Daylight / Sunlight Report

Proposed Development for Cambridge House, 373-375 Euston Road, London, NW1

DATE: 4th December 2017

Prepared By:

Savills (UK) Ltd
33 Margaret Street
London
W1G 0JD

CONTENTS

APPENDICES

APPENDIX 1	-	Drawing
APPENDIX 2	-	Daylight / Sunlight Results
APPENDIX 3	-	Savills Guidance Note – Daylight and Sunlight

PROPOSED DEVELOPMENT OF Cambridge House, 373-375 Euston Road, London NW1

1.0 INTRODUCTION

This practice has been instructed to produce a daylight and sunlight report in respect of the proposals for development of the site known as Cambridge House, 373-375 Euston Road, London NW1. This report is based upon the drawings as submitted for planning permission.

This report, and the associated technical appendices, have been produced to satisfy the requirements of the BRE Guidance Note (BR 209): Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice (2011).

Appendix 1 contains drawings illustrating our understanding of the existing situation (Green Building - existing) and the proposal used in our technical analysis (Red Building – with extension) may be found within the drawing layout to assist in identification. Full spreadsheets illustrating the results of our technical analysis may be found at appendix 2.

Appendix 3 contains our latest guidance notes providing an explanation of the assessment methodologies set out in the BRE guide.

2.0 SOURCES OF INFORMATION

The following source of information has been used:

Ordnance Survey
Digital OS Extract.

Arial Photography
Subscription free photographic images available from Google and Multimap

Site Photography
Taken by Savills (UK) Limited)

Three Dimensional Model (Existing Building and Surrounding Context)
MBS Land Survey – Laser Survey and Point Cloud Data

Architects Drawings
Proposed scheme from Penoyre & Prasad Architects

3.0 BRIEF DESCRIPTION OF THE SITE AND APPLICATION PROPOSALS

The site is to the west side of a short terrace of properties created by Euston Road, Cleveland Street and Warren Street. Cambridge House is located at the junction of Euston Road and Cleveland Street.

This report has been prepared to support a planning application for the site. The proposed scheme relies upon the addition of modest massing to the rear and top of the building existing building.

In preparing our report we have been made aware of an earlier extant planning permission dated 20th January 2014.

Our understanding of the existing massing is detailed in drawings no's Savills 568-01-01, 568-01-03, & 568-01- 05. Our understanding of the proposed scheme is provided by Penoyre & Prasad Architect.

All of the technical study drawings can be found at Appendix 1 to this report.

4.0 STANDARD SURVEY LIMITATIONS

In producing our report we have utilised the information set out at 2.0 above including the use of measured survey information where available.

In addition to Standard Survey Limitations the following assumptions also apply.

- Best estimates were made in establishing building use (residential or commercial) and room uses; generally these were made from external observations and recourse to planning records where available.

- When floor plans of surrounding properties were not available, room depths have been assumed from external observations. Where no indicators of room depth were available a standard of 14ft was used in respect of residential properties.

- Test windows are based on the location of the windows identified in the land survey data provided.

  Please note the differing land survey accuracy and tolerance standards used in the Brooke Vincent & Partners study dated 20th January 2014 compared to the 2017 Savills exercise. This earlier 2014 exercise is believed to be based on generic mapping data showing the height context relationship in the massing model. The baseline conditions of the Savills technical study is formed via the use of formal land survey methods using the latest 3D laser survey data capture methods. The context and accuracy of the Savills technical model is therefore to a formal land survey data accuracy.

  It has therefore not been possible for us to replicate the earlier baseline conditions of the 2014 exercise and this has resulted in the Savills 2017 exercise showing a lower general start position for all the properties as the baseline.

5.0 DAYLIGHT AND SUNLIGHT (NEIGHBOURING PROPERTIES)

BRE guidance report: Site Layout Planning for Daylight and Sunlight - A Guide to Good Practice (2011). Explanatory notes providing details of the various assessment methodologies utilised under the guidelines can be found in appendix 3 of this report.

The initial daylighting assessment methodology set out in the BRE guidelines is that a scoping exercise should be undertaken. Therefore not every property and window in a surrounding urban context needs to be calculated. The guide states that properties can be excluded if the distance of the new development is more than three times its height above the lowest window of a test property.

This report therefore has excluded as part of the scoping exercise those areas and properties which do not have habitable space such as commercial offices, studios, storage area, basements, wc, bathrooms, corridors, circulation space and similar type areas. Therefore, the buildings to the North of Euston Road, 379-381 Euston Road, 173 Cleveland Street (ground and basement) and 128-134 Cleveland Street have not required to be tested.

It is important to remember that the BRE Guide states that 'the advice given here is not mandatory and should not be seen as an instrument of planning policy'. Furthermore, daylight criteria should be 'interpreted flexibly because natural lighting is only one of many factors'. Based upon these statements the guidance and target levels should be applied sensibly and flexibly taking into account the context of the site.

Once this scoping is complete the next stage is to identify if the new development subtend more than 25º at the lowest window. Should this test be passed then no further action is required as the scheme is unlikely to significantly affect any surrounding property. Should the line be subtended then the design needs to be proved by calculation. The residential building "Howard House" on Cleveland Street has been excluded as the key windows have sight lines down Warren Street therefore the dominate sky visibility is unaffected by the proposed scheme.

The following areas have been identified in the scoping exercise as justifying further investigation via calculation:

- 34 Warren Street
- 175 Cleveland Street

The daylight test is via the Vertical Sky Component (VSC). This assessment considers sky visibility at the window face of neighbouring properties and expresses this as a percentage. The guidelines recommend that the windows of neighbouring properties enjoy total VSC of at least 27% following construction of a proposal or that the VSC level is reduced to no less than 0.8 times its former value (i.e. a 20% reduction) by a proposal.

Further to the VSC test a further assessment is to be considered relating to the position of the no-sky line within affected properties. This No-Sky Line (also known as the no-sky contour or daylight distribution) test considers the area of a room at desk height that can see the sky. The BRE guidelines do not set absolute target levels but suggest that the No-Sky Contour should not be reduced by more than 20% when comparing an existing situation to that following construction of a planning proposal.

Daylight and Sunlight Analysis in Detail

34 Warren Street

This is a residential property.

All windows to this property pass standard figures both in the context of the VSC and DD method of assessment. The occupier is therefore highly unlikely to notice any adjustment in daylighting due to the proposed works.

The DD range in this property is between 27% and 63% in the pre-existing context.

175 Cleveland Street

This is understood to be an office building which has been converted at the upper levels into residential in the recent history of the property. The change will result in figures outside the 0.8 times change recommendations in both the VSC and DD context.

However in local area context of user expectation and potential satisfaction the long established and mature property of 34 Warren Street provides a useful benchmark example of area expectations. The DD range in this property is between 62%-99% in the existing and will adjust down to 47% - 87% post development. This means even allowing for the change the DD spread across the property will be greater than that historically enjoyed and deem satisfactory by occupiers within 34 Warren Street.

Therefore in holistic context the level of change between the proposed and existing is such that whilst outside the target values of the BRE Guide when considered in local area context the end level is deemed satisfactory.

Sunlight

Only those windows facing within 90 degrees of due south can receive direct sunlight in the UK and therefore windows outside of this orientation are not relevant for analysis. The BRE guidelines state that the main windows of living rooms and conservatories are relevant for analysis and that the impact of a proposed scheme should be assessed by reference to the Annual Probable Sunlight Hours (APSH) methodology. APSH provides an indication of sunlight enjoyed by a window as a percentage of the total potential maximum sunlighting. The guidelines suggest that, following a development, windows should receive at least 25% total APSH with 5% of this total being enjoyed in the winter months. The guidelines also allow for a 20% reduction in sunlighting when compared to the former value.

The scoping exercise did not identify any test houses therefore the proposed scheme is deemed to be in full compliance with this requirement.

6.0 SUN ON GROUND

This test considers the quality of sunlight received at the design garden areas. It is recommended that for a garden to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive, at least two hours of sunlight on 21st March.

The scoping exercise did not identify any test houses therefore the proposed scheme is deemed to be in full compliance with this requirement.

7.0 CONCLUSION

Savills (UK) Limited have completed daylight and sunlight analysis of the proposed new building and the potential impact on the existing residential buildings with a specific emphasis on the key habitable rooms.

We have assessed the daylight and sunlight amenity by reference to BRE guide 209 (2011) with one property being outside the target value recommendations but when assessed in local area context the end figures are within the reasonable expectations for the local area.

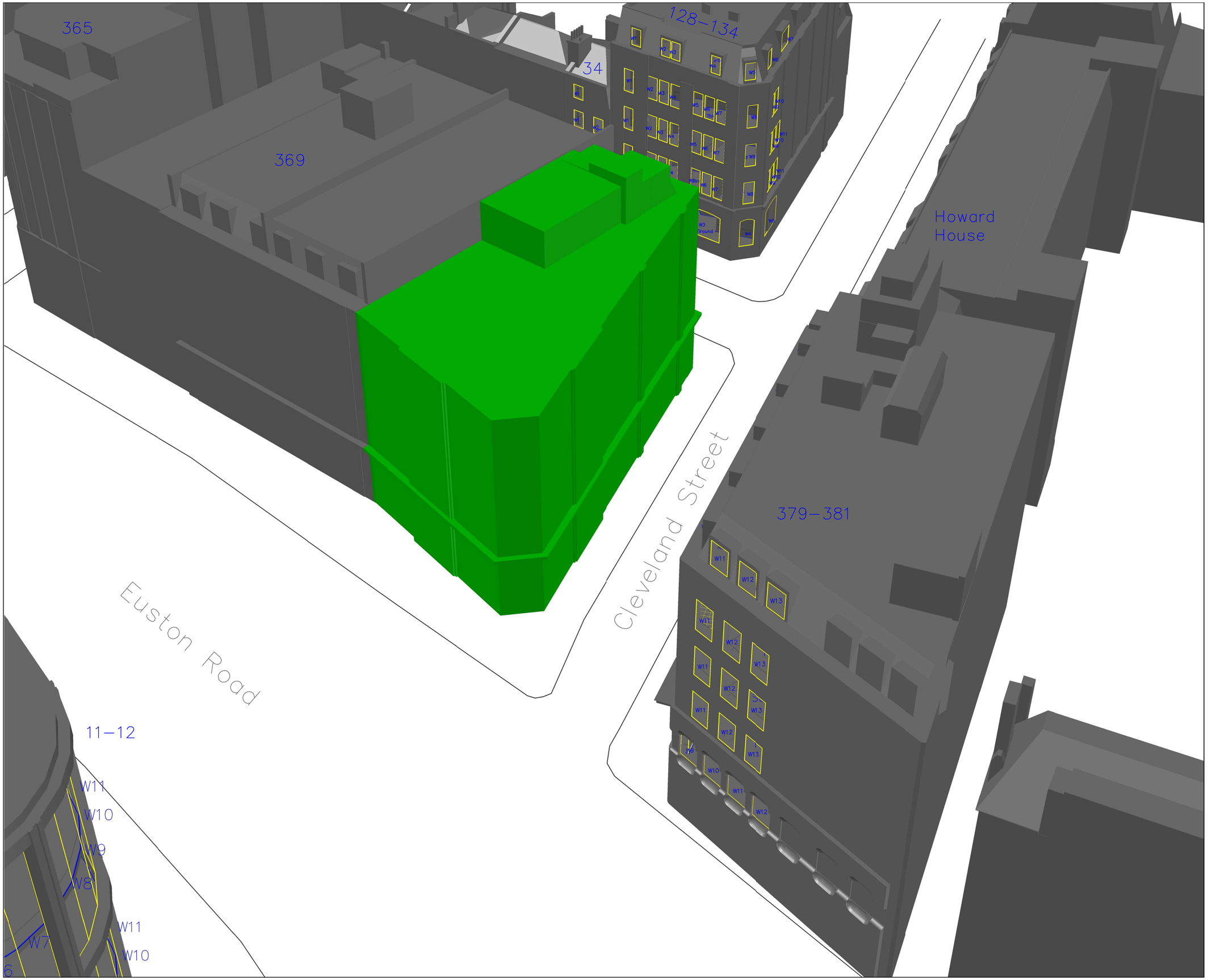
The majority of the surrounding properties around the proposed scheme are either via scoping exercise or calculation above the required level.

In holistic environmental terms therefore the scheme design responds well to its neighbours and the existing site context.

Andrew D Thompson MSc (EDM) Open FRICS
CHARTERED ENVIRONMENTAL SURVEYOR
Savills (UK) Limited

APPENDIX 1

Drawings



Sources:

Existing/Surrounding:
Models derived from 3d terrestrial laser scan survey pointcloud.
Internal room layouts derived from pointcloud wherever possible.
All other room information is assumed or from plans.

Notes:

Rev	Description	By	Date

Drawing Status
REPORT

Savills
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Tel: 020 7409 8644
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Project
Birkbeck College,
373-375 Euston Road,
London NW1.

Drawing
3D View South East
Existing

Date	15-11-2017	Scale	NTS
Drawn By	RM	Checked By	-
Drawing No.			Rev.
16-568-2017	03		-

Sources:

Existing/Surrounding:
Models derived from 3d terrestrial laser scan survey pointcloud.
Internal room layouts derived from pointcloud wherever possible.
All other room information is assumed or from plans.

Notes:

- Commercial buildings
- Residential buildings
- Outline of proposed building

Rev	Description	By	Date

Drawing Status
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Project
Birkbeck College,
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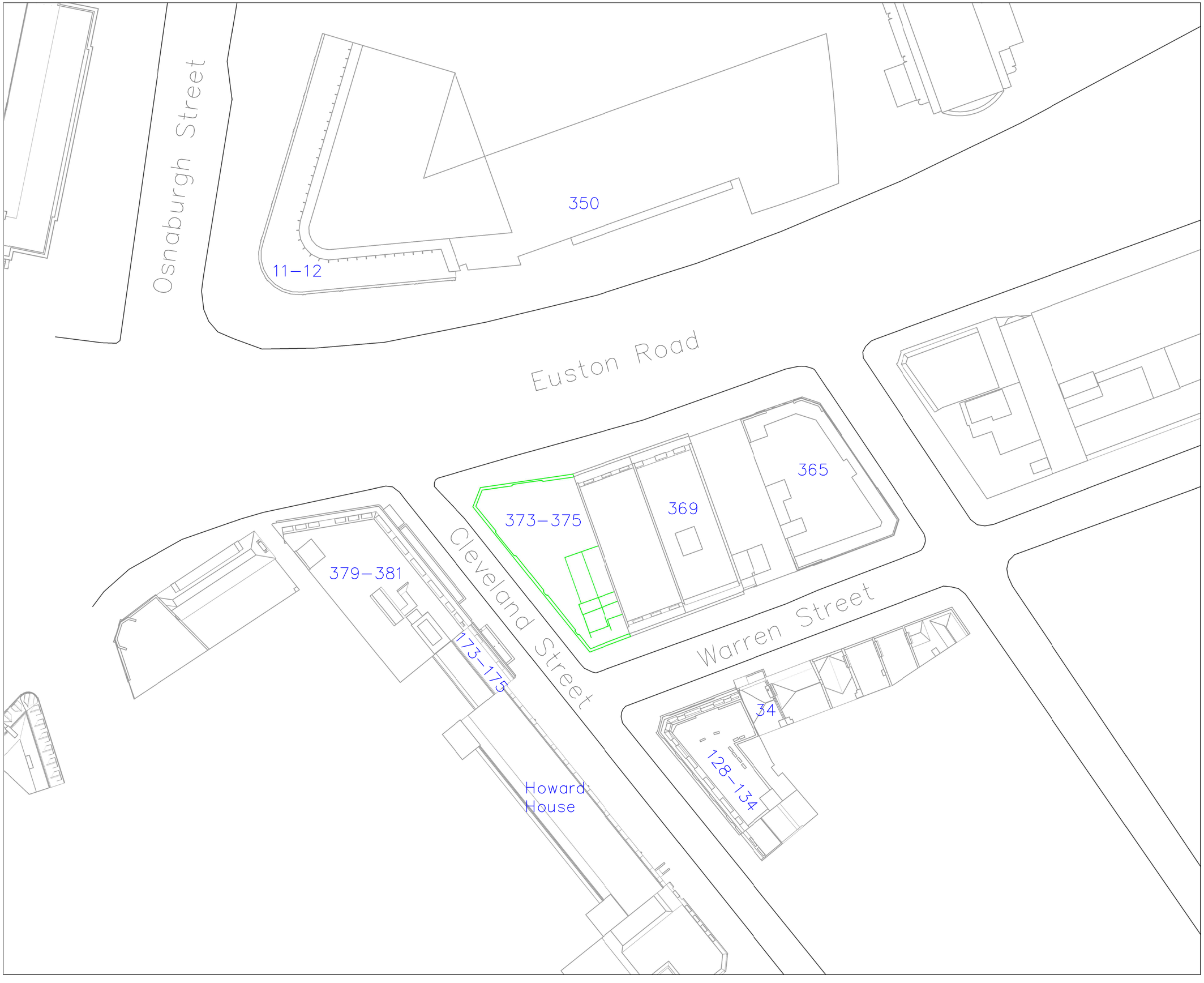
London NW1.

Drawing
Building Type Plan

Date 15-11-2017	Scale NTS
Drawn By RM	Checked By -

Drawing No.	Rev.
16-568-2017	02.1 -



Sources:

Existing/Surrounding:
Models derived from 3d terrestrial laser scan survey pointcloud.
Internal room layouts derived from pointcloud wherever possible.
All other room information is assumed or from plans.

Notes:

Rev	Description	By	Date

Drawing Status
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Project
Birkbeck College,
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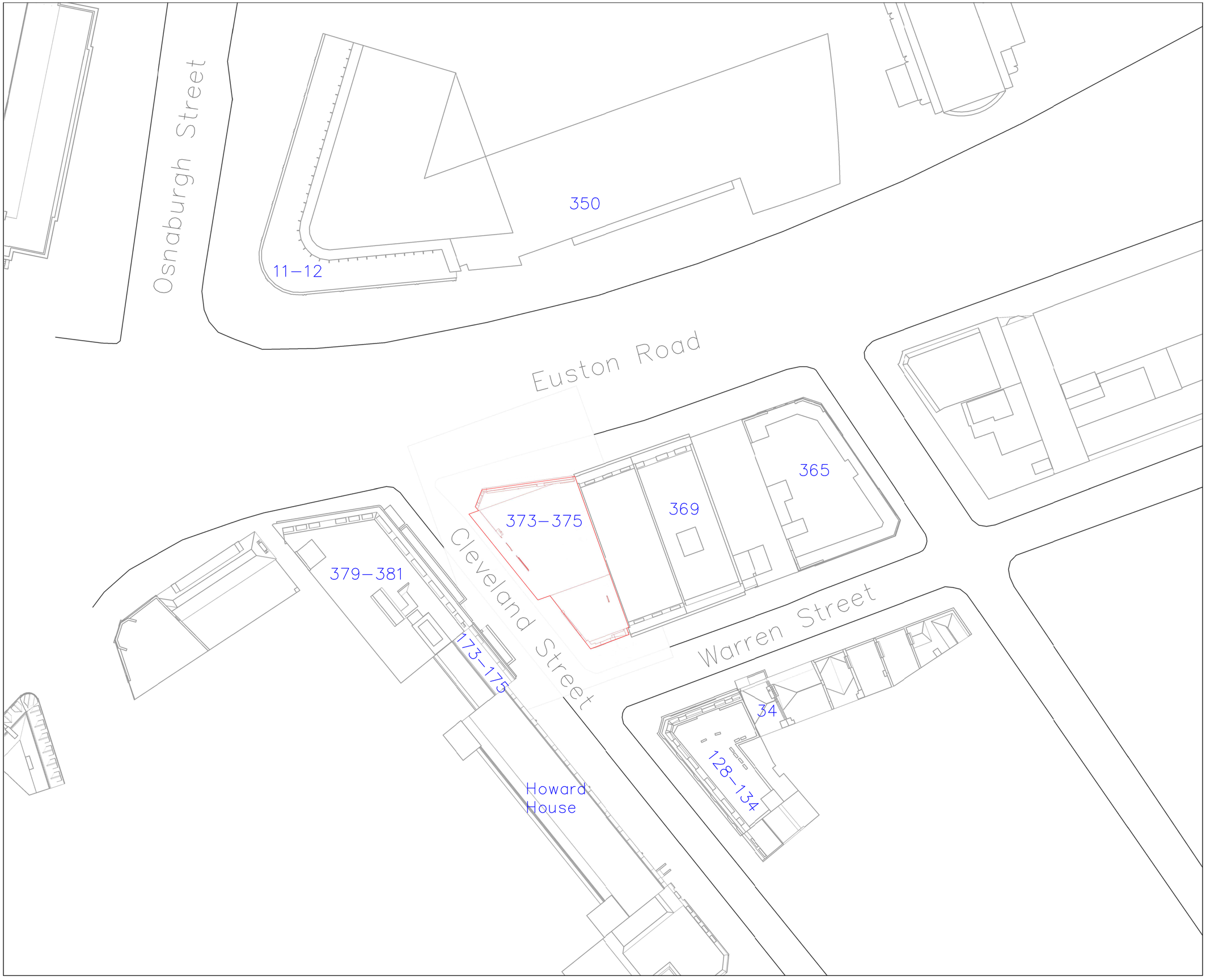
London NW1.

Drawing
Existing Site Plan

Date	15-11-2017	Scale	NTS
Drawn By	RM	Checked By	-
Drawing No.			Rev.
16-568-2017	01		-



Sources:

Existing/Surrounding:
Models derived from 3d terrestrial laser scan survey pointcloud.
Internal room layouts derived from pointcloud wherever possible.
All other room information is assumed or from plans.

Notes:

Rev	Description	By	Date

Drawing Status
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Project
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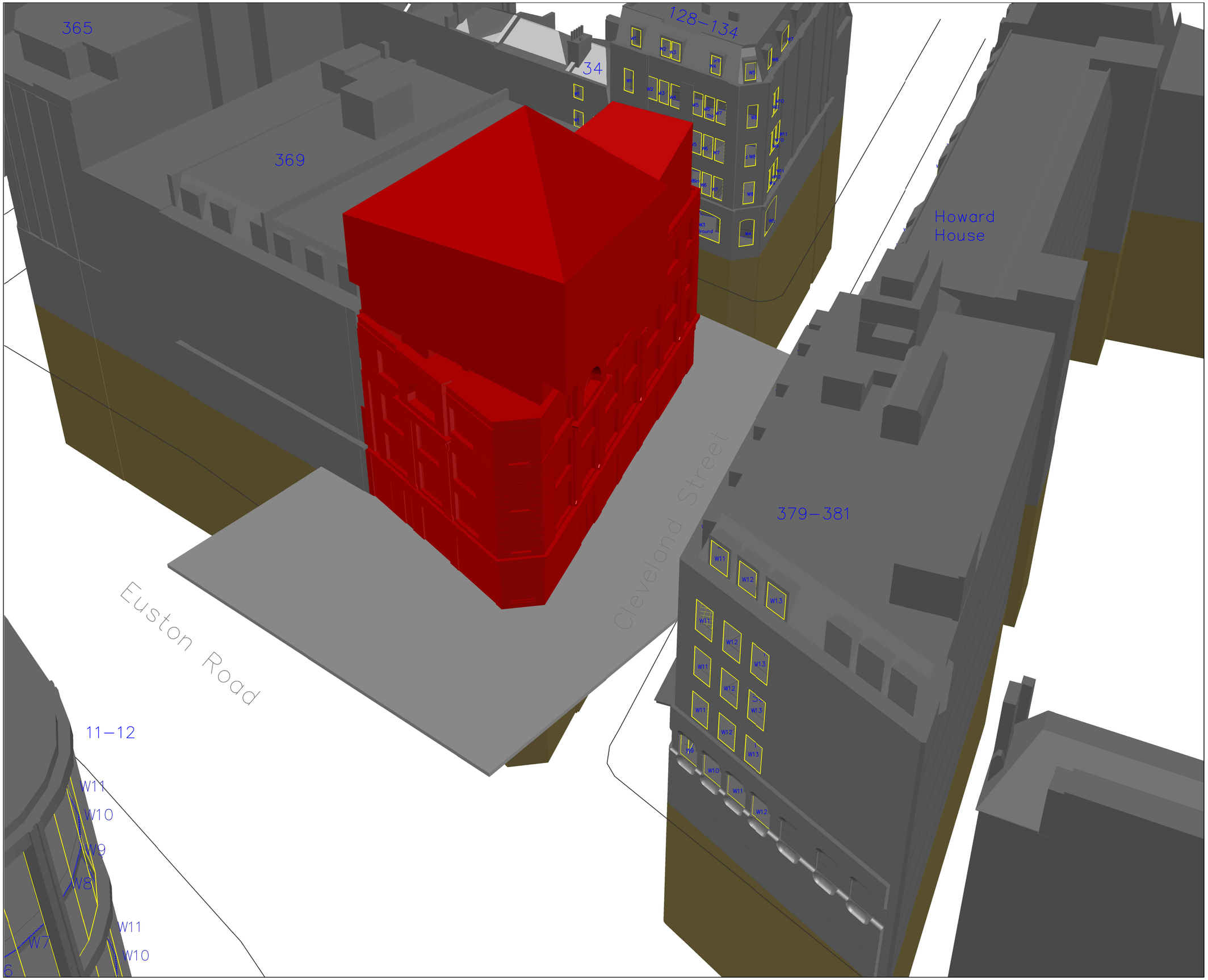
Drawing
Proposed Envelope Site Plan

Date 15-11-2017	Scale NTS
Drawn By RM	Checked By -
Drawing No.	Rev.
16-568-2017	02 -



Sources:

Existing/Surrounding:
Models derived from 3d terrestrial laser scan survey pointcloud.
Internal room layouts derived from pointcloud wherever possible.
All other room information is assumed or from plans.

Notes:

Rev	Description	By	Date

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Project
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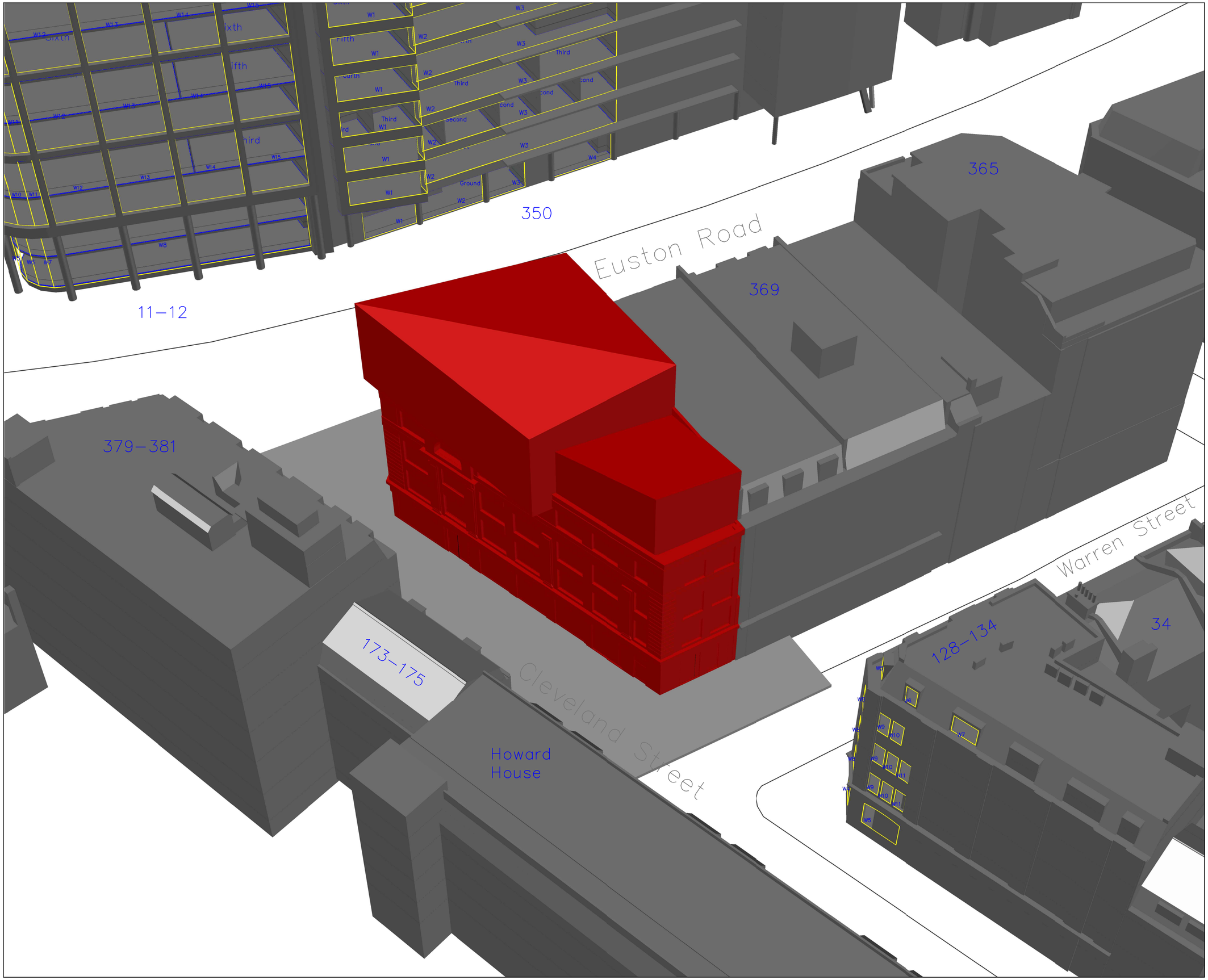
London NW1.

Drawing
3D View South East
Proposed Envelope

Date	15-11-2017	Scale	NTS
Drawn By	RM	Checked By	-

Drawing No.	Rev.
16-568-2017	04 -



Sources:

Existing/Surrounding:
Models derived from 3d terrestrial laser scan survey pointcloud.
Internal room layouts derived from pointcloud wherever possible.
All other room information is assumed or from plans.

Notes:

Rev	Description	By	Date

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RICS

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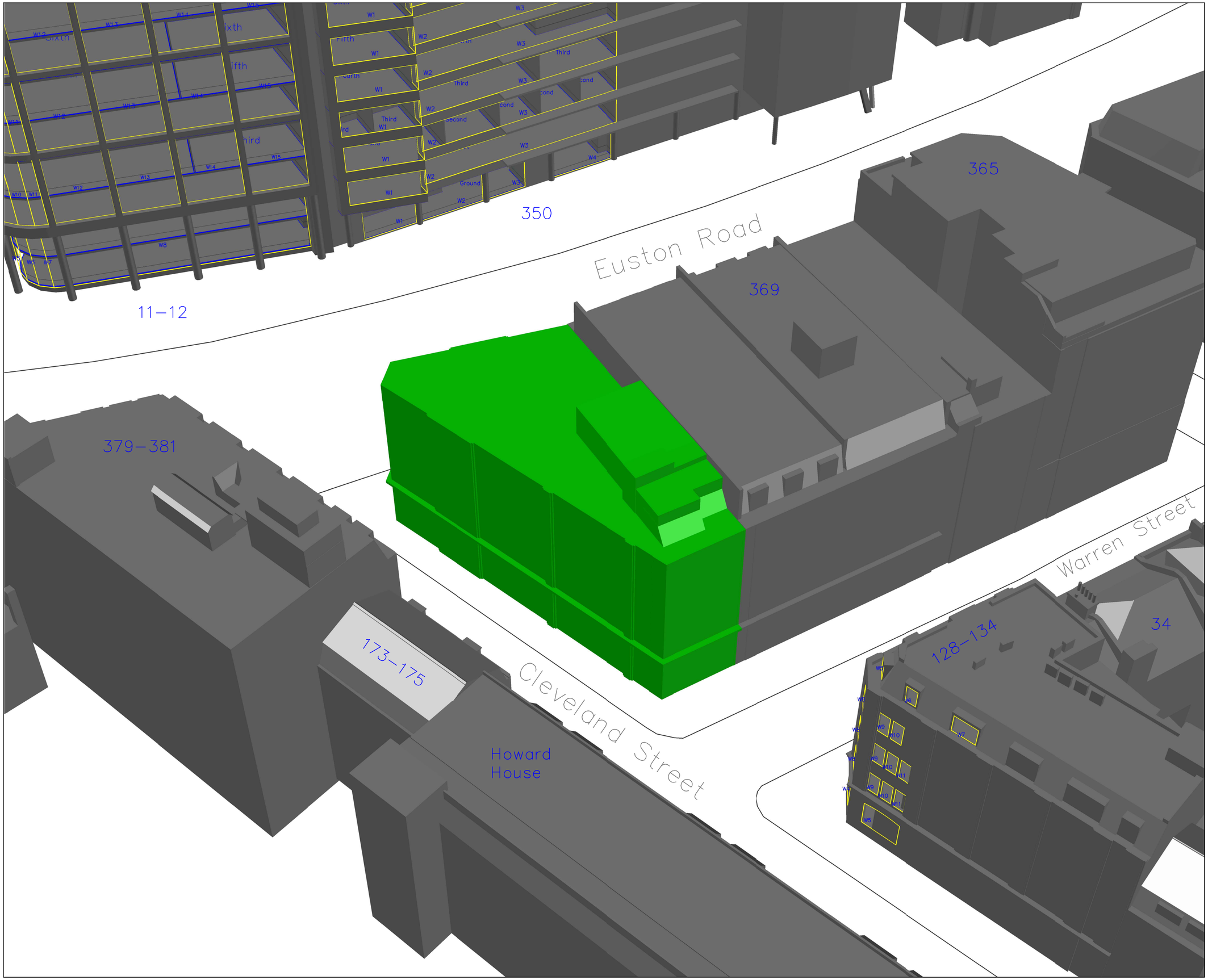
Drawing
3D View North East
Proposed Envelope

Date	15-11-2017	Scale	NTS
Drawn By	RM	Checked By	-
Drawing No.			Rev.
16-568-2017	06		-



Sources:

Existing/Surrounding:
Models derived from 3d terrestrial laser scan survey pointcloud.
Internal room layouts derived from pointcloud wherever possible.
All other room information is assumed or from plans.

Notes:

Rev	Description	By	Date

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Project
Birkbeck College,
373-375 Euston Road,
London NW1.

Drawing
3D View North East
Existing

Date 15-11-2017	Scale NTS
Drawn By RM	Checked By -
Drawing No.	Rev.
16-568-2017	05 -

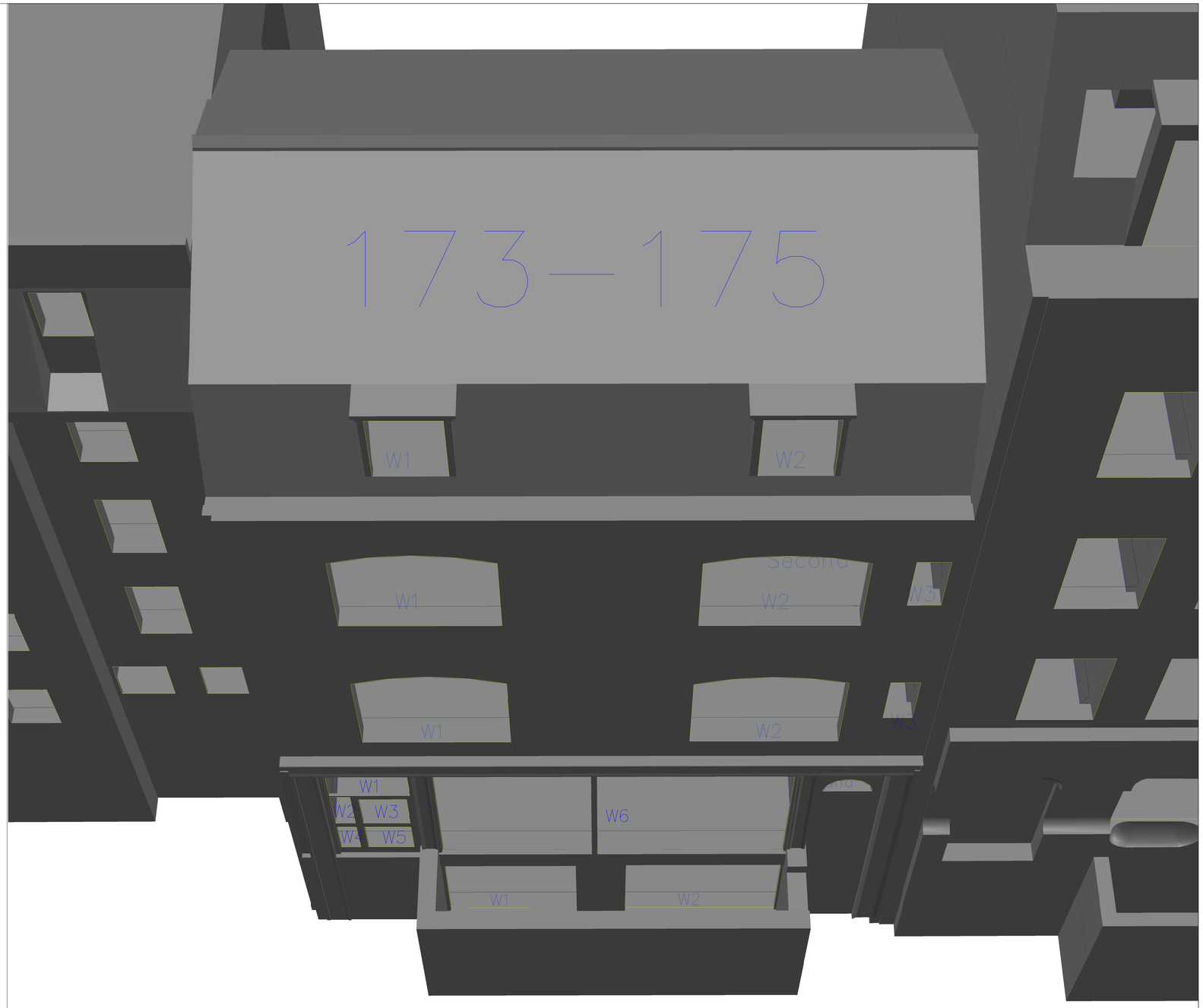
THIRD FLOOR

SECOND FLOOR

FIRST FLOOR

GROUND FLOOR
COMMERCIAL

BASEMENT
COMMERCIAL



Sources:

Existing/Surrounding:
Models derived from 3d terrestrial laser scan survey pointcloud.
Internal room layouts derived from pointcloud wherever possible.
All other room information is assumed or from plans.

Notes:

Rev	Description	By	Date

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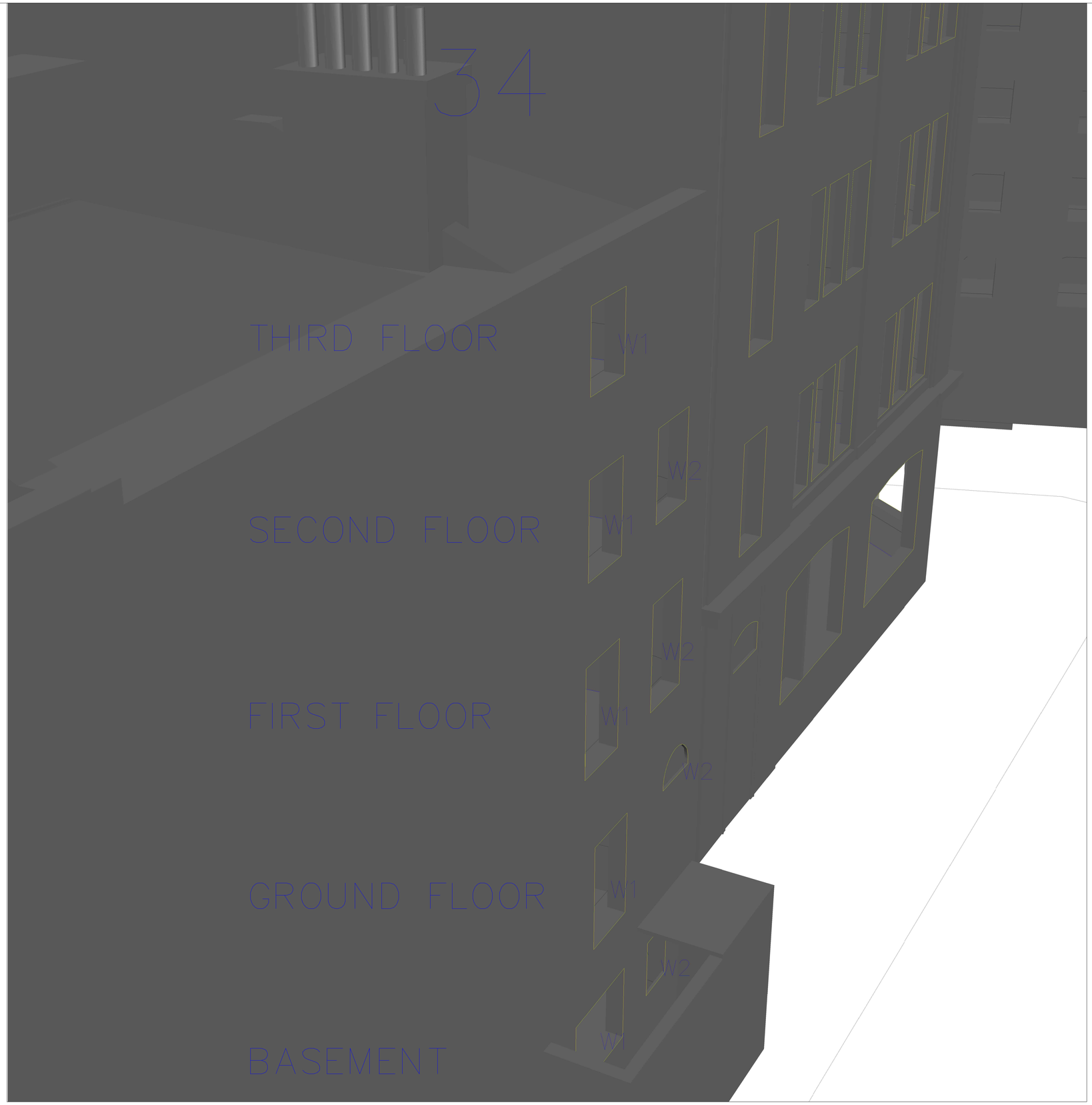
Project
Birkbeck College,
373-375 Euston Road,
London NW1.

Drawing
Window references
No.173-175 Cleveland Street

Date 15-11-2017	Scale NTS
Drawn By RM	Checked By -
Drawing No.	Rev.
16-568-2017	17 -



Sources:

Existing/Surrounding:
Models derived from 3d terrestrial laser scan survey pointcloud.
Internal room layouts derived from pointcloud wherever possible.
All other room information is assumed or from plans.

Notes:

Rev	Description	By	Date

Drawing Status
REPORT

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RICS

Project
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London NW1.

Drawing
Window references
No.34 Warren Street

Date	15-11-2017	Scale	NTS
Drawn By	RM	Checked By	-

Drawing No.	Rev.
16-568-2017	16 -

APPENDIX 2

Daylight / Sunlight Results

Project Name: Birkbeck College, 373-375 Euston Road
Project No.: 16-568-2017
Report Title: BRE Neighbour Analysis Test - 2017 - VSC & APSH
Date of Analysis: 15/11/2017

Floor Ref.	Room Ref.	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	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
34 Warren Street																			
Basement	R1	Residential	Unknown	W1	Existing	7.50	1.00	YES	339°N	*North*			*North*			*North*	*North*	*North*	*North*
					Proposed	7.50													
				W2	Existing	2.05	1.00	YES	339°N	*North*			*North*						
					Proposed	2.05													
Ground	R1	Residential	Unknown	W1	Existing	13.66	0.98	YES	339°N	*North*			*North*			*North*	*North*	*North*	*North*
					Proposed	13.40													
Ground	R2	Residential	Hallway	W2	Existing	15.18	0.98	YES	339°N	*North*			*North*			*North*	*North*	*North*	*North*
					Proposed	14.83													
First	R1	Residential	Unknown	W1	Existing	16.88	0.98	YES	339°N	*North*			*North*			*North*	*North*	*North*	*North*
					Proposed	16.58													
				W2	Existing	17.00	0.98	YES	339°N	*North*			*North*						
					Proposed	16.63													
Third	R1	Residential	Unknown	W1	Existing	24.63	0.98	YES	339°N	*North*			*North*			*North*	*North*	*North*	*North*
					Proposed	24.18													
Second	R1	Residential	Unknown	W1	Existing	20.77	0.98	YES	339°N	*North*			*North*			*North*	*North*	*North*	*North*
					Proposed	20.43													
				W2	Existing	21.04	0.98	YES	339°N	*North*			*North*						
					Proposed	20.61													
175 Cleveland Street																			
First	R1	Residential	Unknown	W1	Existing	19.17	0.74	NO	51°N	*North*			*North*			*North*	*North*	*North*	*North*
					Proposed	14.25													
First	R2	Residential	Unknown	W2	Existing	17.39	0.64	NO	51°N	*North*			*North*			*North*	*North*	*North*	*North*
					Proposed	11.18													
				W3	Existing	18.18	0.61	NO	51°N	*North*			*North*						
					Proposed	11.08													
Second	R1	Residential	Unknown	W1	Existing	24.40	0.73	NO	51°N	*North*			*North*			*North*	*North*	*North*	*North*
					Proposed	17.80													

Project Name: Birkbeck College, 373-375 Euston Road
Project No.: 16-568-2017
Report Title: BRE Neighbour Analysis Test - 2017 - VSC & APSH
Date of Analysis: 15/11/2017

Floor Ref.	Room Ref.	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	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
Second	R2	Residential	Unknown	W2	Existing	23.09	0.62	NO	51°N		*North*			*North*					
					Proposed	14.36													
				W3	Existing	23.85	0.59	NO	51°N		*North*			*North*					
					Proposed	14.09													
																North	*North*	*North*	*North*
Third	R1	Residential	Unknown	W1	Existing	29.02	0.79	NO	51°N		*North*			*North*					
					Proposed	23.17													
																North	*North*	*North*	*North*
Third	R2	Residential	Unknown	W2	Existing	27.63	0.70	NO	51°N		*North*			*North*					
					Proposed	19.39													
																North	*North*	*North*	*North*

APPENDIX 3

Savills Guidance Note – Daylight and Sunlight

Daylight and Sunlight Guidance Notes

January 2016

Prepared By:

Savills (UK) Limited
33 Margaret Street
London
W1G 0JD

SAVILLS (UK) LIMITED

SAVILLS GUIDANCE NOTES - AN OVERVIEW OF DAYLIGHT AND SUNLIGHT

1.0 INTRODUCTION

1.1 Daylight and sunlight are amenities enjoyed by the inhabitants of a building. Whilst 'Rights to Light' have been acknowledged in England and Wales for hundreds of years, recently issues surrounding the need for adequate lighting has become more important to Local Authorities, particularly when assessing the design of a development and the impact it may have on surrounding properties.

1.2 Daylight and sunlight considerations are now commonly incorporated within local planning policy and play an important part in many planning applications. This is principally enforced via Environmental Impact Assessments (EIAs), which were introduced under the EIA Regulations 1999[1].

1.3 Clearly, where analysis is required, this must follow relevant guidance, most notably Building Research Establishment (BRE) Guidance Note 209 – '*Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice'*.[2]

1.4 Broadly speaking, the aim of the BRE guide is to help to ensure that conditions in the local environment are considered. The aim of this is to secure sufficient sunlight and daylight for new developments and surrounding neighbours in order to promote good interior and exterior conditions. Needless to say, where daylight and sunlight is not considered or is not provided for in accordance with the relevant guidance, the Planning Application would be subject to potential failure and an extensive redesign process in order to rectify any shortfalls.

1.5 Although Local Authorities do have subtle differences in their application of daylight and sunlight criteria, BRE Guidance Note 209 provides the basis of most Local Authority requirements.

1.6 There are many factors that need to be taken into account when assessing daylight and sunlight in respect of a proposed development, therefore it is important that a holistic case specific approach is taken in order that all variables can be accounted for.

1.7 Savills (UK) Limited is Regulated by RICS and therefore is bound by the professional standards of the Royal Institution of Chartered Surveyors (RICS). The guidance for this area of professional practice is RICS Professional Guidance Note **GN96/2012 Daylighting & Sunlighting, 1st Edition.**

2.0 BRE GUIDANCE NOTE 209

2.1 The BRE Guide is often the main document used by Local Authorities when considering daylight and sunlight as part of the planning approval process. It provides the basis of what level of loss can be considered 'material' (i.e. at which point levels become unacceptable) - therefore assisting in the process of development control.

2.2 It is important to emphasise that whilst the BRE Guidelines are not mandatory and should not to be used as an instrument of planning policy, they have become an important 'guide' to planners when considering the design of a proposed development and the impact it will have upon the surrounding urban area.

[1] The title being the 'Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999'.

[2] This document was first published in 1991 as a direct commission from the Department of the Environment. BRE 209 was most recently updated in October 2011. The document superseded the 1971 Department of the Environment *'Sunlight and daylight'* guidance document. BRE Guide 209 takes into account the British Standard Code of Practice for Daylighting; BS8206 Part 2 - a stand alone document which also provides guidance on this matter.

2.3 The BRE Guide 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 in planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design. In special circumstances the developer or Planning Authority may wish to use different target values. For example, in an historic city centre, or in an area with modern high rise buildings, a higher degree of obstruction may be un avoidable if new developments are to match the height and proportions of existing buildings".

2.4 BRE Guide 209 (2011) sets out a number of circumstances where it may be appropriate to consider alternative daylight and sunlight target levels which are particularly relevant in respect of dense city-centre development. These circumstances include:

- Where the provision of balconies to neighbouring properties makes them particularly sensitive to development of neighbouring properties it may be appropriate to analyse the position without these balconies in place.

- Where there is an extant planning consent for a site the effect of the permitted scheme may be used as a benchmark when considering future revised or alternative schemes.

- The target levels adopted should be consistent with the site context. Therefore where a higher degree of obstruction is evident to existing neighbouring properties similar targets may be considered in respect of new development.

- Where a neighbouring property has windows close to a joint site boundary it should not take more than its share of light and there should be parity between the constraints imposed on neighbouring sites. This may be assessed by considering a 'mirror-image' of the affected property as the baseline position for development of the neighbouring site.

2.5 The greatest need, under normal circumstances, for daylight and sunlight is to 'habitable' rooms of residential buildings. This is acknowledged within the guidelines, which place the most emphasis on these uses. Indeed Local Authorities are usually only concerned with the impact to 'habitable' rooms and this is often reflected in the drafting of local planning policy.

2.6 The BRE Guide considers both daylight and sunlight. These factors are discussed separately below.

3.0 DAYLIGHT

3.1 Daylight, or skylight, is the amount of light that enters a room and should not be confused with sunlight (discussed later) which is direct sunlight. Daylight can be used to determine the loss of light to a building as a result of a neighbouring development or the internal quality of daylight within a room.

3.2 Initially, when considering the impact to a nearby building the BRE Guide states that where a new development falls beneath a 25 degree angle, taken from the centre of a neighbouring window or a point 1.6m above ground level in relation to floor to ceiling windows, then there will be no material impact on daylight and no further analysis is required. If this is not the case then the BRE Guide recommends that further analysis is undertaken to establish if there will be adequate daylight or, to be precise, light from the sky.

3.3 The BRE Guide and other relevant supporting documentation suggests various methods for calculating daylight;

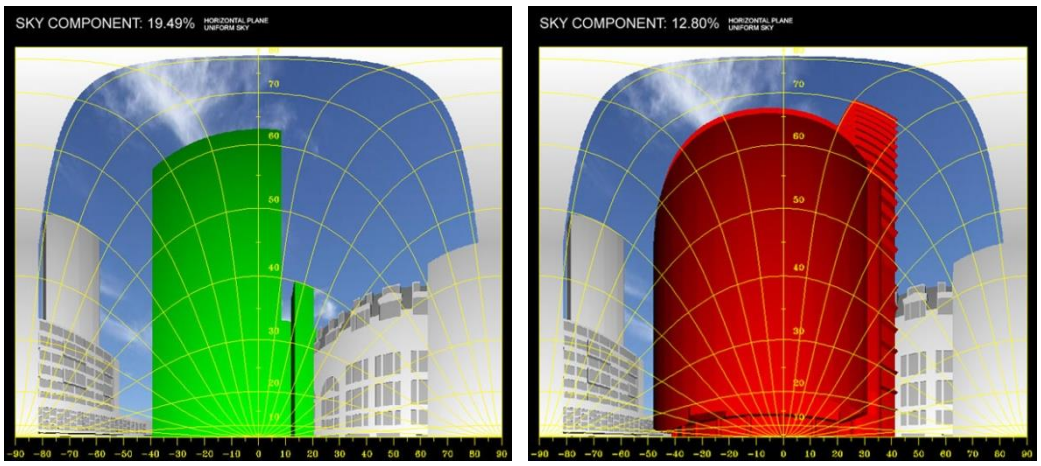
- Vertical Sky Component (VSC)
- No Sky Contours or Daylight Distribution (NSC/DD)
- Average Daylight Factor (ADF)

4.0 VERTICAL SKY COMPONENT (VSC)

4.1 This is the measure of the amount of skylight incident on a vertical plane (i.e. a window). Where establishing the daylight falling upon a window we consider the light at the centre of the window. The VSC is calculated by assessing the ratio of skylight available as a percentage of the unobstructed skylight available at that same point. For a uniform sky, the maximum value is 50% (since the point is on a vertical plane, clearly only half the hemisphere of light can contribute). For a CIE[3] sky, the maximum value is 39.6%.

4.2 The guidelines state that if the VSC at the centre of a window is less than 27% and less than 0.8 times its former value as a result of the development in question, the diffuse day lighting of the existing building will be adversely affected. A value of 27% corresponds to an infinite obstruction angle of 25 degrees - which is why at 25 degrees and above we can normally discount the need for any further daylight and sunlight analysis (see 3.2 Above). Again it is important to note that the BRE Guide (as with all the BRE guidelines) can be interpreted with a degree of flexibility and this is not a hard and fast rule.

4.3 One way of measuring the VSC and displaying any change clearly is by using a Waldram Diagram. As can be seen (below), this method can be used to provide an easy to understand pictorial representation of the pre and post construction VSC.



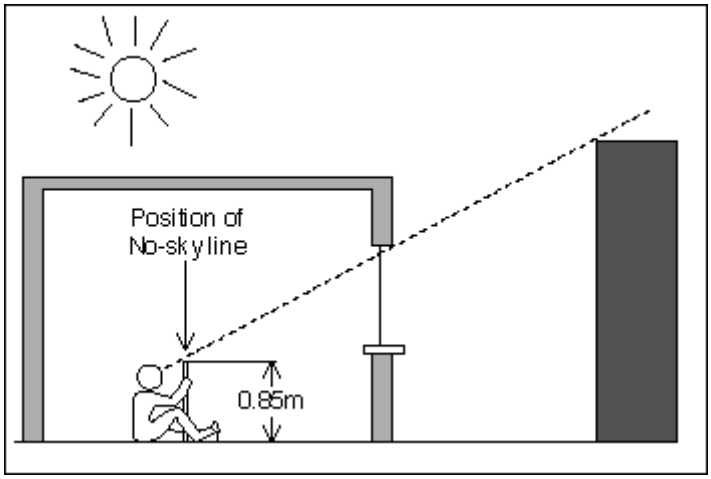
An Example Of A Waldram Diagram Analysis

4.4 As already established an unobstructed view from the vertical plane of a window would give a VSC value of 39.6%, this would correspond to 50% of the hemisphere. The diagram shows how 12.8% of the sky remains after an obstruction has been erected which, when compared with the existing situation shows a marked decrease from the original 19.49% VSC. This is less than 0.8 times it's former value and is less than the 27% recommended. Consequently the VSC for this window would fall beneath the guideline BRE target value – and, as a result, introduce potential planning risk. Accordingly, on this hypothetical project, we would need to work closely with Planners and Architects in order to mitigate this problem and secure planning consent.

[3] Commission Internationale d'Eclairage – the creator of the model for a standard overcast sky.

5.0 NO SKY CONTOUR (NSC) / DAYLIGHT DISTRIBUTION (DD)

5.1 The NSC measures the point, at desktop level, where sky is no longer visible through a window. See below:



How To Establish The Location Of The No Sky Contour

5.2 The NSC is similar to the VSC approach in that the BRE guidelines state that 20% reduction to the existing area of sky visibility at the is considered acceptable. Accurate assessment of the position of the No-Sky Contour is reliant upon knowing room layout although an adequate indication of the position may achieved by adopting appropriate assumptions based upon external observations.

5.3 The NSC, which is sometimes referred to as the Daylight Distribution (DD), enables a greater understanding of the spread of daylighting within a room. The BRE Guide does not relate this methodology of analysis to 'room use', instead it is used to simply provide an understanding of the 'change' caused by the proposed development.

6.0 AVERAGE DAYLIGHT FACTOR

6.1 Average Daylight Factor or ADF is qualitative assessment of the amount of daylight within a room, in other words it is used to show how well a room is illuminated.

6.2 The BRE Guidelines define ADF as;

"Ratio of total daylight flux[4] incident upon the working plane, expressed as a percentage of the outdoor luminance on a horizontal plan due to an unobstructed CIE Standard Overcast Sky"

6.3 ADF values can be calculated for rooms within a proposed development to ensure the quality of daylight will be adequate.

6.4 Factors on which the ADF depend are: VSC at the face of each window, the Total Window Area, Total Wall Area, Wall Reflectivity and Window Transmission. There are no specific BRE criteria for reduction in ADF if a proposed development were to be implemented, but since the ADF is related to the VSC via the obstruction angle, a reduction in VSC leads to a reduction in ADF.

6.5 The BRE Guide states that for a predominantly day lit room the ADF should be 5% or more if there is no supplementary electric lighting, or 2% or more if there is supplementary electric lighting. There are additional recommended ADF levels for dwellings with supplementary lighting.

[4] Luminous Flux – 'The light emitted by source, or received by a surface (expressed in lumens). The quantity is derived from radiant flux (power) by evaluations the radiation in accordance with the spectral sensitivity of the "standard" eye'.

6.6 They are[5];

- *2.0% - Kitchens*
- *1.5% - Living Rooms*
- *1.0% - Bedrooms*

6.7 The ADF methodology is not cited in the main text of the BRE Guide and is principally intended as design tool to ensure appropriate amenity within new-build units. Consideration of the Average Daylight Factor can however have several benefits over the VSC method of analysis given its consideration of both room use and layout. It is also the principal method used by both the British Standard, the British Standards Institute and CIBSE[6] - bodies of reference used in the compilation of BRE Guide 209.

6.8 Accurate assessment of the Average Daylight Factor requires knowledge of the layout, use and specification of finishes / materials of neighbouring properties. Where exact floor plans and room uses are not available the professional may make realistic assumptions regarding room size and use from external observations and experience and utilise standard transmittance and reflectivity values as set out in Daylight and Window Design: CIBSE Guide LG10.

7.0 SUNLIGHT

7.1 Sunlight to windows is assessed by APSH (Annual Probable Sunlight Hours), which seeks to ascertain the likelihood of a building elevation, within 90 degrees of due south, receiving sunlight in a typical year.

7.2 The BRE guide states that main living room windows and conservatories are relevant for detailed sunlight assessment with other habitable spaces being considered less important.

7.3 The calculation was designed to establish the percentage of APSH on the basis of sunlight availability. The maximum total of annual unobstructed sunlight hours is 1,486 - the percentage APSH relates to this.

7.4 The BRE Guide states;

"If a window reference point can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months of 21st September and 21st March, then a room should still receive enough sunlight".

7.5 The sunlight amenity to relevant windows is only considered to be materially affected if following a development APSH levels are less than 0.8 times their former value. Additionally reductions of 4% total APSH or less are not considered an adverse affect upon a neighbour.

8.0 SUMMARY

8.1 These brief Guidance Notes are intended as an overview of the topic of daylight and sunlight and are not intended to be exhaustive. They have been drafted in order to provide an insight into the various documents referred to and relied on by planning, development, construction, legal, building services, and architectural etc professionals.

8.2 In addition to the core constraints of daylight and sunlight the BRE guideline also deal with additional amenity constraints such as overshadowing of amenity spaces. Larger, more complex, development schemes may also require detailed analysis of factors such as light pollution and solar glare. Our specialist teams are able to fully advise on these issues and assist in the production of Environmental Statements (ES / EIA's) to accompany complex planning applications.

8.3 It is most important to note that where a problem exists with daylight and sunlight, once identified, it can almost certainly be overcome. However, it will need careful analysis and professional assistance to do so. Should any queries Savills professionals are available to provide focused, professional advice.

[5] These figures are also recommended in BS 8206 Part 2 2008 entitled 'Code of Practice for Daylighting'.

[6] Chartered Institution of Building Services Engineers