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Daylight and Sunlight Study

10 to 13 Charlotte Place, Camden Town, London W1

3rd February 2012

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CONTENTS

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 10 to 13 Charlotte Place, Camden Town, London W1.

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 2 to 7 & 9 to 14 Charlotte Place, 37 & 41 Charlotte Street and 47 Rathbone 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 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:

Matthew Springett Associates Ltd

129(A)-100	Site Location Plan	Rev –
129(A)-200	Basement Plan Existing & Proposed	Rev –
129(A)-201	Ground Floor Plan Existing & Proposed	Rev –
129(A)-202	First Floor Plan Existing & Proposed	Rev –
129(A)-203	Second Floor Plan Existing & Proposed	Rev –
129(A)-204	Third Floor Plan Existing	Rev –
129(A)-205	Roof Plan Existing	Rev –
129(A)-211	Third Floor Plan Proposed	Rev –
129(A)-212	Fourth Floor Plan Proposed	Rev –
129(A)-213	Roof Plan Proposed	Rev –
129(A)-300	Existing Section A – A	Rev –
129(A)-301	Existing Section B – B	Rev –
129(A)-310	Proposed Section A – A	Rev –
129(A)-311	Proposed Section B – B	Rev –
129(A)-400	Existing North Elevation	Rev –
129(A)-401	Existing South Elevation	Rev –
129(A)-410	Proposed North Elevation	Rev –
129(A)-411	Proposed South 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 13m^2 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 <u>Vertical Sky Component</u>

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 more 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 gardens 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 After the development, windows 43, 46 & 47 at 9 Charlotte Place achieve a Vertical Sky Component (VSC) score of both less 27% and less than 0.8 times the former value (see Appendix 2). However, the BRE guide acknowledges that in historic city centres (as with the aforementioned properties) a higher degree of obstruction may be unavoidable. The guide goes on to explain that where existing neighbouring buildings sit close to the boundary, as with 9 Charlotte Place, alternative VSC targets may be applied. The methodology for setting new targets is set out in Appendix F of the guide. The alternative VSC targets are derived by calculating the level of light that the windows would achieve if obstructed by a hypothetical 'mirror-image' of the existing neighbouring building, an equal distance away from the boundary. All windows at 9 Charlotte Place surpass the alternative VSC targets (See Appendix 3). Furthermore, from our external observations, it appears that windows 43, 46 & 47 are secondary windows. The main windows are south facing, looking onto Rathbone Street, and will not be affected by the development.

4.3.2 All windows at the other properties pass the standard Vertical Sky Component criteria and therefore it is not necessary to calculate alternative VSC targets for these properties. The proposed development therefore satisfies the BRE daylight requirements.

4.4 Sunlight to Windows

4.4.1 Windows 19, 22 & 39 pass both the total annual sunlight hours test and the winter sunlight hours test. All other windows do not face within 90 degrees of due south or

serve a non-domestic property and do not need to be tested for direct sunlight. 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 ratios are 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 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.

5.1.7 Right of Light Consulting will notify those instructing them immediately and confirm in writing if for any reason the report requires any correction or qualification.

5.2 Project Specific

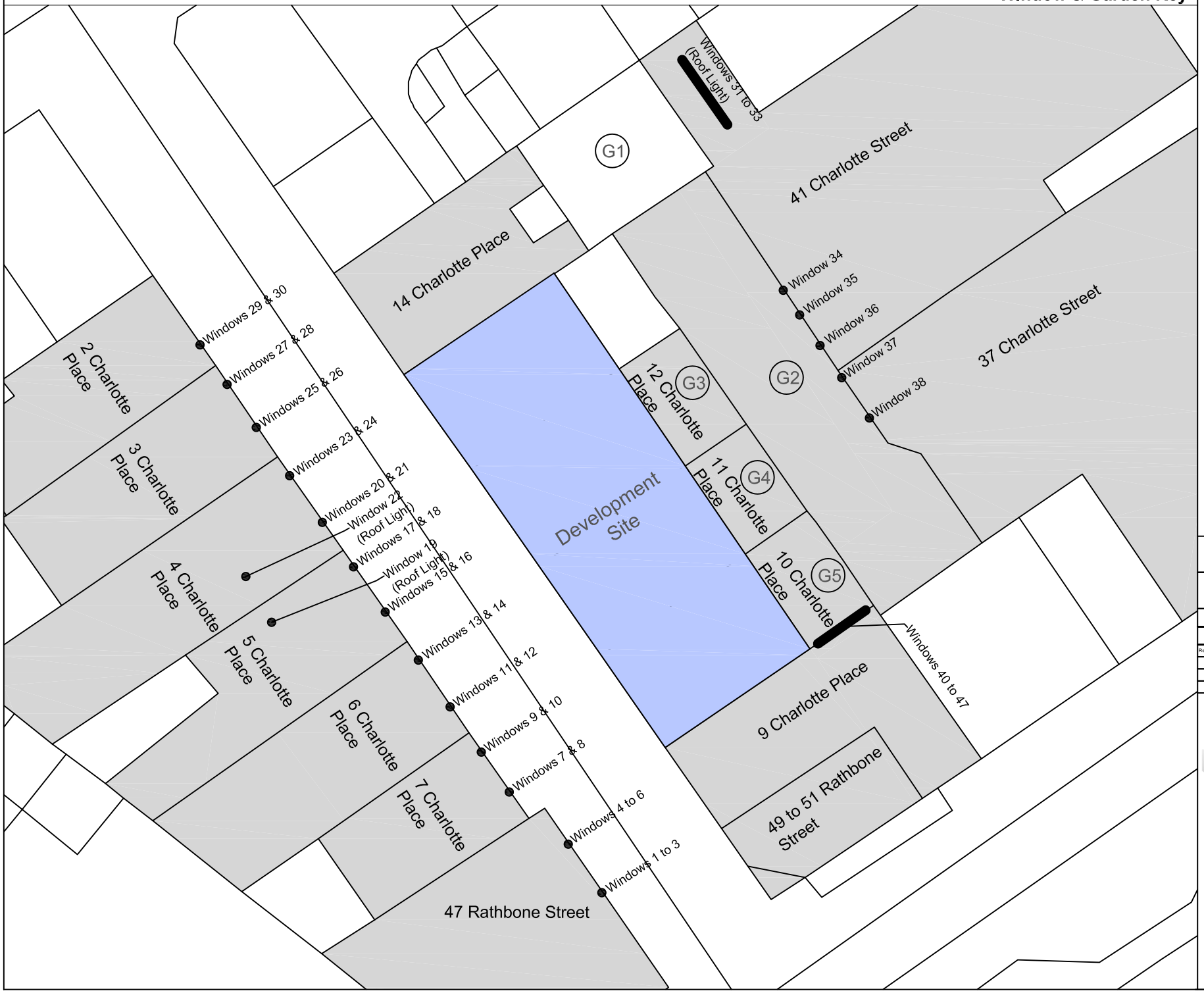
5.2.1 None

APPENDICES

APPENDIX 1

WINDOW & GARDEN KEY

Window & Garden Key



Key

Window 1 ● Window reference

Development site

Neighbouring Properties

G1 Neighbouring Gardens and Amenity Areas

Project Name: 10 to 13 Charlotte Place, Camden Town, London W1

Drawing Title: Appendix 1 - Neighbouring Windows

Scale: Do not scale

Drawing No: 1 Rev. -

Rev	Date	Details of revision

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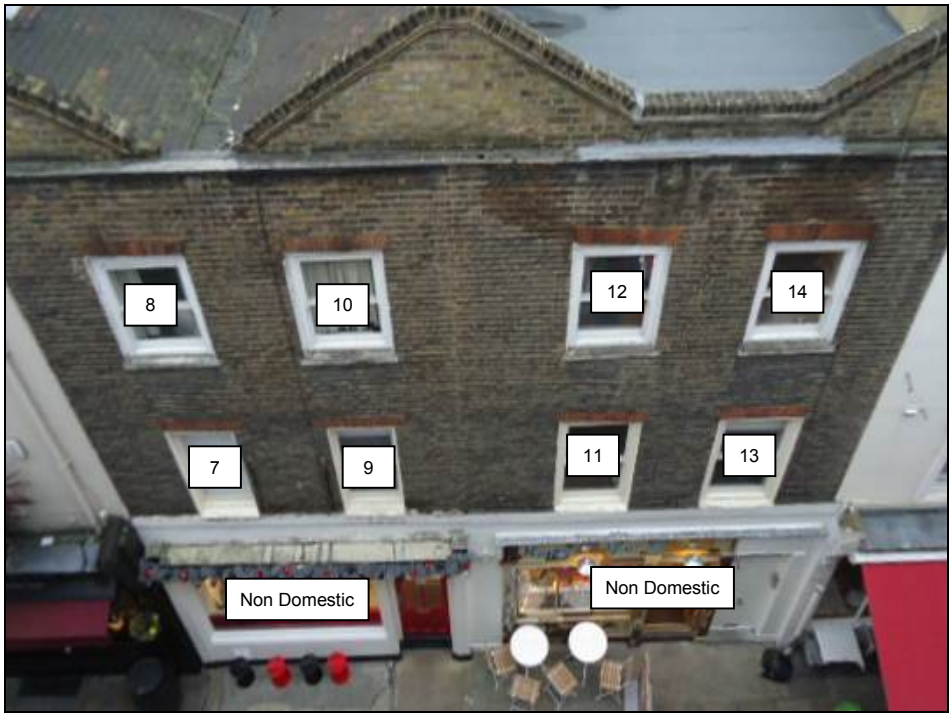
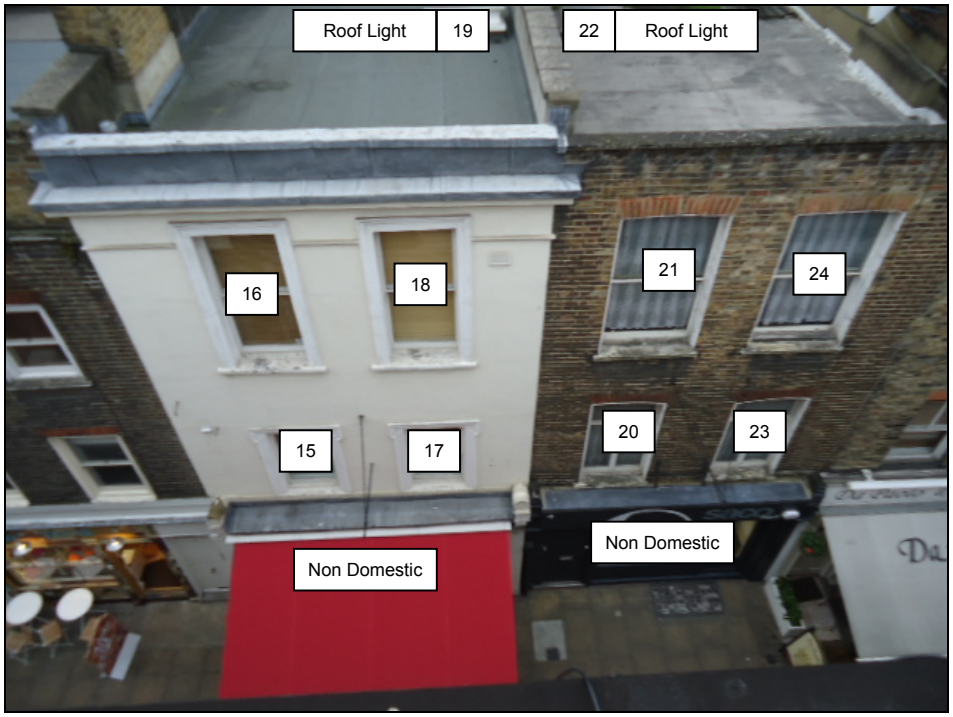
Neighbouring Windows

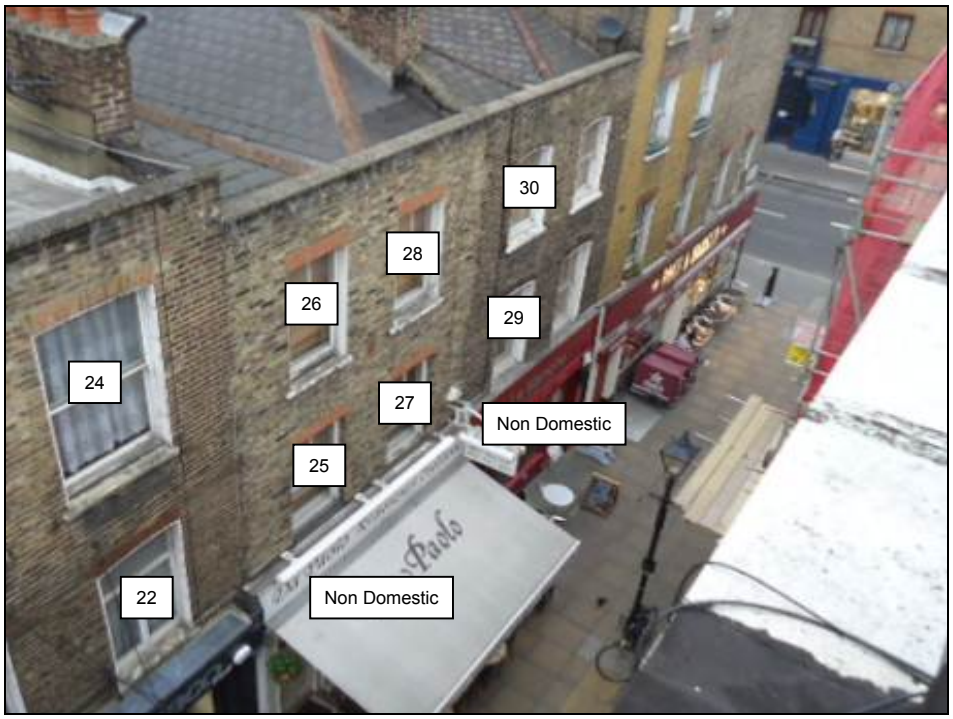
47 Rathbone Street



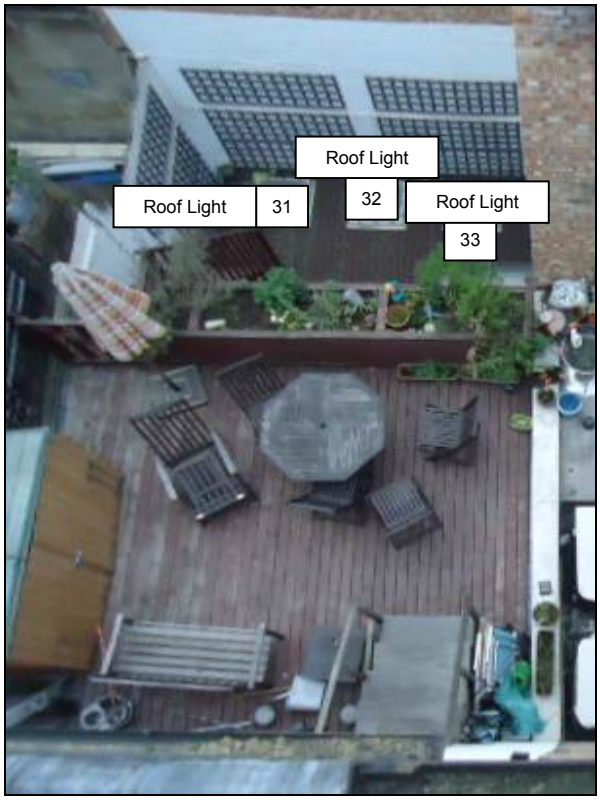
6 & 7 Charlotte Place



4 & 5 Charlotte Place



2 & 3 Charlotte Place

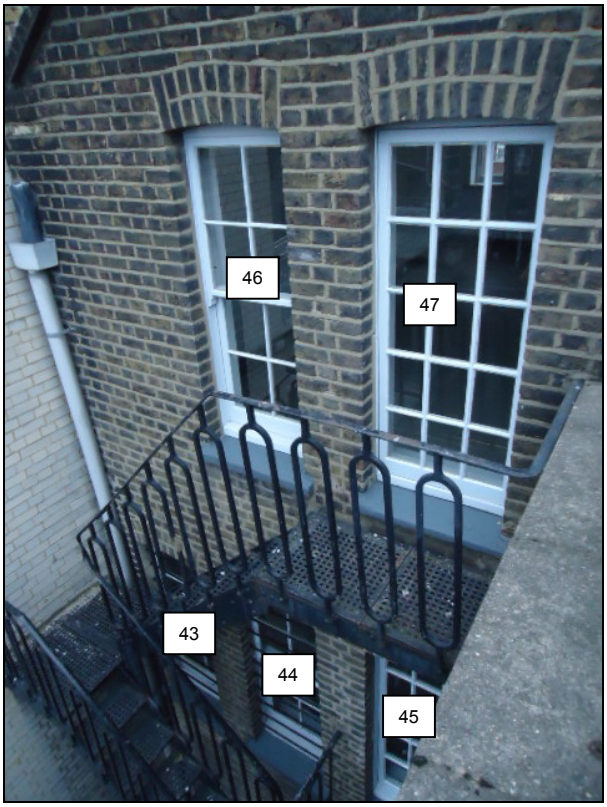


37 & 41 Charlotte Street

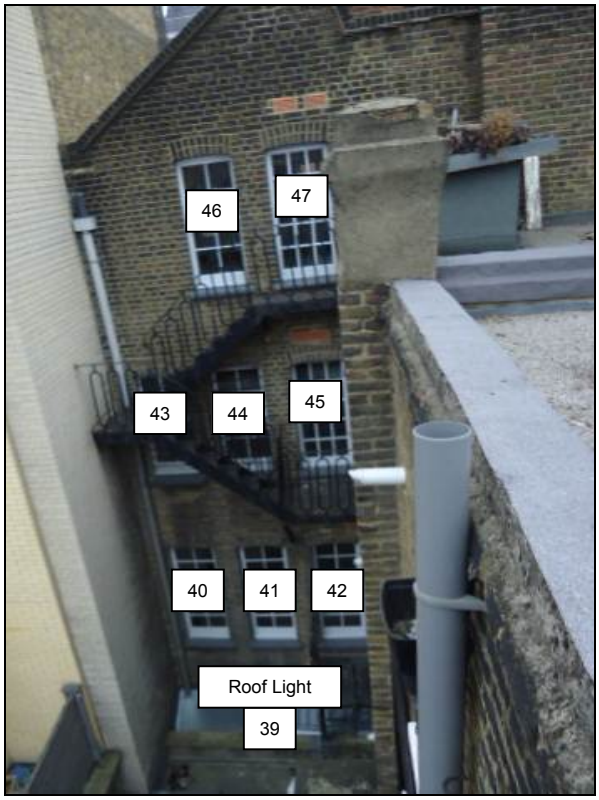
14 Charlotte Place

37 & 41 Charlotte Street

10 to 13 Charlotte Place



9 Charlotte Place



9 Charlotte Place

APPENDIX 2

DAYLIGHT AND SUNLIGHT RESULTS

Appendix 2 - Vertical Sky Component
10 to 13 Charlotte Place, Camden Town, London W1

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
47 Rathbone Street					
Window 1	Habitable	14.8%	14.3%	0.5%	0.97
Window 2	Habitable	19.7%	18.7%	1.0%	0.95
Window 3	Habitable	28.4%	26.9%	1.5%	0.95
Window 4	Habitable	12.9%	12.2%	0.7%	0.95
Window 5	Habitable	18.6%	16.9%	1.7%	0.91
Window 6	Habitable	28.5%	25.6%	2.9%	0.9
6 & 7 Charlotte Place					
Window 7	Habitable	10.1%	8.8%	1.3%	0.87
Window 8	Habitable	16.2%	13.5%	2.7%	0.83
Window 9	Habitable	12.7%	11.2%	1.5%	0.88
Window 10	Habitable	19.2%	16.1%	3.1%	0.84
Window 11	Habitable	12.9%	11.2%	1.7%	0.87
Window 12	Habitable	19.7%	16.1%	3.6%	0.82
Window 13	Habitable	12.8%	11.1%	1.7%	0.87
Window 14	Habitable	19.8%	16.1%	3.7%	0.81
4 & 5 Charlotte Place					
Window 15	Habitable	13.5%	11.6%	1.9%	0.86
Window 16	Habitable	21.8%	17.4%	4.4%	0.8
Window 17	Habitable	13.7%	11.8%	1.9%	0.86
Window 18	Habitable	22.0%	17.7%	4.3%	0.8
Window 19	Habitable	96.5%	95.7%	0.8%	0.99
Window 20	Habitable	14.2%	12.5%	1.7%	0.88
Window 21	Habitable	22.7%	18.9%	3.8%	0.83
Window 22	Habitable	97.1%	96.3%	0.8%	0.99
Window 23	Habitable	14.6%	13.2%	1.4%	0.9
Window 24	Habitable	23.3%	20.1%	3.2%	0.86
2 & 3 Charlotte Place					
Window 25	Habitable	15.0%	13.9%	1.1%	0.93
Window 26	Habitable	23.3%	21.1%	2.2%	0.91
Window 27	Habitable	15.4%	14.4%	1.0%	0.94
Window 28	Habitable	24.0%	22.0%	2.0%	0.92
Window 29	Habitable	16.0%	15.2%	0.8%	0.95
Window 30	Habitable	24.7%	23.2%	1.5%	0.94

Appendix 2 - Vertical Sky Component
10 to 13 Charlotte Place, Camden Town, London W1

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
37 & 41 Charlotte Street					
Window 31	Habitable	35.6%	34.6%	1.0%	0.97
Window 32	Habitable	34.5%	33.6%	0.9%	0.97
Window 33	Habitable	30.2%	29.6%	0.6%	0.98
Window 34	Non Domestic	11.2%	8.2%	3.0%	0.73
Window 35	Non Domestic	14.6%	11.0%	3.6%	0.75
Window 36	Non Domestic	14.8%	11.1%	3.7%	0.75
Window 37	Non Domestic	13.9%	10.3%	3.6%	0.74
Window 38	Non Domestic	12.4%	9.1%	3.3%	0.73
9 Charlotte Place					
Window 39	Habitable	18.9%	18.6%	0.3%	0.98
Window 40	Habitable	12.0%	10.9%	1.1%	0.91
Window 41	Habitable	15.5%	15.0%	0.5%	0.97
Window 42	Habitable	14.8%	14.8%	0.0%	1.0
Window 43	Habitable	4.8%	3.1%	1.7%	0.65
Window 44	Habitable	18.5%	16.4%	2.1%	0.89
Window 45	Habitable	17.1%	17.0%	0.1%	0.99
Window 46	Habitable	32.9%	23.7%	9.2%	0.72
Window 47	Habitable	34.5%	21.4%	13.1%	0.62

Appendix 2 - Sunlight to Windows
Project Name: 10 to 13 Charlotte Place, Camden Town, London W1

Reference	Use Class	Sunlight to Windows							
		Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
47 Rathbone Street									
Window 1	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 2	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 3	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 4	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 5	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 6	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
6 & 7 Charlotte Place									
Window 7	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 8	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 9	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 10	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 11	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 12	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 13	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 14	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4 & 5 Charlotte Place									
Window 15	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 16	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 17	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 18	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 19	Habitable	88%	87%	1%	0.99	23%	23%	0%	1.00
Window 20	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 21	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 22	Habitable	90%	89%	1%	0.99	24%	24%	0%	1.00
Window 23	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 24	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2 & 3 Charlotte Place									
Window 25	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 26	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 27	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 28	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 29	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 30	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Appendix 2 - Sunlight to Windows

Project Name: 10 to 13 Charlotte Place, Camden Town, London W1

Reference	Use Class	Sunlight to Windows							
		Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
37 & 41 Charlotte Street									
Window 31	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 32	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 33	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 34	Non Domestic	24%	15%	9%	0.63	2%	1%	1%	0.50
Window 35	Non Domestic	23%	14%	9%	0.61	2%	1%	1%	0.50
Window 36	Non Domestic	18%	10%	8%	0.56	1%	0%	1%	0.10
Window 37	Non Domestic	14%	9%	5%	0.64	0%	0%	0%	1.00
Window 38	Non Domestic	9%	3%	6%	0.33	0%	0%	0%	1.00
9 Charlotte Place									
Window 39	Habitable	0%	0%	0%	1.0	0%	0%	0%	1.00
Window 40	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 41	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 42	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 43	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 44	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 45	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 46	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 47	Habitable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

n/a = window does not face within 90 degrees of due south and the BRE sunlight targets are not applicable.

Appendix 2 - Overshadowing to Gardens and Open Spaces
10 to 13 Charlotte Place, Camden Town, London W1

Reference	Total Area	Area receiving at least two hours of sunlight on 21st March						
		Before		After		Loss		Ratio
37 & 41 Charlotte Street								
Garden 1	19.95 m^2	0.0 m^2	0%	0.0 m^2	0%	0.0 m^2	0%	1.0
14 Charlotte Place								
Garden 2	18.97 m^2	0.0 m^2	0%	0.0 m^2	0%	0.0 m^2	0%	1.0
10 to 13 Charlotte Place								
Garden 3	37.69 m^2	0.0 m^2	0%	0.0 m^2	0%	0.0 m^2	0%	1.0
Garden 4	31.57 m^2	0.0 m^2	0%	0.0 m^2	0%	0.0 m^2	0%	1.0
Garden 5	25.75 m^2	0.0 m^2	0%	0.0 m^2	0%	0.0 m^2	0%	1.0

APPENDIX 3

ALTERNATIVE DAYLIGHT RESULTS

Appendix 3 - Alternative Vertical Sky Component Results
10 to 13 Charlotte Place, Camden Town, London W1

Reference	Use Class	Vertical Sky Component (VSC)	
		Target VSC	Proposed VSC
9 Charlotte Place			
Window 43	Habitable	0.1%	3.1%
Window 46	Habitable	13.0%	23.7%
Window 47	Habitable	14.4%	21.4%

APPENDIX 4

OVERSHADOWING TO GARDENS AND OPEN SPACES

Appendix 4 : 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:	10 to 13 Charlotte Place, Camden Town, London W1
Drawing Title:	Appendix 3 - Overshadowing to Gardens and Open Spaces
Scale:	Do not scale
Drawing No:	1
Rev.	-

Rev	Date	Details of revision

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