RIGHT OF LIGHT CONSULTING
Chartered Surveyors

Right of Light Consulting
Burley House
15-17 High Street
Rayleigh
Essex
SS6 7EW
TEL 0800 197 4836
E-MAIL enquiries@right-of-light.co.uk
WEBSITE www.right-of-light.co.uk

Daylight and Sunlight Study
62A Grafton Terrace, Camden, London NW5 4HY

21 April 2016

Right of Light Consulting

Suite 6, Webster Court
Webster's Way
Rayleigh
Essex SS6 8JQ

Tel: 0800 197 4836

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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 62A Grafton Terrace, Camden, London NW5 4HY.

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 60, 62b, 64 Grafton Terrace and 2 to 6 Southampton Road. 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 All neighbouring windows pass the BRE diffuse daylight requirements. The development also satisfies the BRE overshadowing to gardens and open spaces test.

1.1.5 The results of the study show that the proposed development will have a relatively low impact on the light receivable by its neighbouring properties. In our opinion there is no daylight/sunlight related reason why planning permission should not be granted for this scheme.

2 INFORMATION SOURCES

2.1 Documents Considered

2.1.1 This report is based on drawings:

Dreamstudio Architecture

001	Site Plan	Rev 10
002	GF Existing Plan	Rev 10
003	GF Proposed Plan	Rev 10
004	Proposed First and Second Floor Plans	Rev 10
005	Proposed Roof Plan	Rev 10
006	Existing Elevation Front	Rev 10
007	Existing Elevation Rear	Rev 10
008	Front Elevation Proposed	Rev 10
009	Rear Elevation Proposed	Rev 10
010	Section AA Existing	Rev 10
011	Existing Section BB	Rev 10
012	Proposed Section AA	Rev 10
013	Proposed Section BB	Rev 10
015	Change of Use Plans	Rev 10

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 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 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 All windows pass the Vertical Sky Component test with the exception of window 17 at 4 Southampton Road (window 17 achieves a reduction ratio of 0.79 against the BRE target of 0.8). However, we note that window 17 is hampered by an existing projecting wing. The BRE guide acknowledges that where a window has an existing overhang or projecting wings on one or both sides of it, a larger relative reduction in VSC may be unavoidable, as the building itself contributes to its poor daylighting. The guide goes on to explain that an additional calculation may be carried out assuming that the existing obstruction does not exist. If the window meets the target on this basis, then this confirms that it is the existing obstruction (in this case, the projecting wing) that prevents the targets from being met as opposed to an unreasonable level of obstruction caused by the development. Window 17 passes the Vertical Sky Component test without the projecting wing in place (see Appendix 4). The proposed development therefore satisfies the BRE daylight requirements.

4.4 Sunlight to Windows

4.4.1 All windows pass both the total annual sunlight hours test and the winter sunlight hours test with the exception of windows 17, 21 & 22 at 4 Southampton Road and window 28 at 6 Southampton Road. However, there are mitigating factors to mention. Firstly, since we have not had access to the neighbouring properties, we are not able to confirm room uses. However, the direct sunlight hours targets stated in the BRE guide are only intended to be applied to main living room windows. From our external observations, it seems unlikely that the windows which fall short serve main living rooms. Secondly, these windows only just face within 90 degrees of due

south and do not benefit from an ideal southerly aspect. Had the windows not faced within 90 degrees of due south, they would not be required to be tested for direct sunlight under the BRE guidelines. Finally, in urban locations it is very often not possible to achieve recommended levels of direct sunlight – particularly during the winter months. The net effect of these factors is that it is impractical to avoid the minor transgression of the BRE recommendations in this instance.

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 results confirm that the proposed development will have a low impact on the light receivable by its neighbouring properties. In our opinion there is no daylight/sunlight related reason why planning permission should not be granted for this scheme.

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

Project Name: 62A Grafton Terrace, Camden, London NW54HY

Drawing Title: Appendix 1 - Neighbouring Windows

Scale: Do not scale

Drawing No: 1 Rev: -

Rev	Date	Details of revision

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Burley House
15 - 17 High Street
Rayleigh
Essex SS6 7EW

Tel. 0800 197 4836

enquiries@right-of-light.co.uk
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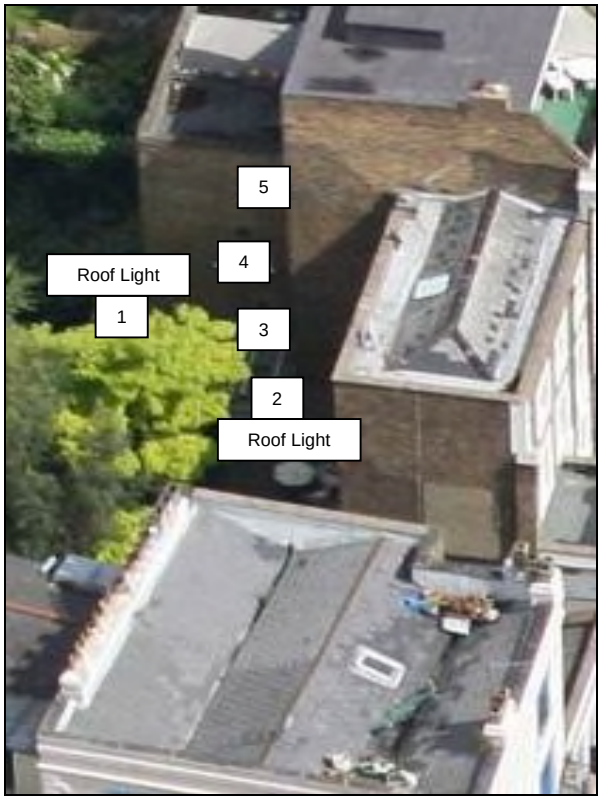
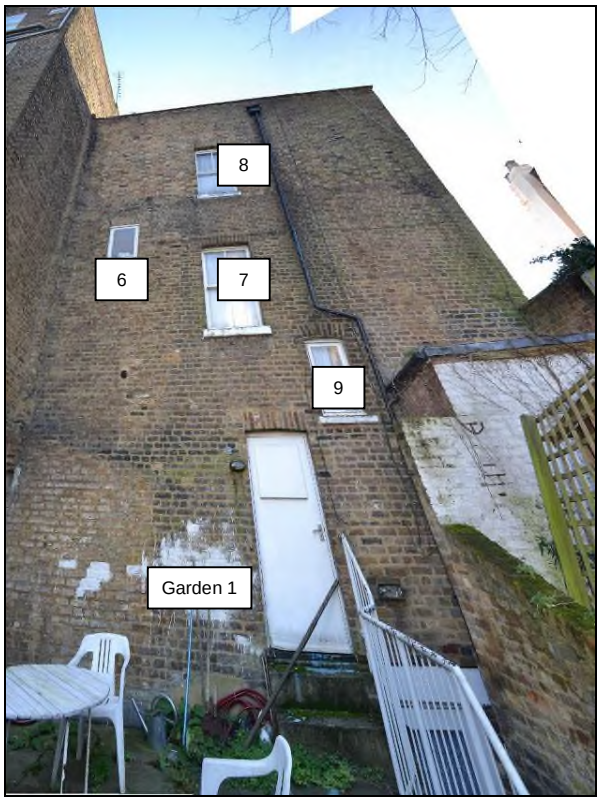
Neighbouring Windows

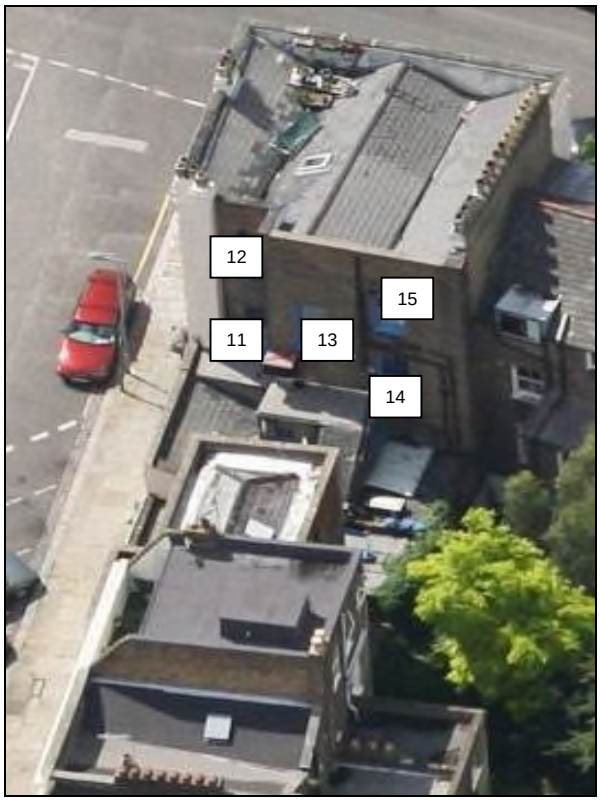


60 Grafton Terrace



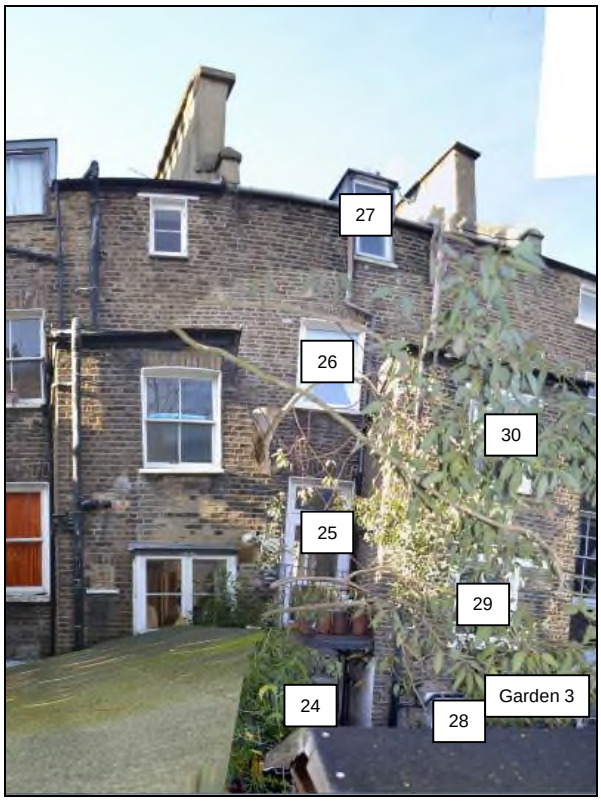
62b Grafton Terrace

64 Grafton Terrace



2 Southampton Road

4 Southampton Road



6 Southampton Road

APPENDIX 2

DAYLIGHT AND SUNLIGHT RESULTS

Appendix 2 - Vertical Sky Component
62A Grafton Terrace, Camden London NW5 4HY

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
60 Grafton Terrace					
Window 1	Unknown	57.8%	57.7%	0.1%	1.0
Window 2	Unknown	40.3%	39.5%	0.8%	0.98
Window 3	Unknown	19.1%	18.5%	0.6%	0.97
Window 4	Unknown	25.1%	24.9%	0.2%	0.99
Window 5	Unknown	25.6%	25.6%	0.0%	1.0
62b Grafton Terrace					
Window 6	Unknown	25.3%	24.9%	0.4%	0.98
Window 7	Unknown	28.7%	27.4%	1.3%	0.95
Window 8	Unknown	31.6%	30.4%	1.2%	0.96
Window 9	Unknown	28.7%	23.4%	5.3%	0.82
64 Grafton Terrace					
Window 10	Unknown	64.4%	57.4%	7.0%	0.89
Window 10a	Unknown	37.8%	37.8%	0.0%	1.0
Window 10b	Unknown	37.8%	37.8%	0.0%	1.0
Window 10c	Unknown	37.8%	37.8%	0.0%	1.0
2 Southampton Road					
Window 11	Unknown	27.5%	25.9%	1.6%	0.94
Window 12	Unknown	29.5%	29.4%	0.1%	1.0
Window 13	Unknown	36.8%	35.2%	1.6%	0.96
Window 14	Unknown	34.4%	27.2%	7.2%	0.79
Window 15	Unknown	37.3%	36.7%	0.6%	0.98
4 Southampton Road					
Window 16	Unknown	7.5%	6.3%	1.2%	0.84
Window 17	Unknown	16.4%	12.9%	3.5%	0.79
Window 18	Unknown	32.4%	28.0%	4.4%	0.86
Window 19	Unknown	36.4%	35.6%	0.8%	0.98
Window 20	Unknown	7.3%	5.9%	1.4%	0.81
Window 21	Unknown	17.9%	15.0%	2.9%	0.84
Window 22	Unknown	29.3%	25.2%	4.1%	0.86
Window 23	Unknown	35.8%	34.8%	1.0%	0.97
6 Southampton Road					
Window 24	Unknown	13.0%	12.8%	0.2%	0.98
Window 25	Unknown	17.8%	17.4%	0.4%	0.98
Window 26	Unknown	33.3%	31.8%	1.5%	0.95
Window 27	Unknown	36.6%	36.3%	0.3%	0.99
Window 28	Unknown	21.1%	19.9%	1.2%	0.94
Window 29	Unknown	30.7%	29.2%	1.5%	0.95
Window 30	Unknown	32.6%	31.5%	1.1%	0.97

Appendix 2 - Sunlight to Windows
62A Grafton Terrace, Camden London NW5 4HY

Reference	Use Class	Sunlight to Windows							
		Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
60 Grafton Terrace									
Window 1	Unknown	18%	17%	1%	0.94	0%	0%	0%	1.0
Window 2	Unknown	13%	11%	2%	0.85	0%	0%	0%	1.0
Window 3	Unknown	10%	9%	1%	0.9	0%	0%	0%	1.0
Window 4	Unknown	22%	22%	0%	1.0	1%	1%	0%	1.0
Window 5	Unknown	20%	20%	0%	1.0	1%	1%	0%	1.0
62b Grafton Terrace									
Window 6	Unknown	2%	0%	2%	0.05	0%	0%	0%	1.0
Window 7	Unknown	1%	0%	1%	0.1	0%	0%	0%	1.0
Window 8	Unknown	3%	0%	3%	0.03	0%	0%	0%	1.0
Window 9	Unknown	0%	0%	0%	1.0	0%	0%	0%	1.0
64 Grafton Terrace									
Window 10	Unknown	54%	54%	0%	1.0	10%	10%	0%	1.0
Window 10a	Unknown	85%	85%	0%	1.0	30%	30%	0%	1.0
Window 10b	Unknown	85%	85%	0%	1.0	30%	30%	0%	1.0
Window 10c	Unknown	85%	85%	0%	1.0	30%	30%	0%	1.0
2 Southampton Road									
Window 11	Unknown	46%	46%	0%	1.0	14%	14%	0%	1.0
Window 12	Unknown	48%	48%	0%	1.0	14%	14%	0%	1.0
Window 13	Unknown	43%	43%	0%	1.0	13%	13%	0%	1.0
Window 14	Unknown	41%	35%	6%	0.85	13%	13%	0%	1.0
Window 15	Unknown	46%	46%	0%	1.0	13%	13%	0%	1.0
4 Southampton Road									
Window 16	Unknown	0%	0%	0%	1.0	0%	0%	0%	1.0
Window 17	Unknown	20%	12%	8%	0.6	0%	0%	0%	1.0
Window 18	Unknown	42%	31%	11%	0.74	12%	9%	3%	0.75
Window 19	Unknown	48%	46%	2%	0.96	14%	12%	2%	0.86
Window 20	Unknown	6%	3%	3%	0.5	0%	0%	0%	1.0
Window 21	Unknown	15%	7%	8%	0.47	2%	1%	1%	0.5
Window 22	Unknown	34%	21%	13%	0.62	10%	7%	3%	0.7
Window 23	Unknown	46%	45%	1%	0.98	13%	12%	1%	0.92
6 Southampton Road									
Window 24	Unknown	9%	8%	1%	0.89	0%	0%	0%	1.0
Window 25	Unknown	23%	21%	2%	0.91	0%	0%	0%	1.0
Window 26	Unknown	44%	42%	2%	0.95	11%	9%	2%	0.82
Window 27	Unknown	47%	47%	0%	1.0	13%	13%	0%	1.0
Window 28	Unknown	28%	23%	5%	0.82	4%	2%	2%	0.5
Window 29	Unknown	37%	33%	4%	0.89	9%	5%	4%	0.56
Window 30	Unknown	44%	41%	3%	0.93	11%	8%	3%	0.73

Appendix 2 - Overshadowing to Gardens and Open Spaces
62A Grafton Terrace, Camden London NW5 4HY

Reference	Total Area	Area receiving at least two hours of sunlight on 21st March						
		Before		After		Loss		Ratio
62b Grafton Terrace								
Garden 1	32.72 m2	0.0 m2	0%	0.0 m2	0%	0.0 m2	0%	1.0
4 Southampton Road								
Garden 2	37.62 m2	0.0 m2	0%	0.0 m2	0%	0.0 m2	0%	1.0
6 Southampton Road								
Garden 3	43.69 m2	0.0 m2	0%	0.0 m2	0%	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:	62A Grafton Terrace, Camden, London NW5 4HY
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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Burley House
15 - 17 High Street
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Essex SS6 7EW

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APPENDIX 4

ALTERNATIVE VERTICAL SKY COMOPNENT RESULTS

Appendix 4 - Alternative Vertical Sky Component
62A Grafton Terrace, Camden London NW5 4HY

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
4 Southampton Road					
Window 17	Habitable	23.5%	20.0%	3.5%	0.85