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DAYLIGHT & SUNLIGHT REPORT

44 Gloucester Avenue

London

7th December 2016

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1. Introduction

1.1. This practice has been instructed to provide an assessment of the daylight & sunlight implications of the proposed new Block E development at 44 Gloucester Avenue, London. This report is based upon the latest proposals prepared by Twenty First Architecture Ltd.

1.2. The methodology and criteria used for these assessments is provided by the Building Research Establishments guidance 'Site layout planning for daylight and sunlight: a guide to good practice' (BRE, 2011) and the British Standard document BS8206 Pt2.

2. Guidance

Daylight & sunlight for planning

Site layout planning for daylight and sunlight: a guide to good practice, BRE 2011

2.1. This document follows from previous guidance produced by Her Majesty's Stationary Office (HMSO) on daylight and sunlight in the built environment and is now the accepted methodology used by local authorities for assessing daylight and sunlight in relation to new developments. It provides methods for the calculation of daylight and sunlight impacts of development upon existing surrounding properties and within proposed new dwellings.

Daylight Assessment

2.2. There are three detailed methods for calculating daylight, the Vertical Sky Component (VSC), the No-Sky Line Contour (NSC) and the Average Daylight Factor (ADF). For sunlight the Annual Probable Sunlight Hours (APSH) method is detailed.

2.3. The VSC method calculates the amount of visible sky available to each window or to points on the façade of a building where windows have not yet been designed. This is the primary assessment of daylight impacts and does not consider the size or nature of rooms behind the façade. The guidelines suggest that, post-development, properties should enjoy at least 27% VSC or that VSC is reduced to no less than 0.8 times its former value.

2.4. The NSC method describes the distribution of daylight within rooms by calculating the area of the 'working plane' which can receive a direct view of the sky and hence 'sky light'. The working plane height is set at 850mm above floor level within a residential property. The BRE does not state a required amount of no-sky line but merely suggests a recommended reduction within which changes

are not considered noticeable.

2.5. The ADF method calculates the average illuminance within a room as a proportion of the illuminance available to an unobstructed point outdoors under a sky of known luminance and luminance distribution. This is the most detailed of the daylight calculations and considers the physical nature of the room behind the window, including; window transmittance, and surface reflectivity. The BRE guidelines / British Standard sets the following recommended ADF levels for habitable room uses:

- 1% Bedrooms
- 1.5% Living Rooms
- 2.0% Kitchens

Sunlight Assessment

2.6. For sunlight the APSH test calculates the percentage of statistically probable hours of sunlight received by each window in both the summer and winter months. March 21st through to September 21st is considered to be the summer period while September 21st to March 21st is considered the winter period. For properties neighbouring a development only those windows orientated within 90° of due south and which overlook the site of the proposal are relevant for assessment.

2.7. The guidelines suggest that 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 with total reductions of less than 4% APSH not being considered noticeable.

Policy Context

2.8. It is important to note that within urban centres achieving good levels of daylight and sunlight in accordance with the BRE guidelines, can be weighed in the balance against other beneficial design factors.

2.9. The opening paragraphs of 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 the document 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 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 a historic city centre a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings".*

2.10. The targets set out in the BRE document are very much 'guidelines' and they should be applied sensibly and flexibly based on the site-specific context of development.

Assessment of new or proposed dwellings

2.11. The proposal of Block E forms part of the wider development at 44 Gloucester Road. To the north of Block E is Block D which is a new build and we have therefore considered the implications to daylight and sunlight within this property.

2.12. Because this emerging development is not yet built, it is not currently occupied. As such the reduction of daylight is not a particularly relevant test, as there is no one to experience the present value, or reduction. During the design of these apartments the Average Daylight Factor (ADF) test has been used to establish whether a suitable amount of daylight is provided. It would therefore seem that the ADF test is a more appropriate indicator of the acceptability of daylight conditions within these apartments.

2.13. The BRE guide states the following in this regards:-

> *"Appendix F – paragraph F8*
>
> *However, there are some situations where meeting a set ADF target value with the new development in place could be appropriate as a criterion for loss of light.*
>
> *(ii) as a special case of (i), where the existing building is proposed and not built. A typical situation might be where the neighbouring building has received planning permission but not yet been constructed."*

3. Assumptions

3.1. A measured survey, architects drawings, site photographs and Ordnance Survey information have been used to create a 3D computer model of the proposed development in the context of the existing site and surrounding buildings.

3.2. Where it has not been possible to gain access to the surrounding properties, details of the internal layouts and floor level heights have been assumed from the external appearance of the building, and the locations of windows. Unless known or otherwise appropriate the depths of rooms have been assumed at 4.27m (14ft) for residential properties and 6m (20ft) for commercial properties.

4. Sources of Information

21st Architecture Ltd

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173_Split Model.skp
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173_161209_PL_GA_10 Rev P.pdf
173_161209_PL_GE_01 Rev P.pdf
173_161209_PL_GE_02 Rev P.pdf
173_161209_PL_GE_03 Rev P.pdf
Received: 12/12/2016

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Site Photographs
Ordnance Survey

5. The Site and Proposal

5.1. The current properties on site are situated along Gloucester Avenue, with the rear of the site fronting the railway lines.

5.2. The proposal includes the construction of a single storey mansard roof extension to building E on the site.

5.3. There are a mix of uses to neighbouring properties with residential properties to the north west and south of the site. There are also properties with elements of residential use above commercial properties to the south. (North = BIA as PCA on the permission).

5.4. Eb7 have used survey information, site photographs and Ordnance Survey information to build a 3D computer model of the existing building and its surroundings. Our understanding of the former site is shown within appendix 1. The architect's drawings have been used to build a model of the proposal drawings of which can also be found in appendix 1.

5.5. The following residential properties were considered within our assessment:

- 67 Gloucester Avenue
- Block D

6. Daylight and Sunlight Results

6.1. Full results of the daylight and sunlight assessment are attached within appendix 2. Drawings showing the layouts of the proposed accommodation with window and room labels are attached within appendix 1.

67 Gloucester Avenue

6.2. This end of terrace property is situated to the south of the proposed scheme. It comprises commercial use at ground floor with residential use above.

Daylight

6.3. The results of our VSC and NSC assessments have shown that all windows and rooms retain in excess of 0.8 times their former value and, as such, the proposed scheme is fully compliant with the BRE criteria.

Sunlight

6.4. All windows within 90 degrees of due south have been assessed under the APSH sunlight assessment, in line with the BRE criteria.

6.5. The results indicate that all windows that are relevant for assessment are fully compliant with the recommendations of the BRE guidance in regard to sunlight.

Block D

6.6. This property is situated to the north of the subject development and is part of the wider development site.

Daylight

6.7. As the proposal at Block D is not yet built the ADF is considered an appropriate indicator of the daylight conditions within this property.

6.8. The results of the ADF assessment has shown that all rooms would receive the suggested levels of ADF for use with the proposal in place and are therefore compliant with the BRE criteria.

Sunlight

6.9. All windows within 90 degrees of due south have been assessed under the APSH sunlight assessment, in line with the BRE criteria.

6.10. The results indicate that all windows that are relevant for assessment are fully compliant with the recommendations of the BRE guidance in regard to sunlight.

Daylight and Sunlight within the proposed apartments

6.11. The daylight and sunlight amenity provided within the proposed residential

accommodation has been assessed using the ADF and APSH tests following the methodology of the BRE guidance and British Standards Document BS8206 pt 2.

6.12. Full results of the daylight and sunlight assessments within the proposed apartments are attached within appendix 3. Drawings showing the layouts of the apartments with window and room labels are attached within appendix 1.

Daylight

6.13. The results of the ADF assessment have shown that 6 of the 7 habitable rooms surpass the BRE and British Standard guidance criteria.

6.14. The 1 room that falls below the targets, a LKD labelled R1 is located at basement level, where daylight amenity is most restricted, but has been maximised where possible by the inclusion of multiple windows serving the room.

6.15. This LKD achieves an ADF of 1%, an increase on the 0.9% that the room achieved in the previous consented scheme.

6.16. All other rooms at ground – second floor exceed the suggested targets for their use.

Sunlight

6.17. The results of the ASPH sunlight assessment has shown that the two living rooms with south facing windows achieve the recommended level of 25% total and 5% winter sunlight.

6.18. As such, these rooms are compliant with the BRE guidelines.

7. Conclusions

7.1. An assessment has been undertaken to consider the potential daylight / sunlight effects of the proposed development at 44 Gloucester Road. The quality of the daylight and sunlight within the neighbouring properties, as well as within the proposed scheme, has been assessed using the VSC, NSC, ADF and APSH assessments as recommended within the BRE document 'Site layout planning for daylight and sunlight' and the British Standards Document BS8206 part 2.

7.2. The results from these assessments illustrate that the proposal will have no noticeable impact to the existing dwelling at 67 Gloucester Road or the proposed Block D building in terms of daylight and sunlight.

7.3. The assessment of daylight and sunlight within the proposed development has shown that the vast majority of rooms achieve good levels of ADF in excess of the BRE and British Standard targets. The 1 room that falls below the targets for daylight is located at basement level, where daylight amenity is most restricted. This however has been maximised by the inclusion of multiple windows and the

ADF increases from the previous scheme. With regard to sunlight, all living rooms exceed the targets.

7.4. In light of the above, the proposed scheme is in line with the intentions of the BRE guide and relevant planning policy in terms of daylight and sunlight.

Appendix 1

Drawings of the existing, proposed and surrounding buildings

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161128 173_PL1_GE_02.dwg
161128 173_PL1_GE_03.dwg
Received: 01/12/2016

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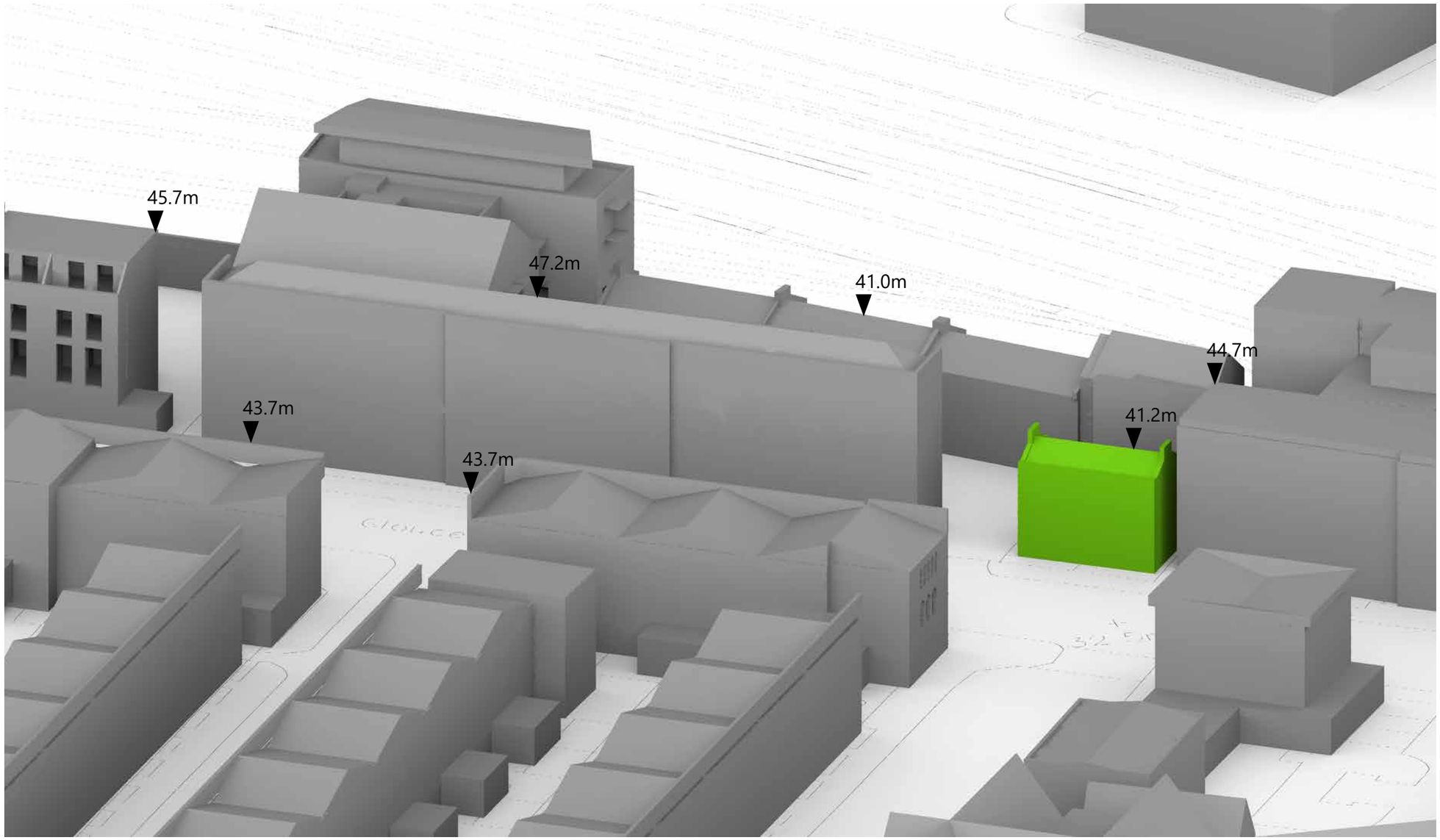
Site Photographs
Ordnance Survey

NORTH

Project	44 gloucester Avenue NW1 8JD London
Title	Existing Condition Plan View

Drawn	ME	Checked	ON
Date	07/12/2016	Rel no.	10
Drawing no.	0088-01		



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Received: 01/12/2016

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Ordnance Survey

Project	44 gloucester Avenue NW1 8JD London
Title	Existing Condition 3D View

Drawn	ME	Checked	ON
Date	07/12/2016	Rel no.	10
Drawing no.	0088-02		

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161128 173_PL1_GE_03.dwg
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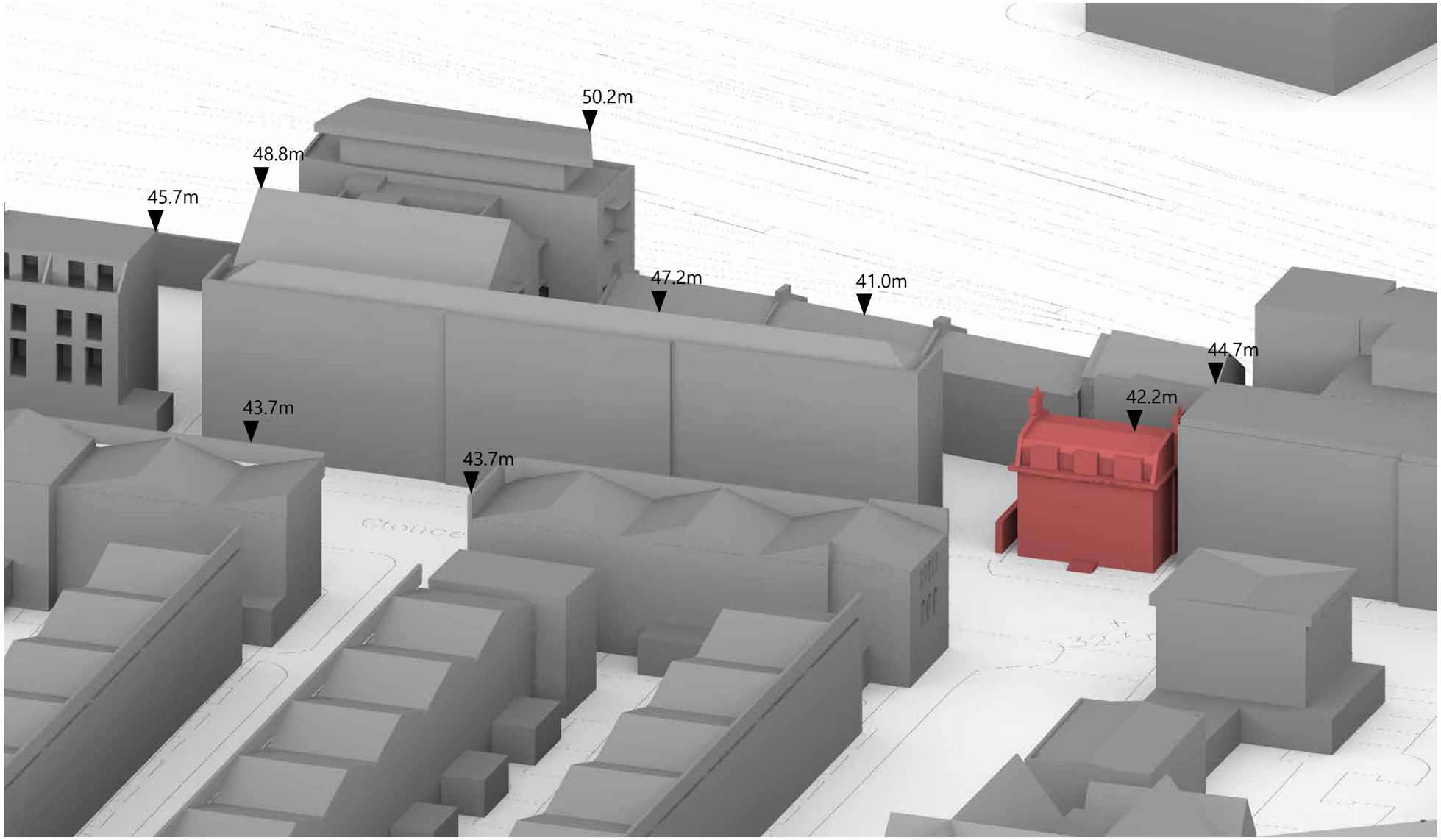
Ordnance Survey

NORTH

Project	44 gloucester Avenue NW1 8JD London		
Title	Proposed Development Plan View		
Drawn	ME	Checked	ON
Date	07/12/2016	Rel no.	10
Drawing no.	0088-03		



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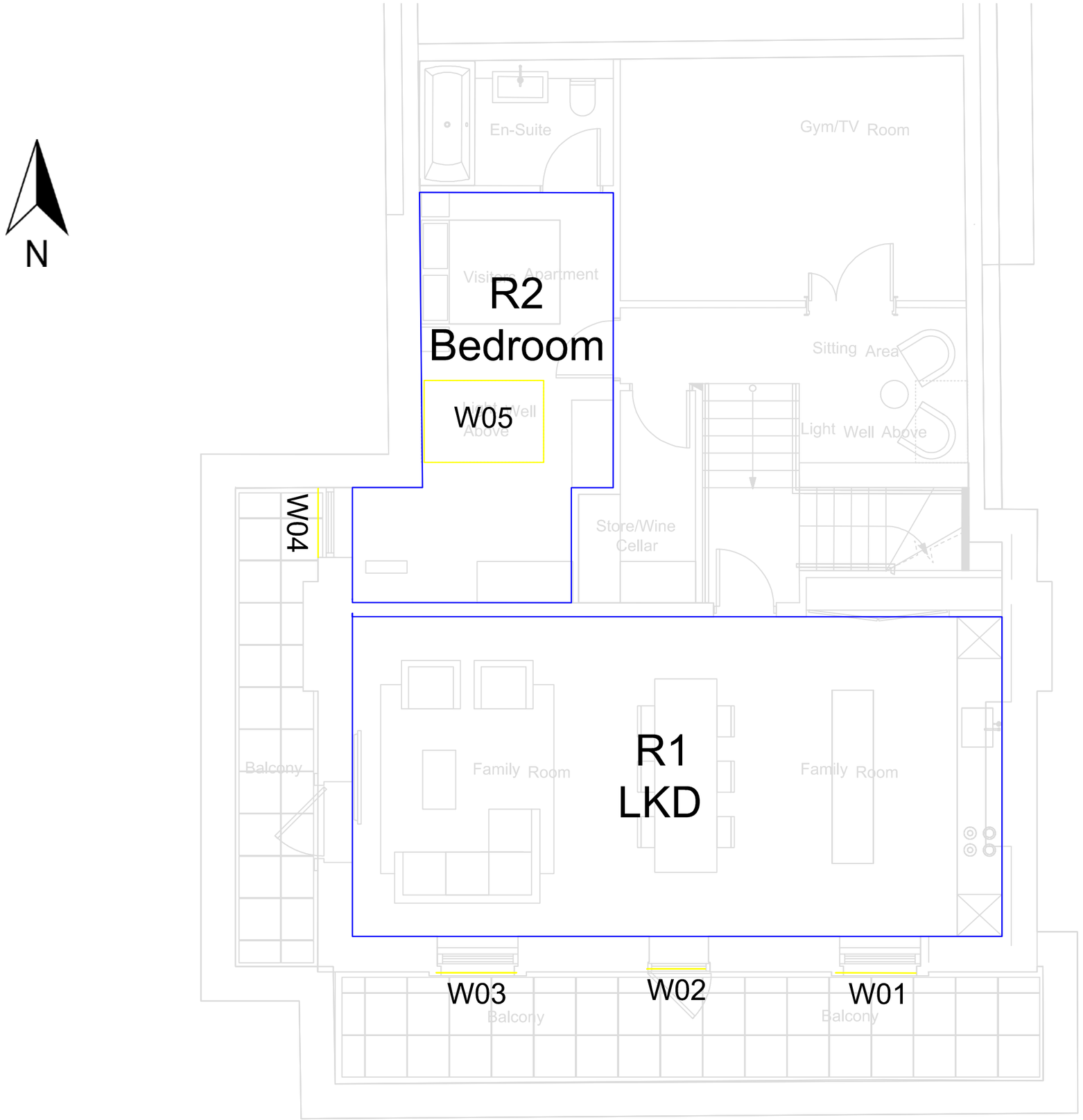
Ordnance Survey

Project	44 gloucester Avenue NW1 8JD London
Title	Proposed Development 3D View

Drawn	ME	Checked	ON
Date	07/12/2016	Rel no.	10
Drawing no.	0088-04		



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173_161209_PL_GE_03 Rev P.pdf
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Site Photographs
Ordnance Survey

Project	44 gloucester Avenue NW1 8JD London
Title	Proposed Scheme _Block E Basement Level
Drawn	ME
Checked	DF
Date	12/12/16
Rel no.	12
Drawing no.	0088-ID01

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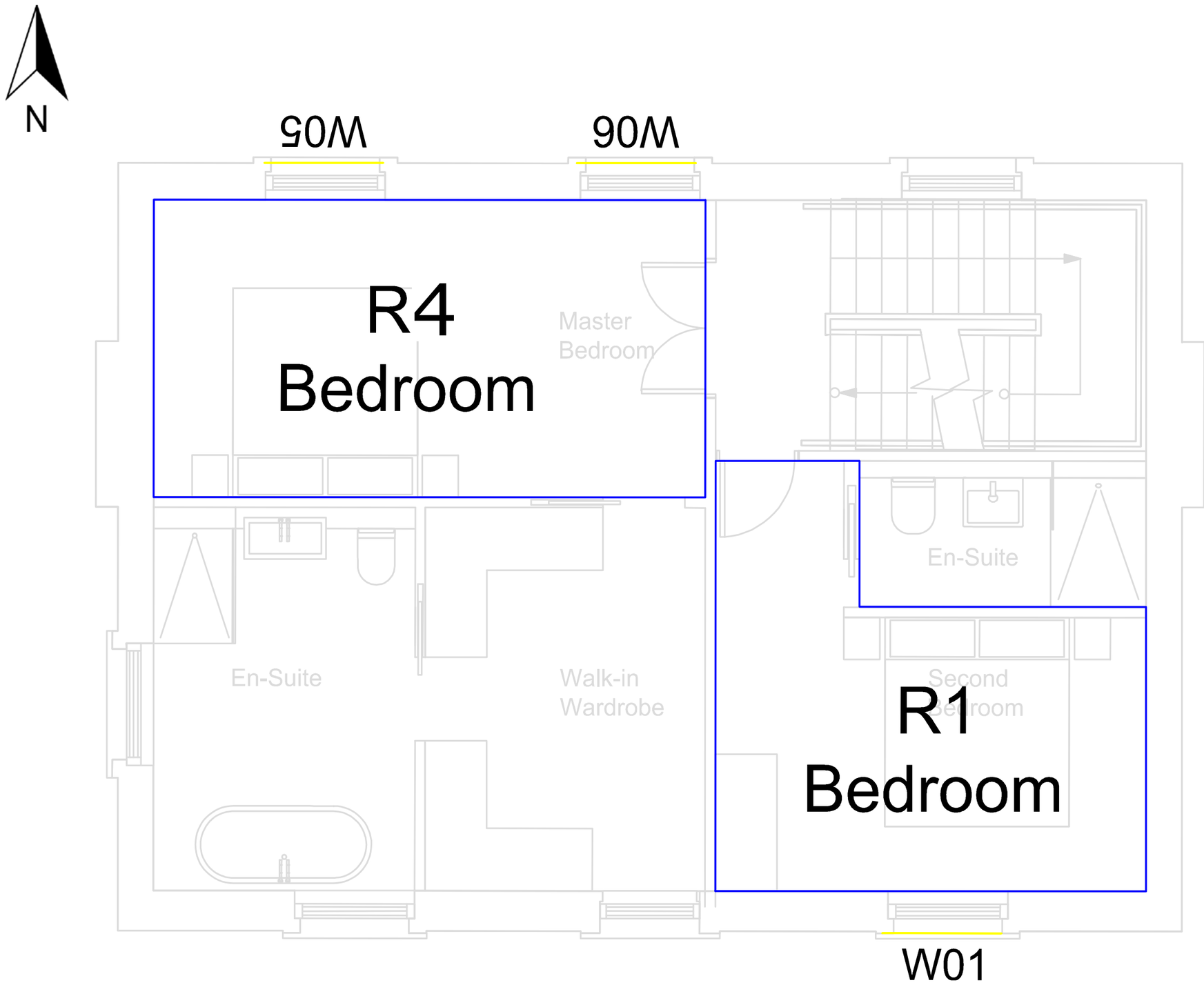
Site Photographs
Ordnance Survey

Project	44 gloucester Avenue NW1 8JD London
Title	Proposed Scheme_Block E Ground Level
Drawn	ME
Checked	DF
Date	12/12/16
Rel no.	12
Drawing no.	0088-ID02



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Site Photographs
Ordnance Survey

Project	44 gloucester Avenue NW1 8JD London
Title	Proposed Scheme _Block E First Level
Drawn	ME
Checked	DF
Date	12/12/16
Rel no.	12
Drawing no.	0088-ID03

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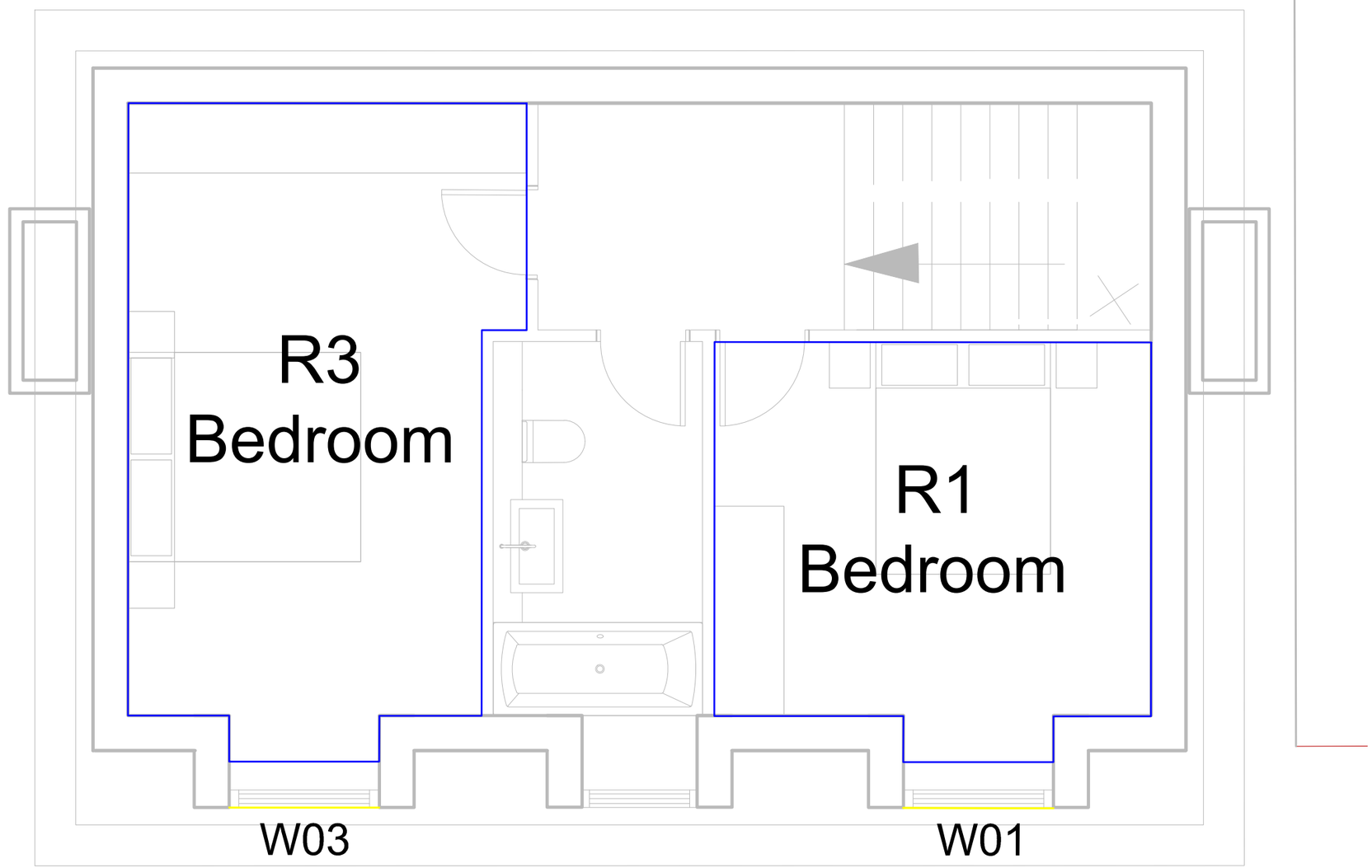

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173_161209_PL_GE_03 Rev P.pdf
Received: 12/12/2016

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Site Photographs
Ordnance Survey

Project	44 gloucester Avenue NW1 8JD London		
Title	Proposed Scheme _Block E Second Level		
Drawn	ME	Checked	DF
Date	12/12/16	Rel no.	12
Drawing no.	0088-ID04		

Appendix 2

Results of the daylight & sunlight assessments within neighbouring properties

Address	Room	Window	Room Use	Existing VSC	Proposed VSC	Loss	Proportion Retained	Room Area	Existing NSC	Proposed NSC	Loss	Proportion Retained	Existing ADF Window	Existing ADF Total	Proposed ADF Window	Proposed ADF Total	Loss	Existing APSH Total	Existing APSH Winter	Proposed APSH Total	Proposed APSH Winter	Total Retained	Winter Retained
67 Gloucester Avenue																							
First	R1	W01-L	Unknown	33.8	33.8	0.0	1.0						0.0		0.0								
		W01-U											0.4		0.4								
	R1	W02-L		33.9	33.9	0.0	1.0						0.0		0.0								
		W02-U											0.4		0.4								
	R1	W03-L		33.9	33.9	0.0	1.0						0.0		0.0								
		W03-U											0.4		0.4								
	R1	W04-L		31.7	31.4	0.3	1.0						0.0		0.0								
		W04-U											0.2		0.2								
	R1	W05-L		31.7	31.4	0.3	1.0						0.0		0.0								
		W05-U											0.4		0.4								
	R1	W06-L		31.4	31.1	0.3	1.0						0.0		0.0								
		W06-U						454.4	450.8	450.8	0.0	1.0	0.2	2.2	0.2	2.2	0.0	66	22	66	22	1.0	1.0
Second	R1	W01-L	Unknown	36.4	36.4	0.0	1.0						0.0		0.0								
		W01-U											0.3		0.3								
	R1	W02-L		36.5	36.4	0.0	1.0						0.0		0.0								
		W02-U											0.3		0.3								
	R1	W03-L		36.5	36.5	0.0	1.0						0.0		0.0								
		W03-U											0.3		0.3								
	R1	W04-L		36.5	36.5	0.0	1.0						0.0		0.0								
		W04-U											0.3		0.3								
	R1	W05-L		36.6	36.5	0.0	1.0						0.0		0.0								
		W05-U											0.3		0.3								
	R1	W06-L		34.9	34.7	0.2	1.0						0.0		0.0								
		W06-U											0.3		0.3								
	R1	W07-L		34.8	34.6	0.2	1.0						0.0		0.0								
		W07-U											0.3		0.3								
	R1	W08-L		34.7	34.5	0.2	1.0						0.0		0.0								
		W08-U						454.4	448.3	448.3	0.0	1.0	0.3	2.2	0.3	2.2	0.0	66	22	66	22	1.0	1.0
44 Gloucester Ave_Block D																							
First	R1	W01-L	Bedroom	25.1	20.4	4.7	0.8						0.1		0.1								
		W01-U											1.0		0.8								
	R1	W02-L		11.1	10.0	1.2	0.9						0.1		0.1								
		W02-U						131.8	131.7	118.8	12.9	0.9	0.5	1.6	0.4	1.4	0.2	54	9	45	4	0.8	0.4
Second	R1	W01-L	Bedroom	33.0	30.7	2.3	0.9						0.1		0.1								
		W01-U											1.2		1.2								
	R1	W02-L		18.1	16.9	1.2	0.9						0.1		0.1								
		W02-U						131.7	131.7	131.7	0.0	1.0	0.7	2.1	0.7	2.0	0.1	70	22	69	21	1.0	1.0

Appendix 3

Results of the daylight & sunlight assessment within the proposed dwelling

Floor	Room ID	Window ID	Room Use	ADF	TOTAL ADF	ROOM TOTAL APSH	ROOM WINTER APSH
Block E							
Basement	R1	W01-L	LKD	0.0			
		W01-U	LKD	0.4			
		W02-L	LKD	0.0			
		W02-U	LKD	0.1			
		W03-L	LKD	0.0			
		W03-U	LKD	0.4	**1.0**	43	10
Basement	R2	W04-L	Bedroom	0.0			
		W04-U	Bedroom	0.1			
		W05	Bedroom	1.7	**1.8**	1	0
Ground	R1	W01-L	LD	0.0			
		W01-U	LD	0.6			
		W02	LD	0.1			
		W03-L	LD	0.0			
		W03-U	LD	0.6			
		W04-L	LD	0.0			
		W04-U	LD	0.5			
		W05-L	LD	0.0			
		W05-U	LD	0.4	**2.3**	59	20
First	R1	W01-L	Bedroom	0.0			
		W01-U	Bedroom	1.5	**1.5**	56	21
First	R4	W05-L	Bedroom	0.0			
		W05-U	Bedroom	1.2			
		W06-L	Bedroom	0.0			
		W06-U	Bedroom	1.1	**2.3**	2	0
Second	R1	W01-L	Bedroom	0.1			
		W01-U	Bedroom	1.3	**1.4**	61	23
Second	R3	W03-L	Bedroom	0.1			
		W03-U	Bedroom	1.0	**1.1**	60	22