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Daylight and Sunlight Study

15a Parliament Hill, London NW3 2SY

17th June 2011

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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 15a Parliament Hill, London NW3 2SY.

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 14, 15 and 16 Parliament Hill. 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 good practice guide' by P J Littlefair 1991.

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 all of the BRE diffuse daylight and direct sunlight tests. The development also satisfies the BRE overshadowing to gardens and open spaces requirements.

1.1.5 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:

Woollacott Gilmartin Architects

P 000	Proposed Ground Floor	Rev –
P 001	Proposed First Floor	Rev –
P 002	Proposed Second Floor	Rev –
P 003	Proposed Third Floor	Rev –
P 004	Proposed Roof Plan	Rev –
P 101	Proposed Southeast Elevation	Rev –
P 102	Proposed Southwest Elevation	Rev –
P 102	Existing Site Plan	Rev –
P 103	Proposed Northwest Elevation A	Rev –
P 104	Proposed Northwest Elevation B	Rev –
P 301	Proposed Section FF	Rev –
X 00-1	Existing Basement	Rev –
X 000	Existing Ground Floor	Rev –
X 001	Existing First Floor	Rev –
X 002	Existing Second Floor	Rev –
X 003	Existing Third Floor	Rev –
X 004	Existing Roof Plan	Rev –
X 101	Existing Southeast Elevation	Rev –
X 102	Existing Southwest Elevation	Rev –
X 102	Existing Site Plan	Rev –
X 103	Existing Northwest Elevation	Rev –
X 104	Existing Northeast 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 good practice guide' by P J Littlefair 1991. 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. In instances where there is a special requirement for daylight or sunlight, higher levels may be deemed necessary. In other situations, such as with urban developments, lower daylight and sunlight levels may be unavoidable. 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 is not mandatory and this document should not be considered 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 the 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.

3.2.2 Diffuse daylight calculations should be undertaken to all main windows at adjoining residential properties. The calculations should be applied to non-domestic buildings where there is a reasonable expectation of daylight. The BRE guide states that windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed.

3.2.3 The BRE guide contains three tests which measure diffuse daylight. These are explained in the following sections.

3.2.4 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 will 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.

3.2.5 Test 2 No-Sky Line

The no-sky line test involves calculating the percentage of a room's area which can receive direct sky light. Diffuse daylight is likely to be adversely affected if after the development the area of a room receiving direct skylight is less than 0.8 times its former value.

3.2.6 Test 3 Average Daylight Factor

The Average Daylight Factor takes into account a range of variables. For example, the size of the window, the type of glazing, whether the room has more than one window and factors such as the reflectivity of the internal decor.

The BRE test is based on the British Standard BS 8206 Part 2, which recommends an Average Daylight Factor of 5% or more if there is no supplementary electric lighting, or 2% or more if supplementary lighting is provided. There are additional minimum recommendations for dwellings of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms.

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. In non-domestic buildings, any spaces which are deemed to have a specific requirement for sunlight should be checked.

3.3.2 The BRE guide recommends that main living room windows should receive at least 25% of the total annual probable sunlight hours, including at least 5% of the annual probable sunlight hours during the winter months between 21st September and 21st March. Sunlight availability will be adversely affected if both the total number of sunlight hours falls below these targets and is less than 0.8 times the amount before the development.

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, and allotments
- 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

3.4.2 The BRE guide recommends that for an open space to appear adequately lit throughout the year, no more than 40% and preferably no more than 25% of its area should be prevented from receiving any sunlight at all on 21st March. Sunlight availability will be adversely affected if these targets are not met and the amount of sunlight received on 21st March is less than 0.8 times the amount before the development.

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 main windows pass the Vertical Sky Component and No Sky Line diffuse daylight tests. The Average Daylight Factor test confirms that whilst there will be a very small loss of light the impact will be negligible. The proposed development therefore satisfies the BRE daylight requirements.

4.4 Sunlight to Windows

4.4.1 Windows 1, 10, 14 & 15 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 bedrooms or non habitable rooms which 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 results of the overshadowing test show that there will be no more than 9% reduction in sunlight availability to any of the gardens. This is better than the BRE minimum requirement which permits a loss of up to 20%. 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 have indicated the sources of all information used in the report.

5.1.8 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.

5.1.9 Right of Light Consulting confirm that they have used their best endeavours to ensure that the facts stated in this report are correct and that the opinions expressed represent a true and complete professional opinion.

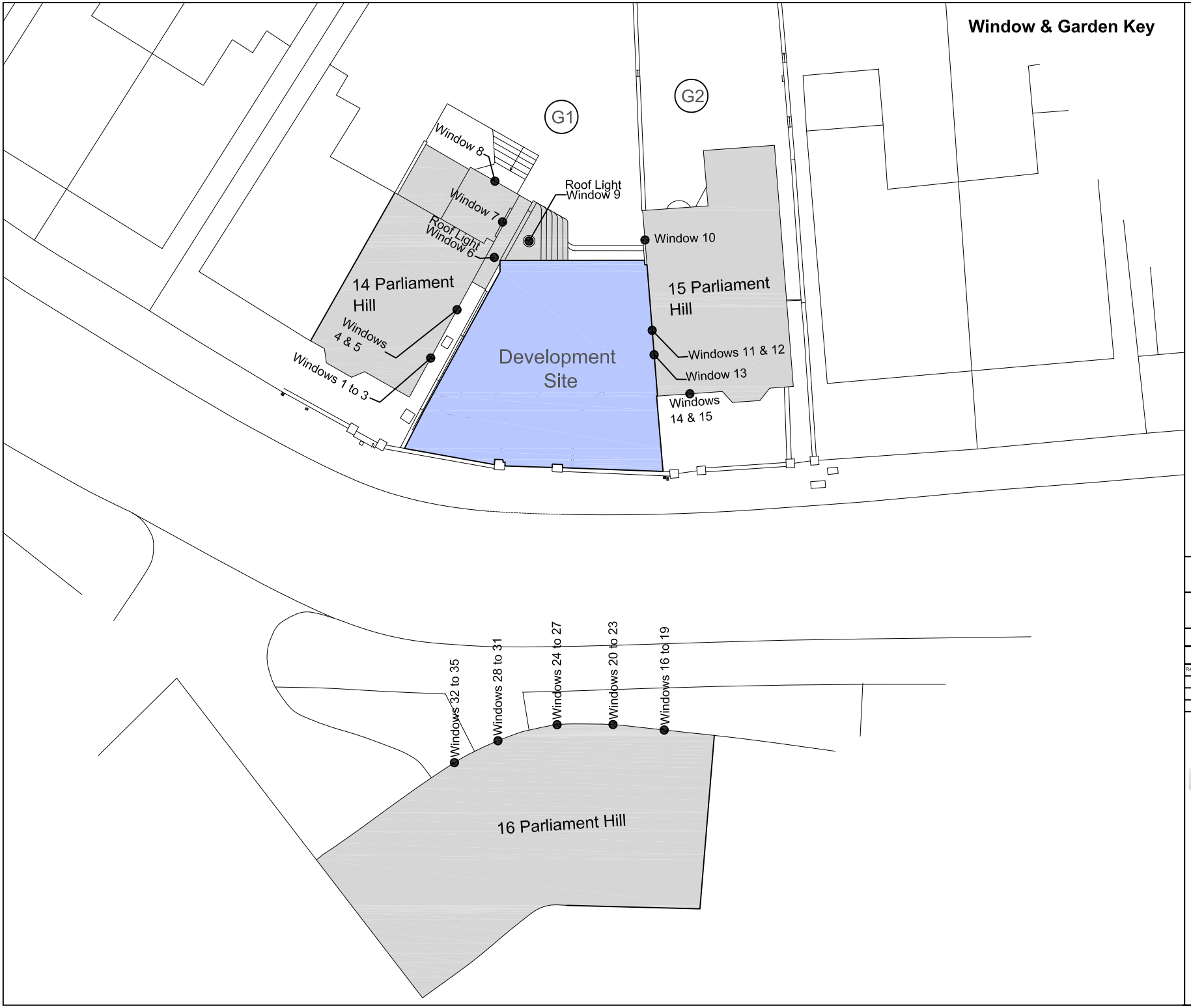
5.2 Project Specific

5.2.1 None

APPENDICES

APPENDIX 1

WINDOW & GARDEN KEY



Project Name: 15a Parliament Hill, London NW3 2SY

Drawing Title: Appendix 1 - Neighbouring Windows

Scale: Do not scale

Drawing No: 1 Rev. -

Rev	Date	Details of revision

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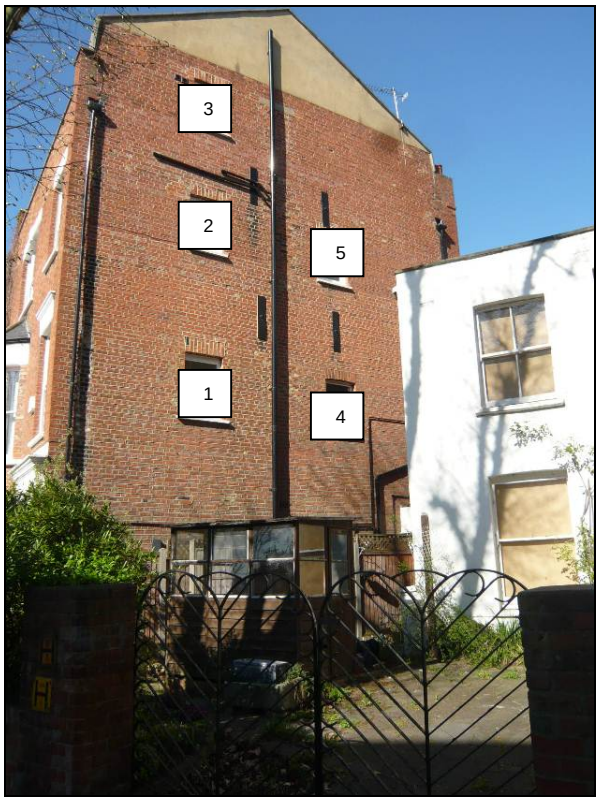
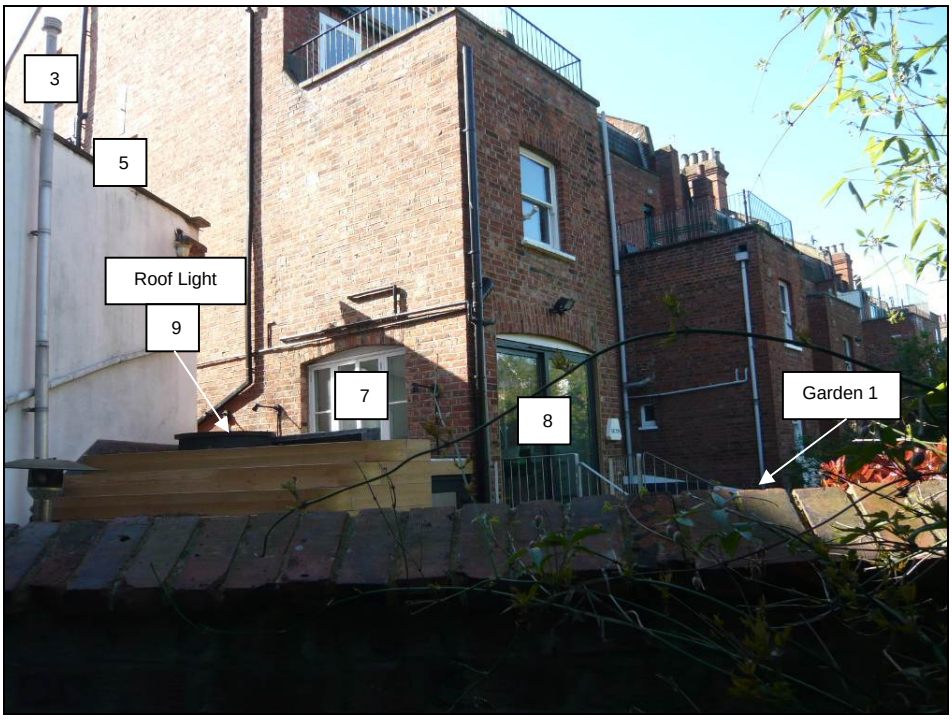
Neighbouring Windows



14 Parliament Hill

14 Parliament Hill



14 Parliament Hill

15 Parliament Hill

15 Parliament Hill

15 Parliament Hill

16 Parliament Hill

16 Parliament Hill

APPENDIX 2

DAYLIGHT AND SUNLIGHT RESULTS

Appendix 2 - Daylight and Sunlight to Windows
15a Parliment Hill, London NW3 2SY

Reference	Use Class	Daylight to Windows											Sunlight to Windows							
		Vertical Sky Component				No-Sky Line				Average Daylight Factor			Total Sunlight Hours				Winter Sunlight Hours			
		Existing	Proposed	Ratio	Result	Existing	Proposed	Ratio	Result	Target	Existing	Proposed	Existing	Proposed	Ratio	Result	Existing	Proposed	Ratio	Result
14 Parliament Hill																				
Window 1	Living Room	29.7%	20.3%	0.68	n/a[2]	100%	100%	1.0	Pass	1.5%	2.5%	2.3%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 1 (Primary)	Living Room	30.2%	30.2%	1.0	Pass	100%	100%	1.0	Pass	1.5%	2.5%	2.3%	43%	43%	1.0	Pass	19%	19%	1.0	Pass
Window 2	Bedroom	34.2%	30.4%	0.89	Pass	100%	99%	0.99	Pass	1.0%	3.4%	3.4%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 3	Bathroom	37.8%	36.8%	0.97	n/a[1]	98%	98%	1.0	n/a[1]	1.5%	2.5%	2.5%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 4	Staircase	23.9%	15.1%	0.63	n/a[1]	1%	1%	1.0	n/a[1]	1.5%	7.2%	5.4%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 5	Staircase	32.2%	25.9%	0.8	n/a[1]	23%	23%	1.0	n/a[1]	1.5%	2.8%	2.4%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 6	Hallway	27.5%	20.5%	0.75	n/a[1]	100%	100%	1.0	n/a[1]	1.5%	2.9%	2.6%	19%	7%	0.37	n/a[1]	6%	3%	0.5	n/a[1]
Window 7	Study	14.9%	11.9%	0.8	Pass	100%	100%	1.0	Pass	1.5%	9.6%	9.3%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 8	Study	36.5%	35.9%	0.98	Pass	100%	100%	1.0	Pass	1.5%	9.6%	9.3%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 9	Bathroom	43.4%	40.1%	0.92	n/a[1]	82%	82%	1.0	n/a[1]	1.5%	0.5%	0.5%	1%	0%	0.1	n/a[1]	0%	0%	1.0	n/a[1]
15 Parliament Hill																				
Window 10	Living Room	37.2%	36.3%	0.98	Pass	100%	100%	1.0	Pass	1.5%	3.6%	3.6%	62%	62%	1.0	Pass	22%	22%	1.0	Pass
Window 11	Staircase	31.2%	14.5%	0.46	n/a[1]	80%	73%	0.91	n/a[1]	1.5%	3.7%	2.3%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 12	Staircase	37.2%	35.1%	0.94	n/a[1]	30%	30%	1.0	n/a[1]	1.5%	18.2%	17.2%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 13	Bedroom	37.4%	35.0%	0.94	Pass	100%	100%	1.0	Pass	1.0%	4.9%	4.7%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 14	Supp Light	18.3%	18.3%	1.0	Pass	71%	71%	1.0	Pass	2.0%	0.6%	0.6%	26%	26%	1.0	Pass	6%	6%	1.0	Pass
Window 15	Supp Light	35.0%	34.8%	0.99	Pass	97%	97%	1.0	Pass	2.0%	1.8%	1.8%	50%	50%	1.0	Pass	14%	14%	1.0	Pass

Appendix 2 - Daylight and Sunlight to Windows
15a Parliment Hill, London NW3 2SY

Reference	Use Class	Daylight to Windows											Sunlight to Windows							
		Vertical Sky Component				No-Sky Line				Average Daylight Factor			Total Sunlight Hours				Winter Sunlight Hours			
		Existing	Proposed	Ratio	Result	Existing	Proposed	Ratio	Result	Target	Existing	Proposed	Existing	Proposed	Ratio	Result	Existing	Proposed	Ratio	Result
16 Parliament Hill																				
Window 16	Supp Light	29.1%	27.7%	0.95	Pass	99%	99%	1.0	Pass	2.0%	3.4%	3.3%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 17	Supp Light	31.8%	30.6%	0.96	Pass	99%	99%	1.0	Pass	2.0%	3.7%	3.6%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 18	Supp Light	34.3%	33.3%	0.97	Pass	99%	99%	1.0	Pass	2.0%	3.9%	3.8%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 19	Supp Light	36.5%	36.0%	0.99	Pass	99%	99%	1.0	Pass	2.0%	4.1%	4.1%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 20	Supp Light	29.0%	27.4%	0.94	Pass	99%	99%	1.0	Pass	2.0%	2.7%	2.6%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 21	Supp Light	31.6%	30.1%	0.95	Pass	99%	99%	1.0	Pass	2.0%	2.9%	2.8%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 22	Supp Light	34.2%	33.0%	0.96	Pass	99%	99%	1.0	Pass	2.0%	3.1%	3.0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 23	Supp Light	36.4%	35.7%	0.98	Pass	99%	99%	1.0	Pass	2.0%	3.3%	3.3%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 24	Supp Light	29.0%	27.3%	0.94	Pass	92%	92%	1.0	Pass	2.0%	1.3%	1.2%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 25	Supp Light	31.7%	30.2%	0.95	Pass	91%	86%	0.95	Pass	2.0%	1.3%	1.3%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 26	Supp Light	34.3%	33.1%	0.97	Pass	96%	96%	1.0	Pass	2.0%	1.4%	1.4%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 27	Supp Light	36.4%	35.8%	0.98	Pass	96%	96%	1.0	Pass	2.0%	1.5%	1.5%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 28	Supp Light	24.0%	22.7%	0.95	Pass	100%	100%	1.0	Pass	2.0%	4.5%	4.3%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 29	Supp Light	31.9%	30.8%	0.97	Pass	100%	100%	1.0	Pass	2.0%	5.1%	5.0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 30	Supp Light	34.4%	33.5%	0.97	Pass	100%	100%	1.0	Pass	2.0%	5.5%	5.3%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 31	Supp Light	36.5%	36.0%	0.99	Pass	100%	100%	1.0	Pass	2.0%	5.8%	5.7%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 32	Supp Light	30.5%	29.7%	0.97	Pass	95%	95%	1.0	Pass	2.0%	1.4%	1.3%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 33	Supp Light	32.8%	32.1%	0.98	Pass	95%	95%	1.0	Pass	2.0%	1.5%	1.4%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 34	Supp Light	35.1%	34.5%	0.98	Pass	95%	95%	1.0	Pass	2.0%	1.5%	1.5%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 35	Supp Light	37.0%	36.7%	0.99	Pass	95%	95%	1.0	Pass	2.0%	1.6%	1.6%	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; or serves a kitchen or bedroom and the BRE sunlight targets are not applicable.

n/a[1] = window serves a non habitable room and the BRE sunlight targets are not applicable.

n/a[2] = window does not meet the minimum BRE criteria; however is not the main window within the room. The main window passes the test.

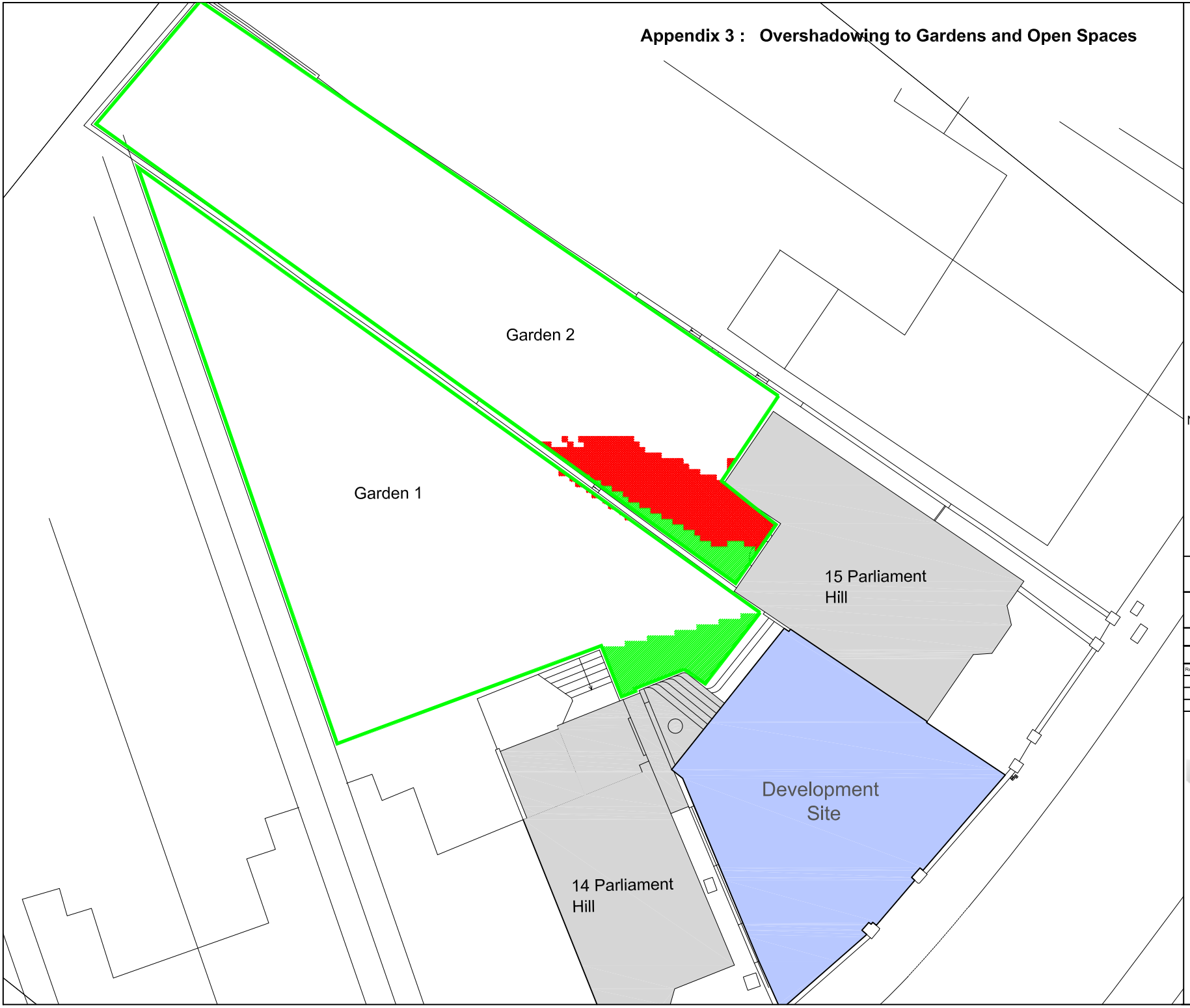
Appendix 2 - Overshadowing to Gardens and Open Spaces
15a Parliment Hill, London NW3 2SY

Reference	Total Area	Area receiving no sunlight on 21st March				Area receiving at least some sunlight on 21st March					Result
		Existing		Proposed		Existing		Proposed		Ratio	
14 Parliament Hill											
Garden 1	283.47 m2	12.22 m2	4%	12.53 m2	4%	271.25 m2	96%	270.94 m2	96%	1.0	Pass
15 Parliament Hill											
Garden 2	257.0 m2	5.48 m2	2%	28.08 m2	11%	251.52 m2	98%	228.92 m2	89%	0.91	Pass

APPENDIX 3

OVERSHADOWING TO GARDENS AND OPEN SPACES

Appendix 3 : Overshadowing to Gardens and Open Spaces



Key

- Receives no sunlight at all on 21st March before and after the development.
- Receives no sunlight at all on 21st March before the development; but will receive at least some sunlight on 21st March after the development (light improved).
- Receives at least some sunlight on 21st March before the development; but will receive no sunlight after the development (light loss).
- Receives at least some sunlight on 21st March before and after the development.

Notes:

1. Contours derived in accordance with BRE Digest 209 : Sit Layout Planning for Daylight and Sunlight

Project Name:	15a Parliament Hill, London NW3 2SY
Drawing Title:	Appendix 1 - Neighbouring Windows
Scale:	Do not scale
Drawing No:	1
Rev.	-

Rev	Date	Details of revision

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