

41 Ornan Road,

London

NW3 4QD

13<sup>th</sup> March, 2025

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#### 1.0 Executive Summary

- 1.1 CHP Surveyors Limited have been instructed by Earlham Homes Limited to consider the impact the proposed scheme will have on the neighbouring residential properties enjoyment of daylight and sunlight.
- 1.2 This report accompanies a planning application submitted by Earlham Homes Limited for the proposed scheme.
- 1.3 From our online research including information on the local authority's planning portal, we have identified the neighbouring properties that have windows overlooking the site and therefore need to be considered as part of this assessment, are:
  - 40 Ornan Road
  - 41 Belsize Avenue
- 1.4 To ensure that this assessment has correctly considered the daylight and sunlight enjoyed by the neighbouring residential properties, it has been undertaken in accordance with the Building Research Establishment's 2022 publication "Site layout planning for daylight and sunlight. A guide to good practice." (BRE guidelines). Consideration has also been given to national, regional, and local planning policies and guidance.
- 1.5 The technical analysis has been undertaken using the standards and tests recommended within the BRE guidelines. A summary of the recommendations made by the BRE are set out in the Principles of Daylight and Sunlight, attached at Appendix A of this report.
- 1.6 As part of the daylight assessment, a Vertical Sky Component (VSC) analysis has been undertaken. The VSC assessment has considered 63 windows that serve 23 rooms within the neighbouring properties. The results of the analysis show that 63 (100%) of the windows assessed will comply with the BRE criteria and the neighbouring properties will retain a good level of daylight.



- 1.7 A daylight distribution analysis has also been undertaken of the 23 rooms within the neighbouiring properties. The results of the analysis demonstrate that all rooms assessed will achieve the target criteria within the BRE guidelines.
- 1.8 The sunlight assessment has considered four rooms within the neighbouring properties. The results demonstrate that all four of the rooms analysed will achieve the recommendations within the BRE guidelines and will continue to enjoy good levels of sunlight.
- 1.9 It is therefore considered that the proposed scheme would not affect the level of daylight and sunlight enjoyed by the neighbouring properties.

#### 2.0 Policies and Guidance

- 2.1 When reviewing the results of the analysis, to ensure that the proposed scheme is appropriate from a daylight and sunlight perspective, the following documents have been considered.
  - National Planning Policy Framework (NPPF) December 2024
  - Ministry of Housing, Communities & Local Government Guidance "Effective Use of Land" (July 2019)
  - GLA "The London Plan" March 2021
  - The Mayor of London's Housing Supplementary Planning Guidance (SPG) March 2016
  - London Borough of Camden Camden Planning Guidance Design (January 2021) and Amenity (January 2021)

#### 2.2 National Planning Policy Framework – December 2023

2.2.1 Set out within the National Planning Policy Framework (December 2024), under paragraph 130 (c) it states with regard to daylight and sunlight, that consideration should be given as to whether efficient use of the land is being made:

"...when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise



inhibit making efficient use of a site (as long as the resulting scheme would provide adequate living standards."

2.3 Ministry of Housing, Communities & Local Government Guidance "Effective use of Land"(July 2019)

2.3.1 Set out within this policy, it states:

"All developments should maintain acceptable living standards.

What this means in practice, in relation to assessing appropriate levels of sunlight and daylight, will depend to some extent on the context for the development as well as its detailed design.

For example, in areas of high-density historical buildings, or city centre locations where tall modern buildings predominate, lower daylight and daylight and sunlight levels at some windows may be unavoidable if new developments are to be in keeping with the general form of their surroundings."

- 2.4 GLA "The London Plan" March 2021
- 2.4.1 Set out under Policy D6 "Housing quality and standards", it states:

"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."

- 2.5 Mayor of London Housing Supplementary Planning Guidance (SPG) March 2016
- 2.5.1 The Mayor of London's Housing SPG acknowledges that the BRE guidelines should be applied sensitively and makes reference to the use of alternative targets, as set out in the BRE guidelines. It states under paragraph 1.3.46:

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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 recognize that fully optimising housing potential on larger sites may necessitate standards which depart from those presently experienced, but which still achieve satisfactory levels of residential amenity and avoid unacceptable harm.

Paragraph 2.3.47 of the Housing SPG relates to the necessity for more living and working space and thus greater density. It states:

BRE guidelines on assessing daylight and sunlight should be applied sensitively to higher density development in London, particularly in central and urban settings, recognizing the London Plan's strategic approach to optimize housing output (Policy 3.4) and the need to accommodate additional housing supply in locations with good accessibility suitable for high 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.

#### 2.6 London Borough of Camden

2.6.1 The London Borough of Camden has produced the policy Camden Planning Guidance –
Design (January 2021), which provides advice regarding daylight and sunlight. It states:

5.12 Proposals should assess the impacts of the scheme from a design perspective and the contribution it makes to townscape character including:

 the effects of the proposal on the amenity of adjacent residential properties with regard to daylight, sunlight, outlook, light pollution/spillage, privacy or the working conditions of occupants of adjacent non-residential buildings;

The London Borough of Camden Planning Guidance-Amenity (January 2021) states:



3.1 The Council aims to protect the quality of life of occupiers and neighbours through Local plan policy A1 Managing the Impact of Development, which seeks to ensure that development does not cause unacceptable harm to amenity, including in terms of daylight and sunlight.

It also states that:

The Council expects applicants to consider the impact of development schemes on daylight and sunlight levels. Where appropriate a daylight and sunlight assessment should be submitted which should follow the guidance in the BRE's Site layout planning for daylight and sunlight: A guide to good practice.

#### 2.7 Building Research Establishment (BRE guidelines)

- 2.7.1 The analysis undertaken by this Practice makes reference to guidelines published by the Building Research Establishment (BRE). The BRE guidelines are considered as a recognised methodology used by local authorities when assessing daylight and sunlight. However, when considering the results of the analysis, the site-specific constraints have been taken into account.
- 2.7.2 In 2022, the Building Research Establishment published a comprehensive revision to the 2011 edition of their guidance on daylight and sunlight within the built environment, titled "Site layout planning for daylight and sunlight. A guide to good practice".
- 2.7.3 The BRE guidelines acknowledge that their purpose is not to provide strict criteria to which a development must adhere to, but to provide guidance. This is affirmed within the introduction of the BRE guidelines, where it states under paragraph 1.6:

The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should interpreted flexibly since natural lighting is only one of many factors in site layout design.

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2.7.4 The guidelines contain methodology on how to calculate the impact a proposed development

will have on the neighbouring residential properties and also how to assess amenity within the

proposed units.

2.7.5 It is suggested within the BRE guidelines that residential properties should have the greatest

need for good daylight and sunlight and that key habitable rooms should be considered, with

these being bedrooms, living rooms and kitchens. For the purpose of our assessment, it is

considered that commercial properties do not have a reasonable expectation to daylight and

sunlight as they generally rely on artificial light.

2.7.6 An extended account of the BRE guidelines is attached at Appendix A.

Information

3.0

3.1 During the process of undertaking the analysis and producing this report, reference has been

made to the following information:

Architects' drawings referenced 41 Ornan Road OS Map, Existing Elevations, Existing Floor

Plans, Proposed Elevations AS, Proposed Floor Plans AS, Proposed Section AS

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Information on the internal configuration of the neighbouring properties has been sourced

from a review of the London Borough of Camden's online planning portal. The following

applications have been reviewed.

London Borough of Camden

40 Ornan Road 41 Belsize Avenue

Planning ref: 2019/6141/P 22704

2010/352/P



#### 4.0 Site and Proposals

- 4.1 The site is located within the London Borough of Camden. The existing building on the site is a two-storey structure providing residential accommodation, as indicated on drawing numbers 2942-001, 003 and 005 attached at Appendix B of this report.
- 4.2 The proposals for the site are to construct an additional storey to provide additional residential accommodation, as indicated on drawing numbers 2942-002, 004 and 006 attached at Appendix B of this report.

#### 5.0 Limitations

- 5.1 To undertake the detailed daylight and sunlight analysis required to produce this report a three-dimensional computer model has been produced using the information provided and sourced by us, as set out in paragraph 3.1.
- 5.2 Internal access to the surrounding properties was not sought by us. Research was undertaking by us using planning portals and other sources such as estate agent's websites, to try and establish the internal configuration of the surrounding properties and therefore increasing the accuracy of the analysis. Where information of the surrounding properties was unable to be sourced, reasonable assumptions have been made as to the probable room size, layout and use.
- 5.3 The daylight and sunlight analysis has been undertaken using a specialist software programme by MBS and from this the resultant data has been produced.

#### 6.0 Methodology

6.1 Using the information provided and online research undertaken by us, a 3D computer model of the properties surrounding the site has been produced. The model includes the window locations and internal configuration (either actual or assumed) to the surrounding properties. We have not had access to the surrounding properties that form part of this study and therefore the internal configuration and establishing which windows serve habitable rooms



has been based on either onsite observations or information we have been able to obtain online. A 3D computer model of the existing structures on the site as well as the proposals has been produced.

- 6.2 Using the specialist computer programme, we have undertaken an analysis in accordance with the criteria recommended within the BRE guidelines. We have run an analysis of the existing situation to establish a baseline figure and then a further analysis with the implementation of the proposals. There is no requirement to consider the implications during the development process as any impact will only be short term.
- As stated in paragraph 1.6 of the BRE guidelines, the intention of the guide is to provide recommendations to assist with site layout design. The criteria should be applied flexibly in line with the context of the site and its environment.
- 6.4 Therefore, when assessing the results of the daylight and sunlight analysis undertaken, a degree of flexibility has been used that considers the location of the site and its surroundings when applying the BRE criteria.
- 6.5 The guidelines also advise instances when alternative target values may be used. The BRE guidelines are designed to be applied within a suburban environment, not a dense urban location. Section 2.2.3 of the BRE guidelines state:

...numerical values given here are purely advisory. Different criteria may be used, based on the requirements for daylighting in an area viewed against other site layout constraints.

#### 6.6 Daylight

6.7 The numerical values contained in the BRE guidelines are used to establish whether the proposals will have a significant effect on the daylight enjoyed by the neighbouring properties and are based initially on a Vertical Sky Component (VSC) analysis. This analysis establishes the amount of available daylight received directly from the sky for each individual window. The reference point for this analysis is the centre point of the window.



6.8 It is recommended in the BRE guidelines that each window should achieve a VSC of 27% or0.8 times the existing value. These values are intended for use in a suburban location.

6.9 The second method to assess daylight is to run a No Sky Line (NSL) or Daylight Distribution analysis. This assesses the change in position of the No Sky Line between the existing and proposed scenarios. It does not consider the number and size of windows serving a room. The BRE guidelines advise that a significant portion of each habitable room (>80%) or at least 0.8 times the existing area should lie infront of the No Sky Line (NSL).

#### 6.10 Sunlight

6.11 Concerning sunlight, the BRE guidelines advise that all windows within 90° of due south should achieve 25% of the Annual Probable Sunlight Hours (APSH) with at least 5% being achieved during the winter months. Where this is not achieved and the difference between the existing and proposed APSH is more than 4%, the BRE guidelines state that the proposals will not have a noticeable effect on sunlight, provided the total APSH, as well as during the winter months, are within 0.8 times the existing.



#### 7.0 Surrounding Properties

- 7.1 Within the BRE guidelines it is recommended that only residential properties that contain windows serving habitable rooms and therefore have a reasonable expectation of daylight and sunlight, need to be assessed.
- 7.2 From a review of the site and its surroundings, it has been established that the following neighbouring properties appear to provide residential accommodation and have therefore been considered within our analysis.



- A 40 Ornan Road
- B 41 Belsize Avenue

#### 8.0 Assessment of Neighbouring Properties

- 8.1 Following our interrogation of the neighbouring properties, the context of the site and the application of the criteria within the BRE guidelines, we have identified the following residential properties are required to be assessed within the daylight analysis.
  - 40 Ornan Road
  - 41 Belsize Avenue



- 8.2 Regarding sunlight, the BRE guidelines state that a sunlight assessment should be undertaken of all surrounding properties to the site that have main rooms with windows facing within 90° of due south. From our review of the site and its surrounding properties, it has been established that the only property that needs to be assessed is 40 Ornan Road.
- 8.3 Concerning 41 Belsize Avenue, it has been established that all habitable rooms are of a northerly orientation and therefore have not been considered as part of the sunlight analysis.

#### 8.4 40 Ornan Road



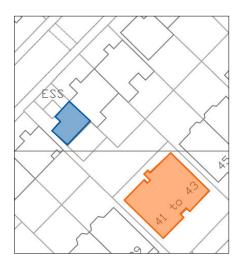
- 8.4.1 This property is located to the northwest of the site and consists of residential accommodation over ground, first and second floors. The internal configuration of this property has been based on plans obtained from the local authority's planning portal.
- 8.4.2 The results of the VSC analysis are set out in the table attached at Appendix C of this report.

  They demonstrate that all windows assessed will achieve the numerical values within the BRE guidelines.
- 8.4.3 An assessment has been undertaken to establish the daylight distribution within this property. The analysis has considered four rooms within this property with the results set out on the table attached at Appendix C of this report. The results demonstrate that in all instances a significant portion of each room will lie in front of the NSL and will achieve the criteria within the BRE guidelines.



- 8.4.4 The analysis results show that, with regard to the daylight received by 40 Ornan Road, the proposals meet the BRE guidelines.
- 8.4.5 A sunlight analysis has been undertaken of the rooms that have windows facing within 90° of due south. The assessment has considered four rooms with the results set out in the table attached at Appendix D of this report.
- 8.4.6 The results of the analysis demonstrate that all rooms will achieve the recommended APSH within the BRE guidelines and therefore the proposals will not have a significant effect on sunlight to 40 Ornan Road.

#### 8.5 41 Belsize Avenue



- 8.5.1 This property is located to the southeast of the site and consists of residential accommodation over ground, first, second, third and fourth floors. The internal configuration of this property has been based on plans obtained from the local authority's planning portal.
- 8.5.2 The results of the VSC analysis are set out in the table attached at Appendix C of this report.

  They demonstrate that all windows assessed will achieve the numerical values within the BRE guidelines.



- 8.5.3 An assessment has been undertaken to establish the daylight distribution within this property. The analysis has considered 19 rooms within this property with the results set out on the table attached at Appendix C of this report. The results demonstrate that in all instances a significant portion of each room will lie in front of the NSL and will achieve the criteria within the BRE guidelines.
- 8.5.4 The analysis results show that, with regard to the daylight received by 41 Belsize Avenue, the proposals meet the BRE guidelines.

#### 9.0 Conclusion

- 9.1 An assessment has been undertaken of the proposals for the site to establish whether there will be an impact on the daylight and sunlight enjoyed by the neighbouring properties.
- 9.2 The results of the analysis have considered with reference to the recommendations set out in the Building Research Establishment's publication "Site layout planning for daylight and sunlight. A guide to good practice." (2022) (BRE guidelines).
- 9.3 It has been considered that the following properties that surround the site provide residential accommodation and therefore have formed part of our assessment.
  - 40 Ornan Road
  - 41 Belsize Avenue
- 9.4 A daylight analysis has been undertaken and includes all the properties listed above. The results of the analysis demonstrate that all of the 63 windows included in Vertical Sky Component (VSC) assessment will achieve suggested values within the BRE guidelines.
- 9.5 The Daylight Distribution analysis has assessed 23 rooms within the surrounding properties.
  The results show that all rooms considered will achieve the criteria within the BRE guidelines.
- 9.6 Consideration has been given to the orientation of the neighbouring properties and therefore a sunlight assessment has been undertaken of 40 Ornan Road.



- 9.7 The results of the sunlight analysis demonstrate that all four rooms considered will achieve the recommendations within the BRE guidelines.
- 9.8 The results of the analysis demonstrate that the implementation of the proposals will achieve the BRE guidelines and not have a significant effect on the daylight and sunlight enjoyed by the neighbouring properties.



## Appendix A



#### Principles of Daylight and Sunlight

In 2022 the Building Research Establishment (BRE) published a revision to their 2011 handbook titled "Site Layout Planning for Daylight and Sunlight. A guide to good practice." The handbook provides advice on how to achieve good daylight and sunlight both within buildings and to open spaces during site layout planning.

The BRE guidelines are used by most local planning authorities when considering the impact on daylight and sunlight. The guidelines are purely advisory and should be applied flexibly to the individual circumstances of each site. The guidelines are more suited to low density suburban development sites where there is greater flexibility for site layout planning. Where sites are located in dense urban locations, there are often constraints from adjacent buildings and in these instances, the guidelines state that the criteria should be applied more flexibly. In paragraph 1.6 of the introduction of the BRE guidelines, it states:

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

#### Assessment of Daylight to Neighbours

Set out in the BRE guidelines is the methodology for assessing daylight within existing buildings. It states that it is important for a new development or extension to 'safeguard the daylight to nearby buildings'.

The guidelines advise that daylight should be assessed to habitable rooms within adjoining dwellings. It states that daylight is required to living rooms, kitchens and bedrooms.

The first assessment that should be undertaken is to establish whether the proposals will subtend an angle of 25° from the centre of the window. The guidelines state that if the angle is less than 25°, then the development is not likely to affect the daylight to this window. If however the angle is greater than 25°, the guidelines advise:

If, for any part of the new development, this angle is more than 25°, a more detailed check is needed to find the loss of skylight to the existing development.

This assessment is more appropriate for well-spaced, low density or low rise, uniform proposed developments. It is not an appropriate assessment for dense urban environments where the existing building on the development site already subtends at an angle greater than  $25^{\circ}$  to the horizontal from the subject window. It is for this reason that the  $25^{\circ}$  assessment is generally dispensed with and the more detailed analysis outlined below is undertaken.



The BRE guidelines advise on two methodologies for calculating daylight. These are a Vertical Sky Component (VSC) and a No Sky Line (NSL) analysis.

#### Vertical Sky Component

A Vertical Sky Component (VSC) analysis establishes the amount of available daylight received directly from the sky for each individual window. The reference point for the analysis is the centre of the window, on the plane of the outer window wall.

The VSC is the amount of direct sky a window enjoys expressed as a percentage of the amount of direct sky a horizontal, unobstructed rooflight would receive.

The maximum percentage of direct skylight a vertical window can receive is 40%. The BRE have determined that where a VSC of 27% is achieved, then daylight should reach the window of an existing building. Where a VSC of less than 27% is achieved either before or after the implementation of the proposals, then the BRE guidelines state that provided the new value is greater than 0.8 times the existing value, daylight will not be significantly affected.

#### No Sky Line

A No Sky Line (NSL) analysis is undertaken to establish the daylight distribution with a room. The assessment is undertaken at working plane level with this set at 0.85m above the floor level of a dwelling.

The BRE guidelines recommend that provided a significant area of the room, which is considered to be 80%, is infront of the NSL (the point behind which at desk top level no sky is visible) or at least 0.8 times the existing area, then the room will enjoy good daylight distribution.

If, in the existing situation this is not the case, the BRE guidelines advise that provided the area following the implementation of the proposals is at least 0.8 times the existing area, there will not be a significant affect.

The BRE guidelines advise that there are scenarios when daylight calculations maybe impacted by the design of an existing building. This may be due to balconies located above existing windows or the neighbouring property is located tight against the site boundary and therefore is taking more than its fair share of light.

#### Assessment of Sunlight to Neighbours

When assessing the impact of sunlight to a neighbouring residential property, the BRE guidelines advise that all living rooms within  $90^{\circ}$  of due south should be analysed. It states that kitchens and bedrooms are considered to be less important, but sunlight to these rooms should not be obstructed too much. Paragraph 3.2.3 of the BRE guidelines states:

To assess loss of sunlight to an existing building, it is suggested that all main living rooms of dwellings and conservatories, should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun.



Normally loss of sunlight need not be analysed to kitchens and bedrooms, except for bedrooms that also comprise a living space, for example a bed sitting room in an old people's home.

Within commercial or non-domestic buildings, the use of the building will determine whether a sunlight assessment is required. Within paragraph 3.2.3 of the BRE guidelines it advises:

In non-domestic buildings any spaces that a deemed to have a special requirement for sunlight should be checked; they will normally face within 90° of due south anyway.

A sunlight analysis is undertaken using a similar method to a VSC assessment. In relation to neighbouring residential buildings, if a window is facing within 90° of due south and overlooking any part of the proposals that subtend an angle of more than 25° to the horizontal, measured from the centre of the window in a vertical section perpendicular to the window, then the sunlight of the existing dwelling may be affected.

To assess the level of impact on sunlight to neighbouring properties, an Annual Probable Sunlight Hours (APSH) analysis should be undertaken. The BRE guidelines advise that an assessment should be carried out to all windows within  $90^{\circ}$  of due south. These windows should achieve 25% APSH with at least 5% being achieved during the winter months.

Where this is not achieved, if the difference between the existing and proposed APSH is more than 4%, then the BRE guidelines state that the proposals will not have a noticeable effect on sunlight, provided the total APSH, as well as during the winter months, are within 0.8 times the existing.

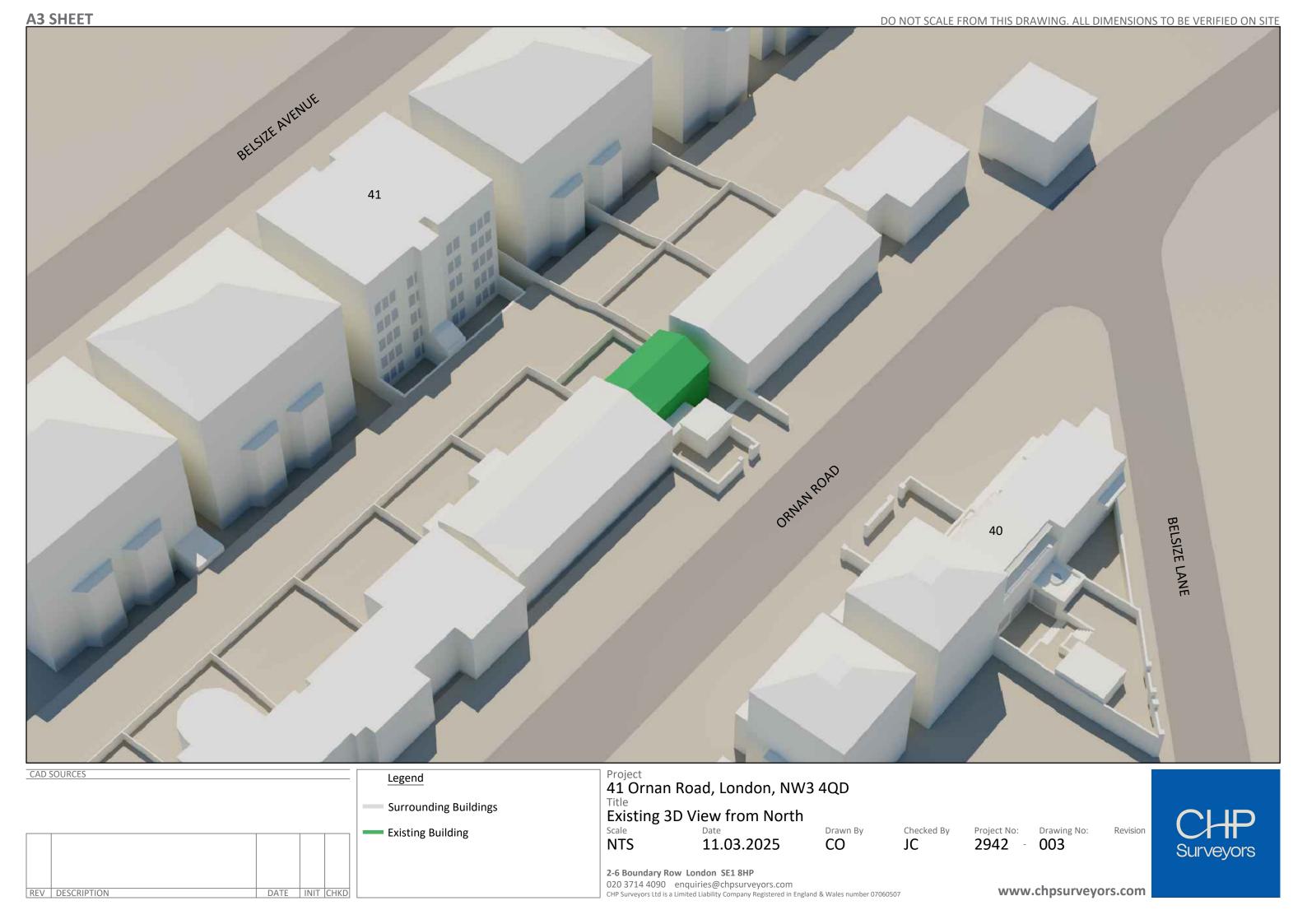
If the main living room to a dwelling has a main window facing within 90° of due north, but a secondary window facing within 90° of due south, sunlight to the secondary window should be checked.

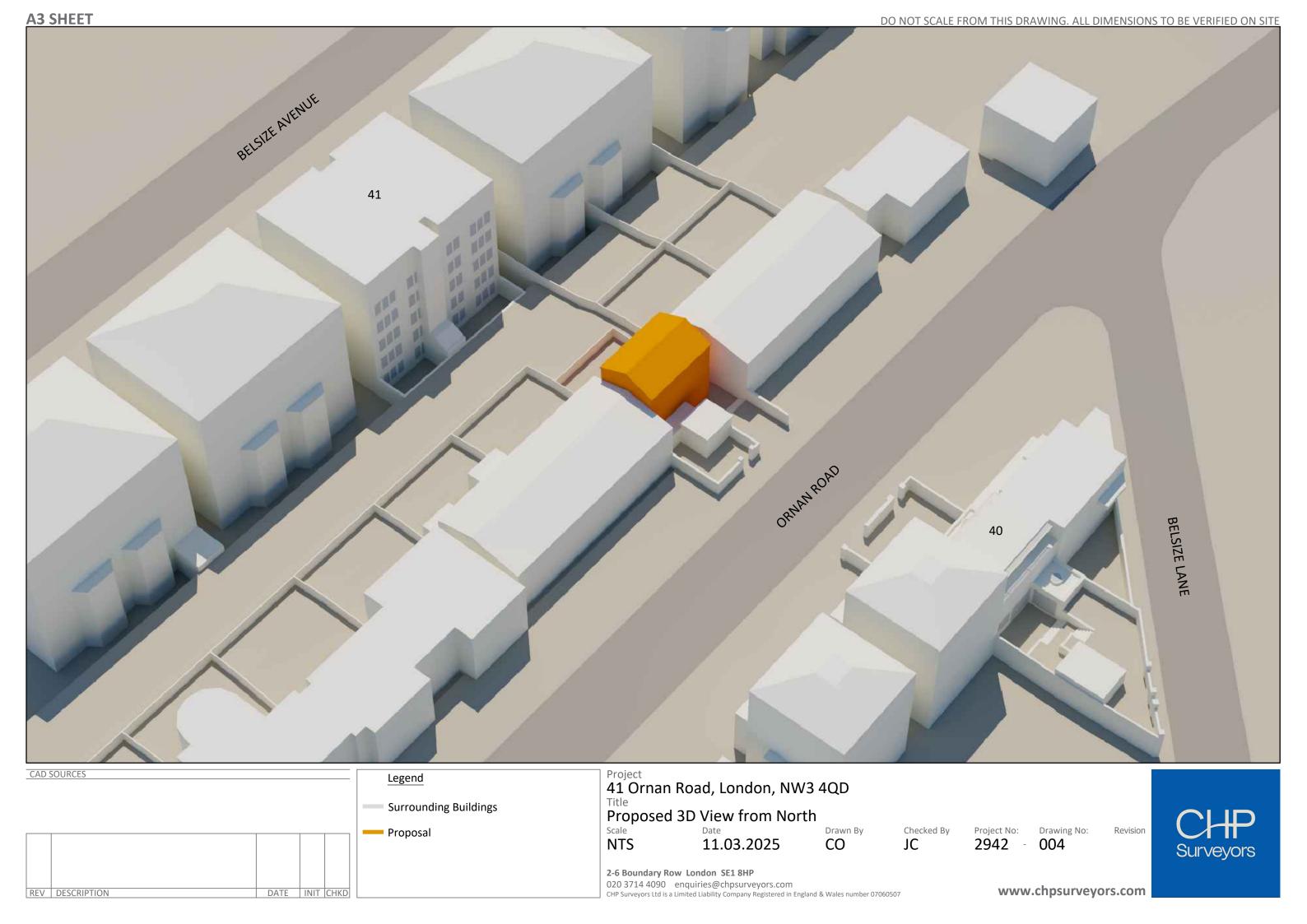


## Appendix B















REV DESCRIPTION DATE INIT CHKD

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REV DESCRIPTION

DATE INIT CHKD



# Appendix C

LEVEL	WINDOW	ROOM	V	SC	LOSS	% LOSS	NOSKY	
			EXISTING	PROPOSED	2333	70 2000	EXISTING	PROPOSED
40 Ornan Road								
Ground	W1	R1	33.6	33.3	0.3	0.9	>80%	>80%
	W2		33.6	33.3	0.3	0.8		
	W3		17.7	17.7	0.0	0.0		
	W4		24.7	24.7	0.0	0.0		
	W5		27.1	27.1	0.0	0.0		
	W6		53.5	53.4	0.0	0.1		
	W7		64.2	64.1	0.0	0.0		
	W8		69.1	69.1	0.0	0.0		
First	W1	R1	36.2	36.1	0.0	0.0	>80%	>80%
Second	W1	R1	18.5	18.5	0.0	0.1	>80%	>80%
Second	W4	IXI	25.2	25.2	0.0	0.0	>0070	>0070
	W2	R2	22.9	22.9	0.0	0.0	>80%	>80%
	W3	NZ	27.2	27.2	0.0	0.0	>0070	>0070
	VVO		21.2	21.2	0.0	0.0		
41 Belsize Ave	<u>enue</u>							
Ground	 W1	R1	23.4	22.6	0.8	3.3	>80%	>80%
	W2		26.1	25.3	0.8	3.0		
	W3		26.5	25.7	0.8	3.0		
	W4	R2	25.3	24.5	0.8	3.1	>80%	>80%
	W5		23.4	22.6	0.8	3.3		
	W6	R3	14.9	14.9	0.0	0.0	62%	60%
	W7		18.9	18.7	0.2	1.1		
	W8		25.4	24.8	0.6	2.3		
	W9		25.5	24.9	0.6	2.2		
	W10		22.7	22.2	0.5	2.3		
First	W1	R1	31.8	31.1	0.7	2.3	>80%	>80%
	W2		31.8	31.0	0.8	2.4		
	W3		31.7	30.9	0.8	2.4		
	W4	R2	31.1	30.3	0.8	2.5	>80%	>80%
	W5		30.2	29.4	0.8	2.5		
	W6	R3	18.1	18.0	0.1	0.3	>80%	>80%
	W7		26.2	25.5	0.6	2.5		
	W8	R4	31.1	30.5	0.6	1.9	>80%	>80%
	W9		31.4	30.8	0.6	1.8		
	W10		31.5	31.0	0.5	1.7		
Second	W1	R1	34.8	34.1	0.7	1.9	>80%	>80%
	W2		34.8	34.1	0.7	2.0		
	W3	5.0	34.7	34.0	0.7	2.0	0.001	222
	W4	R2	34.1	33.4	0.7	2.1	>80%	>80%
	W5	50	33.2	32.4	0.7	2.1	0001	222
	W6	R3	19.9	19.9	0.1	0.4	>80%	>80%
	W7	Б.	28.9	28.3	0.6	2.2	0.007	0.004
	W8	R4	34.2	33.6	0.6	1.7	>80%	>80%
	W9		34.5	34.0	0.6	1.6		
	W10		34.7	34.1	0.5	1.5		

Daylight Results

Third	W1	R1	37.0	36.7	0.4	1.0	>80%	>80%
	W2		37.0	36.7	0.4	1.0		
	W3		37.0	36.6	0.4	1.0		
	W4	R2	36.3	35.9	0.4	1.2	>80%	>80%
	W5		35.4	34.9	0.5	1.3		
	W6	R3	21.2	21.2	0.0	0.2	>80%	>80%
	W7		31.0	30.5	0.5	1.6		
	W8	R4	36.5	36.1	0.5	1.3	>80%	>80%
	W9		36.9	36.4	0.5	1.3		
	W10		37.0	36.6	0.5	1.2		
Fourth	W1	R1	38.5	38.4	0.1	0.2	>80%	>80%
	W2		38.5	38.4	0.1	0.2		
	W3		38.5	38.4	0.1	0.2		
	W4	R2	37.9	37.8	0.1	0.2	>80%	>80%
	W5		36.9	36.8	0.1	0.2		
	W6	R3	22.2	22.2	0.0	0.0	>80%	>80%
	W7		32.3	32.2	0.1	0.5		
	W8	R4	38.1	37.9	0.2	0.5	>80%	>80%
	W9		38.5	38.3	0.2	0.5		
	W10		38.6	38.4	0.2	0.5		



### Appendix D

Sunlight Results

LEVEL	ROOM	EXISTING			PROPOSED			% LOSS	
		SUMMER	WINTER	TOTAL	SUMMER	WINTER	TOTAL	WINTER	TOTAL
40 Ornan F Ground First Second	R1 R1 R1	70% 48% 28%	30% 24% 23%	100% 72% 51%	70% 48% 28%	30% 24% 23%	100% 72% 51%	0.00 0.00 0.00	0.00 0.00 0.00
	R2	35%	20%	55%	35%	20%	55%	0.00	0.00