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Daylight and Sunlight Study

5 to 6 Underhill Street, London NW1 7HS

22 August 2017

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CONTENTS

1 EXECUTIVE SUMMARY

1.1 Overview

1.1.1 Right of Light Consulting has been commissioned by Mr Kirsch to undertake a daylight and sunlight study of the proposed development at 5 to 6 Underhill Street, London NW1 7HS.

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 130 to 152 and 155a Camden High 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. The results confirm that all neighbouring windows pass the BRE diffuse daylight and direct sunlight tests. The development also satisfies the BRE overshadowing to gardens and open spaces requirements.

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:

The House Designer Architecture

14.8396.01	Site Location and Block Plan	Rev –
14.8396.02	Existing Floor Plans	Rev –
14.8396.03	Existing Elevations and Sections	Rev –
226-101	Second, Third and Roof Plans	Rev A
226-300	Proposed Sections and Elevations	Rev B
226-301	Existing and Proposed South West Elevation	Rev B
226-400	Parapet Detail	Rev B

Blueprint Surveys Limited

BPS1562.01	Roof Plan	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 do and do not 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 21 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 sunlight on 21 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 windows pass the Vertical Sky Component test. The proposed development therefore satisfies the BRE daylight requirements.

4.4 Sunlight to Windows

4.4.1 All windows which face within 90 degrees of due south have been tested for direct sunlight. All windows pass both the total annual sunlight hours test and the winter sunlight hours test (annual probable sunlight hours between 21 September and 21 March). 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 21 March. The before/after ratios 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, 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 This report is based upon and subject to the scope of work set out in Right of Light Consulting's quotation and standard terms and conditions.

5.1.7 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

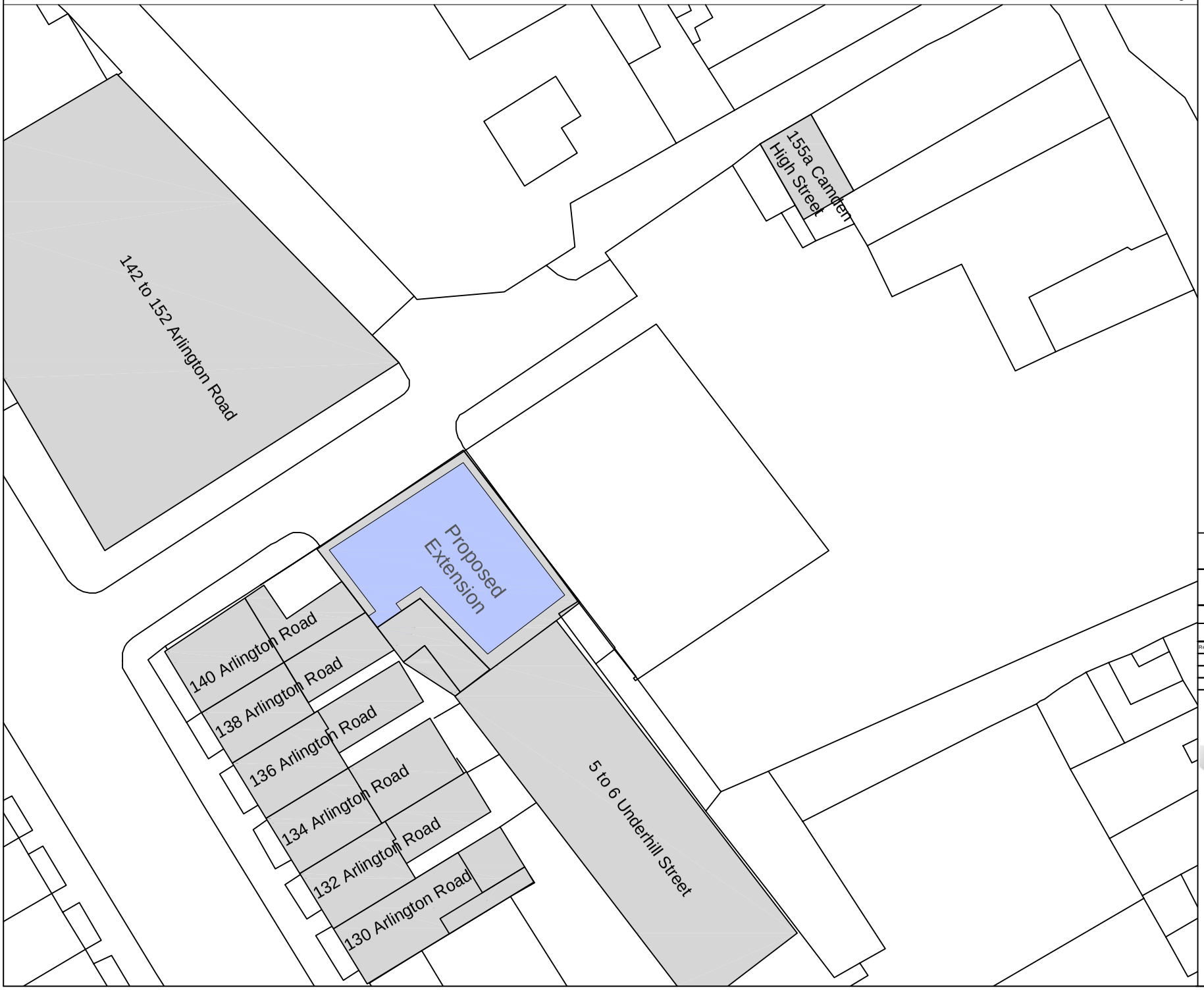
5.2.1 None.

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: 5 to 6 Underhill Street, London NW1 7HS

Drawing Title: Appendix 1 - Neighbouring Windows

Scale: Do not scale

Drawing No: 0 of 3

Rev: -

Rev	Date	Details of revision

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Window & Garden Key

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Window 1 ● Window reference

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Project Name: 5 to 6 Underhill Street, London NW1 7HS

Drawing Title: Appendix 1 - Neighbouring Windows

Scale: Do not scale

Drawing No: 1 of 2 | Rev: -

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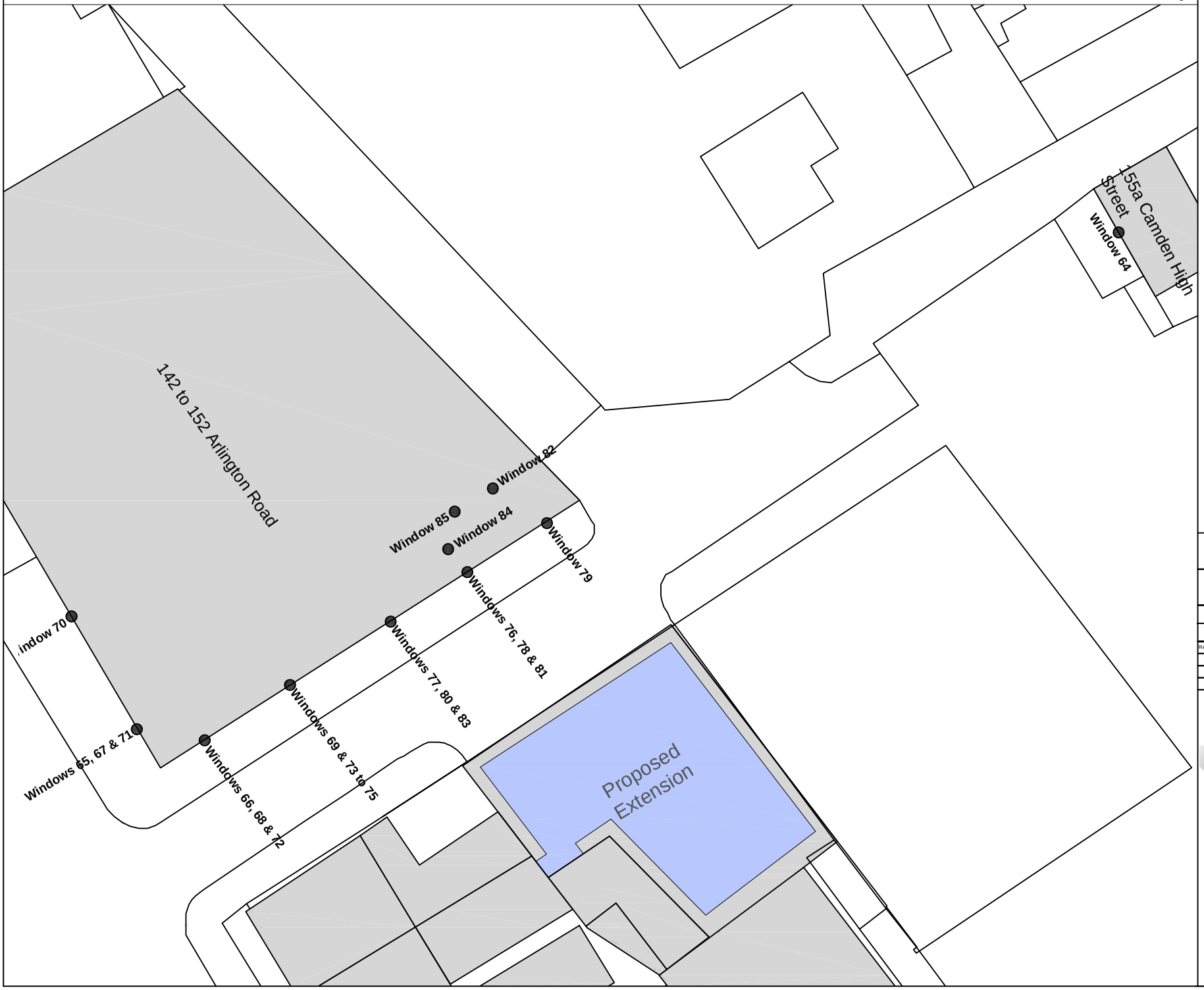
Window & Garden Key



Key

Window 1 ● Window reference

Development site

Neighbouring Properties

G1 Neighbouring Gardens and Amenity Areas

Project Name: 5 to 6 Underhill Street, London NW1 7HS

Drawing Title: Appendix 1 - Neighbouring Windows

Scale: Do not scale

Drawing No: 2 of 2 | Rev: -

Rev	Date	Details of revision

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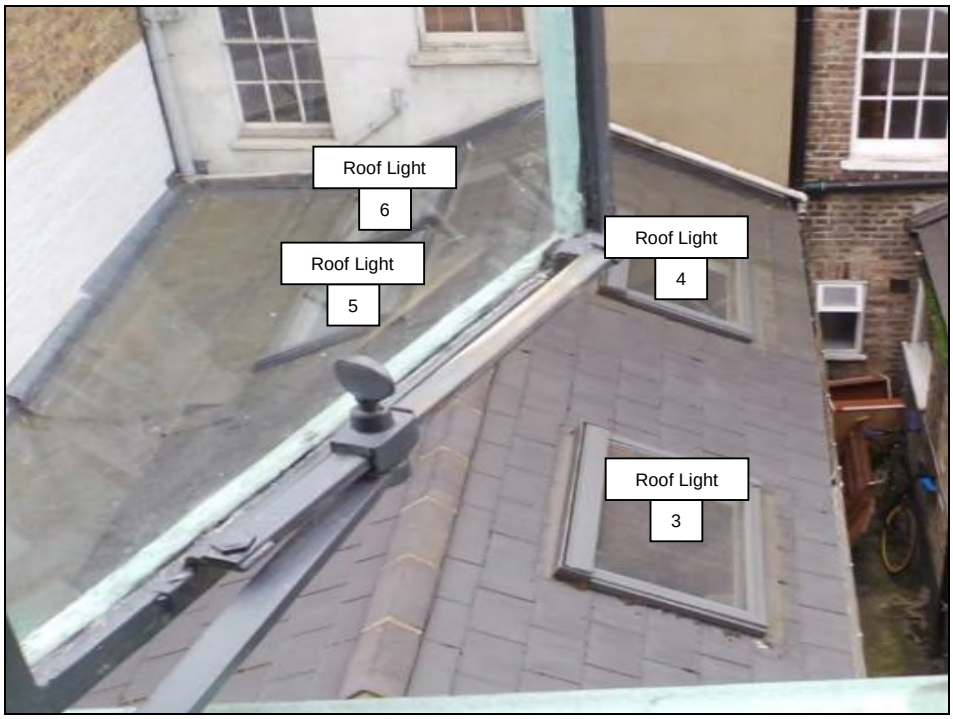
Neighbouring Windows

130 Arlington Road



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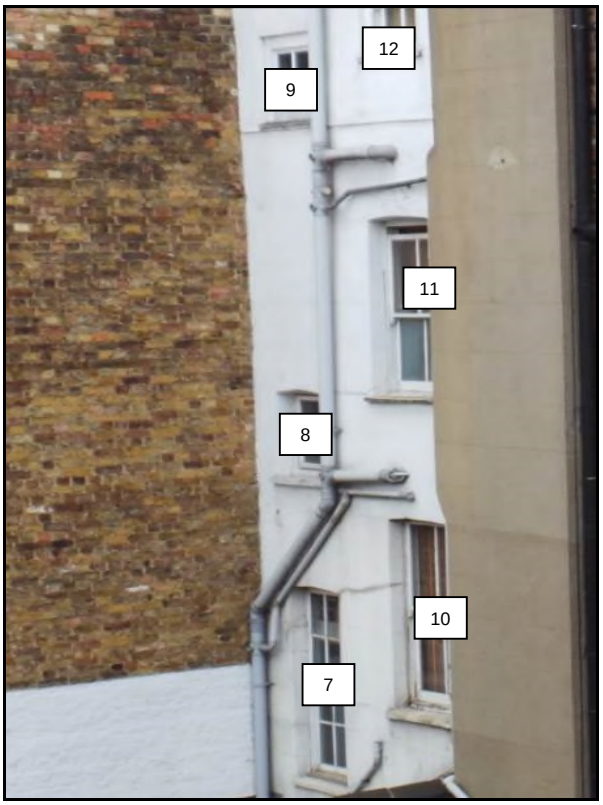

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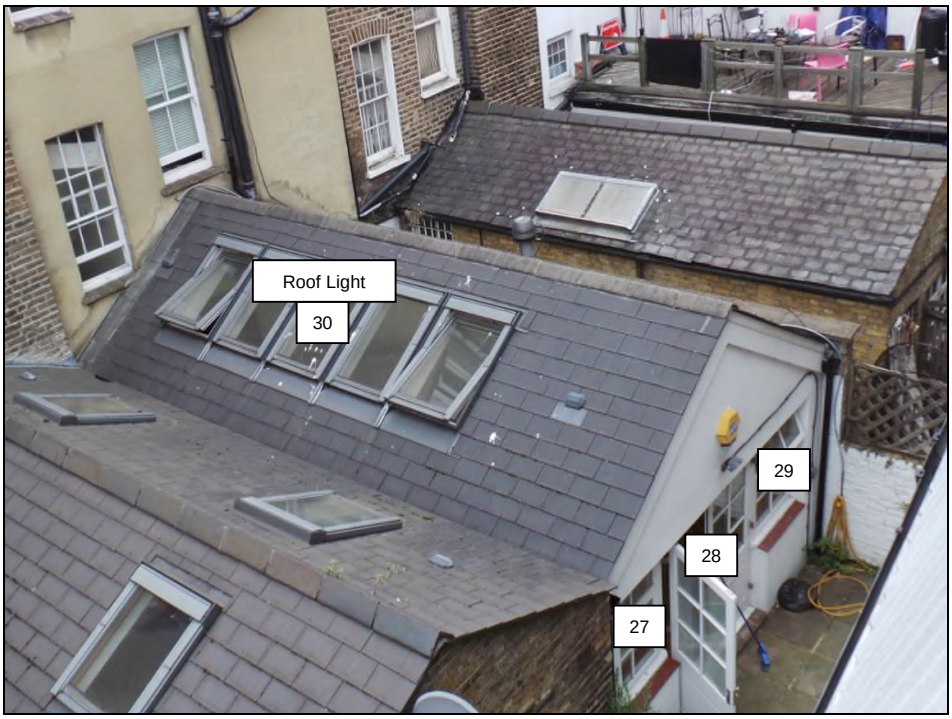
132 Arlington Road

132 Arlington Road



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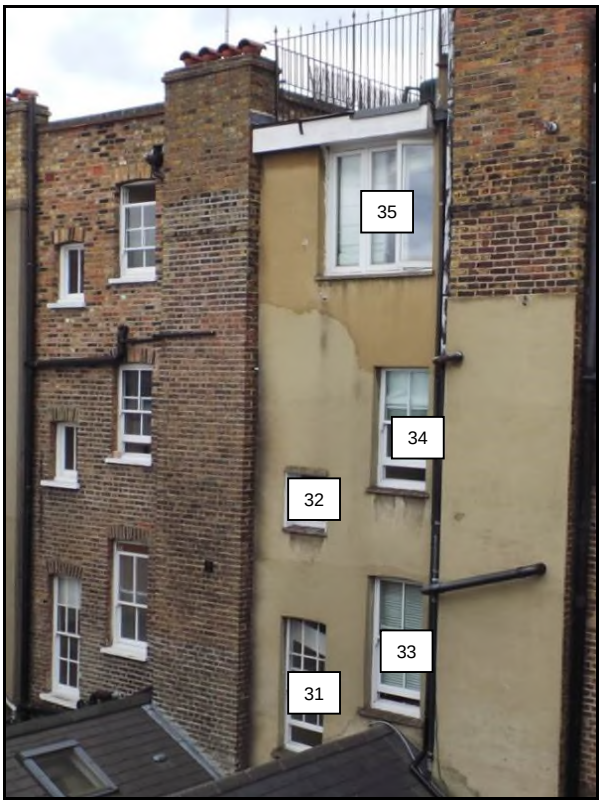

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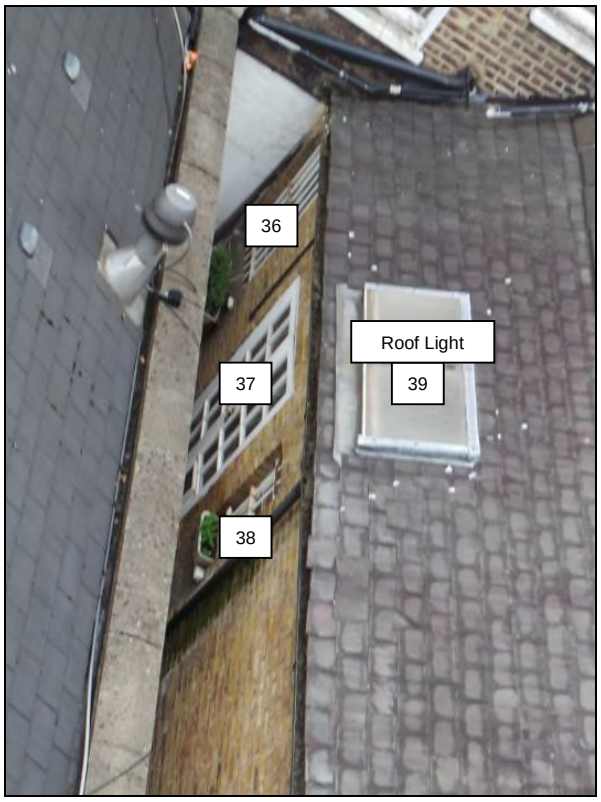

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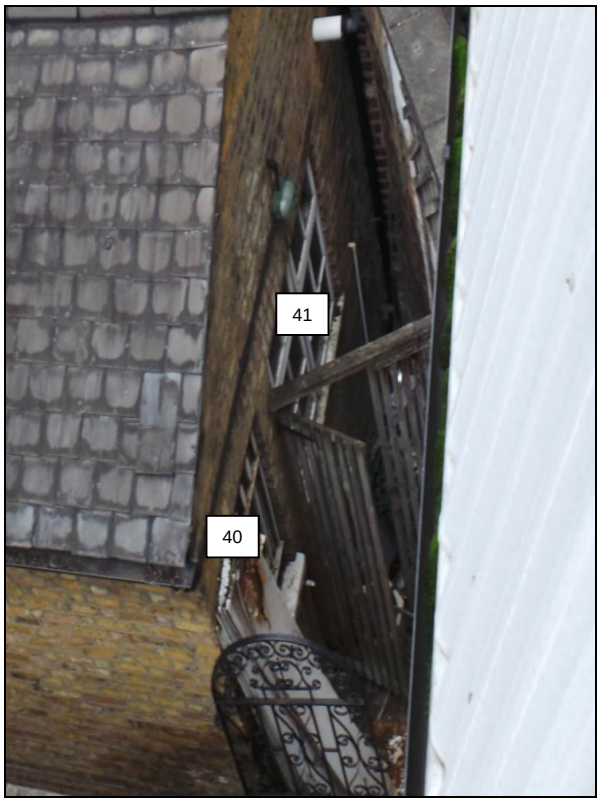

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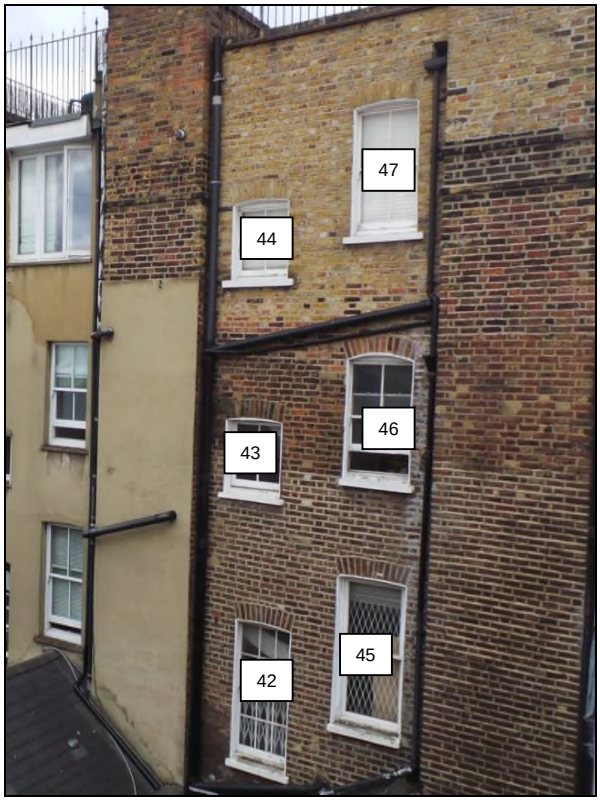

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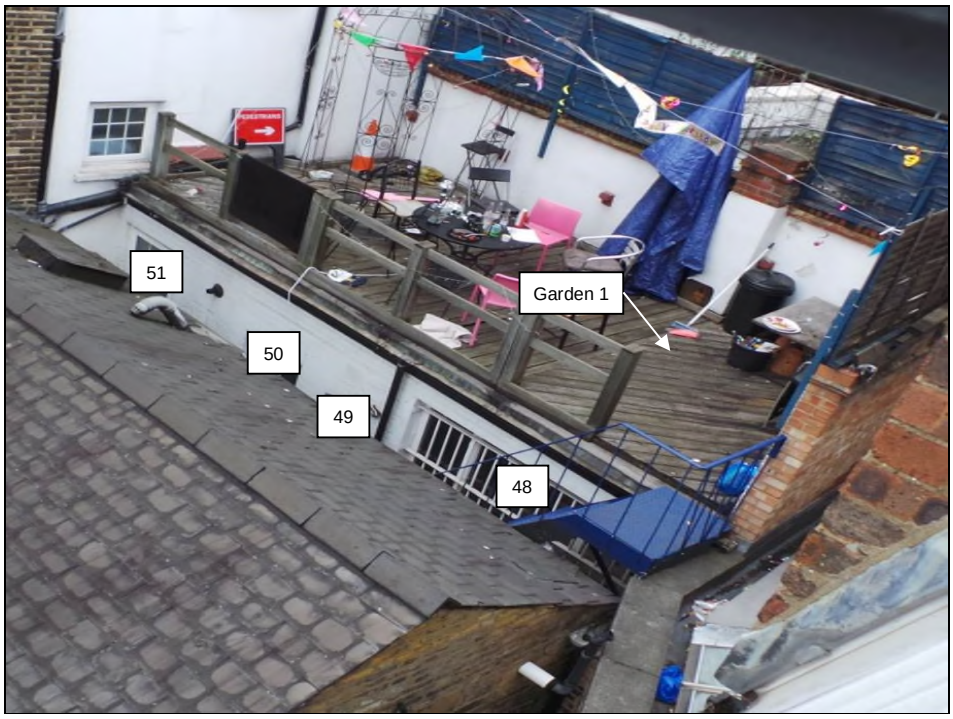

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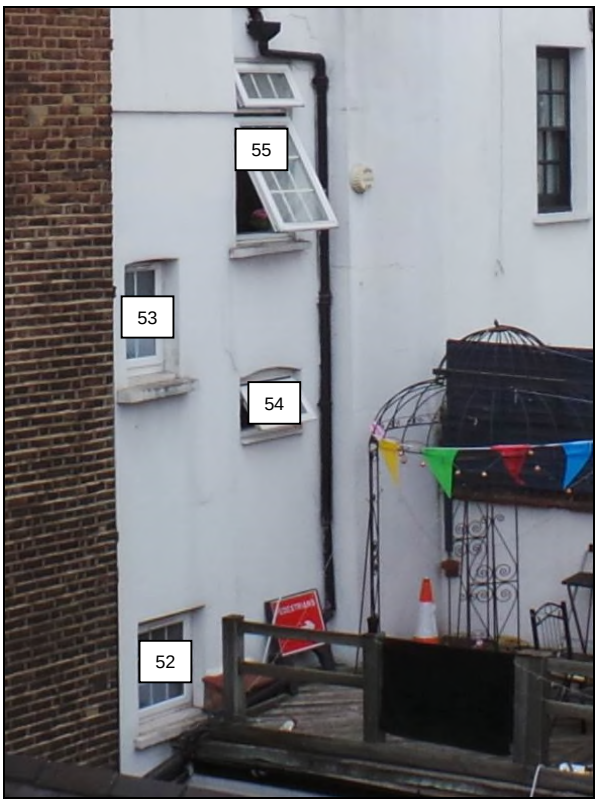

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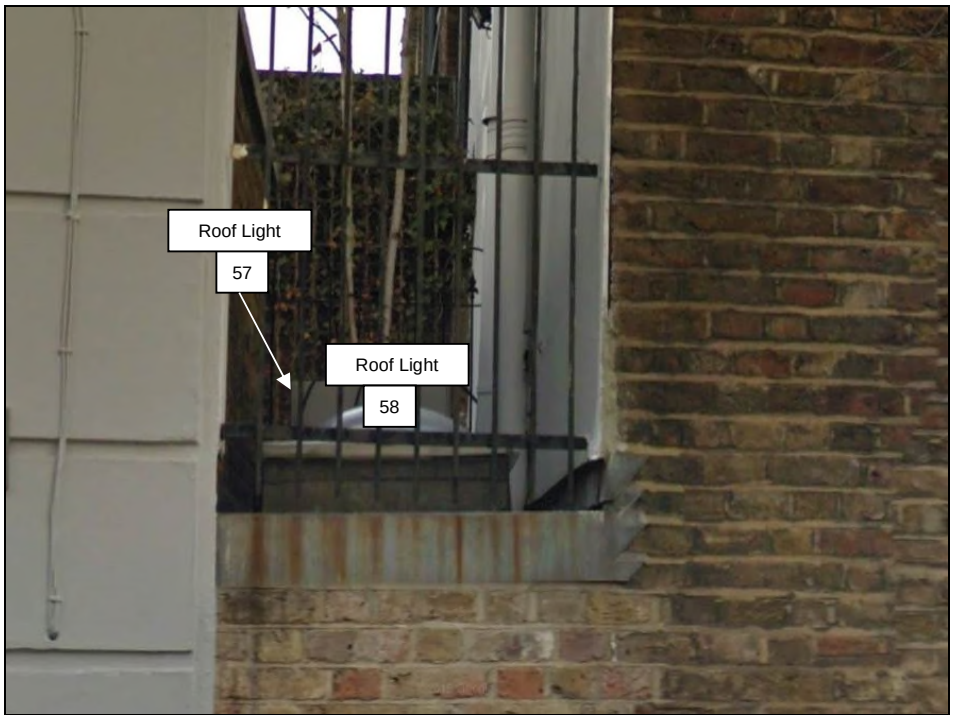

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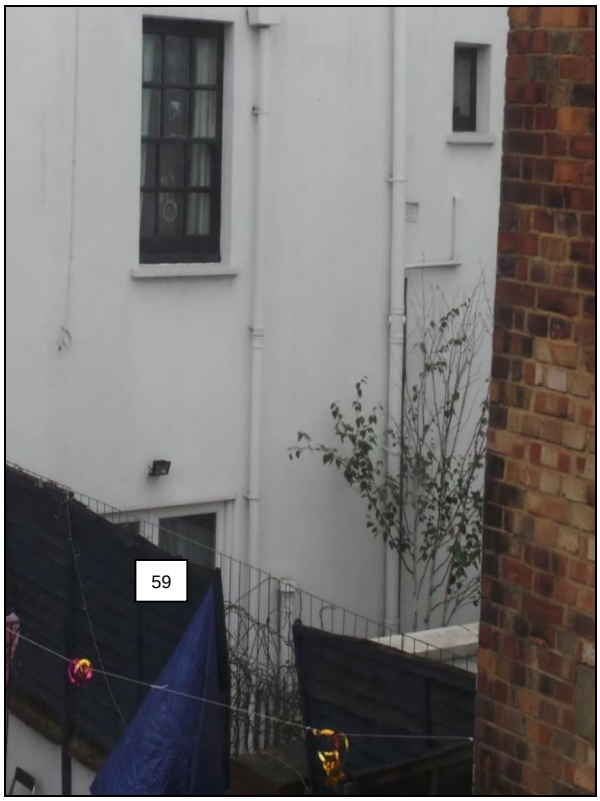

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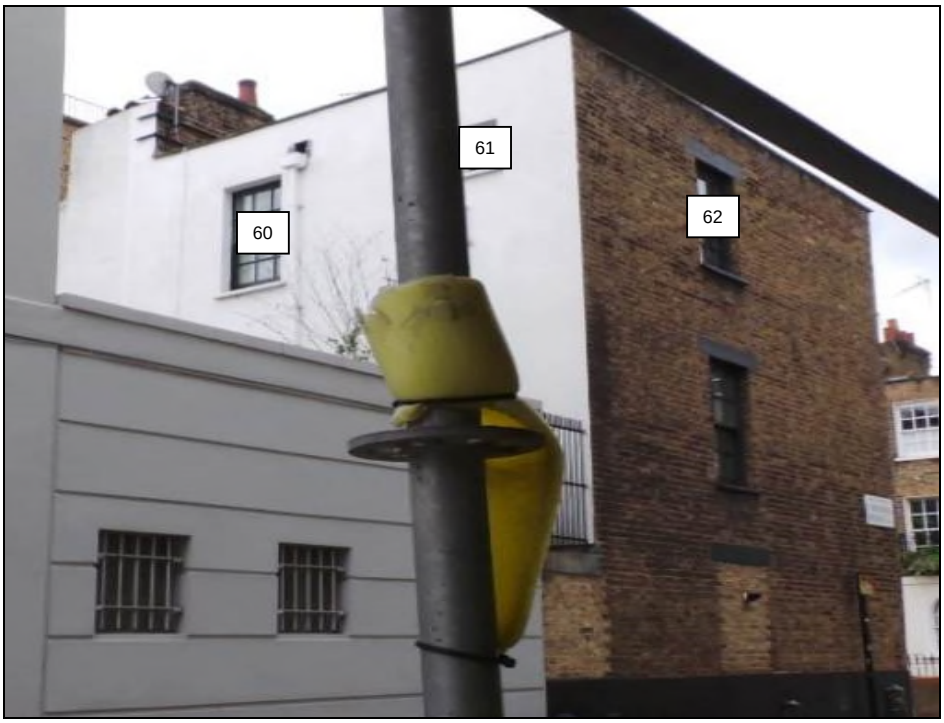

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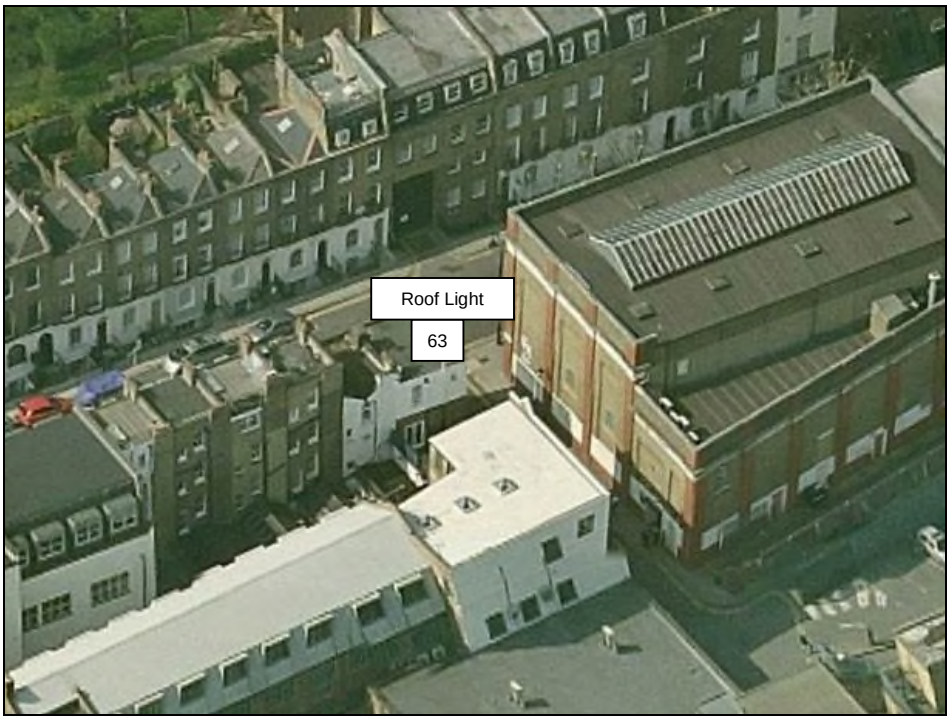

140 Arlington Road

155a Camden High Street

APPENDIX 2

DAYLIGHT AND SUNLIGHT RESULTS

Appendix 2 - Vertical Sky Component
5 to 6 Underhill Street, London NW1 7HS

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
130 Arlington Road					
Window 1	Domestic	5.5%	5.5%	0.0%	1.0
Window 2	Domestic	6.8%	6.8%	0.0%	1.0
Window 3	Domestic	56.6%	56.0%	0.6%	0.99
Window 4	Domestic	42.6%	41.9%	0.7%	0.98
Window 5	Domestic	39.2%	38.9%	0.3%	0.99
Window 6	Domestic	33.3%	33.0%	0.3%	0.99
Window 7	Stairs	16.6%	16.0%	0.6%	0.96
Window 8	Stairs	20.1%	19.5%	0.6%	0.97
Window 9	Stairs	24.7%	24.2%	0.5%	0.98
Window 10	Domestic	20.7%	20.0%	0.7%	0.97
Window 11	Ensuite	26.2%	25.5%	0.7%	0.97
Window 12	Ensuite	32.4%	32.0%	0.4%	0.99
132 Arlington Road					
Window 13	Domestic	6.3%	6.3%	0.0%	1.0
Window 14	Domestic	47.7%	46.8%	0.9%	0.98
Window 15	Domestic	49.1%	47.8%	1.3%	0.97
Window 16	Domestic	10.9%	10.9%	0.0%	1.0
Window 17	Domestic	5.6%	5.5%	0.1%	0.98
Window 18	Domestic	59.3%	58.5%	0.8%	0.99
Window 19	Domestic	59.6%	58.5%	1.1%	0.98
Window 20	Domestic	8.5%	8.2%	0.3%	0.96
Window 21	Stairs	24.9%	23.8%	1.1%	0.96
Window 22	Stairs	31.1%	30.0%	1.1%	0.96
Window 23	Stairs	35.9%	35.2%	0.7%	0.98
Window 24	Domestic	26.6%	25.3%	1.3%	0.95
Window 25	Domestic	32.5%	31.2%	1.3%	0.96
Window 26	Domestic	36.6%	35.9%	0.7%	0.98
134 Arlington Road					
Window 27	Domestic	4.6%	4.4%	0.2%	0.96
Window 28	Domestic	4.9%	4.4%	0.5%	0.9
Window 29	Domestic	5.0%	4.3%	0.7%	0.86
Window 30	Domestic	55.7%	53.8%	1.9%	0.97

Appendix 2 - Vertical Sky Component
5 to 6 Underhill Street, London NW1 7HS

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
Window 31	Stairs	25.7%	23.9%	1.8%	0.93
Window 32	Stairs	31.9%	29.9%	2.0%	0.94
Window 33	Domestic	26.7%	24.5%	2.2%	0.92
Window 34	Domestic	32.9%	30.5%	2.4%	0.93
Window 35	Domestic	33.9%	32.5%	1.4%	0.96
136 Arlington Road					
Window 36	Domestic	11.8%	11.8%	0.0%	1.0
Window 37	Domestic	12.3%	12.3%	0.0%	1.0
Window 38	Domestic	15.0%	15.0%	0.0%	1.0
Window 39	Domestic	57.1%	53.3%	3.8%	0.93
Window 40	Domestic	5.0%	4.0%	1.0%	0.8
Window 41	Domestic	4.8%	3.9%	0.9%	0.81
Window 42	Stairs	25.2%	22.2%	3.0%	0.88
Window 43	Stairs	32.0%	28.4%	3.6%	0.89
Window 42	Stairs	25.2%	22.2%	3.0%	0.88
Window 44	Stairs	36.5%	33.7%	2.8%	0.92
Window 45	Domestic	26.0%	22.3%	3.7%	0.86
Window 46	Domestic	33.0%	28.8%	4.2%	0.87
Window 47	Domestic	36.9%	34.2%	2.7%	0.93
138 Arlington Road					
Window 48	Domestic	8.8%	8.7%	0.1%	0.99
Window 49	Domestic	6.8%	6.6%	0.2%	0.97
Window 50	Domestic	6.9%	6.8%	0.1%	0.99
Window 51	Domestic	6.5%	6.4%	0.1%	0.98
Window 52	Domestic	20.6%	16.9%	3.7%	0.82
Window 53	Domestic	27.8%	22.7%	5.1%	0.82
Window 54	Domestic	26.1%	21.0%	5.1%	0.8
Window 55	Domestic	32.1%	26.0%	6.1%	0.81
140 Arlington Road					
Window 56	Domestic	42.8%	40.2%	2.6%	0.94
Window 57	Domestic	36.7%	33.6%	3.1%	0.92
Window 58	Domestic	39.8%	38.7%	1.1%	0.97
Window 59	Domestic	20.1%	16.2%	3.9%	0.81
Window 60	Domestic	31.0%	24.7%	6.3%	0.8
Window 61	Domestic	31.3%	26.1%	5.2%	0.83
Window 62	Domestic	25.4%	25.4%	0.0%	1.0
Window 63	Domestic	95.8%	95.0%	0.8%	0.99

Appendix 2 - Vertical Sky Component
5 to 6 Underhill Street, London NW1 7HS

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
155a Camden High Street					
Window 64	Domestic	33.0%	32.5%	0.5%	0.98
142 to 152 Arlington Road					
Window 65	Domestic	26.2%	26.2%	0.0%	1.0
Window 66	Domestic	21.4%	20.4%	1.0%	0.95
Window 67	Living / Dining / Kitchen	30.7%	30.7%	0.0%	1.0
Window 68	Living / Dining / Kitchen	28.6%	27.5%	1.1%	0.96
Window 69	Living / Dining / Kitchen	28.1%	26.6%	1.5%	0.95
Window 70	Living / Dining / Kitchen	35.9%	35.9%	0.0%	1.0
Window 71	Living / Dining / Kitchen	36.1%	36.1%	0.0%	1.0
Window 72	Living / Dining / Kitchen	35.3%	34.1%	1.2%	0.97
Window 73	Domestic	19.7%	18.8%	0.9%	0.95
Window 74	Bedroom	34.4%	32.4%	2.0%	0.94
Window 75	Bedroom	38.9%	38.2%	0.7%	0.98
Window 76	Domestic	15.7%	14.4%	1.3%	0.92
Window 77	Bedroom	25.6%	23.3%	2.3%	0.91
Window 78	Living / Dining / Kitchen	23.9%	20.6%	3.3%	0.86
Window 79	Domestic	24.5%	21.8%	2.7%	0.89
Window 80	Bedroom	33.1%	29.7%	3.4%	0.9
Window 81	Living / Dining / Kitchen	34.5%	28.9%	5.6%	0.84
Window 82	Living / Dining / Kitchen	31.2%	31.1%	0.1%	1.0
Window 83	Living / Dining / Kitchen	38.9%	37.9%	1.0%	0.97
Window 84	Living / Dining / Kitchen	34.9%	33.6%	1.3%	0.96
Window 85	Living / Dining / Kitchen	38.1%	38.0%	0.1%	1.0

Appendix 2 - Sunlight to Windows
5 to 6 Underhill Street, London NW1 7HS

Reference	Use Class	Sunlight to Windows							
		Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
130 Arlington Road									
Window 5	Domestic	5%	5%	0%	1.0	0%	0%	0%	1.0
Window 6	Domestic	0%	0%	0%	1.0	0%	0%	0%	1.0
132 Arlington Road									
Window 13	Domestic	7%	7%	0%	1.0	0%	0%	0%	1.0
Window 14	Domestic	17%	17%	0%	1.0	0%	0%	0%	1.0
Window 16	Domestic	20%	20%	0%	1.0	1%	1%	0%	1.0
Window 18	Domestic	27%	27%	0%	1.0	2%	2%	0%	1.0
134 Arlington Road									
Window 30	Domestic	28%	28%	0%	1.0	2%	2%	0%	1.0
136 Arlington Road									
Window 36	Domestic	21%	21%	0%	1.0	1%	1%	0%	1.0
Window 37	Domestic	23%	23%	0%	1.0	0%	0%	0%	1.0
Window 38	Domestic	28%	28%	0%	1.0	2%	2%	0%	1.0
Window 39	Domestic	27%	27%	0%	1.0	4%	4%	0%	1.0
138 Arlington Road									
Window 48	Domestic	12%	12%	0%	1.0	0%	0%	0%	1.0
Window 49	Domestic	6%	6%	0%	1.0	0%	0%	0%	1.0
Window 50	Domestic	6%	6%	0%	1.0	0%	0%	0%	1.0
Window 51	Domestic	8%	8%	0%	1.0	0%	0%	0%	1.0
140 Arlington Road									
Window 56	Domestic	9%	9%	0%	1.0	0%	0%	0%	1.0
Window 57	Domestic	2%	2%	0%	1.0	0%	0%	0%	1.0
Window 58	Domestic	16%	16%	0%	1.0	1%	1%	0%	1.0
Window 63	Domestic	94%	90%	4%	0.96	25%	25%	0%	1.0

Appendix 2 - Sunlight to Windows
5 to 6 Underhill Street, London NW1 7HS

Reference	Use Class	Sunlight to Windows							
		Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
155a Camden High Street									
Window 64	Domestic	55%	55%	0%	1.0	17%	17%	0%	1.0
142 to 152 Arlington Road									
Window 65	Domestic	47%	47%	0%	1.0	14%	14%	0%	1.0
Window 66	Domestic	49%	45%	4%	0.92	10%	10%	0%	1.0
Window 67	Living / Dining / Kitchen	55%	55%	0%	1.0	18%	18%	0%	1.0
Window 68	Living / Dining / Kitchen	64%	61%	3%	0.95	16%	16%	0%	1.0
Window 69	Living / Dining / Kitchen	66%	59%	7%	0.89	18%	18%	0%	1.0
Window 70	Living / Dining / Kitchen	64%	64%	0%	1.0	22%	22%	0%	1.0
Window 71	Living / Dining / Kitchen	64%	64%	0%	1.0	22%	22%	0%	1.0
Window 72	Living / Dining / Kitchen	78%	73%	5%	0.94	26%	24%	2%	0.92
Window 73	Domestic	42%	42%	0%	1.0	7%	7%	0%	1.0
Window 74	Bedroom	76%	74%	2%	0.97	24%	24%	0%	1.0
Window 75	Bedroom	81%	80%	1%	0.99	28%	27%	1%	0.96
Window 76	Domestic	42%	38%	4%	0.9	5%	5%	0%	1.0
Window 77	Bedroom	64%	58%	6%	0.91	18%	18%	0%	1.0
Window 78	Living / Dining / Kitchen	59%	53%	6%	0.9	11%	10%	1%	0.91
Window 79	Domestic	60%	52%	8%	0.87	10%	8%	2%	0.8
Window 80	Bedroom	78%	71%	7%	0.91	26%	22%	4%	0.85
Window 81	Living / Dining / Kitchen	78%	70%	8%	0.9	26%	18%	8%	0.69
Window 83	Living / Dining / Kitchen	81%	80%	1%	0.99	28%	27%	1%	0.96
Window 84	Living / Dining / Kitchen	61%	60%	1%	0.98	20%	19%	1%	0.95

Appendix 2 - Overshadowing to Gardens and Open Spaces
5 to 6 Underhill Street, London NW1 7HS

Reference	Total Area	Area receiving at least two hours of sunlight on 21st March						
		Before		After		Loss		Ratio
138 Arlington Road								
Garden 1	22.35 m2	22.34 m2	100%	22.34 m2	100%	0.0 m2	0%	1.0