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Daylight and Sunlight Study

179 to 181 High Street, Hampton Hill, Hampton TW12 1NL

26 April 2016

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CONTENTS

1 EXECUTIVE SUMMARY

1.1 Overview

1.1.1 Right of Light Consulting has been commissioned by Smartrose Estates Ltd to undertake a daylight and sunlight study of the proposed development at 179 to 181 High Street Hampton Hill, Hampton TW12 1NL.

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 173b, 175, 177 & 183 High Street and 1 to 23 Taylor Close. 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:

Twickenham Surveys

14134LS	Topographical Surveys	Rev –
14134G	Ground Floor Plan	Rev –
141341	First Floor Plan	Rev –
141342	Second Floor Plan	Rev –

Clive Chapman Architects

179HS-01A	Site Location Plan	Rev –
179HS-SK16	Proposed Ground and First Floor Plans	Rev –
179HS-SK17	Proposed Second Floor and Roof Plans	Rev –
179HS-SK18	Proposed Elevations & Sections	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 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 room windows pass the Vertical Sky Component test with the exception of window 5 at 183 High Street. However, this window is already hampered by a projecting wing. The BRE guide acknowledges that where a window has a projecting wings on one or both sides of it, as is the case with window 5, a larger relative reduction in VSC may be unavoidable, as the building itself contributes to its poor daylighting. One way to test whether the building is the main factor in poor daylighting is to test the windows without the obstructions in place. In this instance without the wings in place, window 5 would surpass the BRE criteria. The results are presented in appendix 3. The proposed development therefore satisfies the BRE daylight requirements.

4.4 Sunlight to Windows

4.4.1 All main habitable room 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 There are no nearby gardens or amenity areas directly to the north of the development. The proposed development will therefore not create any new areas which receive less than two hours of sunlight on 21 March. The proposed

development therefore satisfies the BRE overshadowing to gardens and open spaces requirements.

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.

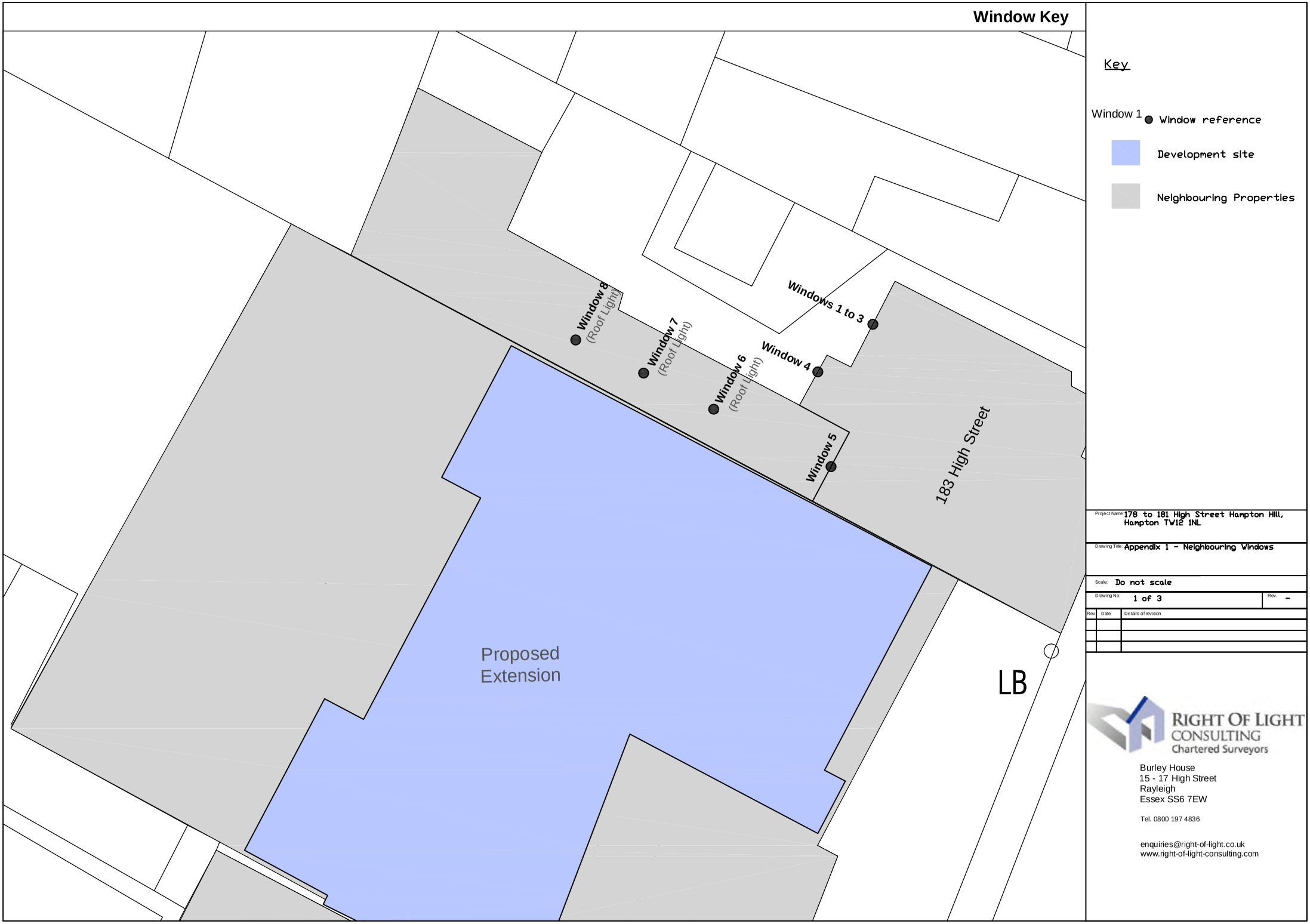
5.2 Project Specific

5.2.1 None

APPENDICES

APPENDIX 1

WINDOW KEY



Project Name: 178 to 181 High Street Hampton Hill, Hampton TW12 1NL

Drawing Title: Appendix 1 - Neighbouring Windows

Scale: Do not scale

Drawing No: 1 of 3

Rev. -

Rev.	Date	Details of revison

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Window Key

Key

Window 1 ● Window reference

Development site

Neighbouring Properties

Project Name: 178 to 181 High Street Hampton Hill, Hampton TW12 1NL

Drawing Title: Appendix 1 - Neighbouring Windows

Scale: Do not scale

Drawing No: 2 of 3 | Rev. -

Rev.	Date	Details of revision

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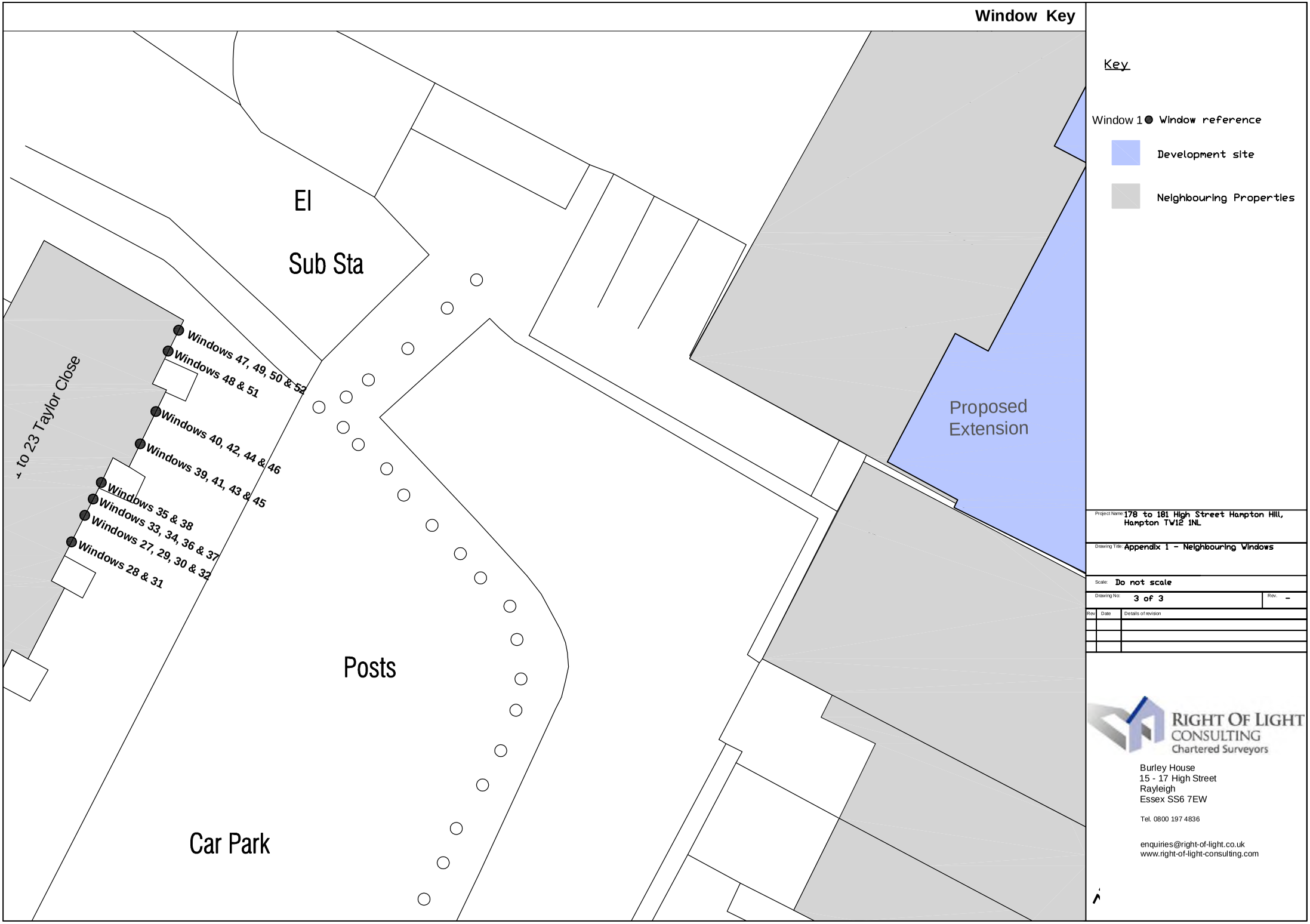
Window Key
Key
Window 1
Window reference
Development site
Neighbouring Properties
EI
Sub Sta
Proposed
Extension
Windows 47, 49, 50 & 52
Windows 48 & 51
Windows 40, 42, 44 & 46
Windows 39, 41, 43 & 45
Windows 35 & 38
Windows 33, 34, 36 & 37
Windows 27, 29, 30 & 32
Windows 28 & 31
to 23 Taylor Close
Posts
Car Park
Project Name: 178 to 181 High Street Hampton Hill, Hampton TW12 1NL
Drawing Title: Appendix 1 - Neighbouring Windows
Scale: Do not scale
Drawing No: 3 of 3
Rev. -
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Neighbouring Windows

183 High Street

183 High Street

177 High Street

177 High Street

175 High Street

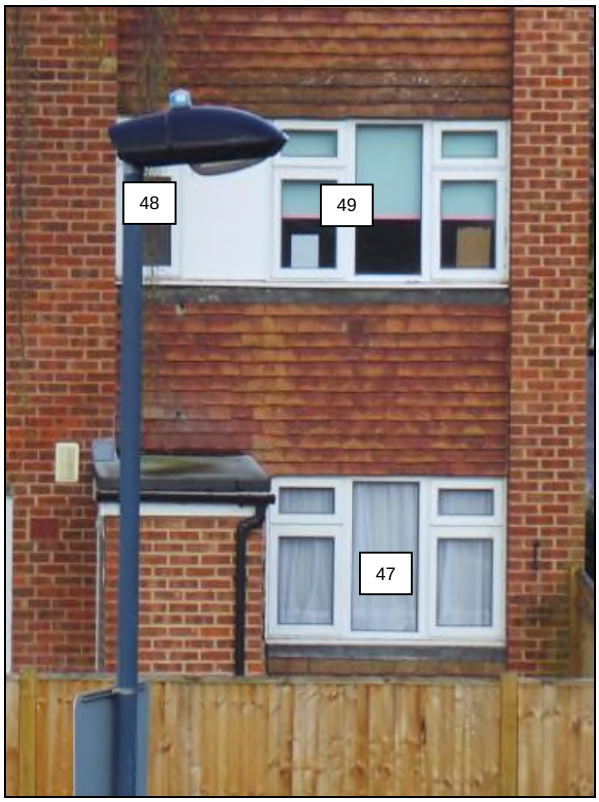
173b High Street

1 to 23 Taylor Close

1 to 23 Taylor Close

1 to 23 Taylor Close

1 to 23 Taylor Close



1 to 23 Taylor Close

1 to 23 Taylor Close

APPENDIX 2

DAYLIGHT AND SUNLIGHT RESULTS

Appendix 2 - Vertical Sky Component
179 to 181 High Street Hampton Hill, Hampton TW12 1NL

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
183 High Street					
Window 1	Habitable	25.1%	25.1%	0.0%	1.0
Window 2	Habitable	36.9%	35.8%	1.1%	0.97
Window 3	Habitable	39.1%	38.5%	0.6%	0.98
Window 4	Habitable	36.9%	30.6%	6.3%	0.83
Window 5	Non Habitable	19.2%	14.3%	4.9%	0.74
Window 6 (Secondary)	Habitable	73.0%	55.6%	17.4%	0.76
Window 7 (Secondary)	Habitable	85.1%	63.7%	21.4%	0.75
Window 8 (Secondary)	Habitable	84.9%	61.8%	23.1%	0.73
177 High Street					
Window 9	Habitable	36.5%	36.0%	0.5%	0.99
Window 10	Habitable	36.3%	36.2%	0.1%	1.0
Window 11	Habitable	35.5%	30.4%	5.1%	0.86
Window 12	Habitable	39.0%	38.2%	0.8%	0.98
Window 13	Habitable	37.9%	34.6%	3.3%	0.91
Window 14	Habitable	38.9%	38.5%	0.4%	0.99
Window 15	Habitable	37.0%	34.9%	2.1%	0.94
Window 16	Habitable	38.8%	38.5%	0.3%	0.99
Window 17	Habitable	28.1%	26.8%	1.3%	0.95
Window 18	Habitable	36.7%	36.6%	0.1%	1.0
175 High Street					
Window 19	Habitable	31.4%	31.4%	0.0%	1.0
Window 20	Habitable	37.2%	36.9%	0.3%	0.99
Window 21	Habitable	38.7%	38.5%	0.2%	0.99
Window 22	Habitable	38.6%	38.5%	0.1%	1.0
173b High Street					
Window 23	Habitable	36.6%	36.5%	0.1%	1.0
Window 24	Habitable	38.6%	38.5%	0.1%	1.0
Window 25	Habitable	37.6%	37.5%	0.1%	1.0
Window 26	Habitable	38.6%	38.5%	0.1%	1.0

Appendix 2 - Vertical Sky Component
179 to 181 High Street Hampton Hill, Hampton TW12 1NL

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
1 to 23 Taylor Close					
Window 27	Habitable	28.5%	28.3%	0.2%	0.99
Window 28	Habitable	22.6%	22.5%	0.1%	1.0
Window 29	Habitable	33.4%	33.3%	0.1%	1.0
Window 30	Habitable	34.8%	34.7%	0.1%	1.0
Window 31	Habitable	25.5%	25.5%	0.0%	1.0
Window 32	Habitable	37.7%	37.7%	0.0%	1.0
Window 33	Habitable	30.1%	30.1%	0.0%	1.0
Window 34	Habitable	33.9%	33.7%	0.2%	0.99
Window 35	Habitable	26.8%	26.7%	0.1%	1.0
Window 36	Habitable	35.2%	35.1%	0.1%	1.0
Window 37	Habitable	38.1%	38.1%	0.0%	1.0
Window 38	Habitable	31.2%	31.2%	0.0%	1.0
Window 39	Habitable	36.0%	35.7%	0.3%	0.99
Window 40	Habitable	35.8%	35.5%	0.3%	0.99
Window 41	Habitable	37.4%	37.2%	0.2%	0.99
Window 42	Habitable	37.4%	37.2%	0.2%	0.99
Window 43	Habitable	38.5%	38.4%	0.1%	1.0
Window 44	Habitable	38.5%	38.4%	0.1%	1.0
Window 45	Habitable	39.5%	39.5%	0.0%	1.0
Window 46	Habitable	39.4%	39.4%	0.0%	1.0
Window 47	Habitable	29.0%	28.6%	0.4%	0.99
Window 48	Habitable	22.5%	22.2%	0.3%	0.99
Window 49	Habitable	33.9%	33.6%	0.3%	0.99
Window 50	Habitable	35.2%	35.1%	0.1%	1.0
Window 51	Habitable	24.9%	24.9%	0.0%	1.0
Window 52	Habitable	37.7%	37.7%	0.0%	1.0

Appendix 2 - Sunlight to Windows
179 to 181 High Street Hampton Hill, Hampton TW12 1NL

Reference	Use Class	Sunlight to Windows							
		Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
183 High Street									
Window 6 (Secondary)	Habitable	37%	6%	31%	0.16	1%	0%	1%	0.01
Window 7 (Secondary)	Habitable	57%	14%	43%	0.25	5%	0%	5%	0.0
Window 8 (Secondary)	Habitable	67%	18%	49%	0.27	9%	0%	9%	0.0
1 to 23 Taylor Close									
Window 27	Habitable	39%	39%	0%	1.0	5%	5%	0%	1.0
Window 28	Habitable	24%	24%	0%	1.0	3%	3%	0%	1.0
Window 29	Habitable	47%	47%	0%	1.0	13%	13%	0%	1.0
Window 30	Habitable	48%	48%	0%	1.0	13%	13%	0%	1.0
Window 31	Habitable	26%	26%	0%	1.0	3%	3%	0%	1.0
Window 32	Habitable	59%	59%	0%	1.0	16%	16%	0%	1.0
Window 33	Habitable	47%	47%	0%	1.0	15%	15%	0%	1.0
Window 34	Habitable	54%	54%	0%	1.0	16%	16%	0%	1.0
Window 35	Habitable	54%	54%	0%	1.0	18%	18%	0%	1.0
Window 36	Habitable	56%	56%	0%	1.0	16%	16%	0%	1.0
Window 37	Habitable	62%	62%	0%	1.0	19%	19%	0%	1.0
Window 38	Habitable	58%	58%	0%	1.0	20%	20%	0%	1.0
Window 39	Habitable	61%	61%	0%	1.0	19%	19%	0%	1.0
Window 40	Habitable	62%	62%	0%	1.0	19%	19%	0%	1.0
Window 41	Habitable	63%	63%	0%	1.0	20%	20%	0%	1.0
Window 42	Habitable	64%	64%	0%	1.0	21%	21%	0%	1.0
Window 43	Habitable	64%	64%	0%	1.0	21%	21%	0%	1.0
Window 44	Habitable	63%	63%	0%	1.0	20%	20%	0%	1.0
Window 45	Habitable	64%	64%	0%	1.0	21%	21%	0%	1.0
Window 46	Habitable	63%	63%	0%	1.0	20%	20%	0%	1.0
Window 47	Habitable	39%	39%	0%	1.0	5%	5%	0%	1.0
Window 48	Habitable	24%	24%	0%	1.0	3%	3%	0%	1.0
Window 49	Habitable	46%	46%	0%	1.0	12%	12%	0%	1.0
Window 50	Habitable	47%	47%	0%	1.0	12%	12%	0%	1.0
Window 51	Habitable	25%	25%	0%	1.0	3%	3%	0%	1.0
Window 52	Habitable	59%	59%	0%	1.0	16%	16%	0%	1.0

APPENDIX 3

ALTERNATIVE DAYLIGHT RESULTS

Appendix 3 - Alternative Vertical Sky Component
179 to 181 High Street Hampton Hill, Hampton TW12 1NL

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
183 High Street					
Window 5	Habitable	27.7%	22.7%	5.0%	0.82