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11 Chalcot Road

London, NW1 8LH

Daylight & Sunlight Report

Client:	Sara McKinnon and Ryan Stanier
Project No:	154
Date:	May 2023
Version:	1

Contents

Appendices

1 Introduction

1.1 Development & Light LLP has been appointed by Sara McKinnon and Ryan Stanier to undertake a Daylight and Sunlight assessment with regard to the development proposals at 11 Chalcot Road, London, NW1 8LH, in the London Borough of Camden (hereafter referred to as 'the Site'), on the surrounding properties.

1.2 Our understanding of the existing buildings on the Site is demonstrated in drawings 154/01-02 in Appendix A and in Figure 01 below.

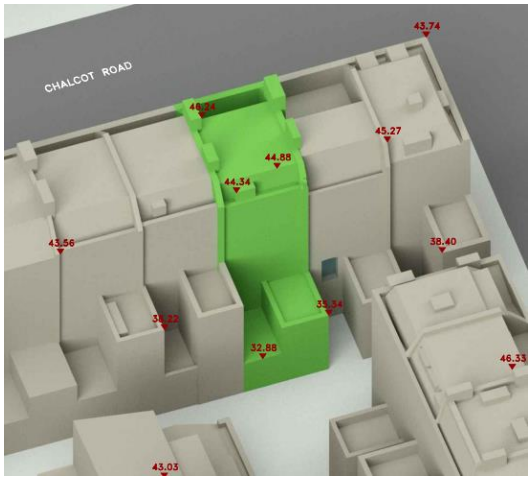

Figure 01 – the Site

1.3 The existing building on Site is a four-storey Victoria terraced residential property, located on the northern side of Chalcot Road. There is currently a one-storey rear extension, whilst the adjacent properties at 10 and 9 Chalcot Road have two-storey rear extensions.

1.4 The development proposals, designed by Atnica Architecture, entail raising the existing single-storey rear extension of the property by one floor to match those of the adjacent properties.

1.5 Our understanding of the Proposed Development and its relationship with the surrounding properties is demonstrated in drawings 154/03-04 in Appendix A and in Figure 02 below.

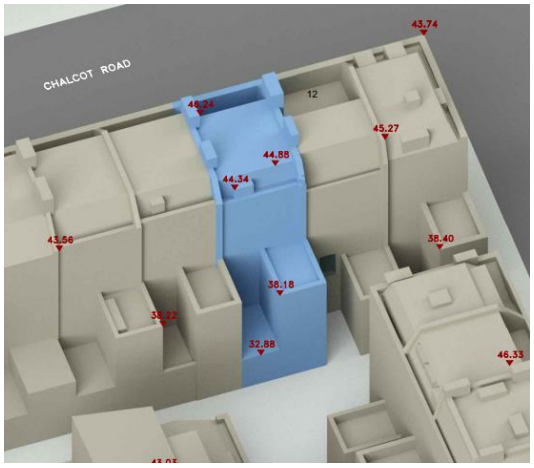

Figure 02 – Proposed Development

1.6 The technical analysis of the Daylight & Sunlight effects of the Proposed Development has been undertaken via the creation of a digital three-dimensional model of the Site and surroundings. Buildings in proximity have been modelled photogrammetric data and site photographs. The key source data used to create the analytical model is also listed on drawings 154/03-04 in Appendix A.

1.7 Access into the surrounding properties has not been obtained and we have therefore used site photographs, information from the local authority's planning records or other research to inform our understanding of the internal layouts and room uses. In this case, no layout information was available for 12 Chalcot Road, however information obtained for other properties on the terrace has been used to inform our assumptions for the internal configuration of the property.

1.8 By necessity, assumptions are also made within the analytical model of the internal floor levels and internal window reveal details in each property. Our assumptions are based upon external observations, industry practices and any other relevant information that is available.

2 Methodology

2.1 It is correct to assess Daylight and Sunlight in relation to the Building Research Establishment publication *'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice'* (Third Edition, published in 2022) - Ref 1.1 – hereafter referred to as 'the BRE Guidelines'. This document is most widely accepted by planning authorities as the means by which to judge the acceptability of a scheme.

2.2 The BRE Guidelines provide two principal measures of Daylight for assessing the impact on properties neighbouring a site, namely Vertical Sky Component (VSC) and No Sky Line (NSL).

2.3 In terms of Sunlight amenity to windows in surrounding properties, the appropriate quantitative methodology is the Annual Probable Sunlight Hours (APSH); and in relation to Sunlight amenity to gardens and open spaces, the appropriate quantitative two-hour Sunlight test is otherwise known as the Sun-on-Ground (SOG) methodology.

2.4 The Daylight and Sunlight methodologies set out in the BRE Guidelines are generally two-stage tests, involving either achieving absolute target values or limiting relative change to within an acceptable margin. However, it is common for both the absolute levels of Daylight and Sunlight and also the relative change between the two scenarios in the assessment to be expressed in percentage units, which can lead to confusion. Therefore, for ease of interpretation in this report, we avoid reference to absolute levels of Daylight and Sunlight using percentage units and instead we express them as simplistic units of the relevant methodology – i.e. 27 VSC (rather than 27% VSC) or 25 APSH (rather than 25% APSH).

Daylight

2.5 **Vertical Sky Component (VSC)** – VSC is a measure of the direct skylight reaching a point from an overcast sky. It is the ratio of the illuminance at a point on a given vertical plane to the illuminance at a point on a horizontal plane due to an unobstructed sky.

2.6 For existing buildings, the BRE guideline is based on the loss of VSC at a point at the centre of a main window serving a habitable room, on the outer plane of the wall.

2.7 The BRE Guidelines state that if the absolute retained value of VSC at the centre of a window is less than 27 VSC, and it is also less than 0.8 times its former value (i.e. the proportional reduction is greater than 20%), then the reduction in skylight will be noticeable, and the existing building may be adversely affected.

2.8 The BRE advises that the VSC assessment should focus on the main window serving each room; and in instances where a room has two or more windows of equal size a mean reading of the VSC across the windows may be taken. To ensure a comprehensive approach, the VSC results in Appendix B have been assessed for all windows in habitable rooms containing any Site-facing glazing, within the scope of assessment. Thereafter, the specific effect to rooms with any windows that technically record effects in excess of the typical guidance is identified and discussed further below.

2.9 **No Sky Line (NSL)** - NSL is a measure of the distribution of Daylight within a room. It maps out the region within a room, at the height of the working plane, where light can penetrate directly from the sky, and therefore accounts for the size of and number of windows by simple geometry.

2.10 The BRE suggest that it is useful to assess the No Sky Line where room uses are known. Ordinarily this assessment should focus on living rooms, kitchens and dining rooms; and whilst bedrooms should also be assessed they are identified as being less important (para 2.2.10).

2.11 The BRE advise that if the working plane within a room that can receive direct skylight is reduced to less than 0.8 times its former value (i.e. the proportional reduction in area is greater than 20%), then the effect will be noticeable to the occupants and more of the room will appear poorly lit.

Sunlight

2.12 **Annual Probable Sunlight Hours (APSH)** – APSH is a measure of the Sunlight availability to a window. Unlike the Daylight assessments, the APSH methodology is sensitive to the orientation of windows, as it focuses on those that face within 90° of due south.

2.13 The APSH assessment is also primarily focused on living rooms and conservatories, whereas kitchens and bedrooms are identified as being less important and normally need not be analysed (para 3.2.3). For the avoidance of doubt, all habitable rooms with windows facing within 90° of due south are still included in our assessment.

2.14 The APSH assessment establishes the Sunlight potential available to each window, both during the winter period and annually, in the Existing Situation and identifies how this would be altered in the Proposed Situation. The BRE Guidelines suggest that the absolute APSH received at a given window in the Proposed Situation should be at least 25% (i.e. 25 APSH) of the total available annually, including at least 5% (i.e. 5 APSH) in winter.

2.15 Where the absolute values in the Proposed Situation fall short of these targets, and the absolute loss is greater than 4%, then the BRE Guidelines suggest the new APSH values should not be less than 0.8 times their previous value in each period (i.e. the proportional reductions should not be greater than 20%).

2.16 The APSH figures are calculated for each individual window relevant for assessment. Where a room is served by more than one window, but the windows are in opposite walls, the contribution of each is accounted for in the overall figures for the room. For rooms served by multiple windows that are not in opposite walls, the BRE Guidance recommends that reference should be made only to the results for the best sunlit window serving the room.

Daylight & Sunlight Assessment Results

2.17 Tables of results and drawings detailing each of the relevant forms of Daylight and Sunlight analysis are included in Appendix B.

2.18 The VSC Daylight analysis and the APSH Sunlight analysis, both of which primarily relate to the effect on windows, are expressed in the same table. Window Map drawings are also included in Appendix B that illustrate the location of each of the surrounding windows subjected to analysis using the corresponding references to those in the detailed tables of results.

2.19 The NSL analysis, which relates to effects on rooms, is expressed in a separate table of results and is supported by the No-Sky Line Contours. The No-Sky Line Contours depict the layout of each room that has been assessed and the area receiving a view of the sky at working plane height in both the Existing Situation (green contour) and the Proposed Situation (red contour); the hatched or shaded areas denote the part of the room experiencing a change in sky view. The No-Sky Line Contours also illustrate the window locations in each room, using the corresponding references to those in the detailed tables of results.

3 Assessment Results - Daylight & Sunlight to Neighbours

3.1 In this case, the planning officer at London Borough of Camden has specifically requested that BRE assessment is undertaken in relation to the effect of the Proposed Development on the adjacent ground floor rear window in 12 Chalcot Road.

3.2 Accordingly, the VSC, NSL and where appropriate, APSH tests have been undertaken for the ground floor of 12 Chalcot Road to establish the effect of the Proposed Development in Daylight and Sunlight terms. The results of the Daylight and Sunlight assessment are included in Appendix B and the effect to the property is discussed in detail below.

Discussion of Daylight & Sunlight Results

12 Chalcot Road

3.3 This property is located immediately adjacent to the west of the Site. It is also a four-storey terraced residential property, with additional lower-ground floor. The rear of the property is a mirror-image of the 11 Chalcot Road, as these are the two properties with single-storey rear extension unlike their immediate neighbours on either side that have two-storey rear extensions.

3.4 Images of the rear ground floor window and the front elevation of the property are included below in Figure 03 and 04.

Figure 03 – Ground floor rear window

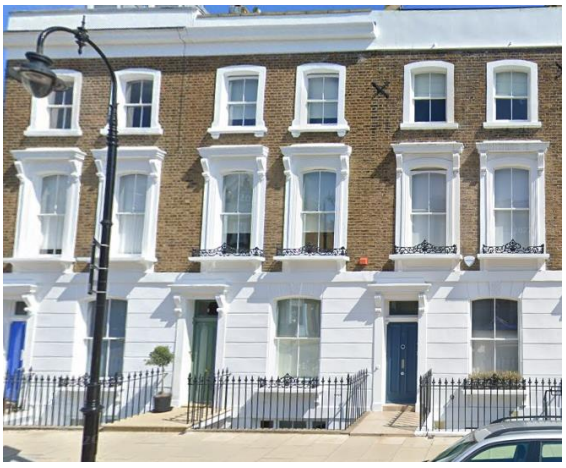

Figure 04 – Front elevation (middle property)

3.5 A Daylight and Sunlight assessment has been requested for the rear ground-floor window, shown in Figure 03, that currently sits between the two single-storey rear extensions of 11 and 12 Chalcot Road.

3.6 In this case, no layout information was available for 12 Chalcot Road, however information obtained for other properties on the terrace has been used to inform our assumptions for the internal configuration of this property.

3.7 Information obtained for 10 Chalcot Road and the existing layout for 11 Chalcot Road both indicate that the ground floor reception areas in this terrace are typically dual aspect spaces that runs from the front to the back of the property, with the hall and stairs run adjacent to the room. As such, these rooms receive light both from the front and rear elevations of the building. We have assumed a similar layout is in place for 12 Chalcot Road. However, to be comprehensive, we have also assessed a secondary scenario wherein the room is subdivided to create small single-aspect room at the rear, such as a study.

3.8 Daylight and Sunlight results and drawings detailing the analysis are included in Appendix B. These initially consider the most likely scenario, wherein the ground floor room in 12 Chalcot Road is an open-plan reception room.

Open-plan layout

3.9 The BRE Guidelines recommend that the VSC Daylight analysis should focus on the primary window serving each habitable room. Assuming the ground floor room in 12 Chalcot Road is a dual-aspect reception room, as is typical for this terrace, the primary window serving the reception area would be the larger window at the front of the property (shown in Figure 04). However, to be comprehensive both the front and rear windows serving the ground floor room have been assessed for VSC.

3.10 The analysis shows that the main front window serving the open-plan space is unaffected by the Proposed Development. It retains a VSC value of over 29 VSC, which is above the suggested target value of 27 VSC recommended in the BRE Guidelines; and in addition, the NSL analysis for the room also shows comfortable adherence to the BRE recommendations, with over 93% of the room retaining a view of the sky. Therefore, the Daylight effect for this room meets the BRE recommendations.

3.11 The front window of the property also shows adherence to the BRE Guidelines recommendations in respect of the APSH methodology. The rear window is not relevant for assessment in accordance with the BRE recommended methodology, as it does not face within 90 degrees of due south. Therefore, the Sunlight effect also meets the BRE recommendations.

Subdivided layout

3.12 To be comprehensive, we have also assessed the Daylight and Sunlight effect to the rear window, assuming the ground floor is subdivided to create a small study at the rear that only receives light from the rear window. Additional tables of Daylight and Sunlight results and drawings are included in a separate subsection of Appendix B that depict this scenario. This scenario does not alter the VSC effect to the rear window, but it determines if the NSL effect would vary if a smaller single-aspect room were to exist here.

3.13 The rear window, when considered in isolation, experiences a loss of VSC from the Proposed Development that goes beyond the typical BRE recommendations, when compared to the existing value. The larger VSC effect to the rear window is largely due to the blinkered outlook from this window, which has projecting wings on either side of it in the Existing Situation. The BRE acknowledges that in such situations larger losses of Daylight and Sunlight are to be expected. It states at para 2.2.14:

> *'A larger relative reduction in VSC may also be unavoidable if the existing window has projecting wings on one or both sides of it, or is recessed into the building so that it is obstructed on both sides as well as above'.*

3.14 Therefore, the BRE Guidelines recognises that for windows such as this rear window a higher VSC effect is inevitable. Conversely, the NSL analysis demonstrates that this smaller, single-aspect room would still comfortably meet the BRE recommendations, experiencing a less than 10% change from the Existing Situation and retaining sky visibility to over 78% of its area. This indicates that this smaller room would still enjoy excellent Daylight distribution in accordance with the Guidelines recommendations.

3.15 The rear window is not relevant for Sunlight assessment in accordance with the BRE methodology, so the APSH assessment is not a consideration for the single-aspect rear room.

4 Conclusion

4.1 Whilst we cannot be definitive about the internal configuration of 12 Chalcot Road, it appears to have an open-plan reception room at ground floor. On this basis, the Daylight and Sunlight effect to the room would meet the BRE Guidelines recommendations, when consideration is given to the primary window as per the BRE methodology.

4.2 In the event that the ground floor or 12 Chalcot Road has been subdivided to implement a small room at the rear, there is an effect in terms of VSC to the rear window that is beyond the typical recommendations in the BRE Guidelines. However, the BRE Guidelines recognise that a larger effect to this window is to be expected due to the obstructions on either side of it. The NSL Daylight assessment still shows comfortable adherence to the BRE Guidelines in this scenario, which indicates the internal Daylight distribution amenity will remain good.

4.3 Overall, we consider the Daylight effect to this property to be negligible to minor and the Sunlight effect to be negligible.

References

Ref. 1.1 Building Research Establishment publication 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice' (Third Edition, published in 2022) - available at https://www.bre.co.uk/

Appendix A – Drawings

SOURCES OF INFORMATION:

ACCUCITIES LTD
3D PHOTOGRAMMETRIC MODEL
003376_11_Chalcot_Road_MASTER.dwg

ATNICA ARCHITECTURE
PROPOSAL DRAWINGS
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AS026 201 Second -Roof Proposed.dwg
AS026 250 Elevations Proposed.dwg
AS026 275 Section AA Proposed.dwg
AS026 276 Section BB Proposed.dwg
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EXISTING BUILDINGS IN GREEN

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PROJECT:
11 CHALCOT ROAD
LONDON NW1 8LH

TITLE:
SITE PLAN
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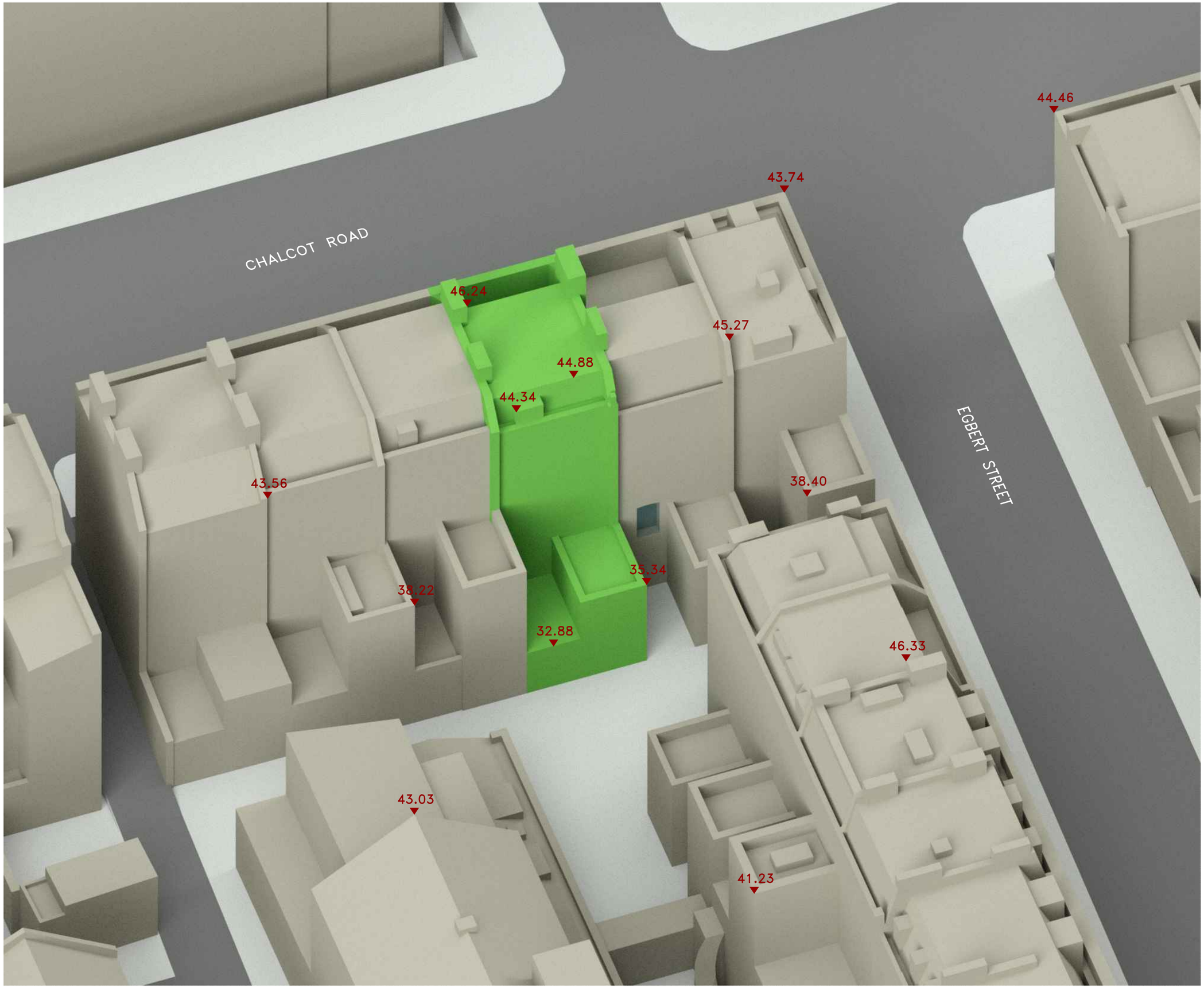

SOURCES OF INFORMATION:

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LONDON NW1 8LH

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PROPOSED SCHEME IN BLUE

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11 CHALCOT ROAD
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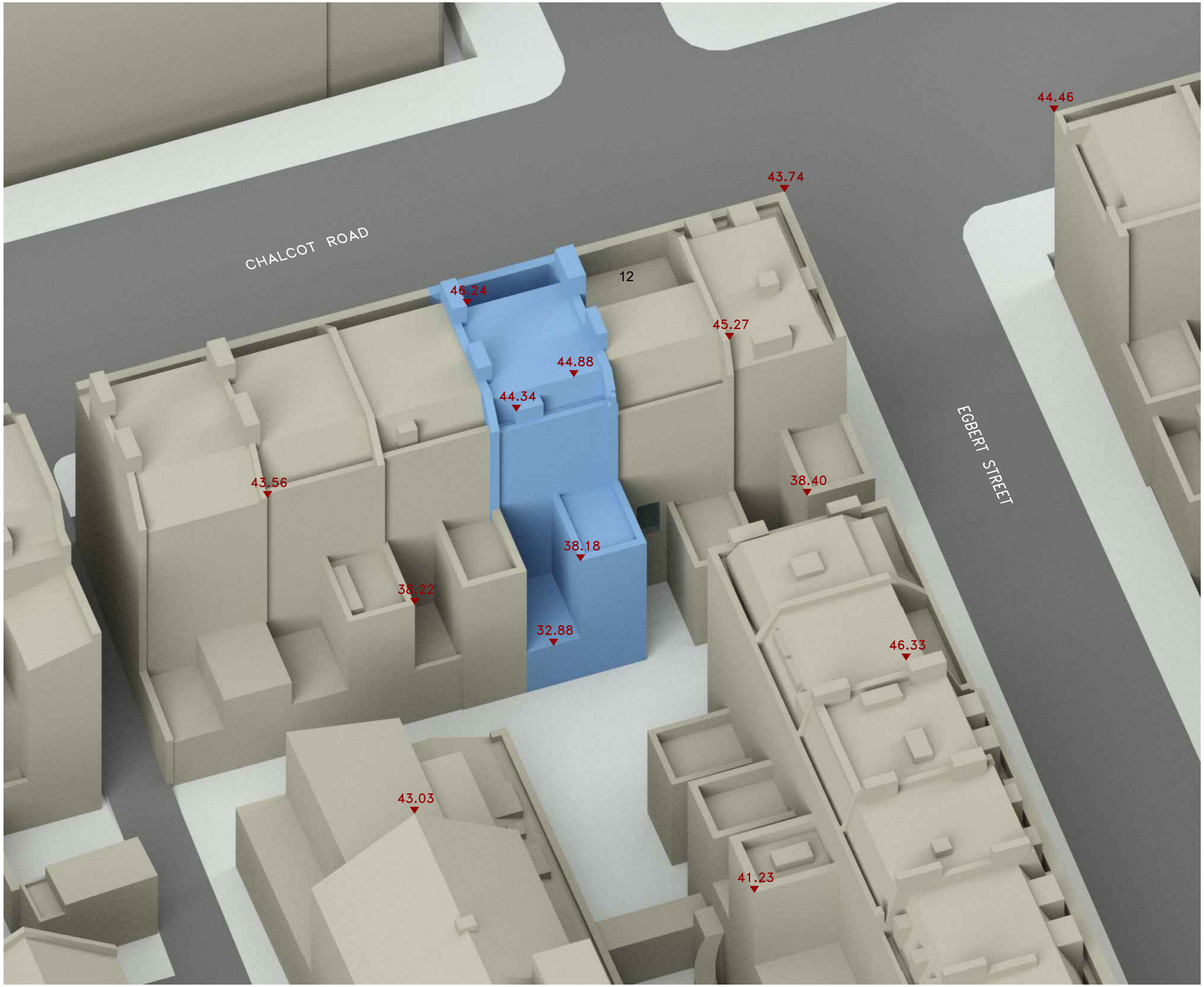

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LONDON NW1 8LH

TITLE:
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DEVELOPMENT & LIGHT

Appendix B – Daylight & Sunlight Results

Open-plan Scenario

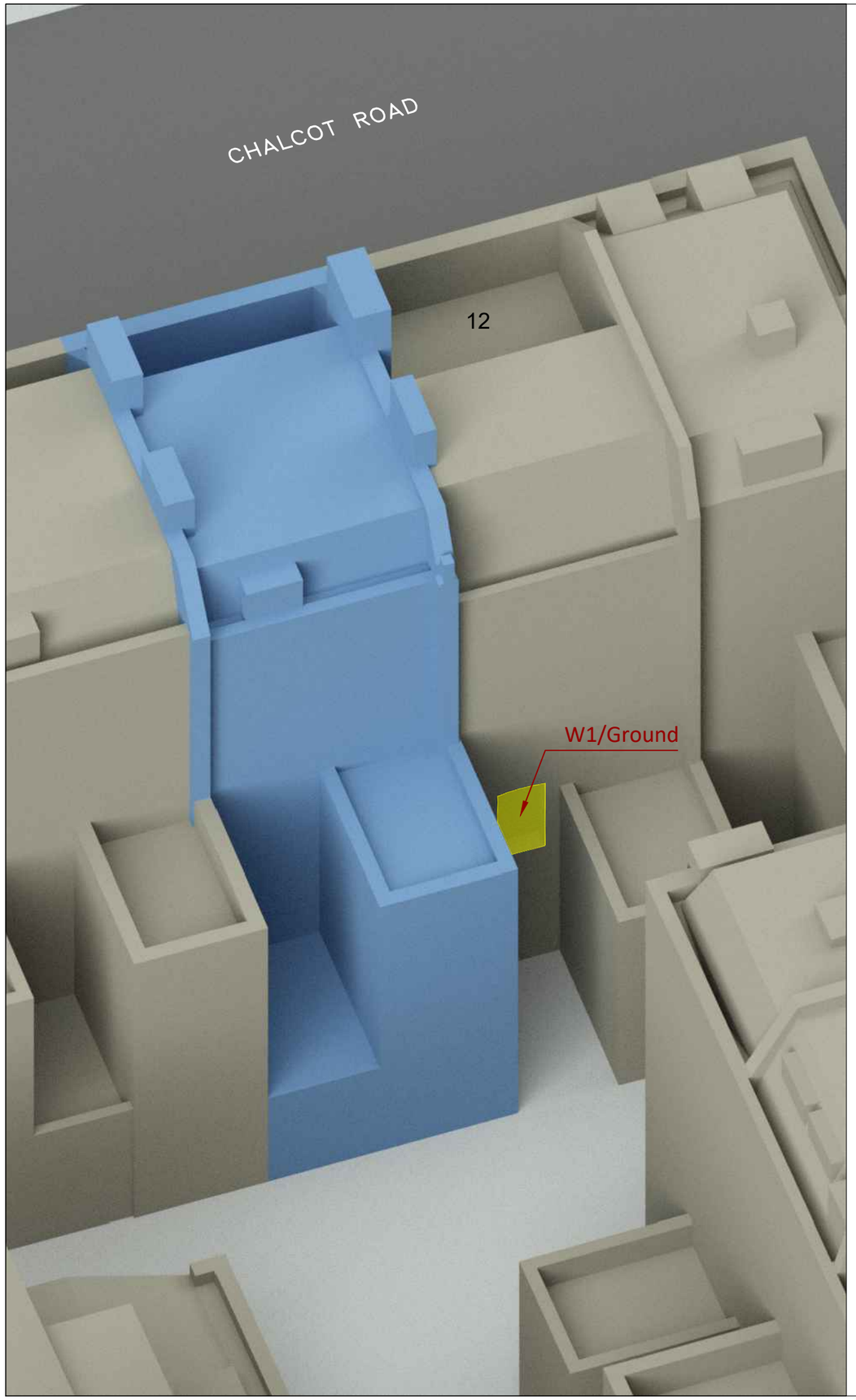
Project Name: 11 Chalcot Road
Project No.: 154
Report Title: Daylight & Sunlight Analysis - VSC & APSH
Date of Analysis: May 2023

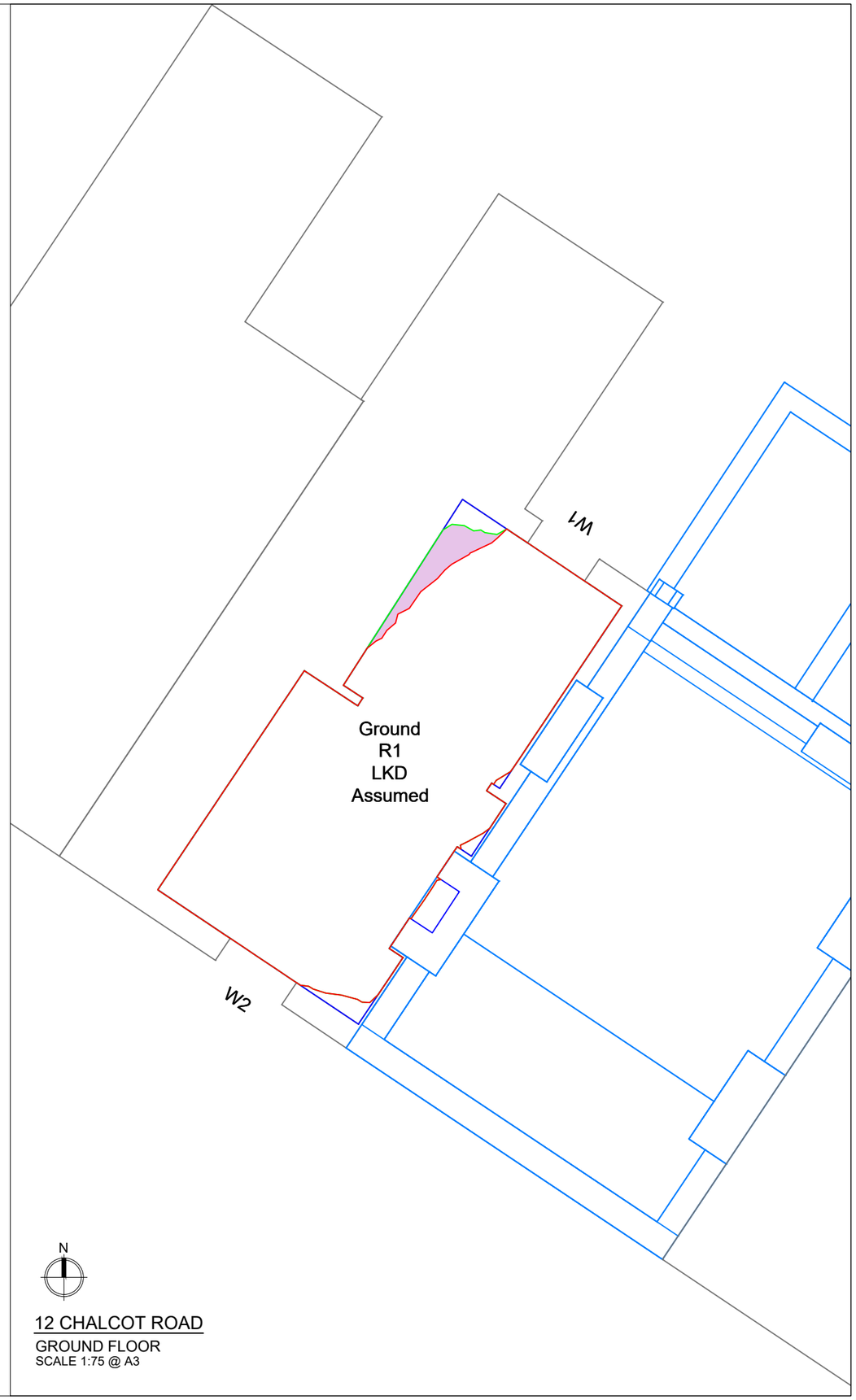
Floor Ref.	Room Ref.	Room Attribute	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
12 Chalcot Road																						
Ground	R1	Assumed	Residential	LKD	W1	Existing	20.32	0.63	NO	34°N	9.00	*North	*North	0.00	*North	*North						
						Proposed	12.74				0.00			0.00								
					W2	Existing	29.33	1.00	YES	214°	66.00	1.00	YES	17.00	1.00	YES						
						Proposed	29.33				66.00			17.00								
																	75.00			17.00		
																	66.00	0.88	YES	17.00	1.00	YES

Project Name: 11 Chalcot Road
Project No.: 154
Report Title: Daylight Analysis - NSL
Date of Analysis: May 2023

Floor Ref.	Room Ref	Room Attribute	Property Type	Room Use		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
12 Chalcot Road										
Ground	R1	Assumed	Residential	LKD	Area m2	24.01	23.24	22.56		
					% of room		96.80%	93.94%	0.97	YES

Window Map / No-Sky Line Contours





12 CHALCOT ROAD
GROUND FLOOR
SCALE 1:75 @ A3

SOURCES OF INFORMATION:

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EXISTING NO-SKY CONTOUR

PROPOSED NO-SKY CONTOUR

AREA OF LOSS / GAIN

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PROJECT:
11 CHALCOT ROAD
LONDON NW1 8LH

TITLE:
WINDOW MAP &
NO-SKY LINE CONTOURS
OPEN PLAN ROOM LAYOUT

JOB NO:	RELEASE:	DRG NO:
154	01	154/05
DATE:	DRAWN:	SCALE:
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DEVELOPMENT & LIGHT

Subdivided Scenario

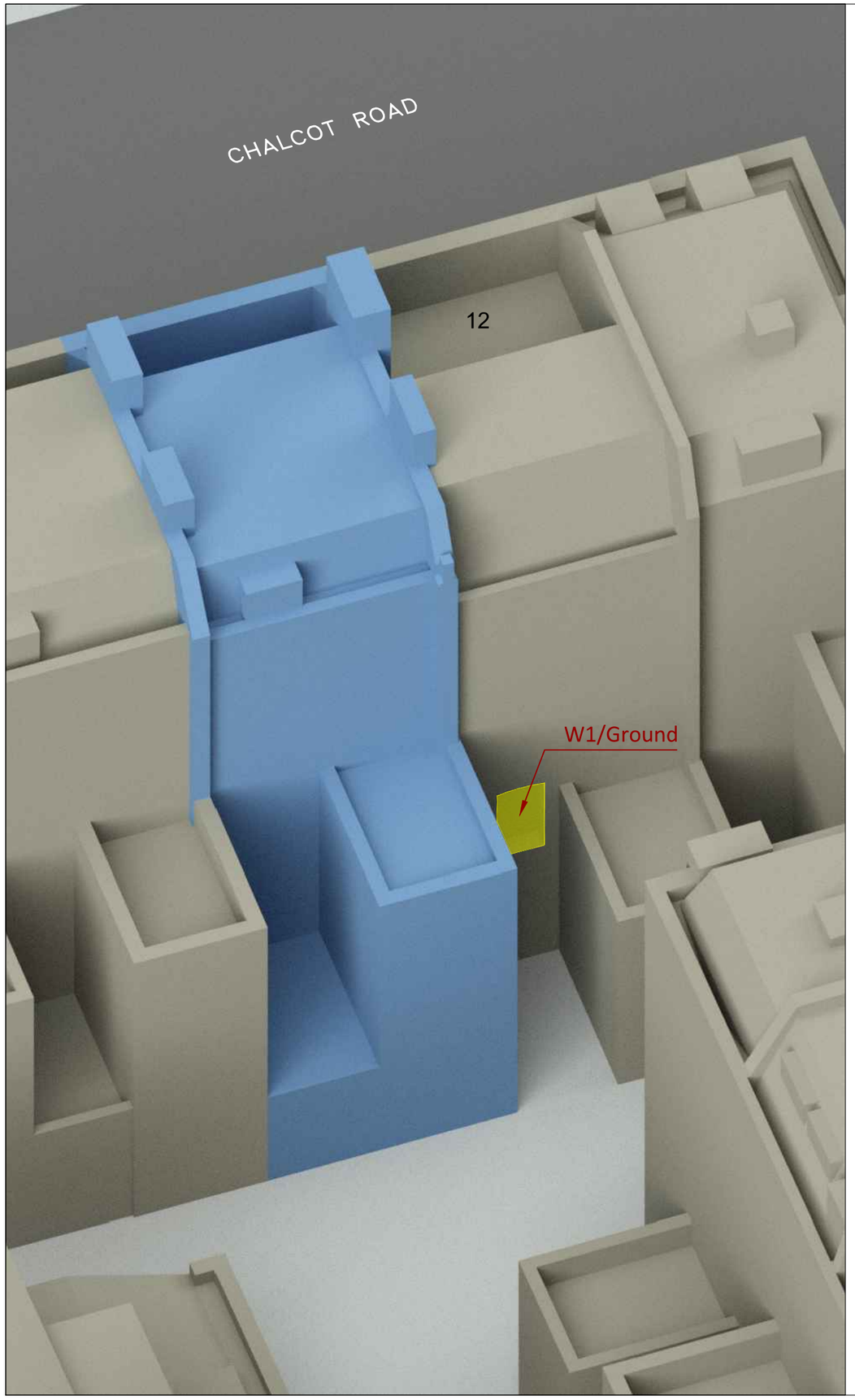
Project Name: 11 Chalcot Road
Project No.: 154
Report Title: Daylight & Sunlight Analysis - VSC & APSH
Date of Analysis: 12/05/2023

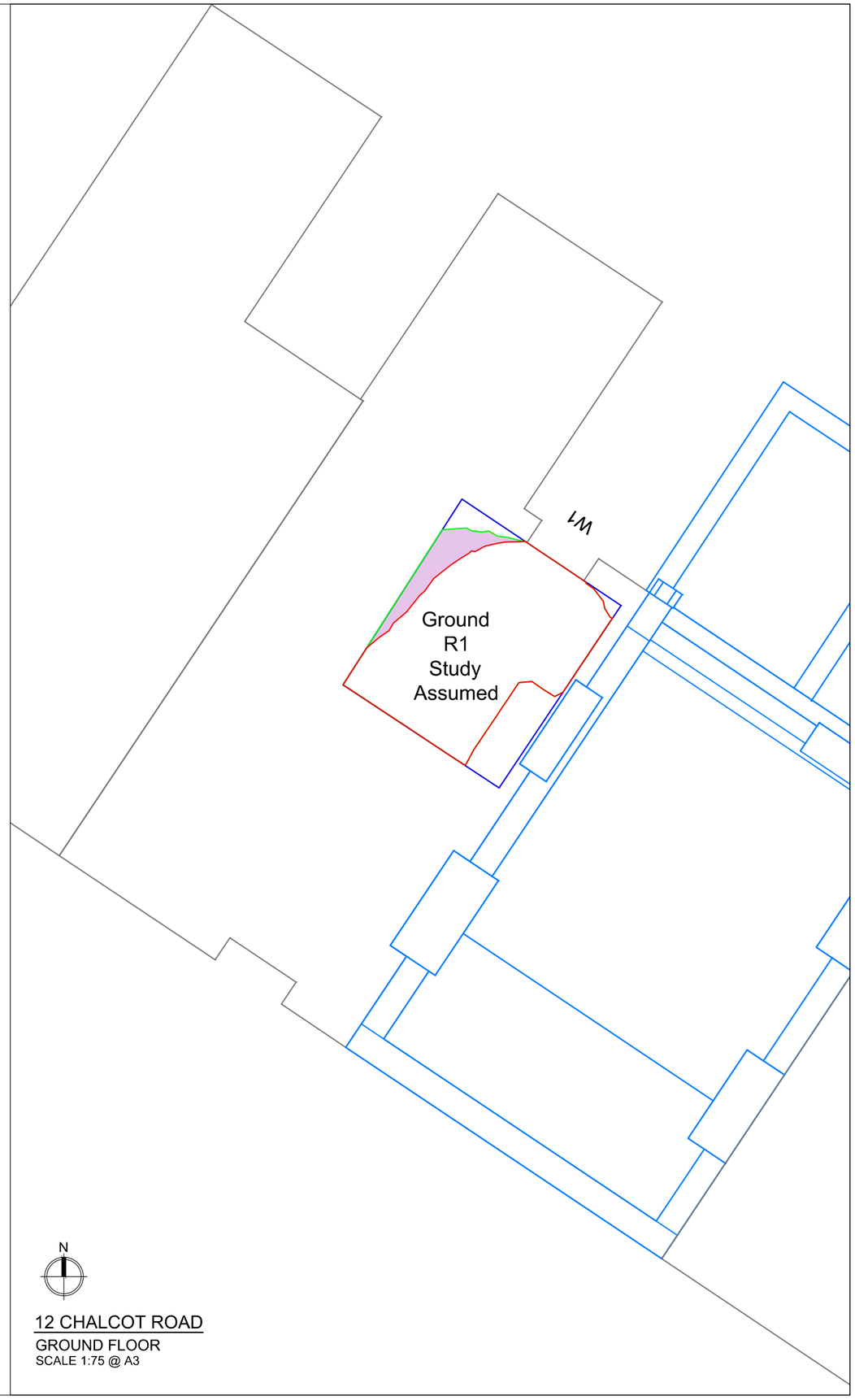
Floor Ref.	Room Ref.	Room Attribute	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
12 Chalcot Road																						
Ground	R1	Assumed	Residential	Dining Room	W1	Existing Proposed	20.32 12.74	0.63	NO	34°N		*North	*North		*North	*North		*North	*North		*North	*North

Project Name: 11 Chalcot Road
Project No.: 154
Report Title: Daylight Analysis - NSL
Date of Analysis: 12/05/2023

Floor Ref.	Room Ref	Room Attribute	Property Type	Room Use		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
12 Chalcot Road										
Ground	R1	Assumed	Residential	Dining Room	Area m2	9.41	8.07	7.36		
					% of room		85.78%	78.22%	0.91	YES

Window Map / No-Sky Line Contours





12 CHALCOT ROAD
GROUND FLOOR
SCALE 1:75 @ A3

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EXISTING NO-SKY CONTOUR

PROPOSED NO-SKY CONTOUR

AREA OF LOSS / GAIN

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PROJECT:
11 CHALCOT ROAD
LONDON NW1 8LH

TITLE:
WINDOW MAP &
NO-SKY LINE CONTOURS
HALF DEPTH LAYOUT

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