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Daylight and Sunlight Study
16 Alma Street, London NW5 3DJ

18th February 2013

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DAYLIGHT AND SUNLIGHT STUDY
16 Alma Street, London NW5 3DJ

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1 EXECUTIVE SUMMARY

1.1 Overview

- 1.1.1 Right of Light Consulting has been commissioned to undertake a daylight and sunlight study of the proposed development at 16 Alma Street, London NW5 3DJ.
- 1.1.2 The aim of the study is to assess the impact of the development on the light receivable by the neighbouring properties at 15 and 17 Alma Street. The study is based on the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice' by P J Littlefair 2011.
- 1.1.3 The window key in Appendix 1 identifies the windows analysed in this study. Appendix 2 gives the numerical results of the various daylight and sunlight tests.
- 1.1.4 In summary, the proposed development will have a low impact on the light receivable by its neighbouring properties. Right of Light Consulting confirms that the development design satisfies all of the requirements set out in the BRE guide 'Site Layout Planning for Daylight and Sunlight'.

2 INFORMATION SOURCES

2.1 Documents Considered

2.1.1 This report is based on drawings:

Coffey Architects Ltd

608_001	Site Location Plan	Rev –
608_100	Existing Site Plan	Rev –
608_101	Existing Lower Ground Plan	Rev –
608_102	Existing Ground Floor Plan	Rev –
608_103	Existing First Floor Plan	Rev –
608_104	Existing Attic Plan	Rev –
608_105	Existing Roof Plan	Rev –
608_111	Existing Section AA	Rev –
608_112	Existing Section BB	Rev –
608_113	Existing Section CC	Rev –
608_121	Existing Front Elevation	Rev –
608_122	Existing Rear Elevation	Rev –
608_200	Proposed Site Plan	Rev –
608_201	Proposed Lower Ground Plan	Rev –
608_202	Proposed Ground Floor Plan	Rev –
608_203	Proposed First Floor Plan	Rev –
608_204	Proposed Attic Plan	Rev –
608_205	Proposed Roof Plan	Rev –
608_211	Proposed Section AA	Rev –
608_212	Proposed Section BB	Rev –
608_213	Proposed Section CC	Rev –
608_214	Proposed Section DD	Rev –
608_221	Proposed Front Elevation	Rev –
608_222	Proposed Rear Elevation	Rev –

3 METHODOLOGY OF THE STUDY

3.1 BRE Guide : Site Layout Planning for Daylight and Sunlight

- 3.1.1 The study is based on the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice' by P J Littlefair 2011. In general, the BRE tests are based on the requirements of the British Standard, BS 8206 Part 2.
- 3.1.2 The standards set out in the BRE guide are intended to be used flexibly. The following statement is quoted directly from the BRE guide:
- 3.1.3 "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 of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design."

3.2 Daylight to Windows

- 3.2.1 Diffuse daylight is the light received from the sun which has been diffused through the sky. Even on a cloudy day when the sun is not visible, a room will continue to be lit with light from the sky. This is diffuse daylight.

Diffuse daylight calculations should be undertaken to all rooms where daylight is required, including living rooms, kitchens and bedrooms. Usually, if a kitchen is less than 13m² it is considered to be a non-habitable room and the daylight tests need not be applied. The BRE guide states that windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed.

- 3.2.2 The BRE guide contains two tests which measure diffuse daylight:

3.2.3 Test 1 Vertical Sky Component

The percentage of the sky visible from the centre of a window is known as the Vertical Sky Component. Diffuse daylight may be adversely affected if after a development the Vertical Sky Component is both less than 27% and less than 0.8 times its former value.

3.2.4 Test 2 Daylight Distribution

The BRE guide states that where room layouts are known, the impact on the daylighting distribution can be found by plotting the 'no sky line' in each of the main rooms. The no-sky line is a line which separates areas of the working plane that can and cannot have a direct view of the sky. Daylight may be adversely affected if after the development the area of the working plane in a room which can receive direct skylight is reduced to less than 0.8 times its former value.

3.3 Sunlight availability to Windows

3.3.1 The BRE sunlight tests should be applied to all main living rooms and conservatories which have a window which faces within 90 degrees of due south. The guide states that kitchens and bedrooms are less important, although care should be taken not to block too much sunlight.

3.3.2 The BRE guide states that sunlight availability may be adversely affected if the centre of the window:

- receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March and
- receives less than 0.8 times its former sunlight hours during either period and
- has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

3.4 Overshadowing to Gardens and Open Spaces

3.4.1 The availability of sunlight should be checked for all open spaces where sunlight is required. This would normally include:

- Gardens, usually the main back garden of a house
- Parks and playing fields
- Children's playgrounds
- Outdoor swimming pools and paddling pools
- Sitting out areas, such as those between non-domestic buildings and in public squares
- Focal points for views such as a group of monuments or fountains.

3.4.2 The BRE guide recommends that at least 50% of the area of each amenity space listed above should receive at least two hours of sunlight on 21st March. If as a result of new development an existing garden or amenity area does not meet the above, and the area which can receive two hours of sun on 21st March is less than 0.8 times its former value, then the loss of light is likely to be noticeable.

4 RESULTS OF THE STUDY

4.1 Windows & Amenity Areas Considered

- 4.1.1 Appendix 1 provides a plan and photographs to indicate the positions of the windows and garden analysed in this study.

4.2 Numerical Results

- 4.2.1 Appendix 2 lists the detailed numerical daylight and sunlight test results. The results are interpreted below.

4.3 Daylight to Windows

- 4.3.1 All main habitable windows pass the Vertical Sky Component test (VSC) with the exception of window 6a. However, this room is also served by another window of the same size (window 6b). The BRE guide acknowledges that if a room has two or more windows of equal size, the mean of their VSC's may be taken. The results confirm that the VSC mean average for the two windows passes the VSC test (average VSC is 20.2% before the development to 17.6% after which equates to a reduction ratio of 0.87). The proposed development therefore satisfies the BRE daylight requirements.

4.4 Sunlight to Windows

- 4.4.1 All windows face within 90 degrees of due south and accordingly they have been tested for direct sunlight. All windows pass both the total annual sunlight hours test and the winter sunlight hours test. The proposed development therefore satisfies the BRE direct sunlight to windows requirements.

4.5 Overshadowing to Gardens and Open Spaces

- 4.5.1 The proposed development will not create any new areas which receive less than two hours of sunlight on 21st March. The before/after ratio is 1 (no loss) and the proposed development therefore passes the BRE overshadowing to gardens and open spaces test.

4.6 Conclusion

- 4.6.1 The proposed development will have a low impact on the light receivable by its neighbouring properties. Right of Light Consulting confirms that the development design satisfies all of the requirements set out in the BRE guide 'Site Layout Planning for Daylight and Sunlight'.

5 CLARIFICATIONS

5.1 General

- 5.1.1 The report provided is solely for the use of the client and no liability to anyone else is accepted.
- 5.1.2 We have undertaken the survey following the guidelines of the RICS publication “Surveying Safely”.
- 5.1.3 We have used our best endeavours to ensure all relevant windows within the neighbouring properties have been identified.
- 5.1.4 Where limited access is available, reasonable assumptions will have been made.
- 5.1.5 We have adopted the conventional approach of assessing all habitable rooms within domestic properties.
- 5.1.6 Right of Light Consulting have endeavoured to include in the report those matters, which they have knowledge of or of which they have been made aware, that might adversely affect the validity of the opinion given.

5.2 Project Specific

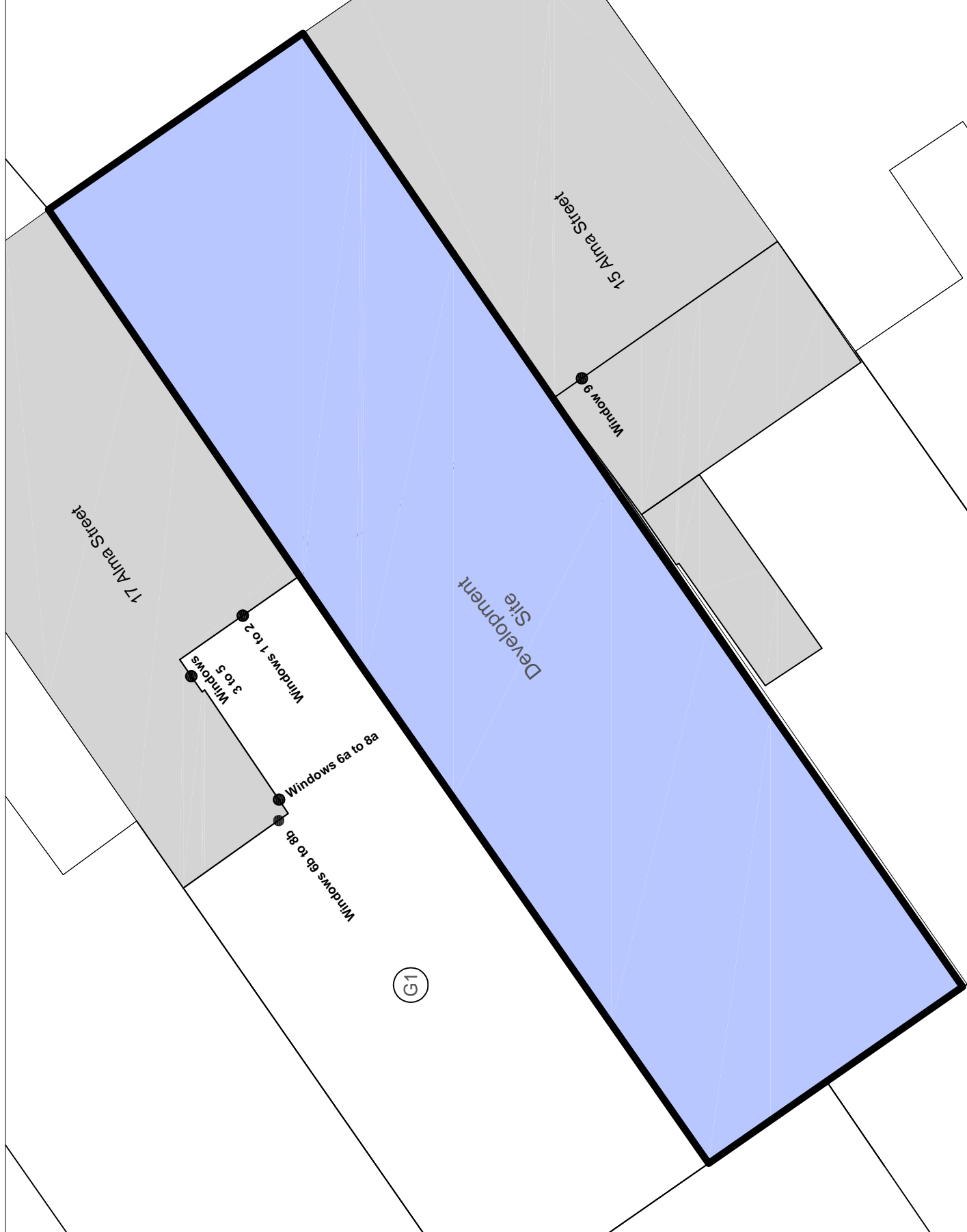
- 5.2.1 None

APPENDICES

APPENDIX 1

WINDOW & GARDEN KEY

Window & Garden Key



Key

Window 1 ● Window reference

Development site

Neighbouring Properties

G1 Neighbouring Gardens and Amenity Areas

①

Project Name: **16 Alma Street, London nw5 3dJ**

Drawing Title: **Appendix 1 - Neighbouring Windows**

Scale: **Do not scale**

Drawing No: 1

Rev	Date	Details of revision
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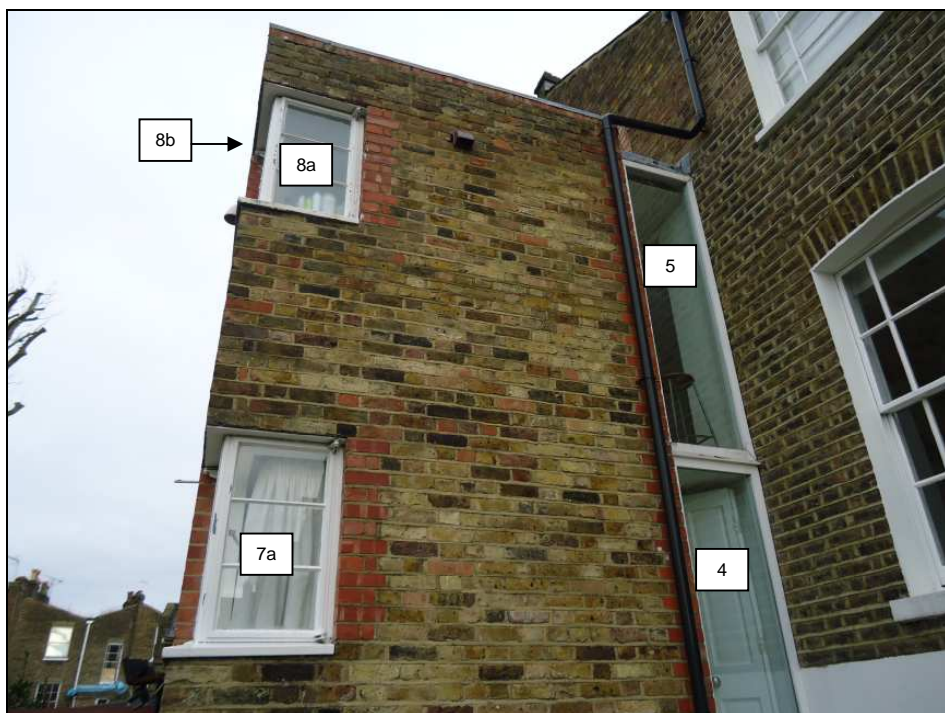
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Neighbouring Windows



17 Alma Street



17 Alma Street



15 Alma Street

APPENDIX 2

DAYLIGHT AND SUNLIGHT RESULTS

Appendix 2 - Vertical Sky Component

16 Alma Street, London NW5 3DJ

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
<u>17 Alma Street</u>					
Window 1	Habitable	15.5%	14.1%	1.4%	0.91
Window 2	Habitable	26.7%	22.8%	3.9%	0.85
Window 3	Non Habitable	10.0%	7.3%	2.7%	0.73
Window 4	Non Habitable	18.0%	12.4%	5.6%	0.69
Window 5	Non Habitable	20.8%	19.5%	1.3%	0.94
Window 6a	Habitable	20.6%	15.5%	5.1%	0.75
Window 6b	Habitable	19.8%	19.6%	0.2%	0.99
Window 7a	Habitable	26.1%	23.2%	2.9%	0.89
Window 7b	Habitable	35.0%	35.0%	0.0%	1.0
Window 8a	Habitable	30.1%	29.9%	0.2%	0.99
Window 8b	Habitable	37.5%	37.4%	0.1%	1.0
<u>15 Alma Street</u>					
Window 9	Habitable	35.4%	32.9%	2.5%	0.93

Appendix 2 - Sunlight to Windows

16 Alma Street, London NW5 3DJ

Reference	Use Class	Sunlight to Windows							
		Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
<u>17 Alma Street</u>									
Window 1	Habitable	26%	25%	1%	0.96	4%	3%	1%	0.75
Window 2	Habitable	55%	44%	11%	0.8	21%	10%	11%	0.48
Window 3	Habitable	30%	26%	4%	0.87	8%	6%	2%	0.75
Window 4	Habitable	43%	36%	7%	0.84	18%	11%	7%	0.61
Window 5	Habitable	46%	46%	0%	1.0	21%	21%	0%	1.0
Window 6a	Habitable	48%	37%	11%	0.77	17%	13%	4%	0.76
Window 6b	Habitable	47%	45%	2%	0.96	18%	16%	2%	0.89
Window 7a	Habitable	55%	53%	2%	0.96	22%	20%	2%	0.91
Window 7b	Habitable	63%	63%	0%	1.0	21%	21%	0%	1.0
Window 8a	Habitable	63%	63%	0%	1.0	24%	24%	0%	1.0
Window 8b	Habitable	65%	65%	0%	1.0	23%	23%	0%	1.0
<u>15 Alma Street</u>									
Window 9	Habitable	64%	62%	2%	0.97	22%	22%	0%	1.0

Appendix 2 - Overshadowing to Gardens and Open Spaces
16 Alma Street, London NW5 3DJ

Reference	Total Area	Area receiving at least two hours of sunlight on 21st March						
		Before		After		Loss		Ratio
<u>17 Alma Street</u>								
Garden 1	38.79 m2	28.36 m2	73%	28.36 m2	73%	0.0 m2	0%	1.0

APPENDIX 3

OVERSHADOWING TO GARDENS AND OPEN SPACES

Appendix 3 : Overshadowing to Gardens and Open Spaces

Key



Receives under two hours sunlight on 21st March before and after the development.



Receives under two hours sunlight on 21st March before the development; but will receive at least two hours sunlight on 21st March after the development (light improved).



Receives at least two hours sunlight on 21st March before the development; but will receive under two hours sunlight after the development (light loss).



Receives at least two hours sunlight on 21st March before and after the development.

Notes:

- 1. Contours derived in accordance with BRE Guide : Site Layout Planning for Daylight and Sunlight

Project Name		16 Alma Street, London nw5 3dJ	
Drawing Title		Appendix 3 - Overshadowing to Gardens and Open Spaces	
Scale		Do not scale	
Drawing No.		1	Rev. -
Rev.	Date	Details of revisions	



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