48 Shoot-Up Hill, London
Daylight & Sunlight Report

Client:	Moreland and Co
Prepared by:	Michael Harper
Reference:	1639
Date:	19th May 2016

waldrams
daylight & sunlight

Chartered Surveyors

e: contact@waldrams.com

t: 020 7183 9109

Table of Contents

Executive Summary

- This report provides analysis of the internal daylight and sunlight for the basement habitable rooms of the proposed scheme at 48 Shoot-Up Hill, London.
- The analysis is based on the methods laid out in the BRE Guidelines, used by planning officers to determine acceptability of daylight and sunlight.
- The analysis shows that all habitable rooms in the basement either meet or are sufficiently close to the BRE Guidelines to be considered acceptable.
- No main living spaces in the basement units have windows that face within 90° of due south and as such the BRE Guidelines do not require that they are analysed.
- Overall therefore it can be concluded that all rooms within these two units either meet the BRE Guidelines or come sufficiently close to be considered acceptable for planning purposes in terms of daylight and sunlight.

1. Introduction

Waldrams Chartered Surveryors has been instructed to provide an analysis of the internal daylight and sunlight for the basement habitable rooms of the proposed scheme at 48 Shoot-Up Hill, London. The analysis has been based upon a photogrammetric survey of the site and surrounding properties, a site visit and drawings of the Genesis Architects scheme received 18th May 2016.

The existing site is shown on drawings 1639-02-01 to -02-03 in Appendix 1. The proposal can be seen on drawings 1639-02-04 to -02-06. The room layouts for the basement can been seen on drawing 1639-03-03. The numerical results of the daylight and sunlight analysis can be found in Appendix 2.

2. Summary of how daylight and sunlight are considered for planning

2.1 Introduction to the BRE Guidelines

Daylight and sunlight are planning considerations. The main reference used by local planning authorities to determine the acceptability of proposals in terms of their internal daylight and sunlight and the impact on daylight and sunlight to the surrounding properties is the Building Research Establishment (BRE) Guidelines, used in conjunction with British Standard BS8206 Part 2. The BRE Guidelines provide scientific, objective methods for establishing the acceptability of daylight and sunlight internal to the scheme and the surrounding properties. In practice it is principally the main habitable rooms internal to the scheme and within the surrounding residential properties which are sensitive in terms of loss of daylight and sunlight. This report therefore focuses on the internal daylight and sunlight and the change in daylight and sunlight to habitable rooms in the surrounding residential property.

The BRE Guidelines specify that the daylight and sunlight results be considered flexibly and in the context of the site. Clearly there would be a higher expectation for daylight and sunlight in a rural or suburban environment than in a dense city centre location. Likewise if the existing site is open or only has low existing buildings, but has been earmarked in local development policy for high density development, then it is inevitable that the change between existing and proposed levels will be relatively large. In these situations it is the retained level of daylight and sunlight which the primary measure of acceptability, not the change between existing and proposed levels. The important factor in all cases is that the levels of daylight and sunlight are appropriate, taking into account all the planning policy requirements of the site. The BRE Guidelines acknowledge this in the introduction where the BRE Guidelines state:

> "The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and thus this document should not be seen as an instrument of planning policy. Its aim is to help rather constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design. In special circumstances the developer or planning authority may wish to use different target values."
>
> (Page 1, BRE Guidelines)

Thus, the numerical figures should not be rigidly applied, but instead used as part of the overall evaluation of the daylight and sunlight to the surroundings in context of the site, its existing massing, and the need for regeneration and local planning policy guidance for the site. In particular existing local precedents or recent planning consents may provide a good indication as to appropriate levels in the vicinity.

2.2 Method used for calculating the daylight and sunlight results

The analysis provided in this report utilizes state-of-the-art software to calculate in three dimensions the internal daylight sunlight following the methods specified in the revised 2011 BRE Guidelines to correctly calculate the daylight and sunlight to all rooms and windows within the scheme. A three dimensional accurate computer model has been created for the existing site in context of the immediate surrounding properties which either could be affected by the proposal or which could materially affect the result of a potentially affected room and window.

2.3 Method for analysing acceptable daylight and sunlight internal to the scheme itself

The method for assessing internal daylight to the scheme is:

- Average Daylight Factor (ADF) based on the criteria for room use or where this is not known a criteria of 1.5% ADF (i.e. living room) has been used;

and for internal sunlight it is:

- Annual Probable Sunlight Hours (APSH).

The ADF measure of daylight takes into account the main factors which affect the actual daylight appearance of a room including the area of the window.

ADF provides an absolute measure of daylight expressed as a ratio of daylight for the room in question as a proportion of the daylight outside at any moment in time. The ADF for a living room should be above 1.5% (i.e. the room should enjoy a minimum of 1.5% of the average external

daylight at any moment in time), whilst that for a bedroom and kitchen should be in excess of 1% and 2% respectively. ADF is dependent on the area of sky visibility, which is closely related to VSC, the area of the window serving the room, the glazing transmittance, the total area of the room's surfaces and the internal reflectance of the room.

References:

BRE Guidelines (BR 209):- Site layout planning for daylight and sunlight: a guide to good practice, by PJ Littlefair (2011).

These Guidelines provide the basis of the analysis described in this report. Please refer to this document for a detailed description as to the approach, methodology and implementation of the numerical analysis used in this report. A summary of the approach and methods recommended by the BRE Guidelines is included in the Introduction (Section 1) above of this report.

3. Assumptions

An accurate 3-dimensional CAD model has been constructed based on a photogrammetric survey, the architect's drawings of the proposal and site photographs.

4. Sources of information used in the report

Genesis Architects Ltd
001 SITE EXISTING (1).pdf
002 EXISTING ELEVATIONS.pdf
Received 12.1.16
003 PROPOSED PLANS.pdf Rev A.pdf
004 PROPOSED ELEVATIONS.pdf Rev A.pdf
master PC B.dwg
Received 12.2.16

Moreland & Co
master PC A.dwg

Received 12.1.16

003 PROPOSED PLANS.pdf Rev B.pdf
004 PROPOSED ELEVATIONS.pdf Rev B.pdf
Received 18.5.16

Waldrams Ltd
Site photographs
Photogrammetry
Ordnance Survey

5. The Existing Site

The existing site is shown on drawings 1639-02-01 to -02-03 in Appendix 1, and also below in Photo 1.

Photo 1: The existing site

6. Internal Daylight and Sunlight

The internal daylight and sunlight to the basement habitable rooms of the proposed scheme by Genesis Architects has been analysed. The proposal can be seen on drawings 1639-02-04 to -02-06 in Appendix 1. The room layouts used in this analysis can been seen on drawing 1639-03-03 also in Appendix 1.

The BRE Guidelines makes clear that ADF is the appropriate measure for daylight for new build accommodation such as this, and APSH is the measure for sunlight. It is important to note that whilst the BRE Guidelines recommend a kitchen should enjoy daylight levels of 2% ADF and a living room levels of 1.5%, where a room is designated as living room/kitchen/dining room, the lower threshold of 1.5% has been used as a benchmark of acceptability. It will be commonplace for the kitchen portions of these rooms to be positioned at the rear of these L/K/Ds where these spaces will be artificially lit to provide adequate light at the working plane to allow for food preparation etc.

In terms of daylight, all rooms apart from basement R1 (as seen in drawing 1639-03-03) are fully compliant with the BRE Guidelines, achieving ADF percentages above what is recommended for their room use and thus can be considered well daylit.

Basement R1, in Unit 1, achieves an ADF percentage of 0.92%, which is only marginally below the 1% ADF recommended by the BRE Guidelines for bedrooms and is in our opinion sufficiently close to the BRE Guidelines to be considered acceptable given the flexibility within the BRE Guidelines in urban locations such as this. Moreover, the other two rooms (basement R2 and R3), which together form Unit 1 with basement R1, achieve ADF figures in excess of the recommendations, and so the unit as a whole will have a reasonably well daylit appearance.

The bedroom and LKD in Unit 2 both achieve ADF percentages in excess of the minimum recommendations in the BRE Guidelines, indicating that they and the unit as a whole will be well daylit.

In terms of sunlight, the BRE Guidelines make it clear that sunlight is primarily of concern for main living spaces. Neither of the two LKDs within the basement have windows that face within 90° of due south and as such the BRE Guidelines does not require they are analysed.

Overall therefore all habitable rooms in the basement units either meet or come sufficiently close to the BRE Guidelines to be considered acceptable.

7. Conclusion

This report provides analysis of the internal daylight and sunlight for the basement habitable rooms of the proposed scheme at 48 Shoot-Up Hill, London.

The analysis is based on the methods laid out in the BRE Guidelines, used by planning officers to determine acceptability of daylight and sunlight.

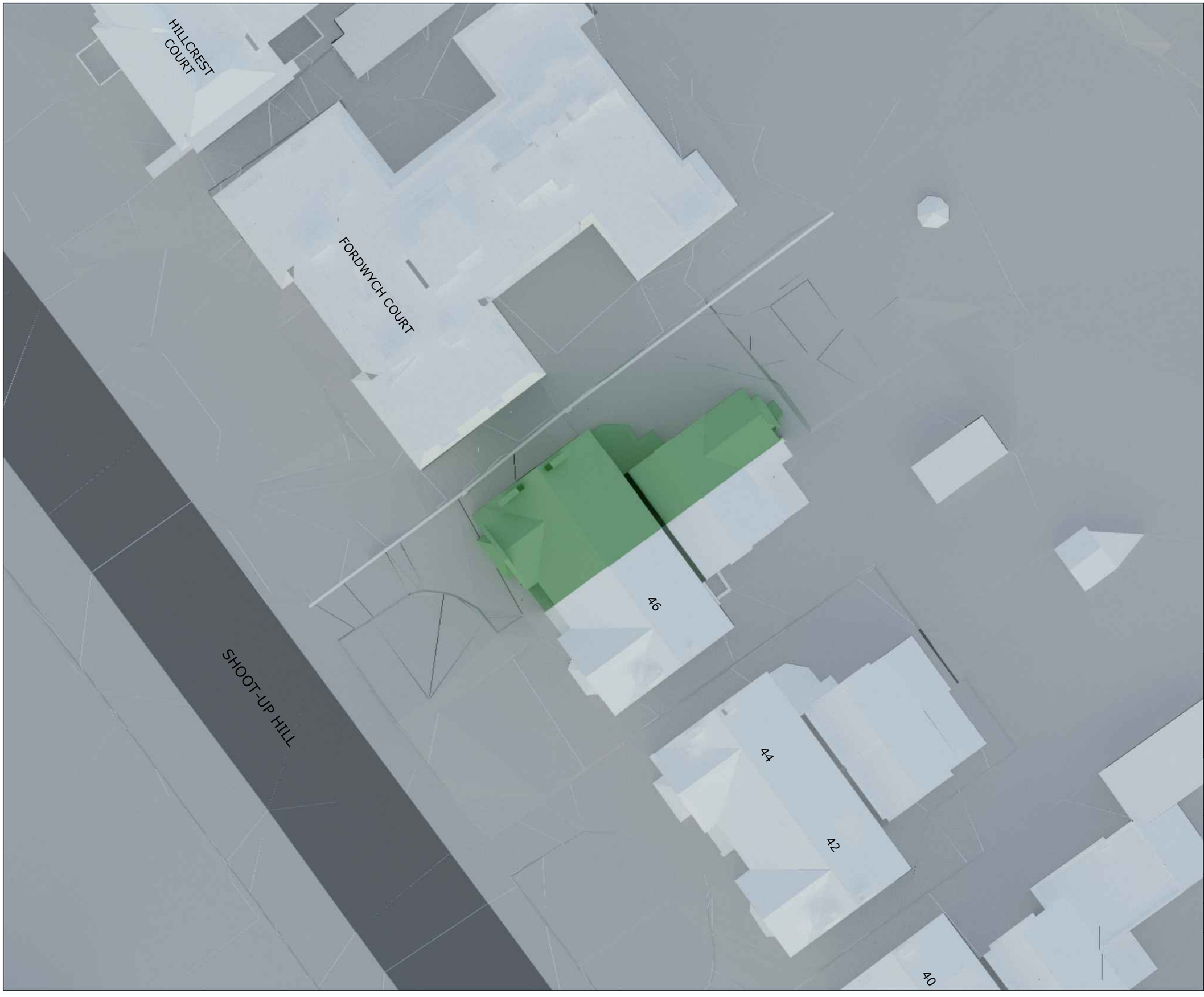
The analysis shows that all habitable rooms in the basement units either meet or come sufficiently close to the BRE Guidelines for daylight to be considered acceptable.

No main living spaces have windows that face within 90° of due south and as such the BRE Guidelines do not require that they are analysed for APSH.

Overall therefore it can be concluded that all rooms within these two units either meet the BRE Guidelines or come sufficiently close to be considered acceptable for planning purposes in terms of daylight and sunlight.

Appendix 1

Drawings



SOURCES OF INFORMATION:

MORELAND AND CO
IR01 (RECEIVED 12.01.2016)

VERTEX
IR02 (RECEIVED 20.01.2016)

SITE PHOTOGRAPHS

N

NOTES:

EXISTING BUILDING SHOWN IN GREEN

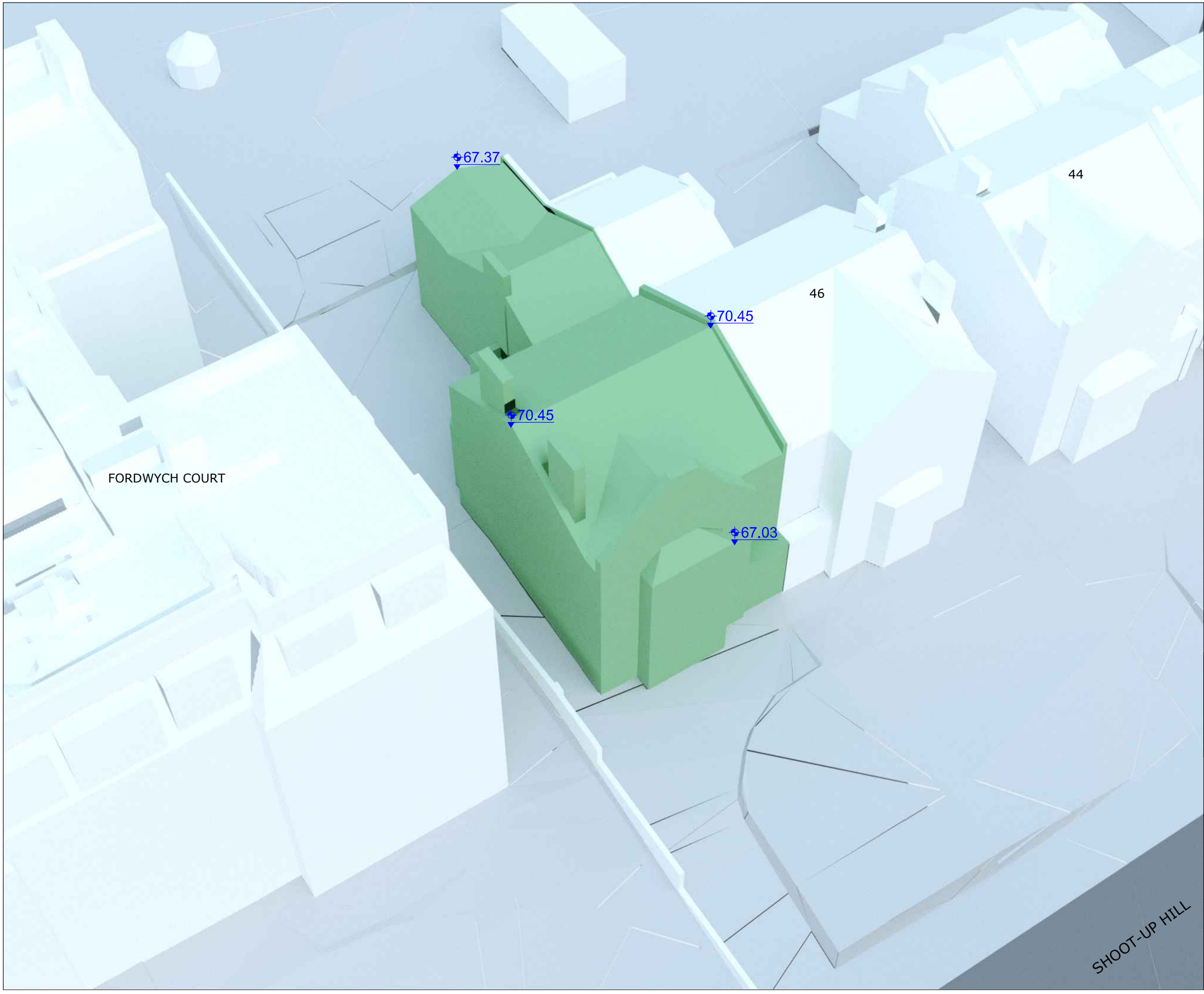
waldrams
Email: contact@waldrams.com
Tel: 020 7183 9109
www.waldrams.com

PROJECT
48 SHOOT-UP HILL
LONDON NW2

DRAWING
PLAN VIEW
EXISTING CONDITION

DATE	SCALE @ A3
15.02.16	1:250
DRAWN BY	REVISION
ET	A

PROJECT No.	REL No.-DRAWING No.
1639	02-01



SOURCES OF INFORMATION:

MORELAND AND CO
IR01 (RECEIVED 12.01.2016)

VERTEX
IR02 (RECEIVED 20.01.2016)

SITE PHOTOGRAPHS

NOTES:

ALL AOD HEIGHTS ARE IN METRES

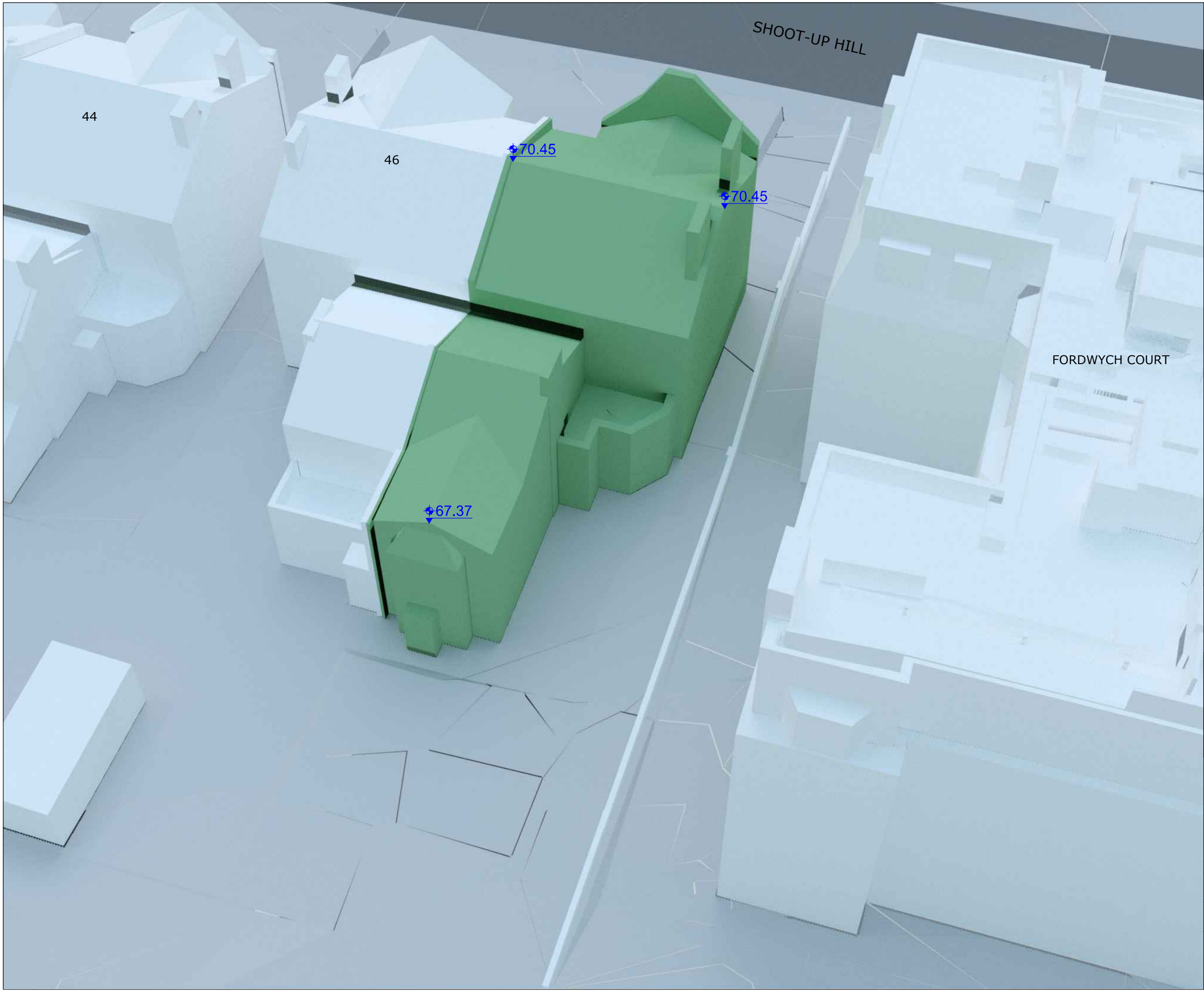
EXISTING BUILDING SHOWN IN GREEN

waldrams
Email: contact@waldrams.com
Tel: 020 7183 9109
www.waldrams.com

PROJECT
48 SHOOT-UP HILL
LONDON NW2

DRAWING
3D VIEW
EXISTING CONDITION

DATE	SCALE @ A3
15.02.16	NTS
DRAWN BY	REVISION
ET	A
PROJECT No.	REL No.-DRAWING No.
1639	02-02



SOURCES OF INFORMATION:

MORELAND AND CO
IR01 (RECEIVED 12.01.2016)

VERTEX
IR02 (RECEIVED 20.01.2016)

SITE PHOTOGRAPHS

NOTES:

ALL AOD HEIGHTS ARE IN METRES

EXISTING BUILDING SHOWN IN GREEN

waldrams
Email: contact@waldrams.com
Tel: 020 7183 9109
www.waldrams.com

PROJECT
48 SHOOT-UP HILL
LONDON NW2

DRAWING
3D VIEW
EXISTING CONDITION

DATE	SCALE @ A3
15.02.16	NTS
DRAWN BY	REVISION
ET	A

PROJECT No.	REL No.-DRAWING No.
1639	02-03

SOURCES OF INFORMATION:

MORELAND AND CO
IR01 (RECEIVED 12.01.2016)

VERTEX
IR02 (RECEIVED 20.01.2016)

SITE PHOTOGRAPHS

N

NOTES:

PROPOSED SCHEME SHOWN IN BLUE

waldrams
Email: contact@waldrams.com
Tel: 020 7183 9109
www.waldrams.com

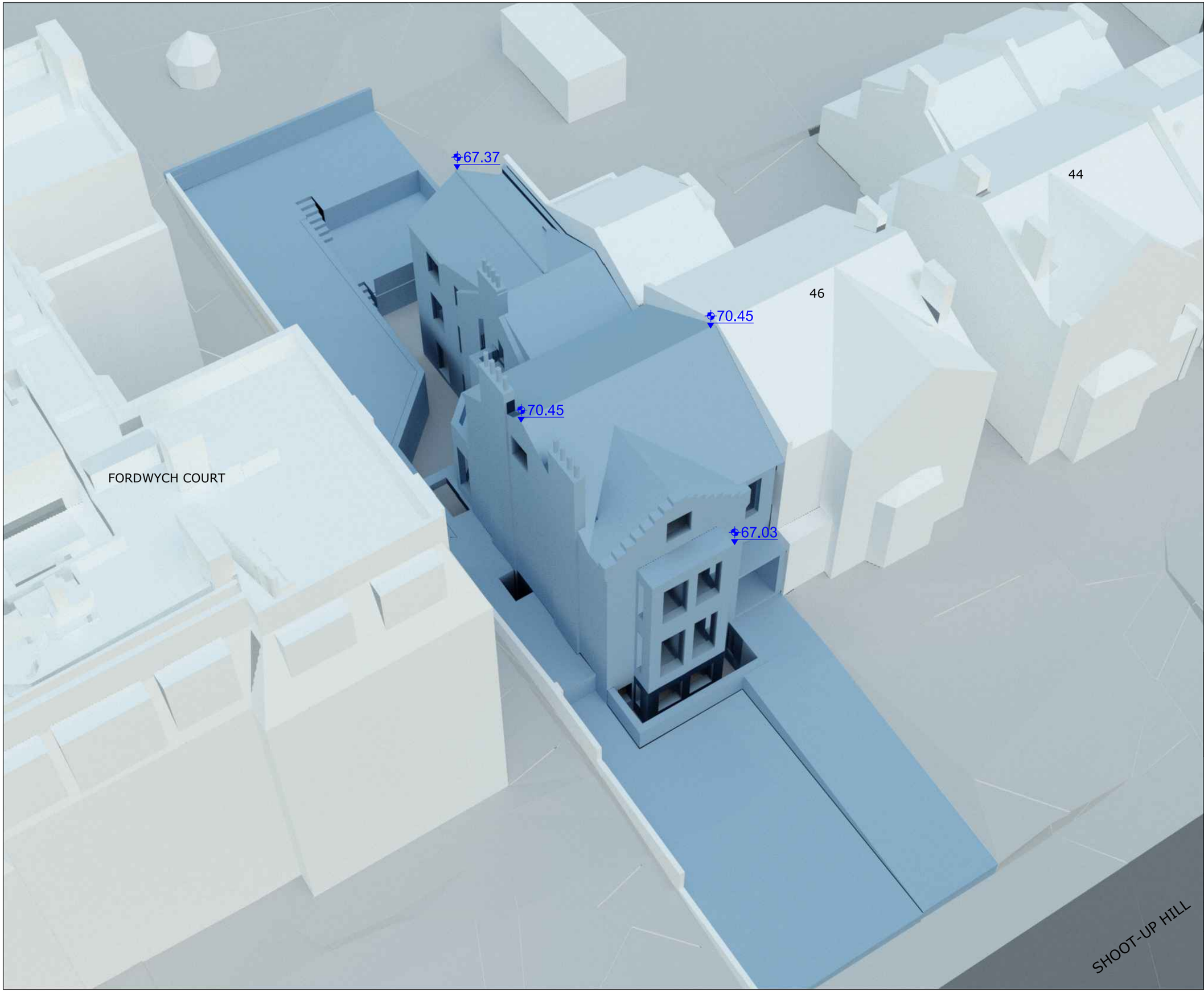
PROJECT

48 SHOOT-UP HILL
LONDON NW2

DRAWING

PLAN VIEW
PROPOSED SCHEME
(AS RECEIVED)

DATE	SCALE @ A3
15.02.16	1:250
DRAWN BY	REVISION
ET	A
PROJECT No.	REL No.-DRAWING No.
1639	02-04



SOURCES OF INFORMATION:

MORELAND AND CO
IR01 (RECEIVED 12.01.2016)

VERTEX
IR02 (RECEIVED 20.01.2016)

SITE PHOTOGRAPHS

NOTES:

ALL AOD HEIGHTS ARE IN METRES

PROPOSED SCHEME SHOWN IN BLUE

waldrams
Email: contact@waldrams.com
Tel: 020 7183 9109
www.waldrams.com

PROJECT

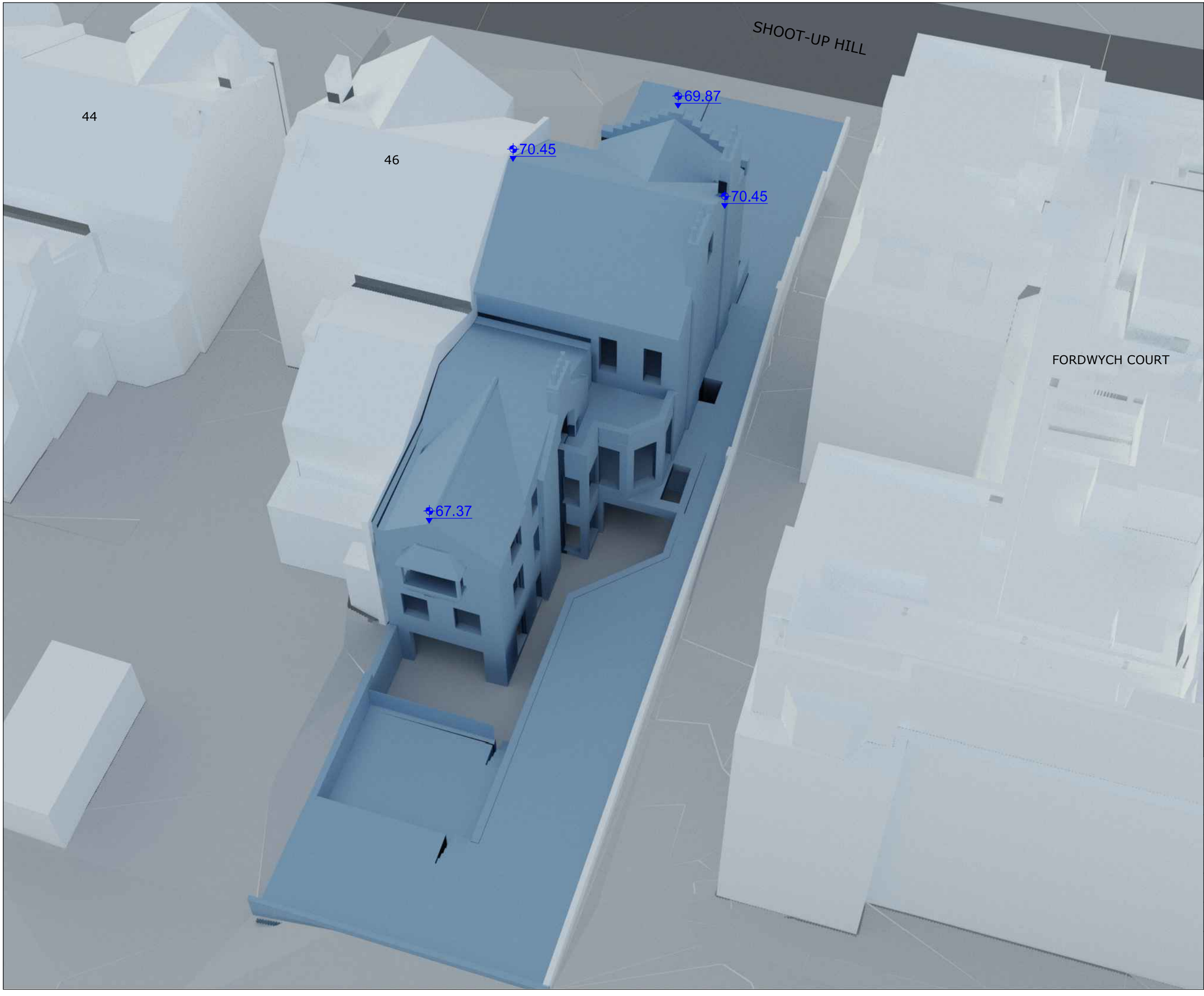
48 SHOOT-UP HILL
LONDON NW2

DRAWING

3D VIEW
PROPOSED SCHEME
(AS RECEIVED)

DATE	SCALE @ A3
15.02.16	NTS
DRAWN BY	REVISION
ET	A

PROJECT No.	REL No.-DRAWING No.
1639	02-05



SOURCES OF INFORMATION:

MORELAND AND CO
IR01 (RECEIVED 12.01.2016)

VERTEX
IR02 (RECEIVED 20.01.2016)

SITE PHOTOGRAPHS

NOTES:

ALL AOD HEIGHTS ARE IN METRES

PROPOSED SCHEME SHOWN IN BLUE

waldrams
Email: contact@waldrams.com
Tel: 020 7183 9109
www.waldrams.com

PROJECT

48 SHOOT-UP HILL
LONDON NW2

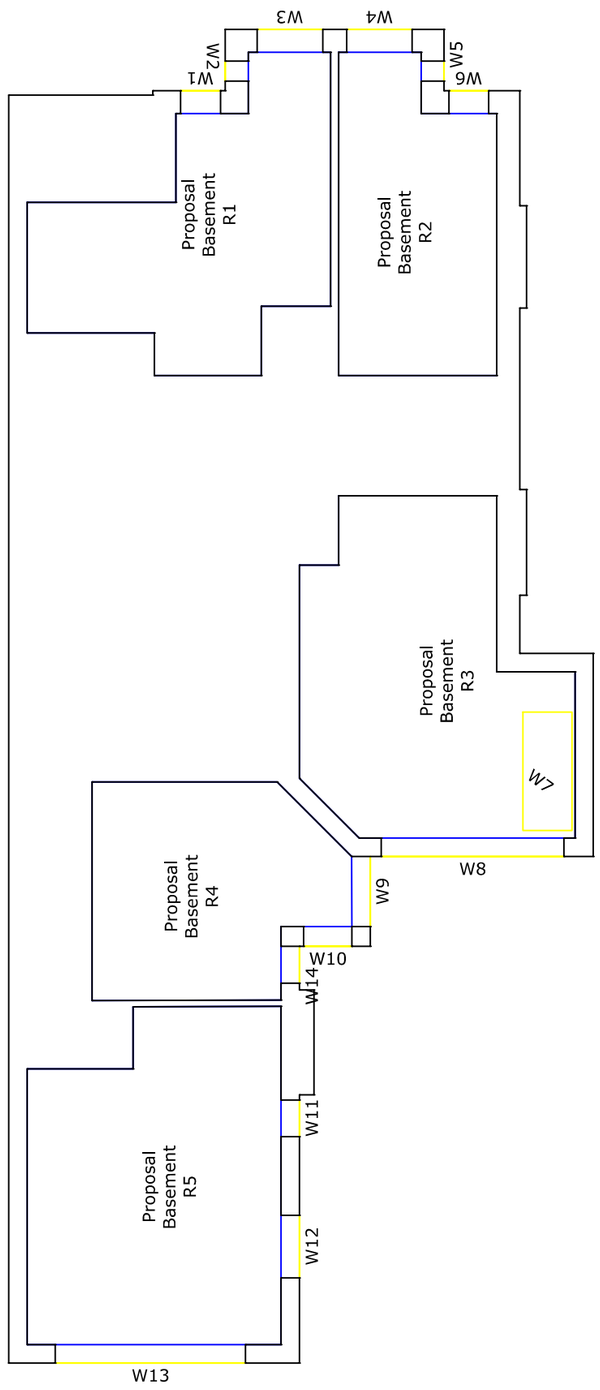
DRAWING

3D VIEW
PROPOSED SCHEME
(AS RECEIVED)

DATE	SCALE @ A3
15.02.16	NTS
DRAWN BY	REVISION
ET	A

PROJECT No.	REL No.-DRAWING No.
1639	02-06

BASEMENT FLOOR



SOURCES OF INFORMATION:

MORELAND AND CO
IR01 (RECEIVED 12.01.2016)

VERTEX
IR02 (RECEIVED 20.01.2016)

GENESIS
IR04 (RECEIVED 18.05.2016)

SITE PHOTOGRAPHS

waldrams
Email: contact@waldrams.com
Tel: 020 7183 9109
www.waldrams.com

PROJECT
48 SHOOT-UP HILL
LONDON NW2

DRAWING
INTERNAL LAYOUTS

DATE	SCALE @ A3
19.05.16	1:100
DRAWN BY	REVISION
ET	A

PROJECT No.	REL No.-DRAWING No.
1639	03-03

Appendix 2

Daylight & Sunlight Analysis internal to the Proposed scheme

Floor	Room	Room Use.	Window	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed
Proposal											
Basement	R1	Bedroom	W1	0.68	0.80	N/A	27.23	81.57	0.50	1.00	0.24
			W2	0.68	0.40	N/A	20.21	81.57	0.50	1.00	0.09
			W3	0.68	1.31	N/A	40.48	81.57	0.50	1.00	0.59
											0.92
Basement	R2	Bedroom	W4	0.68	1.31	N/A	40.48	62.40	0.50	1.00	0.77
			W5	0.68	0.40	N/A	18.88	62.40	0.50	1.00	0.11
			W6	0.68	0.80	N/A	28.26	62.40	0.50	1.00	0.33
											1.21
Basement	R3	LD	W8-L	0.68	2.27	N/A	35.43	87.44	0.50	0.15	0.13
			W8-U	0.68	3.69	N/A	41.46	87.44	0.50	1.00	1.59
			W7	0.30	1.41	N/A	41.91	87.44	0.50	1.00	0.27
											1.98
Basement	R4	Bedroom	W9-L	0.30	0.64	N/A	25.70	61.61	0.50	0.15	0.02
			W9-U	0.30	1.42	N/A	27.05	61.61	0.50	1.00	0.25
			W10-L	0.68	0.44	N/A	33.02	61.61	0.50	0.15	0.03
			W10-U	0.68	0.97	N/A	36.23	61.61	0.50	1.00	0.52
			W14-L	0.68	0.33	0.00	20.95	61.61	0.50	0.15	0.02
			W14-U	0.68	0.74	0.00	21.59	61.61	0.50	1.00	0.24
											1.07
Basement	R5	LKD	W11-L	0.68	0.33	N/A	27.74	88.47	0.50	0.15	0.01
			W11-U	0.68	0.74	N/A	29.98	88.47	0.50	1.00	0.23
			W12-L	0.68	0.57	N/A	29.95	88.47	0.50	0.15	0.03
			W12-U	0.68	1.264023	N/A	34.65089	88.47275	0.5	1	0.448856
			W13-L	0.68	2.368376	N/A	48.31034	88.47275	0.5	0.15	0.175881
			W13-U	0.68	3.847834	N/A	62.87347	88.47275	0.5	1	2.479259
											3.37

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Scenario	VSC	Difference	Pass / Fail	Available Sunlight Hours					
								Annual %	Diff	Pass / Fail	Winter %	Diff	Pass / Fail
Proposal													
Basement	**R1**	Bedroom	W1	Existing	N/A			N/A			N/A		
				Proposed	7.45	N/A	N/A	7	N/A	N/A	0	N/A	N/A
Basement	**R1**	Bedroom	W2	Existing	N/A			N/A			N/A		
				Proposed	5.64	N/A	N/A	5	N/A	N/A	0	N/A	N/A
Basement	**R1**	Bedroom	W3	Existing	N/A			N/A			N/A		
				Proposed	12.85	N/A	N/A	15	N/A	N/A	1	N/A	N/A
Basement	**R2**	Bedroom	W4	Existing	N/A			N/A			N/A		
				Proposed	12.91	N/A	N/A	15	N/A	N/A	1	N/A	N/A
Basement	**R2**	Bedroom	W5	Existing	N/A								
				Proposed	5.52	N/A	N/A		*North*			*North*	
Basement	**R2**	Bedroom	W6	Existing	N/A			N/A			N/A		
				Proposed	7.9	N/A	N/A	8	N/A	N/A	0	N/A	N/A
Basement	**R3**	LD	W7	Existing	N/A								
				Proposed	13.5	N/A	N/A		*North*			*North*	
Basement	**R3**	LD	W8	Existing	N/A								
				Proposed	12.42	N/A	N/A		*North*			*North*	
Basement	**R4**	Bedroom	W9	Existing	N/A								
				Proposed	6.71	N/A	N/A		*North*			*North*	
Basement	**R4**	Bedroom	W10	Existing	N/A								
				Proposed	10.51	N/A	N/A		*North*			*North*	
Basement	**R4**	Bedroom	W14	Existing	0								
				Proposed	5.15	0	PASS		*North*			*North*	
Basement	**R5**	LKD	W11	Existing	N/A								
				Proposed	9.25	N/A	N/A		*North*			*North*	
Basement	**R5**	LKD	W12	Existing	N/A								
				Proposed	10.25	N/A	N/A		*North*			*North*	
Basement	**R5**	LKD	W13	Existing	N/A								
				Proposed	23	N/A	N/A		*North*			*North*	