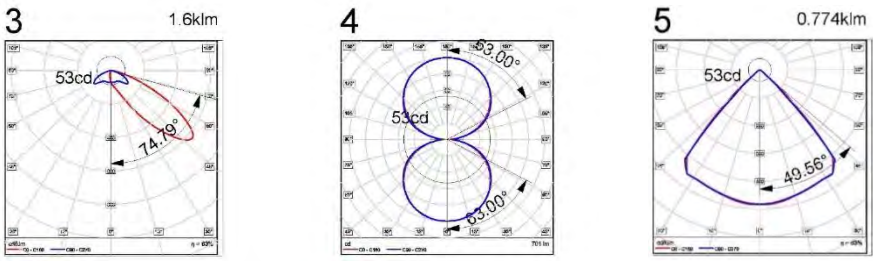

Figure 11 - Calculation of angle corresponding to an intensity of 53cd for luminaires 3, 4 and 5.

The following diagrams show the position of the closest receptors in the adjacent building (Cheylesmore House). A cone with variable angle (a cone for each fixture) is used to check whether these receptors are reached by an intensity of 53cd. It can be observed that all receptors are outside the cones, which results in intensities below 53cd and thus meet guidance.

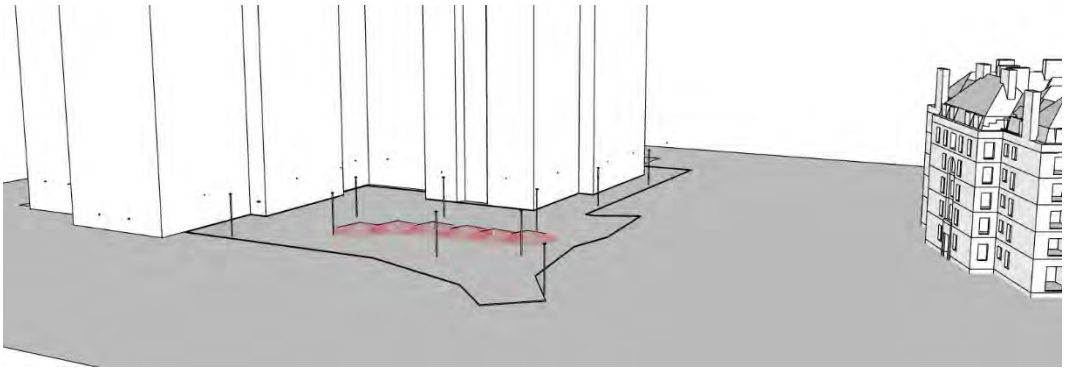

Figure 12 - limit angles corresponding to an intensity of 53cd for luminaires 1. These luminaires are mounted on low level bollards and have a very limited incidence in the surrounding areas.

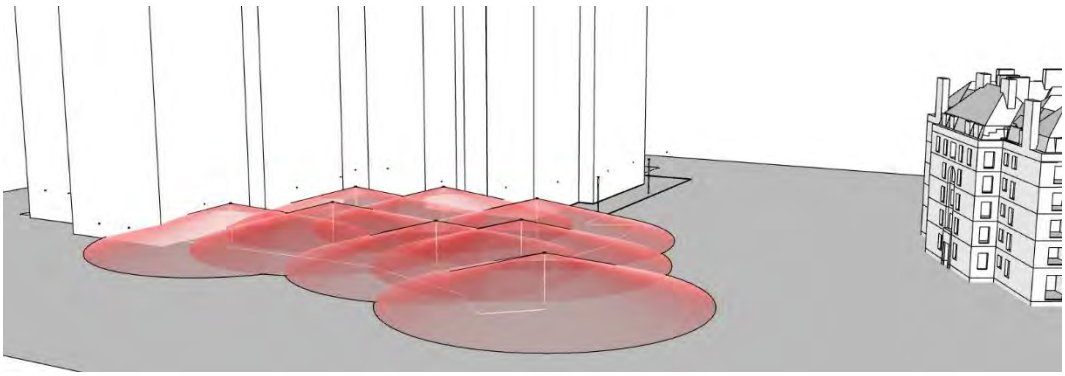

Figure 13 - limit angles corresponding to an intensity of 53cd for luminaires 2.

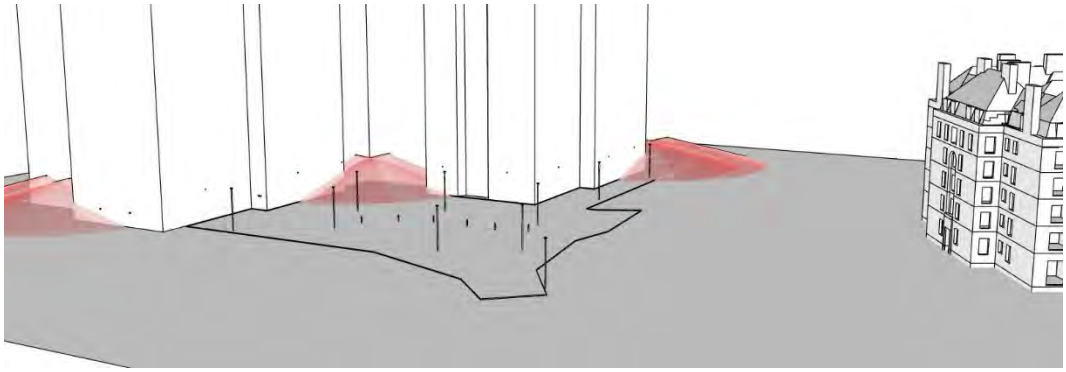

Figure 14 - limit angles corresponding to an intensity of 53cd for luminaires 3.

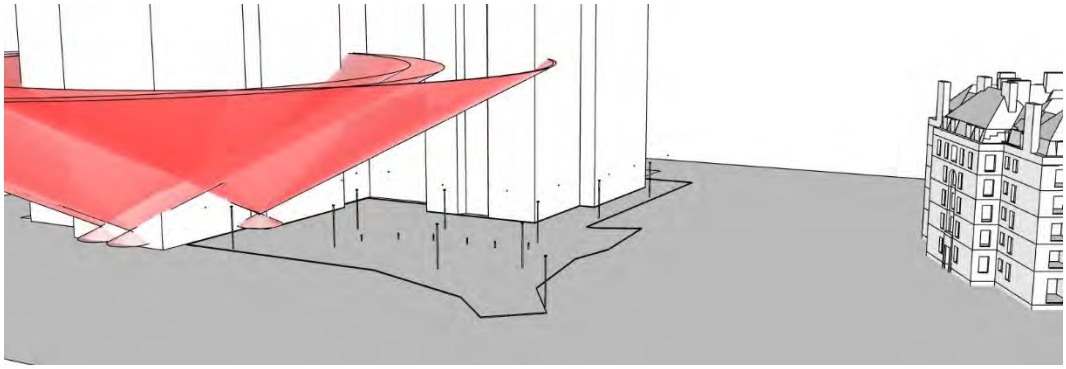

Figure 15 - limit angles corresponding to an intensity of 53cd for luminaires 4. These luminaires have an uplight component, however, the limit angle does not reach any receptors.

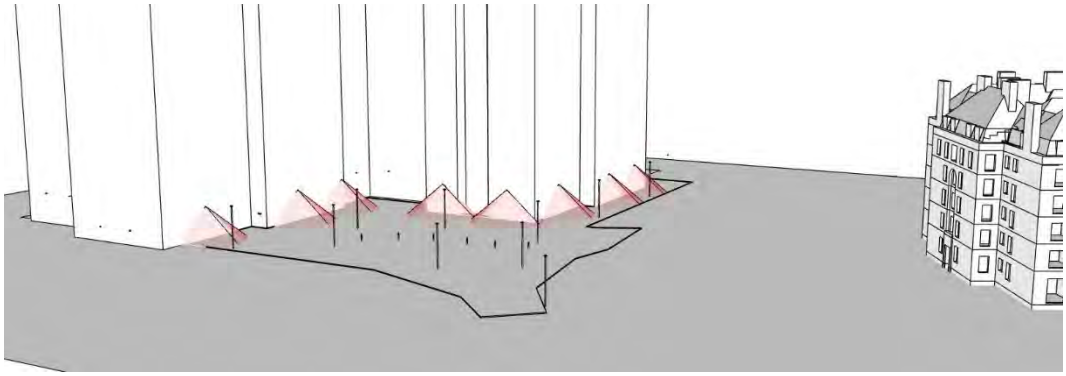

Figure 16 - limit angles corresponding to an intensity of 53cd for luminaires 5.

Threshold increment and veiling luminance

This has not been calculated as the luminaires are not visible from the street and hence it can be assumed to be zero.

Maximum values of upward light ratio (ULR) of luminaires

Most of the luminaires proposed have an ULR of 0%. Exception to this are the decorative fittings installed in front of the building entrances and the residential balcony lighting which is operated by a switch and are typically switched off.

Maximum values of upward flux ratio of installation

The upward flux ratio of the installation considers the comparison between the theoretical design performance and the actual installation performance, including the spill lighting to the surrounding areas and its distribution as diffuse light to the sky. This assessment is typically used for road lighting and area lighting installations and ignores decorative lighting

In this case, the theoretical design performance is determined by the area illuminated and the target illuminance specified multiplied by the reflectance of the surface. The tables below summarise these values and the resulting luminous fluxes.

Theoretical design performance (total upward flux reflected by task surfaces)				
Designation of Use	**Area**	**Design illuminance requirement**	**Design Luminous Flux landing on task**	**Design Luminous Flux reflected by task surfaces (reflectance = 10%)**
Vehicular routes	752 m^2	6.3 lux	4738 lm	473.8 lm
Pedestrian routes	1235 m^2	4.0 lux	4940 lm	494.0 lm
Total				**967.8 lm**

The total reflected and direct upward flux for the proposed design is calculated by obtaining average illuminance levels outside the site boundaries in all directions and weighting by the corresponding areas. The table below summarises these values and the total flux corresponding to it.

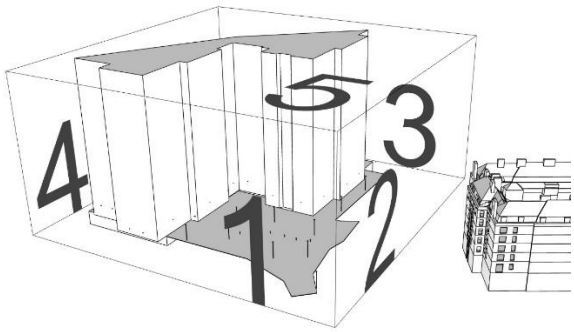

Figure 17 - location of the boundaries calculated.

Design performance (total reflected and direct upward flux)			
Boundary	**Area**	**Average illuminance**	**Total Luminous Flux above the horizon**
1	5 000 m^2	0.45 lux	2267 lm
2	5 000 m^2	0.36 lux	1800 lm
3	5 000 m^2	0.07 lux	373 lm
4	5 000 m^2	0.02 lux	107 lm
5	10 000 m^2	0.20 lux	2000 lm
Total			**6547 lm**

Design performance (total upward flux reflected by surfaces and direct)	**Theoretical design performance (total upward flux reflected by task surfaces)**	**Upward flux ratio of installation** **(target for E3 < 8)**
967.8 lm	6547 lm	6.76

The upward flux ratio of installation is 6.76, which is below the threshold of 8 as per guidance.

Maximum permitted values of average surface luminance

The proposed lighting design does not provide any flood lighting for façade accent, and thus, since the illuminance determined by the spill lighting is within the recommended threshold, the resulting building envelope luminance has also to be within guidance.

7 Conclusions and Recommendations

The assessment considered all parameters included in the ILP GN01 Guidance Notes for the reduction of obtrusive light: 2020.

This was performed by a combination of lighting calculations and geometric analysis of the photometric data.

All parameters meet guidance and the lighting design complies with the ILP recommendations for environmental zone E3.

No further recommendations are considered necessary as all results are compliant.

E5 Additional description of daylight and sunlight existence effects

E5.1 Introduction

E5.1.1 This appendix contains a detailed description of the qualitative analysis undertaken for each property where moderate or major adverse daylight and / or sunlight amenity impacts were identified through quantitative technical analysis data.

Existence Effects

E5.2 The Rising Sun

E5.2.1 The VSC, DD and APSH assessment results for this property are summarised in Table 3.

Table 3: The Rising Sun VSC, DD and APSH assessment data

The Rising Sun PH												
Analysis	Windows / Rooms Assessed		BRE Compliant		Non-Compliant Windows (27% Target)							
					Total		Minor Adverse		Moderate Adverse		Major Adverse	
	All	Living	**All**	**Living**	All	Living	All	Living	All	Living	All	Living
VSC	4	1	**0** **0%**	**0** **0%**	4 100%	1 100%	2 50%	1 100%	2 50%	0 0%	0 0%	0 0%
DD	2	1	**1** **50%**	**1** **100%**	1 50%	0 0%	0 0%	0 0%	0 0%	0 0%	1 50%	0 0%
APSH	4	1	**1** **25%**	**1** **100%**	3 75%	0 0%	0 0%	0 0%	3 75%	0 0%	0 0%	0 0%

E5.2.2 At first floor, two windows would experience minor adverse VSC impacts and two would experience moderate adverse VSC impacts. Based on external observation, the ground floor room referenced ‘R1’, served by window reference ‘W1’ (as referenced within the VSC spreadsheet in Appendix E1) is assumed to be in use as the main living space, and the remaining smaller windows at first and second floor are assumed to serve bedrooms

E5.2.3 W1 would experience a VSC reduction marginally below the BRE recommendations, retaining a VSC value that is 0.79 times the baseline

(compared to the BRE guidance of 0.8 times) and the impacts are considered negligible to borderline minor.

E5.2.4 One assumed bedroom at first floor would experience major adverse DD impacts, retaining a value 0.57 times the baseline. Bedrooms are considered to have a lesser requirement for daylight amenity by the BRE guide.

E5.2.5 R1, the assumed main living space at ground floor, remains BRE compliant for DD and the effects to this room would be negligible. The BRE guide considers daylight amenity to be most important within main living spaces.

E5.2.6 In terms of sunlight, three of the four windows assessed would experience moderate adverse APSH impacts. W1, serving the assumed main living space, would remain BRE compliant for APSH and the impacts would be negligible.

E5.2.7 With reference to paragraph E.1.2.15 in Appendix E1, bedrooms are considered to have a lesser requirement for daylight and sunlight amenity by the BRE guide, with the main living space considered most important.

E5.2.8 The effect on this property is therefore considered **not significant adverse** for both daylight and sunlight amenity, taking into account the negligible impacts to R1, which is reasonably assumed to be the main living space within this property.

E5.3 20 to 42 Ebury Bridge Road

E5.3.1 The VSC, DD and APSH assessment results for this property are summarised in Table 4.

Table 4: 20-42 Ebury Bridge Road VSC, DD and APSH assessment data

20-42 Ebury Bridge Road												
Analysis	**Windows / Rooms Assessed**		**BRE Compliant**		**Non-Compliant Windows (27% Target)**							
					Total		**Minor Adverse**		**Moderate Adverse**		**Major Adverse**	
	All	Living	**All**	**Living**	All	Living	All	Living	All	Living	All	Living
VSC	36	12	**14** **39%**	**7** **58%**	22 61%	5 42%	22 61%	5 42%	0 0%	0 0%	0 0%	0 0%
DD	36	12	**9** **25%**	**4** **33%**	27 75%	8 67%	5 14%	3 25%	20 56%	5 42%	2 6%	0 0%
APSH	36	12	**29** **81%**	**5** **42%**	7 19%	7 58%	7 19%	7 58%	0 0%	0 0%	0 0%	0 0%

E5.3.2 Based on external observation and historic estate agent particulars available in the public realm, it is assumed that these terraced properties are typically

arranged with the main living space at ground floor, and bedrooms on the upper floors.

E5.3.3 Historical estate agent particulars have been obtained for some of these properties, which show significant renovations have taken place. Most properties have extended to the rear at ground floor and added skylights and rear patio doors, creating a very well daylit space at the rear of the property. Photographs show that in some cases, the ground floor accommodation has been opened out to create a through-lit living / kitchen / dining space, with the main living space located at the rear of the property to make use of the improved natural daylighting and rear garden access. However, as we have been unable to obtain floorplans or verify the layouts with internal inspection, we have assessed all assumed living spaces located at the front of the properties as single aspect rooms to a depth halfway into the property. This demonstrates a worst-case scenario, with the assumed rooms solely reliant on daylight and sunlight from the application site.

E5.3.4 22 of the 48 windows assessed across the 12 properties would experience minor adverse VSC impacts, including the ground floor living room windows for 34 to 42 Ebury Bridge Road. All remaining windows would comply with BRE criteria and the impact would be negligible.

E5.3.5 20, 22, 24 and 32 Ebury Bridge Road would retain BRE compliant DD in the assumed living room and the impacts would be negligible. 26, 28 and 34 Ebury Bridge Road would experience minor adverse DD reductions to the assumed living room.

E5.3.6 The remaining properties, 30, 36,38, 40 and 42 Ebury Bridge Road, would experience moderate adverse DD reductions to the assumed living space; these reductions have been investigated further (below) to determine whether such impacts would give rise to significant adverse effects.

E5.3.7 In each case, the assumed living rooms with moderate adverse DD effects do not achieve the BRE target value of 80% in the existing conditions, and the reductions that are small in quantum (between 1.9 sqm and 3.5 sqm) appear disproportionately large when expressed as a percentage of the existing value. Furthermore, if these rooms are indeed found to be open plan (lit additionally by windows and rooflights at the rear of the property), adverse impacts on the DD levels within the room are unlikely to occur.

E5.3.8 For the 24 assumed bedrooms assessed, five would experience negligible adverse DD effects, two would experience minor adverse DD impacts, 15 would experience moderate adverse DD effects and the remaining two (both within 38 Ebury Bridge Road) would experience major adverse DD effects, based on numerical data. Para 2.1.13 of the BRE guide states ‘Living rooms and kitchens need more daylight than bedrooms’; the assumed ground floor living room for each property would retain good access to daylight, with negligible to minor adverse VSC reductions and negligible to moderate adverse DD reductions (with the latter deemed moderate adverse in percentage terms, but equating to small reductions to the visible-sky area of no more than 3.5 sqm, as already noted).

E5.3.9 In terms of sunlight, seven of the 36 windows tested (all serving assumed living rooms at ground floor) would experience minor adverse impacts, retaining good

annual sunlight values above 20%. All remaining windows would comply with BRE recommendations and the impacts would be negligible.

E5.3.10 20 Ebury Bridge Road would remain BRE compliant for the VSC, DD and APSH tests, and the effect on daylight and sunlight amenity would be **neutral.**

E5.3.11 Taking into account the negligible or minor VSC, DD and APSH impacts to the rooms reasonably assumed to be the living rooms within 22 to 28 and 32 to 34 Ebury Bridge Road, the overall effect to these properties is considered **not significant adverse** for both daylight and sunlight amenity**.**

E5.3.12 For the remaining 5 properties (30 and 36 to 42 Ebury Bridge Road), the assumed living rooms would experience negligible to minor adverse VSC and APSH impacts, and further review of the moderate adverse DD percentage reductions to these rooms reveal small absolute changes to the no-sky line of no greater than 3.5 sqm. The overall effect to these properties is therefore considered **not significant adverse** for daylight and sunlight amenity**.**

E5.4 Fountain Court

E5.4.1 The VSC, DD and APSH assessment results for this property are summarised in Table 5.

Table 5: Fountain Court VSC, DD and APSH assessment data

Fountain Court														
Analysis	**Windows / Rooms Assessed**		**BRE Compliant**		**Non-Compliant Windows (27% Target)**									
					Total		**Minor Adverse**		**Moderate Adverse**		**Major Adverse**			
	All	Living	**All**	**Living**	All	Living	All	Living	All	Living	All	Living		
VSC	55	24	**55** **100%**	**24** **100%**	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%		
DD	43	16	**42** **98%**	**15** **94%**	1 2%	1 6%	1 2%	1 6%	0 0%	0 0%	0 0%	0 0%		
APSH	43	16	**43** **100%**	**16** **100%**	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%		

E5.4.2 This residential block is located to the north of the application site. Partial floorplans were obtained for publicly accessible sources and have been used to inform our assumptions as to the internal layouts of this property.

E5.4.3 55 windows have been assessed across 43 rooms for daylight amenity using the VSC and DD test. All windows would comply with BRE recommendations for VSC, and all but one room would comply with BRE recommendations for DD. This room, an assumed living room, would retain a DD value that is 0.79 times

the former value, marginally below the BRE recommended 0.8. The effect on daylight amenity is therefore considered **not significant adverse.**

E5.4.4 43 windows facing within 90 degrees of due south were assessed for sunlight amenity using the APSH test. All windows comply with BRE recommendations, and the effect on sunlight amenity is therefore **neutral.**

E5.5 1 Ebury Bridge Road

E5.5.1 The VSC, DD and APSH assessment results for this property are summarised in Table 6.

Table 6: 1 Ebury Bridge Road VSC, DD and APSH assessment data

1 Ebury Bridge Road												
Analysis	**Windows / Rooms Assessed**		**BRE Compliant**		**Non-BRE Compliant Windows (27% Target)**							
					Total		**Minor Adverse**		**Moderate Adverse**		**Major Adverse**	
	All	Living	**All**	**Living**	All	Living	All	Living	All	Living	All	Living
VSC	54	20	**19** **35%**	**9** **45%**	35 65%	11 55%	10 19%	4 20%	20 37%	4 20%	5 9%	3 15%
DD	50	20	**36** **72%**	**16** **80%**	14 28%	4 20%	2 4%	2 10%	10 20%	1 5%	2 4%	1 5%
APSH	44	16	**17** **39%**	**6** **38%**	27 61%	10 63%	16 36%	6 38%	5 11%	2 13%	6 14%	2 13%

E5.5.2 This property is located to the immediate north of the development and contains 12 flats with windows located on the rear and flank elevations, overlooking the development site. It is understood that the upper floors are purpose built residential apartments, but that the ground and first floor were formerly in use as a medical centre which has since been converted into residential apartments.

E5.5.3 Lease plans showing detailed internal layouts were obtained for the majority of flats overlooking the development (with the exception of those at third floor) and have been applied within the assessment environment. Floor plans for the

second floor below have been used to inform assumptions as to the internal layouts of these third-floor flats.

E5.5.4 Overall, 10 of the 65 windows assessed across the 12 flats would experience minor adverse VSC impacts, 19 would experience moderate adverse VSC impacts and 5 would experience major adverse VSC impacts.

E5.5.5 Of the 28 rooms assessed across the 12 flats, three would experience minor adverse DD impacts, four would experience moderate adverse DD impacts and one room, a living room in Flat B would experience major adverse DD impacts.

E5.5.6 Five of the 43 windows assessed for sunlight amenity would experience minor adverse APSH impacts, seven would experience moderate adverse APSH impacts and four would experience major adverse APSH impacts.

E5.5.7 Further review of the impacts is set out on a per property basis below.

E5.5.8 Assessment results demonstrate that Flats L, Q and E would remain BRE compliant for daylight and sunlight amenity using the VSC, DD and APSH tests, and the effects on these properties would be **neutral** and therefore are not considered further

E5.5.9 The significance of effects for the remaining flats is as follows;

Flat K

E5.5.10 This flat is located at ground floor within the rear two-storey wing to the rear of the property. From floor plans, it can be seen that all eight windows overlooking the development site serve habitable rooms, with the 2 large centre windows serving the main living space.

E5.5.11 The VSC values currently achieved by these eight windows range from 3.64% to 17.48%, compared to the BRE recommended value of 27%. Such values are not unusual for city centre locations and highlight the enclosed nature of the windows at lower levels to the rear of this building.

E5.5.12 With the Proposed Development in place, these eight windows would retain VSC values between 4.2% and 9.4%. Minor beneficial impacts will occur to one bedroom window (ref 'W5'), and the remaining seven would see reductions beyond BRE recommendations, with absolute reductions ranging from 2.76% to 8.12% VSC.

E5.5.13 The two living room windows would see moderate adverse reductions of 7.47% and 6.29% absolute VSC, which are up to 0.57 times the former value. The kitchen windows would retain VSC values up to 0.7 times the former value.

E5.5.14 For daylight distribution within the rooms, DD results show that all three rooms would remain BRE compliant and will retain good access to visible sky with the development in place.

E5.5.15 For sunlight amenity, all but one of the assessed windows would experience reductions in annual and winter sunlight using the APSH test. The BRE guide considers sunlight to be most important in living rooms; the living room would retain annual sunlight values of up to 16% (compared to the BRE target of 25%), which is 0.59 times the former value. Such reductions are likely to be

noticeable, however the main living room (and kitchen) will continue to provide the occupants with levels of APSH typically achieved in city centre locations.

E5.5.16 The private garden to the rear has been assessed for overshadowing as per BRE guidelines. Results show that on 21 March, a small portion of the garden (28%) would achieve at least 2 hours of sunlight. The garden would no longer achieve at least 2 hours of sunlight with the development in place, however when assessed on 21 June (as per optional guidance in para 3.3.15 of the BRE guide), the garden will retain at least 2 hours of sunlight across over 80% of the space, in excess of BRE guidelines. It is during the summer months that private gardens are most likely to be in use.

E5.5.17 Overall, numerical data shows moderate adverse VSC impacts to the main living room and minor adverse VSC impacts to the Kitchen, with negligible change in DD to all rooms. Whilst the VSC changes are likely to be noticeable, the retained absolute VSC to the living room and kitchen (where daylight is considered most important (para 2.1.13 of the BRE guide) are in-line with those achieved to other habitable rooms in the property in the baseline conditions, and are commensurate with values typically achieved in urban areas. Over 80% of each room area will retain access to visible sky and the overall impact on daylight amenity to this property is therefore considered **not significant adverse**.

E5.5.18 In terms of sunlight, numerical data shows moderate adverse APSH impacts would occur to the main living room, and overshadowing impacts would occur to the terrace on 21 March. Given that sunlight is considered most important in living rooms (notwithstanding that the retained levels of annual sunlight are considered in-line with those typically achieved in urban areas), the overall impact on sunlight amenity is considered **significant adverse.**

Flat J

E5.5.19 This corner flat is located at ground floor of the property; floor plans show four of the six windows serving habitable space overlook the existing Ebury Bridge Estate to the south, with two bedroom windows overlooking Bridge Road to the east. The open plan living / kitchen / dining space enjoys corner aspect, but all 3 windows closely overlook the development site.

E5.5.20 These six windows currently achieve VSC values between approximately 9% and 22% (all below the BRE recommended value of 27%); four of these windows would retain VSC values less than 0.8 times the former value with the Proposed Development in place.

E5.5.21 The three living room windows would experience minor to moderate adverse impacts, retaining VSC values up to 0.62 times the former value and experiencing reductions in absolute VSC ranging between 3.47% and 9.13%. One bedroom would see moderate adverse VSC impacts and another would not be materially affected.

E5.5.22 For daylight distribution within the rooms, DD results show that minor adverse impacts would occur to the main living space, with the room retaining 0.72

times the former DD value. One bedroom would experience moderate adverse DD impacts, and another would remain unaffected.

E5.5.23 For sunlight amenity, APSH results show that the 4 assessed windows would experience reductions in annual and winter sunlight below the BRE targets. The two east-facing bedroom windows face away from the Proposed Development and do not face within 90 degrees due south and are therefore unlikely to be materially affected.

E5.5.24 The BRE considers sunlight to be most important in living rooms; the living room windows would experience reductions in APSH, retaining values that are between 0.47 and 0.52 the former value, but absolute values of up to 21% annual sunlight would be retained (compared to the BRE target of 25%). Whilst reductions of this nature will be noticeable, the main living room will continue to provide the occupants with levels of APSH in-line with those typically achieved in city centre locations.

E5.5.25 One bedroom will remain unaffected by the Proposed Development, and the other will retain 25% annual sun, which is the BRE recommended target. Reductions in winter sunlight are also likely to be noticeable but would be an inevitable consequence of any development on the site above the existing built heights, due to the low altitude sun-path during the winter months. In-line with standard 32 of the Mayor of London's SPG; good sunlight will continue to be achieved within at least one habitable room.

E5.5.26 The private garden to the rear has been assessed for overshadowing as per BRE guidelines. Results show that on 21 March, the garden would not achieve at 2 hours of sunlight, and this would not change with the development in place. When assessed on 21 June, the garden will retain at least 2 hours of sunlight across the entire area, far in excess of BRE guidelines.

E5.5.27 Overall, numerical data shows minor to moderate adverse daylight impacts in VSC to the main living room, with minor change in DD. One bedroom will not be materially affected by the development. The overall impact on daylight amenity (bearing in mind the retained levels of daylight in the main living space are considered in-line with those typically achieved in urban areas) is therefore considered **not significant adverse**.

E5.5.28 In terms of sunlight, numerical data shows minor to moderate adverse APSH impacts would occur to the main living room. The rear garden will see no change on 21 March and will remain BRE compliant on June 21. At least one habitable room in this property will retain BRE compliant levels of sunlight amenity in-line within Standard 32 of the Mayor of London's SPG and the overall impact on sunlight amenity is considered **not significant adverse.**

Flat P

E5.5.29 This flat is located at first floor within the rear two-storey wing to the rear of the property. From floor plans, it can be seen that all 5 windows overlooking the development site serve habitable rooms, with the large central window serving the main living space.

E5.5.30 The windows currently achieve VSC values between approximately 7.8% and 22.8% (below the BRE recommended 27%) and four of these windows would

retain VSC values less than 0.8 times the former value with the Proposed Development in place.

E5.5.31 The living room window would retain 0.52 times the former VSC, and the kitchen would retain up to 0.62 time the former VSC. One of the two windows serving the bedroom would experience major adverse VSC impacts and the other would experience minor beneficial VSC impacts. It should be borne in mind that larger ratio reductions are inevitable when expressed as a percentage of a low existing value.

E5.5.32 For daylight distribution within the rooms, DD results show that all three rooms would remain BRE compliant and will retain good access to visible sky with the development in place.

E5.5.33 For sunlight amenity, all but one of the assessed windows would experience reductions in annual and winter sunlight using the APSH test. The BRE guide considers sunlight to be most important in living rooms; the living room would retain annual sunlight values of 24% (marginally below the BRE target of 25%) and the impact is considered minor adverse. The kitchen would retain 28% annual sun, in excess of the BRE target. Winter-sunlight reductions would transgress BRE target values, with the kitchen and bedroom retaining winter sunlight values of 3% compared to the BRE recommended 5%. The winter sunlight is particularly difficult to achieve in city-centre locations, due to the low altitude sun-path during the winter months. Whilst the reductions are likely to be noticeable, the main living room (and kitchen) will continue to provide the occupants with good levels of APSH.

E5.5.34 This property does not appear to benefit from access to a private garden or terrace and has therefore further testing for external overshadowing is not required.

E5.5.35 Overall, whilst numerical data shows major adverse daylight impacts in VSC to the main living room, there would be negligible change in DD to all rooms and over 80% of each room area will continue to retain access to visible sky. The overall impact on daylight amenity is therefore considered **not significant adverse**.

E5.5.36 In terms of sunlight, minor adverse APSH impacts would occur to the main living room, with retained annual sunlight values being marginally below BRE target. The overall impact on sunlight amenity is considered **not significant adverse.**

Flat N

E5.5.37 This corner flat is located at first floor; from floor plans it can be seen that six, of the eight, windows serving habitable space overlook the existing Ebury Bridge Estate to the south, with two bedroom windows overlooking Bridge Road to the east. The open plan living / kitchen / dining space enjoys corner aspect, but all three windows closely overlook the development site.

E5.5.38 Six of the eight windows currently achieve VSC values below the BRE recommended value of 27%, with the remaining two bedroom windows exceeding this target. The living room windows currently achieve VSC values

between 14.3% and 25.7% which, whilst below BRE target, represent a range of values typically achieved in urban areas.

E5.5.39 Six of the eight assessed windows would fall below the BRE target of 0.8 times the former value in the proposed conditions, with the 3 living room windows retaining up to 0.67 times the former value. Absolute VSC values of up to 14% will be retained by the living room, which will continue to provide the room with daylight levels typically achieved in urban areas.

E5.5.40 The 2 remaining bedroom windows would not be materially affected by the Proposed Development, retaining VSC values greater than 0.8 times the former value.

E5.5.41 DD results show that minor adverse impacts would occur to the main living space, with the room retaining 0.72 times the former DD value. One bedroom would experience moderate adverse DD impacts, and another would remain unaffected.

E5.5.42 For sunlight amenity, APSH results show that six of the assessed windows would experience reductions in annual and winter sunlight below the BRE targets. The two east-facing bedroom windows face away from the Proposed Development and do not face within 90 degrees due south and are therefore unlikely to be materially affected.

E5.5.43 The BRE considers sunlight to be most important in living rooms; the living room windows would experience reductions in APSH, retaining values that are between 0.47 and 0.68 the former value, but would retain BRE compliant absolute annual sunlight values of up to 25%. Similar levels of reduction would occur to bedrooms, but both would also retain annual sunlight levels in excess of BRE guidance, of 29% and 31%. Whilst the reductions will be noticeable, all rooms will continue to provide the occupants with BRE compliant levels of annual sun.

E5.5.44 Again, winter-sun BRE targets are difficult to achieve in city-centre locations due to the low altitude sun-path during the winter months.

E5.5.45 This property does not appear to benefit from access to a private garden or terrace and has therefore further testing for external overshadowing is not required.

E5.5.46 Overall, numerical data shows moderate adverse daylight impacts in VSC and minor adverse impacts in DD to the main living room. One bedroom will remain not materially affected by the development. The overall impact on daylight amenity (and bearing in mind the retained levels of daylight in the main living space are considered in-line with those typically achieved in urban areas) is therefore considered **not significant adverse**.

E5.5.47 In terms of sunlight, numerical data shows minor adverse APSH impacts would occur to the main living room. All rooms will retain annual sunlight values that

meet or exceed BRE recommendations and the overall impact on sunlight amenity is considered **not significant adverse**

Flat B

E5.5.48 Flat B is located at second floor, occupying the western wing of the floor; from floor plans it can be seen that the only habitable rooms facing the development site are a kitchen and a study, with all bedrooms and the main living room facing onto Ebury Bridge Road, away from the site. All other windows facing the site serve bathrooms or circulation areas which do not require testing for daylight and sunlight amenity under BRE guidelines.

E5.5.49 VSC results show that both kitchen windows will continue to comply with BRE guidance with the development in place. The study window, which is located on the rear elevation between the two projecting wings of the building, would retain a VSC value 0.6 times the former value, retaining an absolute value of 16.7%. Daylight to the main living room would remain unaffected by the development.

E5.5.50 For daylight distribution within the rooms, DD results show that the kitchen will remain BRE complaint and would therefore retain good access to visible sky with the development in place. The study would retain 0.58 times the former DD, however the levels of DD within the main living space, kitchen and all bedrooms will remain unaffected by the development.

E5.5.51 Turning to sunlight amenity, APSH results show that the kitchen will continue to achieve annual and winter sunlight levels far in excess of the BRE targets. The study will also continue to achieve annual sunlight far in excess of the BRE target of 25%, but will retain a winter sunlight value of 4%, marginally below the BRE recommended 5%. In-line with standard 32 of the Mayor of London's SPG, at least one habitable room will achieve BRE compliant sunlight levels.

E5.5.52 The private roof terrace has been assessed for overshadowing as per BRE guidelines. Results show that major sunlight impacts below BRE recommendations would occur on 21 March, but on 21 June, 100% of the space will continue to achieve at least 2 hours direct sunlight on 21 March, far exceeding BRE recommendations. It is during the summer months that private terraces are most likely to be in use.

E5.5.53 Overall, the effect on daylight and sunlight amenity is considered **not significant adverse.**

Flat A

E5.5.54 Flat A is located at second floor, occupying the eastern wing of the building; from floor plans it can be seen that half of the habitable rooms face the development site (a bedroom, dining room and living room) and the other half (two bedrooms and a kitchen) face away from the site, onto Ebury Bridge.

E5.5.55 VSC results show five of the six assessed windows would retain VSC values less than 0.8 times the former with the development in place. The living room and dining room would experience minor adverse impacts, retaining relative

values of 0.74 times the former value, and absolute values of 20% and 19% respectively; representing daylight values typically achieved in urban areas.

E5.5.56 DD results show that the living room and dining room would retain DD values of 0.46 and 0.53 the former value, whereas these numerically large percentage reductions translate to relatively small areas of 7.6 sqm and 5.5 sqm experiencing a change in sky visibility.

E5.5.57 Turning to sunlight amenity, APSH results show that all assessed rooms will continue to achieve annual sunlight levels far in excess of the BRE target. The two bedrooms facing the site will retain winter sun value of 4%and 6%; the former marginally below the BRE recommended 5% and the latter exceeding this target. In-line with standard 32 of the Mayor of London's SPG, at least one habitable room will train BRE compliant sunlight access. The kitchen and third bedroom will remain unaffected for sunlight amenity.

E5.5.58 The private roof terrace has been assessed for overshadowing as per BRE guidelines. Results show that full BRE compliance would be achieved on 21 March and 21 June, with over 50% of the space continuing to achieve at least 2 hours of sunlight on these days.

E5.5.59 Overall, taking into account the high retained VSC values of the main living space, along with the small absolute reductions in DD, the overall effect on daylight amenity is considered **not significant adverse**. For sunlight, at least one habitable room achieves BRE complaint sunlight in-line with Standard 32 of the Mayor of London's SPG, and the overlay impact on sunlight is considered **not significant adverse**.

Flat D

E5.5.60 Flat D is located at third floor, occupying half of the eastern wing of the building; we have been unable to obtain floorplans showing detail internal layouts, with only the basic layout shown on lease plans. We have therefore assumed a similar internal configuration as Flat A on the floor below.

E5.5.61 VSC results show that the 6 assessed windows would retain VSC values below the BRE recommended 0.8 times with the development in place. The main living space and dining room would experience minor adverse VSC reductions, retaining 0.77 and 0.75 the former value respectively (with retained absolute values of 24.5% and 25%, marginally below the BRE recommended 27%).

E5.5.62 For daylight distribution within the rooms, DD results show that the assumed living room and dining room will retain 0.53 and 0.61 times the former value. In

absolute terms, the reductions translate to relatively small areas of change to the sky visibility area of 7.1 sqm and 4.8 sqm.

E5.5.63 Turning to sunlight amenity, APSH results show that all assessed rooms will continue to achieve exceptionally high annual and winter sunlight values in excess of BRE recommendations.

E5.5.64 This property does not appear to benefit from access to a private garden or roof terrace and has therefore further testing for external overshadowing is not required.

E5.5.65 Overall, taking into account the minor VSC reduction to the main living space and the high retained absolute value, the effect on daylight amenity is considered not significant adverse. With full BRE compliance for sunlight amenity, the effect is considered neutral.

Flat C

E5.5.66 Flat C is located at third floor, and again obtain floorplans showing detail internal layouts have not been obtained, with only the basic layout shown on lease plans. According to the outline lease plan, just one window in this flat would overlook the development site. If following a similar layout to the floor below, this window is likely to serve a bedroom (which would have a lesser requirement for daylight and sunlight amenity).

E5.5.67 VSC results show that this window would experience moderate adverse VSC impacts, retaining 0.57 times the former value and an absolute value of 19.4%, which represents values typically achieved in urban areas. This assumed bedroom would experience moderate adverse DD impacts, retaining a value of 0.66 times the former, which equates to a relatively small absolute reduction of 3.5 sqm. No other rooms within this flat would be affected by the development.

E5.5.68 Turning to sunlight amenity, APSH results show that this assumed bedroom will continue to achieve exceptionally high annual and winter sunlight values in excess of BRE recommendations.

E5.5.69 This property does not appear to benefit from access to a private garden or roof terrace and therefore further testing for external overshadowing is not required.

E5.5.70 Overall, taking into account the likely use of the affected room as a bedroom, the effect on daylight amenity is considered **not significant adverse**. With full BRE compliance for sunlight amenity, the effect is **neutral**.

E5.6 Consort Rise House (199-203 Buckingham Palace Road)

E5.6.1 The VSC, DD and APSH assessment results for this property are summarised in Table 7.

Table 7: Consort Rise House VSC, DD and APSH assessment data

Consort Rise House				
Analysis		**BRE Compliant**		**Non-Compliant Windows (27% Target)**

	Windows / Rooms Assessed				Total		Minor Adverse		Moderate Adverse		Major Adverse	
	All	Living	**All**	**Living**	All	Living	All	Living	All	Living	All	Living
VSC	33	21	**26** **79%**	**15** **71%**	7 21%	6 29%	4 12%	3 14%	3 9%	3 14%	0 0%	0 0%
DD	24	12	**24** **100%**	**12** **100%**	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
APSH	30	18	**29** **97%**	**17** **94%**	1 3%	1 6%	0 0%	0 0%	0 0%	0 0%	1 3%	1 6%

E5.6.2 This purpose-built apartment building is located to the northeast of the application site, across Ebury Bridge.

E5.6.3 Of the 39 windows assessed for this property, seven will not meet BRE recommendations for the VSC test. Results show that all seven windows (5 of which would serve main living spaces) would experience minor adverse VSC impacts, with small absolute VSC reductions to these windows ranging from 2.7% to 4.4%.

E5.6.4 Of the 27 rooms assessed for DD within this property, all would remain BRE compliant. Taking into account the minor VSC impacts and BRE compliance for DD (and that all affected rooms are served by additional corner aspect windows that will not be adversely affected by the development), it is considered that the overall effect on the daylight amenity to this property is **not significant adverse**.

E5.6.5 Turning to sunlight amenity, APSH results show that three living room windows beneath recessed balconies (window reference 'W10' in each case) would experience small absolute reductions in APSH of 6%, 5% and 6% respectively, but such reductions when expressed as a percentage of the low existing value appear disproportionately large. It should be noted that the BRE considers an absolute reduction of 4% or less will not be noticeable to the occupants. It should be noted that these rooms are each served by an additional south-east facing window that will remain unaffected by the Proposed Development, and the effect on sunlight amenity to this property is considered **not significant adverse**.

E5.6.6 It should be noted that this property will not be adversely affected by the detailed application proposal (the 'Detailed Area'), with the outline massing giving rise to the transgressions (the 'Outline Area') coming forward at a later date. The effects will therefore be progressive (rather than immediate as implied

by the assessment) and therefore less noticeable to the occupants as the phased development is built out over time.

E5.7 Cheylesmore House

E5.7.1 The VSC, DD and APSH assessment results for this property are summarised in Table 8.

Table 8: Cheylesmore House VSC, DD and APSH assessment data

Cheylesmore House												
Analysis	Windows / Rooms Assessed		BRE Compliant		Non-Compliant Windows (27% Target)							
					Total		Minor Adverse		Moderate Adverse		Major Adverse	
	All	Living	**All**	**Living**	All	Living	All	Living	All	Living	All	Living
VSC	108	53	**27** **25%**	**16** **30%**	81 75%	37 70%	33 31%	18 34%	31 29%	10 19%	17 16%	9 17%
DD	93	39	**51** **55%**	**24** **62%**	42 45%	15 38%	9 10%	3 8%	18 19%	5 13%	15 16%	7 18%
APSH	70	33	**65** **93%**	**28** **85%**	5 7%	5 15%	0 0%	0 0%	0 0%	0 0%	5 7%	5 15%

E5.7.2 This property is located to the immediate south of the development; 40 flats have windows located on the north and east-facing elevations, overlooking the development site.

E5.7.3 Lease plans showing detailed internal layouts were obtained for a number of flats overlooking the development and have been applied within our assessment environment. Where floorplans were not available, we have used those obtained for neighbouring flats to inform our assumptions as to the internal layouts. We state below where floorplans or assumptions have been used.

E5.7.4 From these floorplans, it is understood that the vast majority of flats in Cheylesmore House are dual aspect, with habitable rooms facing out onto the development site and into the courtyard of the building. Based on the floorplans that we have seen, it appears that most units have their living rooms facing onto the site, and bedrooms facing into the courtyard, although some flats appear to be configured the other way around.

E5.7.5 108 windows have been assessed across 42 flats within the building. It should be borne in mind that only those windows facing the development have been included in the assessment, and 38 of these 42 flats would contain other windows (not assessed) that remain unaffected by the development.

E5.7.6 27 of the 108 site facing windows would comply with BRE recommendations for VSC, and the effect on these windows would be **neutral**. Of the 81 windows

falling below BRE recommendations for VSC (based on numerical criteria alone); 33 would experience minor adverse VSC impacts, and the effect would be **not significant adverse**. The remaining 48 windows would potentially experience significant adverse effects, and will require further investigation, measured against BRE recommended qualitative factors.

E5.7.7 31 windows would experience moderate adverse VSC impacts (10 of which serve main living rooms) and 17 would experience major adverse VSC impacts (9 of which serve main living rooms). With daylight amenity being most important in living rooms, it is considered that the 19 windows with moderate or major adverse VSC impacts would potentially experience significant adverse effects.

E5.7.8 As VSC is one of two daylight tests, it will be necessary to also consider the DD impacts before determining the significance of effect.

E5.7.9 93 habitable rooms across 42 flats have been tested for DD; again, only those rooms with a view of the development site have been tested, and 38 of the 42 tested flats contain habitable rooms that will not be affected by the Proposed Development.

E5.7.10 51 of the 93 site facing rooms would comply with BRE recommendations for DD, and the effect on these rooms would be **neutral**. Of the 42 rooms falling below BRE recommendations for DD (based on numerical criteria alone); 9 would experience minor adverse DD impacts, and the effect would be **not significant adverse**. The remaining 33 rooms would potentially experience significant adverse effects, and will require further investigation, measured against BRE recommended qualitative factors.

E5.7.11 18 rooms would experience moderate adverse DD impacts (5 of which are assumed main living rooms) and 15 would experience major adverse DD impacts (7 of which are assumed main living rooms). With daylight amenity being most important in living rooms, it is considered that the 12 rooms with moderate or major adverse DD impacts would potentially experience significant adverse effects.

E5.7.12 BRE guidance recommends taking into account the quantity of affected rooms / windows per property in determining significance of effects; for example, the effects to a property experiencing moderate adverse impacts to all habitable rooms would be of greater significance than a property with major adverse impacts to just one habitable room, with other rooms unaffected. It is therefore necessary to consider the above 19 living room windows and 12 assumed living rooms on a per property basis, as set out below.

E5.7.13 For sunlight amenity, 70 windows have been assessed across 32 flats with site-facing windows orientated within 90 degrees of due south, in accordance with BRE guidance. Again, only those windows facing the development have been included in the assessment, all of these flats would contain other windows (not assessed) that remain unaffected by the development.

E5.7.14 65 of the 70 site facing windows would comply with BRE recommendations for APSH, and the effect on these windows would be **neutral**. Of the 5 windows falling below BRE recommendations for VSC (based on numerical criteria

alone), all appear to serve main living rooms; significant adverse effects would therefore potentially arise.

E5.7.15 Again, it will be necessary to consider the above 5 assumed living room windows on a per-flat basis. Standard 32 of the Mayor of London's SPG considers that at least on habitable room per property should achieve good sunlight, and we therefore consider whether each affected flat would retain BRE compliant APSH in at least one habitable room after the Proposed Development.

E5.7.16 Assessment results demonstrate that all tested rooms within Flats 1, 11, 25, 39, 47 and 61 would remain BRE compliant for daylight and sunlight amenity using the VSC, DD and APSH tests, and the effects on these properties would be **neutral**.

E5.7.17 The main living room within Flats 18, 32 and 46 do not overlook the development and would not be affected for daylight and sunlight amenity. 1 site-facing bedroom would experience moderate VSC impacts and the other would remain BRE compliant. Bedrooms are considered to have a lesser requirement for daylight amenity by the BRE guide. The overall effects on daylight amenity to these properties would be **not significant adverse**. With full BRE compliance for APSH, the effects on sunlight amenity to these properties would be **neutral.**

E5.7.18 The main living room window in Flats 7, 12, 26, 40 and 54 would remain BRE compliant for daylight using the VSC test and would experience minor adverse DD impacts; the overall effects on daylight amenity to these properties would be **not significant adverse**. With full BRE compliance for APSH, the effects on sunlight amenity to these properties would be **neutral.**

E5.7.19 The main living room windows within Flats 2, 3, 13, 14, 19, 33, 55, 56 and 57 would experience minor adverse VSC impacts but would remain BRE compliant for DD; the effects on daylight amenity to these properties would be **not significant adverse.** With full BRE compliance for APSH, the effects on sunlight amenity to these properties would be **neutral.**

E5.7.20 Flats 27, 28 and 42 would experience minor adverse VSC and DD effects to the main living room, and the effects on daylight amenity to these properties would be **not significant adverse.** With full BRE compliance for APSH, the effects on sunlight amenity to these properties would be **neutral.**

E5.7.21 The main living rooms within Flats 41, 59, 60 would experience minor adverse VSC impacts and moderate adverse DD impacts, and the overall effects on daylight amenity to these properties would be **not significant adverse**. With the exception of Flat 59, full BRE compliance would be achieved for APSH and the effects on sunlight amenity to these properties would be **neutral.**

E5.7.22 The main living room in Flat 15, 29 and 43 would experience moderate adverse VSC impacts but would remain BRE compliant for DD. The overall effects on daylight amenity to these properties would be **not significant adverse**. With full BRE compliance for APSH, the effects on sunlight amenity to these properties would be **neutral.**

E5.7.23 The main living room in Flat 6 would experience major adverse VSC impacts but would remain BRE compliant for DD. The overall effects on daylight amenity to this property would be **not significant adverse**. With full BRE

compliance for APSH, the effects on sunlight amenity to this property would be **neutral.**

E5.7.24 The remaining flats (Flat 4, 5, 16, 17, 30, 31, 44, 45, 58 and 59) would experience moderate to major daylight and / or sunlight impacts (based on numerical data alone) that could potentially give rise to significant adverse impacts. These flats are considered in more detail below.

Flat 4

E5.7.25 Detailed floorplans were not available for this property, and, based on external observation and plans for neighbouring flats, we have assumed the windows facing the site to serve a single aspect living room, a kitchen and 2 bedrooms, with another bedroom served by windows facing into the courtyard away from the site.

E5.7.26 All five windows assessed would fall below BRE recommendations for VSC, retaining less than 0.8 times the former value. None of the windows achieve the BRE recommended 27% VSC in the baseline conditions, and the main living room window is reduced to 0.55 times the former value in the proposed conditions. The retained VSC of 13.9% represents values typically achieved in city centre locations, and it is reasonably assumed that at least one other habitable room in this flat will remain unaffected by the development.

E5.7.27 The living room would experience moderate adverse DD impacts, retaining a DD that is 0.59 times the former value. However, the kitchen will remain BRE compliant experiencing negligible DD impacts, and it is reasonably assumed that at least one other habitable room in this flat will remain unaffected by the development.

E5.7.28 In terms of sunlight amenity, all site-facing windows orientated within 90 degrees of due south will remain BRE compliant using the APSH test. The private garden would retain BRE compliant sunlight levels, with the area achieving at least 2 hours of sunlight on 21 March reduced to no less than 0.8 times the former value.

E5.7.29 Overall, the main living room would experience moderate to major adverse impacts in VSC and DD. Notwithstanding that the retained VSC levels would be in line with those typically achieved in city-centre locations, the effect on daylight amenity would be considered **significant adverse**. It should be borne in mind that (based on reasonable assumptions) at least one other habitable room in this flat will remain unaffected by the development. The effect on sunlight amenity is considered **neutral**, with full BRE compliance achieved.

Flat 5

E5.7.30 Detailed floorplans were not available for this property, and, based on external observation and plans for neighbouring flats, we have assumed the windows facing the site to serve an open-plan LKD, with bedrooms served by windows facing into the courtyard away from the site.

E5.7.31 The windows serving the LKD would fall below BRE recommendations, retaining VSC values that are 0.4 and 0.51 the former values. Neither window currently achieves the BRE target of 27% VSC and the moderate absolute

change in VSC of 11.6% and 10.3% manifest as major impacts when expressed as a percentage of the former value.

E5.7.32 The 'Waldram' diagram provided in Figure 4 below illustrates that daylight to LKD window ref 'W9' is obstructed by Cheylesmore House itself in the baseline conditions. Referring to VSC obstruction, the BRE guide states at para 2.1.12 "This situation often occurs at the internal corners of courtyards or L-shaped blocks. If windows are sited close to these corners, they will result in poor levels of daylight…". Para 2.2.12 continues, "A larger relative reduction in VSC may also be unavoidable if the existing window has projecting wings on one or both sides of it".

E5.7.33 All other habitable rooms in this flat will remain unaffected for VSC.

E5.7.34 The assumed open plan LKD would experience major adverse DD impacts, retaining 0.43 times the former value. Again, a large portion of visible sky is blocked by Cheylesmore House itself, resulting in the vast majority of remaining visible sky access coming from above the development site. Para 2.2.3 of the BRE guide states, "Another important issue is whether the existing building it itself a good neighbour…taking no more than its fair share of light".

E5.7.35 All other habitable rooms in this flat will remain unaffected for DD.

E5.7.36 For sunlight amenity, the living room window currently receives 12% annual sunlight, but no winter sunlight. This is due it its predominately east-facing orientation, resulting in direct sunlight being limited to the morning hours only. It can be seen in Figure 4 that the majority of 'available' sunlight hours to this window (shown as yellow dots) are obstructed by the perpendicular elevation of Cheylesmore House itself (shown in grey), rather than the Proposed Development (shown in red). Nonetheless, the loss of remaining available sunlight hours is likely to be noticeable to the occupants; however, the south-facing windows serving habitable rooms to the rear of this flat are likely to provide the main source of sunlight to this property, and will remain unaffected by the development, in keeping with Standard 32 of the GLA Housing SPG which states "all homes should provide for direct sunlight to enter at least one habitable room for part of the day."

E5.7.37 No part of the private garden would currently achieve at least 2 hours of sunlight on 21 March, and this will not change in the proposed conditions. On 21 June, the garden will retain BRE compliant sunlight levels, with over 50% of the area achieving at least 2 hours of sunlight.

E5.7.38 To reiterate Para I6 in Appendix I of the BRE guide, "Factors tending towards a minor adverse impact include: only a small number of windows or limited area of open space are affected".

E5.7.39 Overall, the main living room will experience moderate to major adverse impacts in VSC, DD and APSH. Whilst it should be borne in mind that the obstruction of the property itself causes limited daylight availability in the baseline conditions (and the constraints this place on the development site), the overall impact on daylight and sunlight amenity is considered **significant adverse**. However, it is important to note that the levels of daylight and sunlight achieved to at least one other habitable room in this property will remain

unaffected by the development.

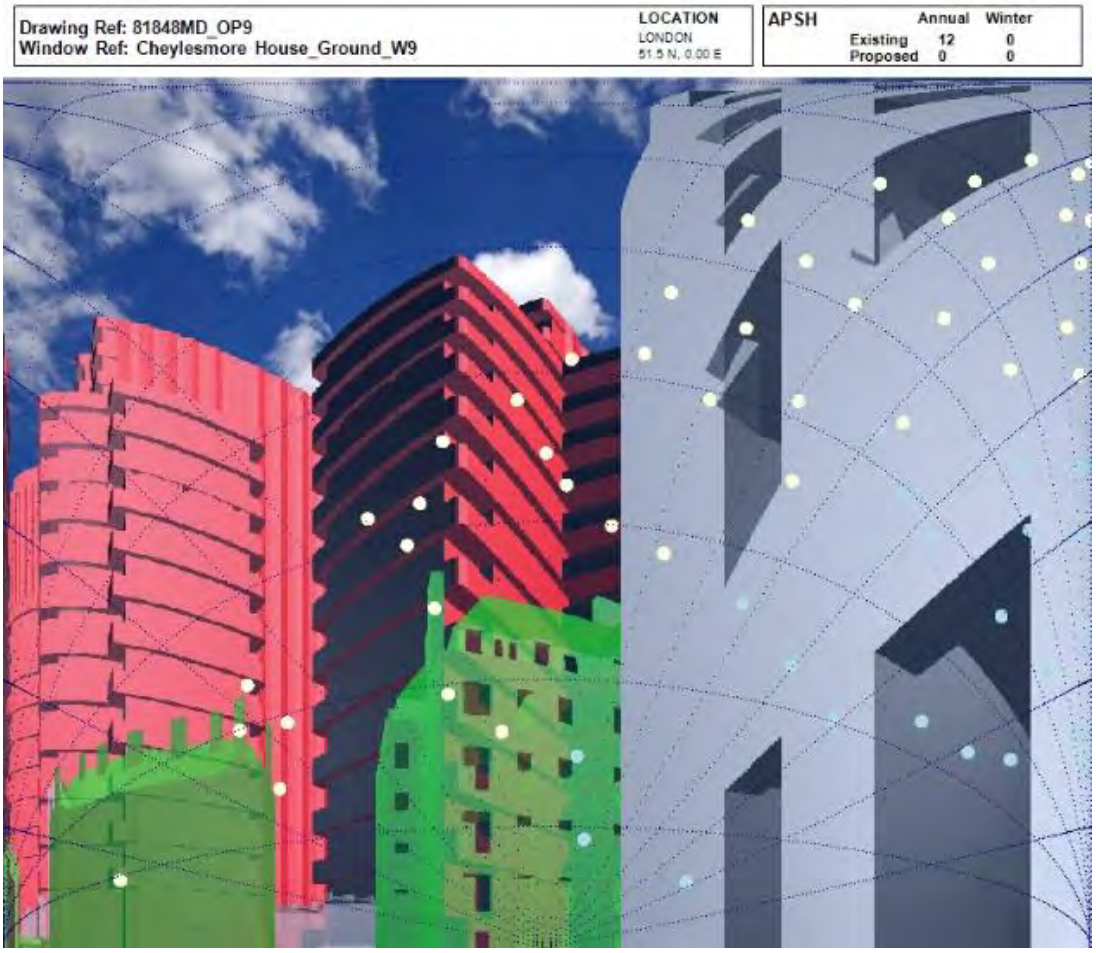

Figure 4: APSH Waldram Diagram, Flat 5

Flat 16

E5.7.40 Detailed floorplans were not available for this property, and, based on external observation and plans for neighbouring flats, we have assumed the windows facing the site to serve a single aspect living room, a kitchen and 2 bedrooms. It is unknown whether further habitable rooms are served by windows facing into the courtyard away from the site.

E5.7.41 All four windows assessed would fall below BRE recommendations for VSC, retaining less than 0.8 times the former value. The main living room window is reduced to 0.54 times the former value in the proposed conditions, and the

retained VSC of 15.1% represents values typically achieved in city centre locations.

E5.7.42 The living room would experience moderate adverse DD impacts, retaining a DD that is 0.56 times the former value with a small reduction in sky-visibility area of less than 5 sqm.

E5.7.43 In terms of sunlight amenity, all site-facing windows orientated within 90 degrees of due south will remain BRE compliant using the APSH test.

E5.7.44 Overall, the main living room would experience moderate to major adverse impacts in VSC and DD. Notwithstanding that the retained VSC levels would be in line with those typically achieved in city-centre locations, the effect on daylight amenity would be considered **significant adverse**. The effect on sunlight amenity is considered **neutral**, with full BRE compliance achieved.

Flat 17

E5.7.45 Detailed floorplans were not available for this property, and, based on external observation and plans for neighbouring flats, we have assumed the windows facing the site to serve an open plan LKD, with bedrooms served by windows facing into the courtyard away from the site.

E5.7.46 The windows serving the LKD would fall below BRE recommendations, retaining VSC values that are 0.42 and 0.56 the former values. Neither window currently achieves the BRE target of 27% VSC and the moderate absolute change in VSC of 10.6% and 10.9% manifest as major impacts when expressed as a percentage of the former value. All other habitable rooms in this flat will remain unaffected.

E5.7.47 This flat is located directly above Flat 5, and similar restrictions on daylight availability are imposed on this flat by the perpendicular elevation of Chelyesmore House itself (as shown in the 'Waldram' diagram provided in Figure 4).

E5.7.48 The assumed open plan LKD would experience major adverse DD impacts, retaining 0.31 times the former value. Again, the room is overly dependent on sky visibility from over the development site, as a large portion of the sky-dome is blocked by Cheylesmore House itself. All other habitable rooms in this flat will remain unaffected.

E5.7.49 For sunlight amenity, the living room window currently receives 15% annual sunlight, but no winter sunlight. Again, this is due it its predominately east-facing orientation (resulting in direct sunlight being limited to the morning hours only) and the majority of 'available' sunlight hours to this window are obstructed by the perpendicular elevation of Cheylesmore House itself. Nonetheless, the loss of remaining available sunlight hours is likely to be noticeable to the occupants; however, the south-facing windows serving habitable rooms to the rear of this flat will not be affected and are likely to provide the main source of sunlight to this property.

Overall, the main living room will experience moderate to major adverse impacts in VSC, DD and APSH. Whilst it should be borne in mind that the obstruction of the property itself causes limited daylight availability in the

baseline conditions (and the constraints this place on the development site), the overall effect on daylight and sunlight amenity is considered **significant adverse**. However, it is important to note that the levels of daylight and sunlight achieved to at least one other habitable room in this property will remain unaffected by the development.

Flat 30

E5.7.50 A detailed lease plan was available for this property, showing the windows facing the site to serve a single aspect living / dining room, a kitchen and 2 bedrooms. There are no habitable rooms facing onto the courtyard to the rear of the property.

E5.7.51 All four windows assessed would fall below BRE recommendations for VSC, retaining less than 0.8 times the former value. The main living room window is reduced to 0.54 times the former value in the proposed conditions, and the retained VSC of 16.2% represents values typically achieved in city centre locations.

E5.7.52 The living room would experience moderate to major adverse DD impacts, retaining a DD that is 0.52 times the former value with a moderate reduction in sky-visibility area of 5.76 sqm. The kitchen would experience minor adverse DD impacts, retaining 0.71 times the former value with a small absolute reduction of 1.55%.

E5.7.53 In terms of sunlight amenity, all site-facing windows orientated within 90 degrees of due south will remain BRE compliant using the APSH test.

E5.7.54 Overall, the main living room would experience moderate to major adverse impacts in VSC and DD. Notwithstanding that the retained VSC levels would be in line with those typically achieved in city-centre locations, the effect on daylight amenity would be considered **significant adverse**. The effect on sunlight amenity is considered **neutral**, with full BRE compliance achieved.

Flat 31

E5.7.55 Detailed floorplans were not available for this property, and, based on external observation and plans for neighbouring flats, we have assumed the windows facing the site to serve an open-plan LKD, with bedrooms served by windows facing into the courtyard away from the site.

E5.7.56 The windows serving the LKD would fall below BRE recommendations, retaining VSC values that are 0.44 and 0.62 the former values. Neither window currently achieves the BRE target of 27% VSC and the moderate change in absolute VSC of 9.8% and 10.8% manifest as major impacts when expressed as a percentage of the former value. The retained values of 15.9% and 16% are in-line with those typically achieved in city-centre locations. All other habitable rooms in this flat will remain unaffected.

E5.7.57 This flat is located directly above Flat 17, and similar restrictions on daylight availability are imposed on this flat by the perpendicular elevation of

Cheylesmore House itself (as shown in the 'Waldram' diagram provided in Figure 4).

E5.7.58 The assumed open plan LKD would experience major adverse DD impacts, retaining 0.33 times the former value. Again, the room is overly dependent on sky visibility from over the development site, as a large portion of the sky-dome is blocked by Cheylesmore House itself. All other habitable rooms in this flat will remain unaffected.

E5.7.59 For sunlight amenity, the living room window currently receives 15% annual sunlight, but no winter sunlight. Again, this is due it its predominately east-facing orientation (resulting in direct sunlight being limited to the morning hours only) and the majority of 'available' sunlight hours to this window are obstructed by the perpendicular elevation of Cheylesmore House itself. Nonetheless, the loss of remaining available sunlight hours is likely to be noticeable to the occupants; however, the south-facing windows serving habitable rooms to the rear of this flat will not be affected and are likely to provide the main source of sunlight to this property.

E5.7.60 Overall, the main living room will experience moderate to major adverse impacts in VSC, DD and APSH, and the impact on daylight and sunlight amenity is therefore considered **significant adverse**. However, it should be borne in mind that obstructions caused by the building itself considerably limit daylight and sunlight availability to the affected room, resulting in over-reliance from over the application site. Furthermore, the levels of daylight and sunlight achieved to at least one other habitable room in this property will remain unaffected by the development.

Flat 44

E5.7.61 Detailed floorplans were not available for this property; based on external observation and lease plans for neighbouring flats, we have assumed the windows facing the site serve a single aspect living / dining room, a kitchen and 2 bedrooms. It would appear that there are no habitable rooms facing onto the courtyard to the rear of the property.

E5.7.62 All four windows assessed would fall below BRE recommendations for VSC, retaining less than 0.8 times the former value. The main living room window is reduced to 0.55 times the former value in the proposed conditions, and the retained VSC of 17.4% represents values typically achieved in city centre locations.

E5.7.63 The living room would experience moderate to major adverse DD impacts, retaining a DD that is 0.47 times the former value with a moderate reduction in sky-visibility area of 7.1 sqm. The kitchen would remain BRE compliant for DD with negligible impacts to the area within the room with sky visibility.

E5.7.64 In terms of sunlight amenity, all site-facing windows orientated within 90 degrees of due south will remain BRE compliant using the APSH test.

E5.7.65 Overall, the main living room would experience moderate to major adverse impacts in VSC and DD. Considering retained VSC to the main living room is is-line with values typically achieved in city-centre locations, and taking into account the good retained levels of daylight distribution within the kitchen, the

effect on daylight amenity would be considered **not significant adverse**. The effect on sunlight amenity is considered **neutral**, with full BRE compliance achieved.

Flat 45

E5.7.66 Detailed floorplans were not available for this property, and, based on external observation and plans for neighbouring flats, we have assumed the windows facing the site to serve an open plan LKD, with bedrooms served by windows facing into the courtyard away from the site.

E5.7.67 The windows serving the LKD would fall below BRE recommendations, retaining VSC values that are 0.47 and 0.68 the former values. Neither window achieves the BRE target of 27% VSC in the existing conditions, and the room will retain up to 18% in the proposed conditions; such values are in-line with those typically achieved in city-centre locations. All other habitable rooms in this flat will remain unaffected.

E5.7.68 This flat is located directly above Flat 31, and similar restrictions on daylight availability are imposed on this flat by the perpendicular elevation of Cheylesmore House itself (as shown in the 'Waldram' diagram provided in Figure 4).

E5.7.69 The assumed open plan LKD would experience major adverse DD impacts, retaining 0.38 times the former value. Again, the room is overly dependent on sky visibility from over the development site, as a large portion of the sky-dome is blocked by Cheylesmore House itself. All other habitable rooms in this flat will remain unaffected.

E5.7.70 For sunlight amenity, the living room window currently receives 18% annual sunlight and 1% winter sunlight. Again, the predominately east-facing orientation results in direct sunlight being limited to the morning hours only, and the majority of 'available' sunlight hours to this window are obstructed by the perpendicular elevation of Cheylesmore House itself. Nonetheless, the loss of remaining available sunlight hours is likely to be noticeable to the occupants; however, the south-facing windows serving habitable rooms to the rear of this flat will not be affected and are likely to provide the main source of sunlight to this property.

E5.7.71 Overall, the main living room will experience moderate to major adverse impacts in VSC, DD and APSH. Whilst it should be borne in mind that the obstruction of the property itself causes limited daylight availability in the baseline conditions (and the constraints that this place on the development site), the overall effect on daylight and sunlight amenity is considered **significant adverse**. However, the levels of daylight and sunlight achieved to at least one other habitable room in this property will remain unaffected by the development.

Flat 58

E5.7.72 Detailed floorplans were not available for this property; based on external observation and lease plans for neighbouring flats, we have assumed the windows facing the site serve a single aspect living / dining room, a kitchen and

a bedroom. It is unknown whether there are any habitable rooms facing onto the courtyard to the rear of the property.

E5.7.73 All four windows assessed would fall below BRE recommendations for VSC, retaining less than 0.8 times the former value. The main living room window is reduced to 0.55 times the former value in the proposed conditions, and the retained VSC of 18.6% represents values typically achieved in city centre locations.

E5.7.74 The living room would experience moderate to major adverse DD impacts, retaining a DD that is 0.49 times the former value with a moderate reduction in sky-visibility area of 6.9 sqm. The kitchen would remain BRE compliant for DD with negligible impacts to the area within the room with sky visibility.

E5.7.75 In terms of sunlight amenity, all site-facing windows orientated within 90 degrees of due south will remain BRE compliant using the APSH test.

E5.7.76 Overall, the main living room would experience moderate to major adverse impacts in VSC and DD. Considering retained VSC to the main living room is is-line with values typically achieved in city-centre locations, and taking into account the good retained levels of daylight distribution within the kitchen, the effect on daylight amenity would be considered not significant adverse. The effect on sunlight amenity is considered neutral, with full BRE compliance achieved.

Flat 59

E5.7.77 Detailed floorplans were not available for this property, and, based on external observation and plans for neighbouring flats, we have assumed the windows facing the site to serve a dual aspect living room and a kitchen, with bedrooms served by windows facing into the courtyard away from the site.

E5.7.78 The LKD would experience minor adverse VSC impacts, with the windows retaining up to 0.75 times the former value, and absolute values up to 21%, which are considered suitable for urban areas.

E5.7.79 The assumed open plan LKD would experience moderate adverse DD impacts, retaining 0.54 times the former value but with an absolute reduction less than 10 sqm. As with Flat 45 directly below, the room is overly dependent on sky visibility from over the development site, as a large portion of the sky-dome is blocked by Cheylesmore House itself. All other habitable rooms in this flat will remain unaffected.

E5.7.80 For sunlight amenity, the living room window currently receives 25% annual sunlight and 1% winter sunlight, which will be reduced to 9% and 0% in the proposed conditions. Again, the predominately east-facing orientation results in direct sunlight being limited to the morning hours, and the perpendicular elevation of Cheylesmore House limits blocks southerly sunlight reaching this window to a degree. Nonetheless, the reduction in sunlight hours is likely to be noticeable to the occupants; however, the south-facing windows serving

habitable rooms to the rear of this flat will not be affected and are likely to provide the main source of sunlight to this property.

E5.7.81 Overall, the main living room will retain good VSC levels that are marginally below BRE recommendations, but with moderate DD impacts. All other habitable rooms would remain unaffected by the Proposed Development and the effect on daylight amenity is therefore considered **not significant adverse**. The main living room would experience major adverse APSH impacts and the effect on sunlight amenity is therefore considered **significant adverse.** However, limitations caused by the building itself should be considered, along with the other habitable rooms in the property that will remain affected by the development.

E5.7.82 Overall, only four flats, Flat 16, Flat 30, Flat 44 and Flat 58 are identified as potentially experiencing adverse daylight impacts to all habitable rooms in the flat. However, these flats will continue to achieve annual and winter sunlight values far in excess of the BRE recommended target values. All other flats will retain the existing daylight and sunlight levels within at least 1 habitable room, which will not be affected by the development. For the vast majority of habitable rooms that are affected by the development, daylight impacts will be minor to moderate, but sunlight will not be materially affected. Where sunlight impacts and larger daylight impacts are experienced, this is limited to the corner window in Flat 5, 18, 31, 45, and 19 that are heavily obstructed on one side by Cheylesmore House itself.

E5.7.83 It should be noted that the majority of flats within this property will not be adversely affected by the detailed application proposal (the 'Detailed Area'), with the outline massing giving rise to the BRE transgressions (the 'Outline Area') when coming forward at a later date. The effects will therefore be progressive (rather than immediate as implied by the assessment) and therefore less noticeable to the occupants as the phased development is built out over time. Many flats will currently be enjoying significantly improved levels of daylight amenity following the demolition Edgerson House, with the lower site conditions of the 'meanwhile use'.

E5.8 Moore House, Grosvenor Estate

E5.8.1 The VSC, DD and APSH assessment results for this property are summarised in Table 9.

Table 9: Moore House VSC, DD and APSH assessment data

Moore House														
Analysis	Windows / Rooms Assessed		BRE Compliant			Non-Compliant Windows (27% Target)								
						Total		Minor Adverse		Moderate Adverse		Major Adverse		
	All	Living	**All**	**Living**		All	Living	All	Living	All	Living	All	Living
VSC	151	108	**111**	**86**		40	22	40	22	0	0	0	0

			74%	**80%**	26%	20%	26%	20%	0%	0%	0%	0%
DD	127	92	**83** **65%**	**61** **66%**	44 35%	31 34%	17 13%	15 16%	17 13%	8 9%	10 8%	8 9%
APSH	0	0	**0** **N/A**	**0** **N/A**	0 N/A	0 N/A	0 N/A	0 N/A	0 N/A	0 N/A	0 N/A	0 N/A

E5.8.2 This property is located to the south of the development and contains multiple flats with windows located on the north and east-facing elevations, overlooking the development site.

E5.8.3 A full set of recent floorplans were not obtainable, (with the plans uploaded with the planning application appearing to be outdated, and do not match with external observation). Our assessment of this property is therefore based on a combination of these plans (where matching external observation), lease plans (which show only outlines of the leased demises rather than detail layouts) and our reasonable assumptions from external observation.

E5.8.4 111 of the 151 windows assessed for this property will continue to achieve or exceed the BRE recommended target value for VSC.

E5.8.5 40 windows would fall below BRE guidance, retaining less than 0.8 times the former VSC value. Of these 40 windows, 22 are assumed to serve main living spaces or studio apartments. All 40 windows would experience minor adverse VSC impacts. The effect to these windows would be **not significant adverse.**

E5.8.6 127 rooms have been assessed for DD, 83 of which would remain BRE compliant. Of the 44 rooms falling below BRE recommendations, 31 are assumed to be main living rooms or studio apartments. 17 of these 44 rooms (including 15 living rooms) would experience minor adverse DD impacts. The effects to these rooms would be **not significant adverse.**

E5.8.7 17 rooms (including 8 assumed living rooms or studio apartments) would experience moderate adverse DD impacts and 10 rooms (including 8 assumed living rooms or studio apartments) would experience major adverse DD impacts. Based on numerical criteria alone, these impacts could potentially give rise to significant adverse effects and will be investigated in greater detail.

E5.8.8 With reference to the DD contour reference plans in Appendix E2, it can be seen that the vast majority main living spaces experiencing moderate and major DD impacts are in-fact studio apartments with open-plan living, sleeping, dining and kitchen areas. These single-aspect apartments are assumed to be between 7-9m deep; the BRE considers greater movement of the 'no sky line' (DD area) is inevitable with overly deep accommodation of over 5m.

E5.8.9 The bedroom / sleeping area has been included assessed room area. The BRE considers daylight amenity to be most valued by occupants within the living and kitchen, and less important in bedrooms. Assessment is not requirement in circulation areas, which have also been included in our assessment as these areas are indistinguishable from the living areas in the open plan layout. Whilst we have not had access to a full set of detailed floorplans for this property, estate

agent particulars show that the main living area is located nearest to the window, at the front of the room, and these areas will retain good access to visible sky. It is at the rear of the rooms in the circulation areas that loss of sky-visibility occurs following the Proposed Development.

E5.8.10 In terms of sunlight, no windows facing with 90 degrees of due south would be affected by the Proposed Development, and the effects on sunlight amenity would be **neutral.**

E5.8.11 Taking into account the negligible or minor VSC impacts to living room / studio windows and bearing in mind BRE guidance on overly deep accommodation and room-use in relation to DD, the overall effect on daylight amenity to these properties is considered **not significant adverse.**