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DAYLIGHT & SUNLIGHT REPORT

Antwerp House
London

10th July 2015

A photograph of a modern building's facade, featuring a grid of glass panels and horizontal wooden slats. The building is viewed from a low angle, looking up towards a blue sky with white clouds. The image is partially obscured by a large, dark grey geometric shape on the right side of the page.

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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 development at Antwerp House.
- 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 detailed three 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) and Winter Probable Sunlight Hours (WPSH) 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.

3. Sources of Information

Darren Stacey Architects

Proposed Scheme and Survey

Antwerp house proposed export.dwg

Received 16/06/2015

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Site Photographs

OS Survey

4. The Site and Proposal

- 4.1. The existing site comprises a three storey building of commercial use located on the western side of Kirby Street. The proposal is for refurbishment of the existing accommodation and for the construction of a three storey roof top extension to provide residential flats.
- 4.2. The site is neighboured by commercial accommodation to the north, east and south, along Kirby Street. To the north, beyond Saint Cross Street, and to the west are additional buildings of commercial use.
- 4.3. Eb7 have used survey information, site photographs and Ordinance Survey information to build a 3D computer model of the existing. 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.
- 4.4. As there do not appear to be any neighbouring properties of residential use, it is not relevant to assess the daylight and sunlight implications to these properties as a result of the proposed scheme. However, an internal daylight and sunlight assessment is required to establish whether the proposed scheme complies with the BRE and BS documents.



Photo 1 – Aerial view of current site

5. Results

- 5.1. The daylight and sunlight amenity provided within the proposed residential accommodation has been assessed using the ADF and APSH tests respectively, following the methodology of the BRE guidance and British Standard document BS8206 pt2.
- 5.2. The proposal includes three new apartments, which in total contain three Living/kitchen/diners and seven bedrooms. Each of these rooms has been included within our assessment as they constitute the habitable rooms. Full results of these assessments are attached within appendix 2. Drawings showing the layouts of the apartments with window and room labels are attached within appendix 3.

Daylight

- 5.3. The results of our analysis have shown that of the 10 habitable rooms assessed, 9 (90%) surpass the targets for ADF. The room that falls below the target is a bedroom (R2) at second floor level, which receives an ADF of 0.6% where the target is 1%.

Sunlight

- 5.4. The BRE guidance states that the main expectation for sunlight in dwellings is to the main living room. The results of the APSH assessment have shown that 1 of the 3 living rooms achieves the 25% annual of annual sunlight as recommended with 5% in the winter months.

- 5.5. The 2 living rooms which fall below these targets are located at second and third floors and fall only marginally short of the target levels. The living room at second level achieves 22% total and 4% winter sunlight whilst the living room at third level achieves 25% total and 4% winter sunlight.
- 5.6. It should be noted that the access to sunlight is governed entirely by the orientation of windows and the level of obstruction they face. It has not been possible to locate the windows of these units within the south facing elevation as this abuts an adjacent building. The access to sunlight is therefore limited because of the east-west orientation.

6. Conclusions

- 6.1. This practice has assessed the quality of daylight and sunlight amenity within the proposed development for Antwerp House, Kirby Street, London EC1.
- 6.2. The results of the daylight and sunlight assessments within the proposed habitable rooms have shown some slight deviations from the target criteria, but these are largely a result of the dense urban location of the site and the obstruction caused by neighbouring buildings. The BRE guide gives the following in this regard: -

"The advice given here is not mandatory and this 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."
- 6.3. It is considered that the provision of daylight and sunlight within the proposed dwellings is entirely in keeping with the intentions of the BRE and British Standard guidance and therefore compliant with local planning policy.



Appendix 1

Drawings

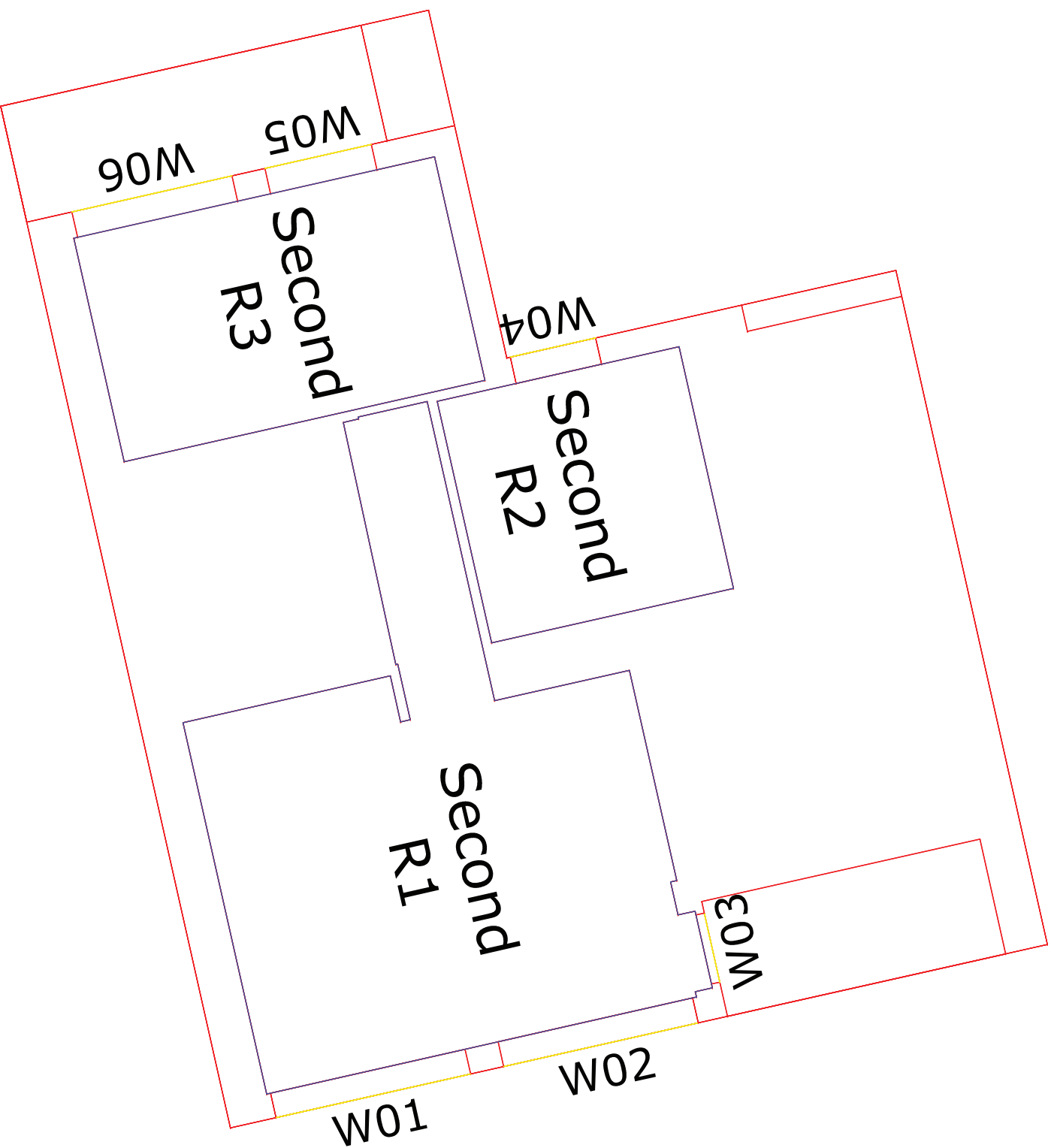


Sources of information

Received

antwerp house proposed export.dwg
Received 16/06/2015

EB7 Ltd
Site Photographs
OS Survey



Project Antwerp House

ECIN 8TE
London

Title Proposed room and window layouts
Second Floor

Drawn ME Checked DF

Date 29/06/2015 Rel no 01

Drawing no

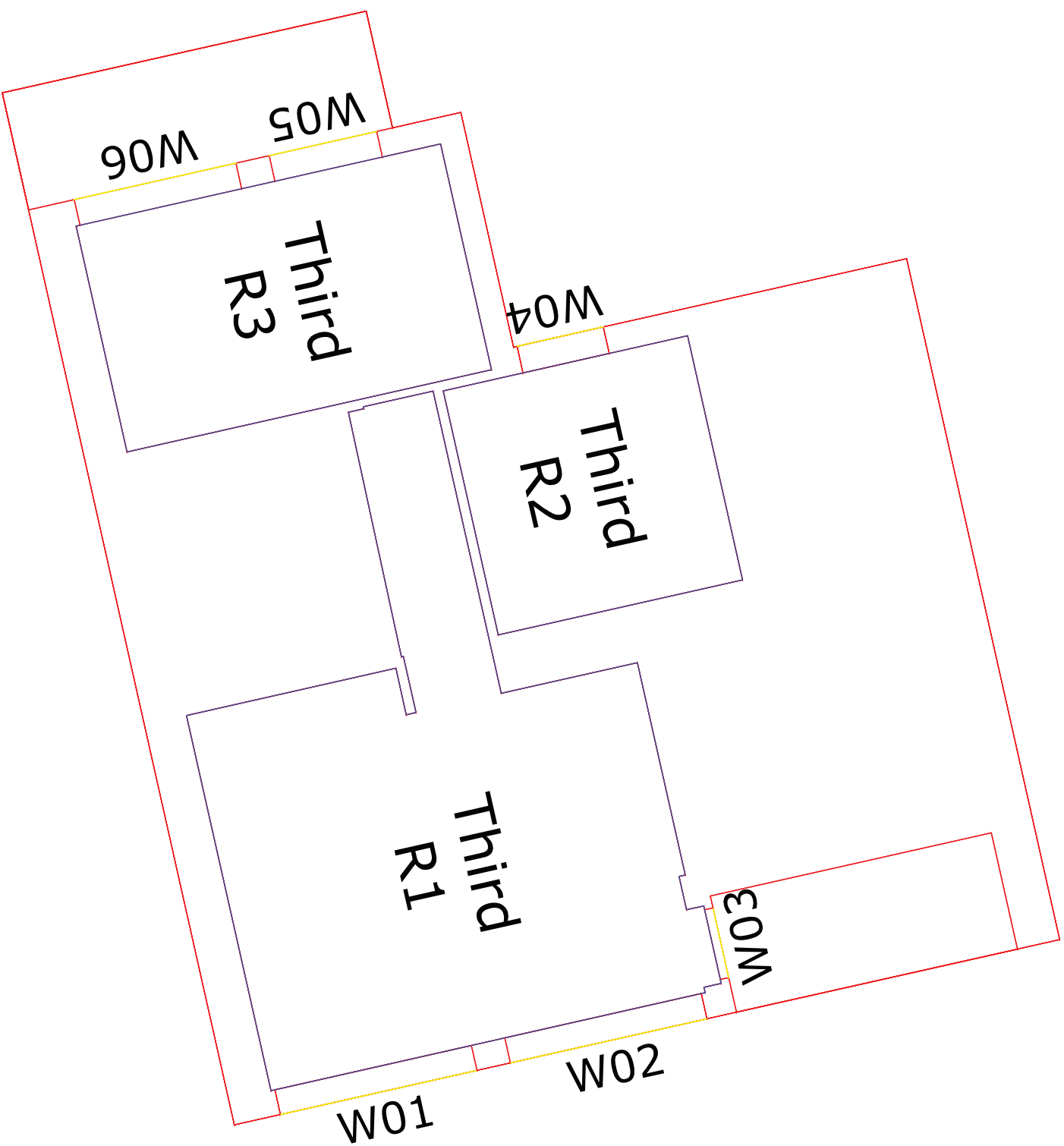
1501-ID03

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antwerp house proposed export.dwg
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Site Photographs
OS Survey



Project	Antwerp House ECIN 8TE London		
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Drawn	ME	Checked	DF
Date	29/06/2015	Rel no	01
Drawing no	1501-ID04		

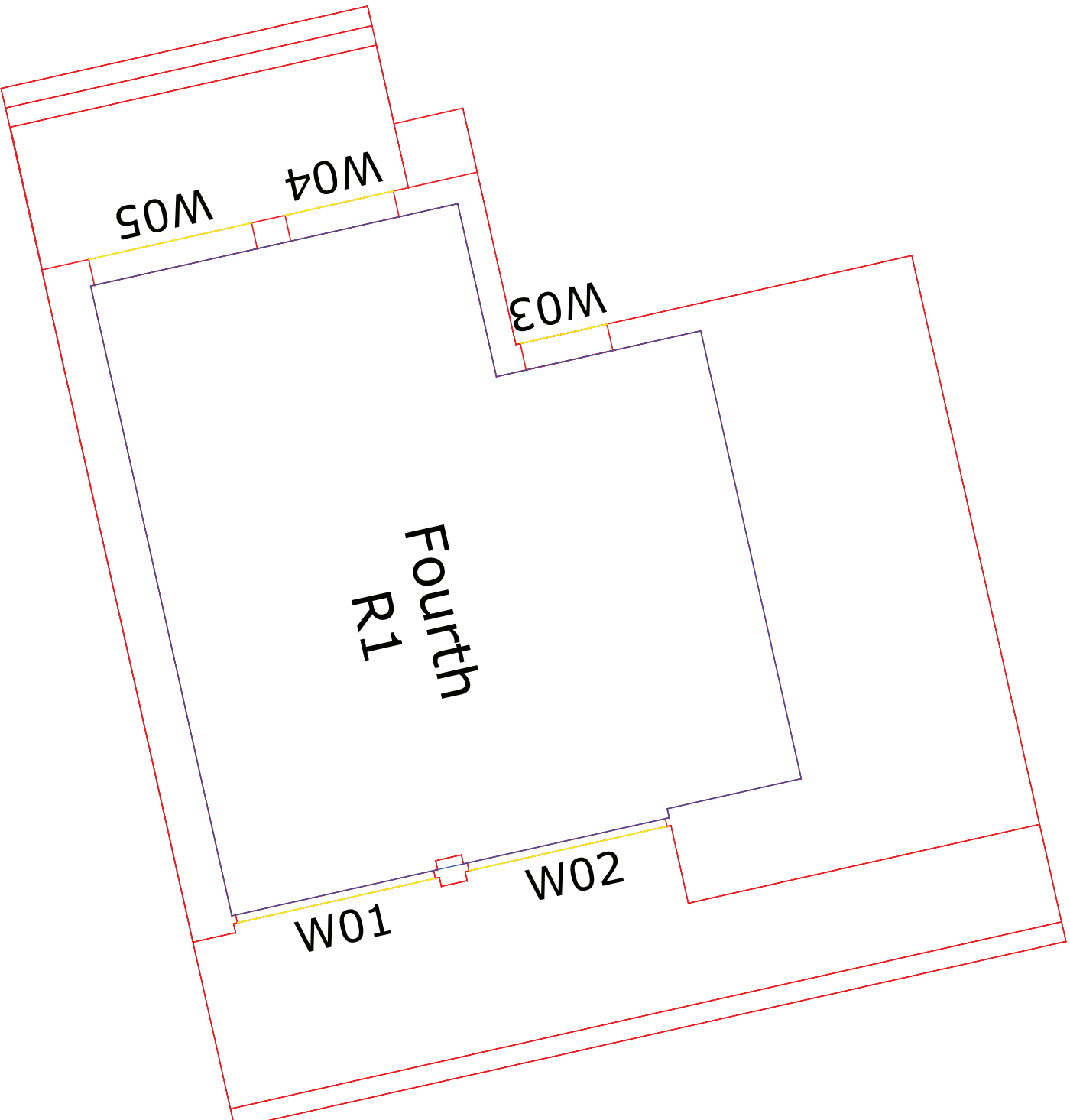
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Received

antwerp house proposed export.dwg
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Site Photographs
OS Survey



Project Antwerp House

ECIN 8TE
London

Title

Proposed room and window layouts
Fourth Floor

Drawn

ME

Checked

DF

Date

29/06/2015

Rel no

01

Drawing no

1501-ID05

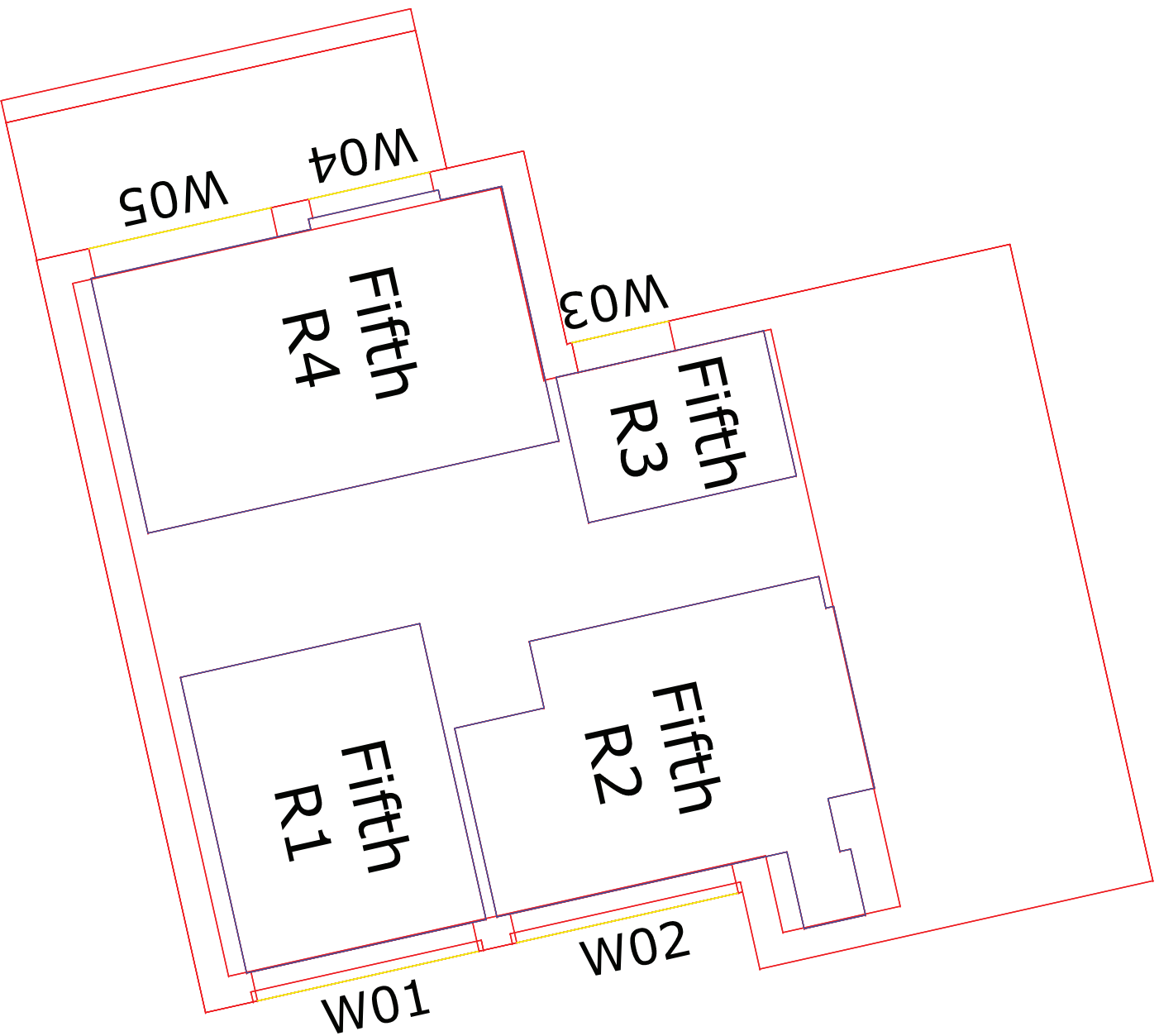
Sources of information

Received

antwerp house proposed export.dwg
Received 16/06/2015

EB7 Ltd

Site Photographs
OS Survey



Project Antwerp House

ECIN 8TE
London

Title Proposed room and window layouts
Fifth Floor

Drawn ME Checked DF

Date 29/06/2015 Rel no 01

Drawing no

1501-ID06



Appendix 2

Results of the Daylight & Sunlight assessment

Floor	Room ID	Window ID	Room Use	ADF	TOTAL ADF	TOTAL APSH	WINTER APSH
Second	R1	W01-L	L/K/D	0.1	4.1	21	3
		W01-U	L/K/D	1.8			
		W02-L	L/K/D	0.1		22	4
		W02-U	L/K/D	1.8			
		W03-L	L/K/D	0.0		0	0
		W03-U	L/K/D	0.2			
Second	R2	W04-L	Bedroom	0.0	0.6	0	0
		W04-U	Bedroom	0.6			
Second	R3	W05-L	Bedroom	0.1	1.7	6	0
		W05-U	Bedroom	0.5			
		W06-L	Bedroom	0.1		7	0
		W06-U	Bedroom	1.1			
Third	R1	W01-L	L/K/D	0.1	4.7	25	4
		W01-U	L/K/D	2.1			
		W02-L	L/K/D	0.1		25	4
		W02-U	L/K/D	2.1			
		W03-L	L/K/D	0.0		0	0
		W03-U	L/K/D	0.2			
Third	R2	W04-L	Bedroom	0.0	1.3	4	0
		W04-U	Bedroom	1.3			
Third	R3	W05-L	Bedroom	0.1	2.9	14	1
		W05-U	Bedroom	1.1			
		W06-L	Bedroom	0.2		13	0
		W06-U	Bedroom	1.6			
Fourth	R1	W01-L	L/K/D	0.1	5.0	33	6
		W01-U	L/K/D	1.7			
		W02-L	L/K/D	0.1		32	5
		W02-U	L/K/D	1.5			
		W03-L	L/K/D	0.0		16	2
		W03-U	L/K/D	0.5			
		W04-L	L/K/D	0.0		17	4
		W04-U	L/K/D	0.4			
		W05-L	L/K/D	0.1		13	1
		W05-U	L/K/D	0.5			
Fifth	R1	W01-L	Bedroom	0.5	6.5	35	7
		W01-U	Bedroom	6.0			
Fifth	R2	W02-L	Bedroom	0.3	4.4	35	7
		W02-U	Bedroom	4.1			

Floor	Room ID	Window ID	Room Use	ADF	TOTAL ADF	TOTAL APSH	WINTER APSH
Fifth	R4	W04-L	Bedroom	0.2	5.9	38	8
		W04-U	Bedroom	2.3			
		W05-L	Bedroom	0.2		30	1
		W05-U	Bedroom	3.2			