

80 GREENCROFT GARDENS, LONDON

Internal Daylight and Sunlight Report



waldrams

Waldrams Ltd
Chartered Surveyors

Daylight and Sunlight Report

Project: 80 Greencroft Gardens
Client: 80 Greencroft Gardens LLP
Prepared by: Luke Wilson
Checked By: Michael Harper
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Document History

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Appendix 1: Drawings

Appendix 2: Internal Daylight and Sunlight results

Executive Summary

- Waldrams Ltd has been instructed by 80 Greencroft Gardens LLP to undertake a quantitative internal daylight and sunlight analysis for the lower ground floor of the proposed development at 80 Greencroft Gardens, London. This analysis has been based upon a photogrammetric survey of the site and surrounding properties, Ordnance Survey information, and scheme drawings by Archian. The layout of this lower ground floor is shown on drawing 1856-01-07 in Appendix 1.
- This analysis has been undertaken in accordance with the guidelines and methodologies contained in the BRE's Site Layout Planning for Daylight and Sunlight: A guide to good practice (2011), in order to demonstrate the acceptability of the scheme for planning purposes in terms of daylight and sunlight.
- Internally to the proposal, for daylight, all four habitable rooms within the proposed lower ground floor meet the BRE Guidelines in ADF terms for their room usage, taking 1.5% ADF as the benchmark of acceptability for an LKD as described above.
- In sunlight terms, both LKDs in the proposed lower ground floor face due north and so do not require analysis for sunlight, as per the BRE Guidelines.
- Overall, therefore, the lower ground floor of the proposed scheme is compliant with the BRE Guidelines for daylight and sunlight and hence in accordance with local planning policy for daylight and sunlight.

1. Introduction

Waldrams Ltd has been instructed by 80 Greencroft Gardens LLP to undertake an quantitative internal daylight and sunlight analysis for the lower ground floor of the proposed scheme at 80 Greencroft Gardens, London. This analysis has been based upon a photogrammetric survey of the surrounding properties, Ordnance Survey information, and scheme drawings by Archian, received 16th September 2016. The proposed scheme is shown on drawings 1856-01-04 to -01-06 in Appendix 1, whilst the room layouts of the proposed scheme are shown on drawing 1856-01-07, also in Appendix 1. The results of our internal daylight and sunlight analysis are included in Appendix 2.

This analysis has been undertaken in accordance with the guidelines and methodologies contained in the BRE's *Site Layout Planning for Daylight and Sunlight: A guide to good practice* (2011), in order to demonstrate the acceptability of the scheme for planning purposes in terms of daylight and sunlight.

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. 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:

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“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.

The BRE Guidelines specifies on Page 3 that in calculating daylight, “For calculation purposes, trees may be ignored unless they form dense continuous belts.”

2.2 Internal new build criteria for daylight and sunlight

According to the BRE Guidelines and BS8206 (Part 2), the method for assessing internal daylight is:

- Average Daylight Factor (ADF);

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.

The test for sunlight is calculated for each main south facing window to habitable rooms and in particular living rooms. Bedrooms and kitchens are considered by the BRE Guidelines as less important for sunlight. The BRE Guidelines state that any south facing window may potentially receive up to 1486 hours of sunlight per year on average, representing 100% of the annual probable sunlight hours (APSH). Of this, each main window to a main habitable room may be adversely affected if it has less than 25% of the total APSH across the whole year or less than 5% APSH during the winter months (defined as the 6 months from September 21st through to March 21st).

Following the BRE Guidelines recommendations, APSH is measured from a point on the inner window wall whilst ADF is measured from the point halfway between the inner and outer window wall.

2.3 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 daylight and sunlight following the methods specified in the BRE Guidelines. A three dimensional accurate computer model has been created for the existing site in context of the immediate surrounding properties, based upon a photogrammetric survey of the site and surrounding properties, site photographs and Ordnance Survey information.

Drawings of the existing and proposed building in context of the surrounding properties are shown in Appendix 1.

2.3.1 Internal residential rooms

Daylight and sunlight levels for the proposed daylight (ADF) and sunlight (APSH) internally to the scheme are then calculated. These results are provided in Appendix 2.

3. Assumptions used in the analysis

A 3-dimensional CAD model has been constructed based on a photogrammetric survey of the site and surrounding properties, scheme drawings and Ordnance Survey information.

It is important to note that the precise position of the surrounding property elevations has been estimated, based on brick counts from site photographs. The floor levels for the surrounding buildings are assumed unless otherwise indicated, which may affect the daylight distribution and ADF calculations.

4. Sources of Information Used in the Report

Archian

Final designs Greencroft.dwg
Greencroft A.01.1 Basement
proposed & Existing.pdf
Greencroft A.02.1 E-01 North
Elevation.pdf
Greencroft A.02.2 E-02 Proposed
Right Elevation.pdf
Greencroft A.02.3 E-03 Existing
Right Elevation.pdf
Greencroft A.02.4 E-04 Rear
Elevation.pdf

Greencroft A.02.5 E-05 Proposed
Left elevation.pdf
Greencroft A.02.6 E-06 Existing Left
elevation.pdf
Greencroft A.02.7 S-01 Proposed
Section.pdf
Greencroft A.02.8 S-02 Existing
Section.pdf

Received 16/9/2016

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Photogrammetric survey
Ordnance Survey

5. Internal Daylight and Sunlight Analysis

We have analysed the habitable rooms within the lower ground floor of the proposed scheme in terms of daylight and sunlight according to the methodologies established in the BRE Guidelines. The results can be found in Appendix 2 which referred to the internal layouts shown on drawings 1856-01-07 to -01-08 in Appendix 1.

The BRE Guidelines make it clear that ADF is the appropriate measure for daylight for new build accommodation such as this, and APSH is the measure for sunlight. We note that whilst the BRE guidelines recommend that 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, we have used the 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.

On this basis, in terms of daylight, all four habitable rooms within the proposed lower ground floor meet the BRE Guidelines in ADF terms for their room usage, taking 1.5% ADF as the benchmark of acceptability for an LKD as described above.

The BRE Guidelines state that access to sunlight is primarily a consideration for main living spaces within residential properties, and that good design practice should aim to ensure that each living room has at least one main window facing within 90° of due south that achieves at least 25% annual probable sunlight hours (APSH) for the entire year as well as at least 5% APSH during the

winter months. Both LKDs in the proposed lower ground floor face due north and so do not require analysis for sunlight, as per the BRE Guidelines.

6. Conclusions

Waldrams Ltd has been instructed by 80 Greencroft Gardens LLP to undertake a quantitative internal daylight and sunlight analysis for the lower ground floor of the proposed development at 80 Greencroft Gardens, London. This analysis has been based upon a photogrammetric survey of the site and surrounding properties, Ordnance Survey information, and scheme drawings by Archian. The layout of this lower ground floor is shown on drawing 1856-01-07 in Appendix 1.

This analysis has been undertaken in accordance with the guidelines and methodologies contained in the BRE's Site Layout Planning for Daylight and Sunlight: A guide to good practice (2011), in order to demonstrate the acceptability of the scheme for planning purposes in terms of daylight and sunlight.

Internally to the proposal, for daylight, all four habitable rooms within the proposed lower ground floor meet the BRE Guidelines in ADF terms for their room usage, taking 1.5% ADF as the benchmark of acceptability for an LKD as described above.

In sunlight terms, both LKDs in the proposed lower ground floor face due north and so do not require analysis for sunlight, as per the BRE Guidelines.

Overall, therefore, the lower ground floor of the proposed scheme is compliant with the BRE Guidelines for daylight and sunlight and hence in accordance with local planning policy for daylight and sunlight.

Appendix 1

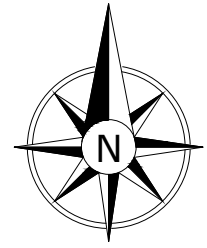
Drawings



SOURCES OF INFORMATION:

JOHN BRUCE
IR01 (RECEIVED 16.09.2016)

VERTEX
IR02 (RECEIVED 04.10.2016)



NOTES:

EXISTING SCHEME SHOWN IN GREEN



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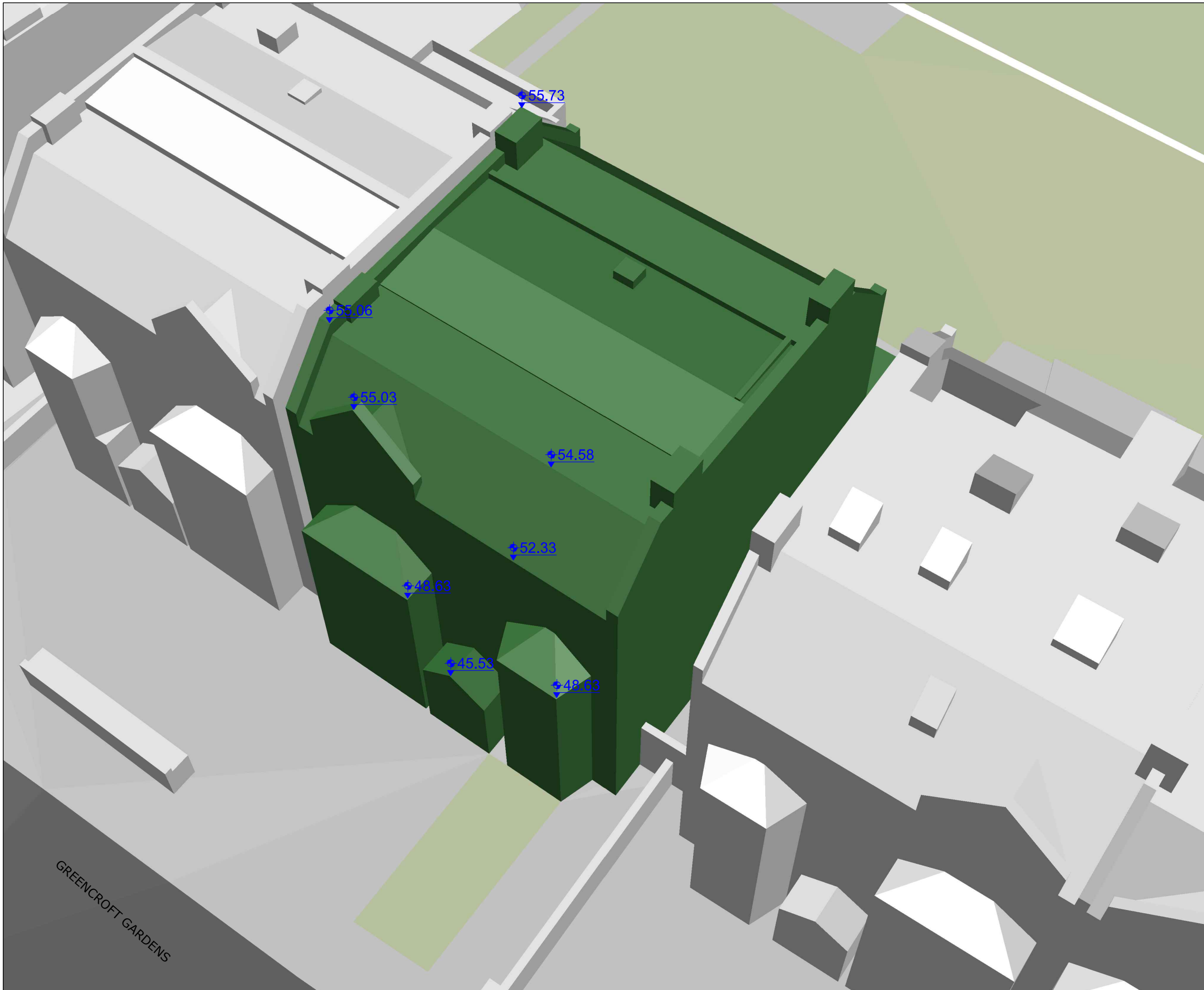
PROJECT
80 GREENCROFT GARDENS
LONDON

DRAWING
PLAN VIEW
EXISTING SCHEME

DATE 05.10.16	SCALE 1:200
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DRAWN BY JH	REVISION A
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PROJECT No. 1856	DRAWING No. 01-01
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SOURCES OF INFORMATION:

JOHN BRUCE
 IR01 (RECEIVED 16.09.2016)
 VERTEX
 IR02 (RECEIVED 04.10.2016)

NOTES:
 ALL AOD HEIGHTS ARE IN METRES
 EXISTING SCHEME SHOWN IN GREEN



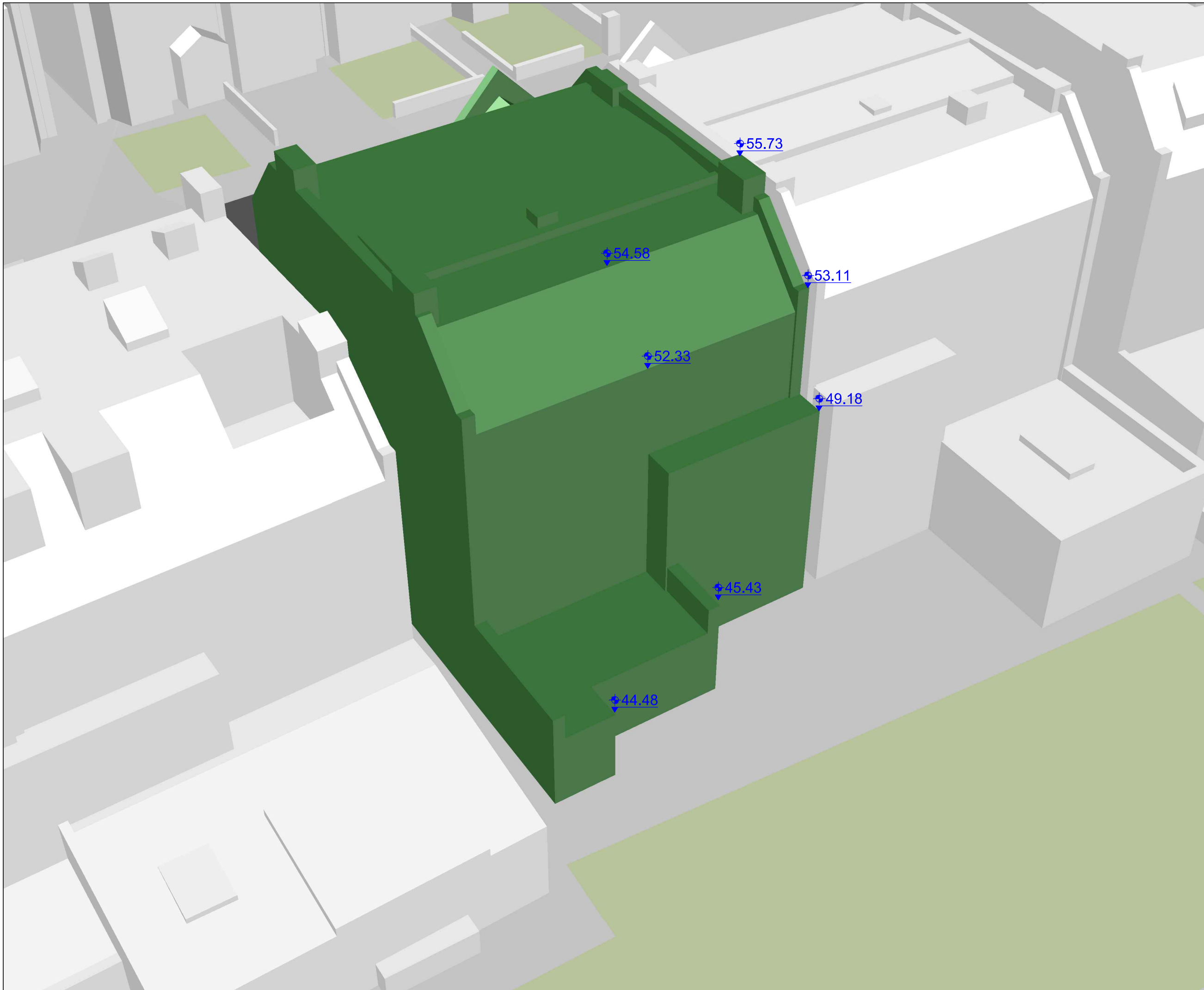
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PROJECT
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DRAWING
 3D VIEW
 EXISTING SCHEME

DATE 05.10.16	SCALE NTS
DRAWN BY JH	REVISION A
PROJECT No. 1856	DRAWING No. 01-02

GRENCROFT GARDENS



SOURCES OF INFORMATION:

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DRAWING
3D VIEW
EXISTING SCHEME

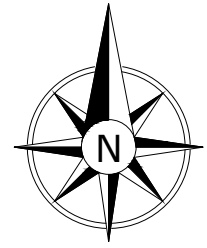
DATE 05.10.16	SCALE NTS
DRAWN BY JH	REVISION A
PROJECT No. 1856	DRAWING No. 01-03



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NOTES:

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DRAWING
PLAN VIEW
PROPOSED SCHEME

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PROJECT No. 1856	DRAWING No. 01-04



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 IR01 (RECEIVED 16.09.2016)
 VERTEX
 IR02 (RECEIVED 04.10.2016)

NOTES:
 ALL AOD HEIGHTS ARE IN METRES
 PROPOSED SCHEME SHOWN IN BLUE



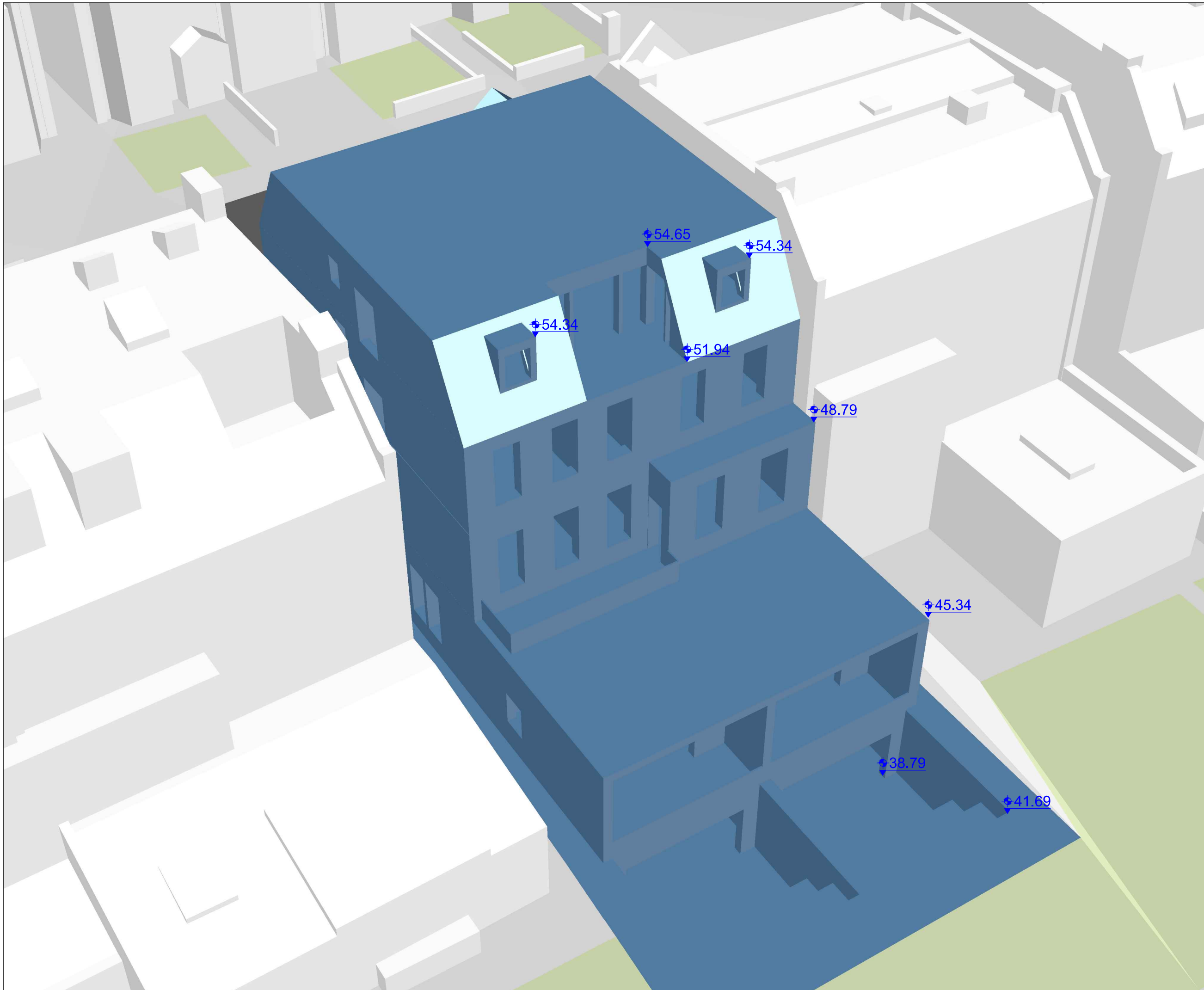
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PROJECT
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DRAWING
 3D VIEW
 PROPOSED SCHEME

DATE	05.10.16	SCALE	NTS
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PROJECT No.	1856	DRAWING No.	01-05

GREENCROFT GARDENS



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JOHN BRUCE
IR01 (RECEIVED 16.09.2016)

VERTEX
IR02 (RECEIVED 04.10.2016)

NOTES:

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PROJECT
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DRAWING
3D VIEW
PROPOSED SCHEME

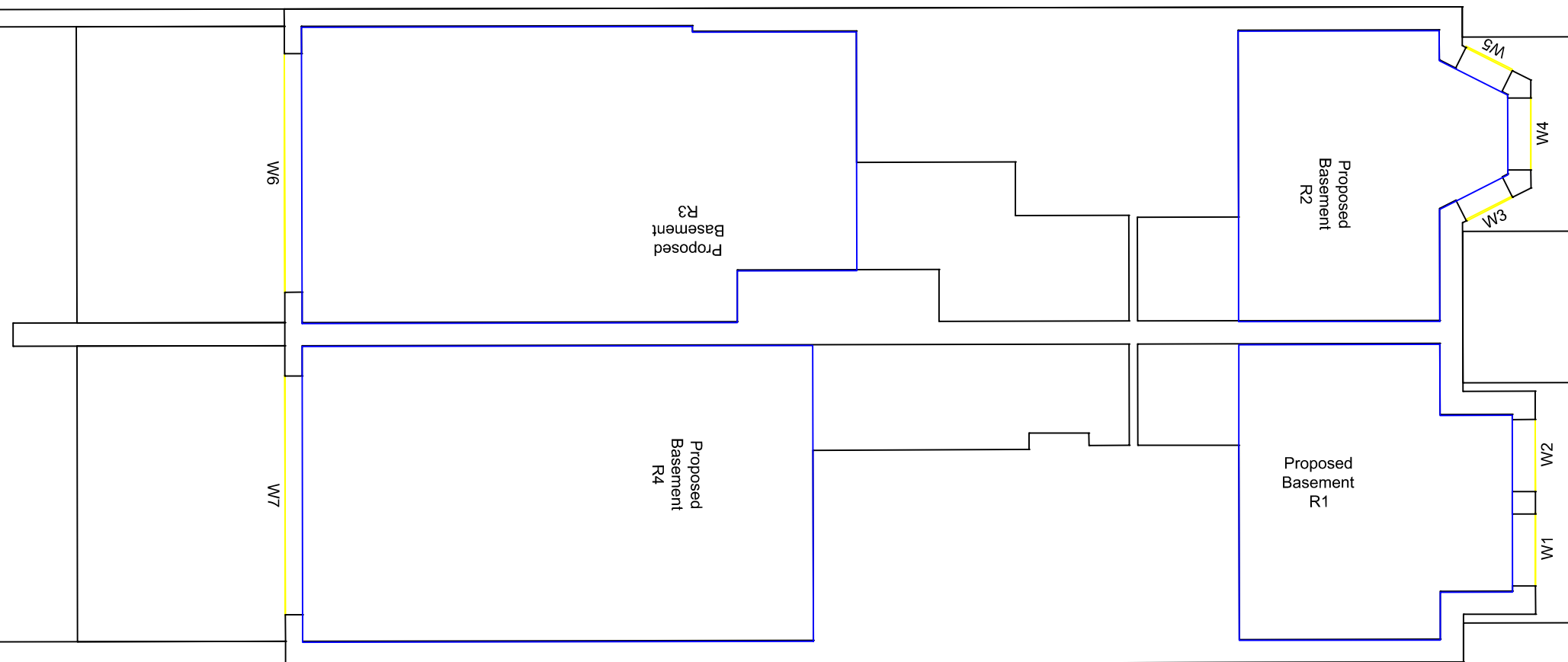
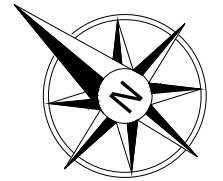
DATE 05.10.16	SCALE NTS
DRAWN BY JH	REVISION A
PROJECT No. 1856	DRAWING No. 01-06

BASEMENT

SOURCES OF INFORMATION:

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PROJECT
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DRAWING
INTERNAL LAYOUTS

DATE 06.10.16	SCALE 1:100
DRAWN BY JH	REVISION A
PROJECT No. 1856	DRAWING No. 01-07

Appendix 2

Internal Daylight & Sunlight Results

Floor Ref	Room Ref	Room Attribute	Room Use	Window Ref	Glass Transmittance	Average Surface Reflectance	ADF Pr	ADF Pr Total
Proposed								
Basement	R1	Flat1	Bedroom	W1-L	0.68	0.5	0.01	
Basement	R1	Flat1	Bedroom	W1-U	0.68	0.5	0.55	
Basement	R1	Flat1	Bedroom	W2-L	0.68	0.5	0.01	
Basement	R1	Flat1	Bedroom	W2-U	0.68	0.5	0.55	1.11
Basement	R2	Flat1	Bedroom	W3-L	0.68	0.5	0	
Basement	R2	Flat1	Bedroom	W3-U	0.68	0.5	0.28	
Basement	R2	Flat1	Bedroom	W4-L	0.68	0.5	0.01	
Basement	R2	Flat1	Bedroom	W4-U	0.68	0.5	0.62	
Basement	R2	Flat1	Bedroom	W5-L	0.68	0.5	0	
Basement	R2	Flat1	Bedroom	W5-U	0.68	0.5	0.29	1.21
Basement	R3	Flat1	LKD	W6-L	0.68	0.5	0.13	
Basement	R3	Flat1	LKD	W6-U	0.68	0.5	1.56	1.69
Basement	R4	Flat1	LKD	W7-L	0.68	0.5	0.14	
Basement	R4	Flat1	LKD	W7-U	0.68	0.5	1.64	1.77

Floor Ref.	Room Ref.	Room Use.	Window Ref.		Annual	Pr/Ex	Winter	Pr/Ex
Proposed								
Basement	R1	Bedroom	W1	Existing	83		28	
				Proposed	10		0	
			W2	Existing	83		28	
				Proposed	10		0	
	R2	Bedroom	W3	Existing	76		28	
				Proposed	6		0	
			W4	Existing	83		28	
				Proposed	14		0	
			W5	Existing		*North*		*North*
	Proposed							
	R3	LKD	W6	Existing		*North*		*North*
	Proposed							
R4	LKD	W7	Existing		*North*		*North*	
Proposed								