

Daylight and Sunlight Report

(Within Development)

14 December 2022

Sheldon House Cromwell Road Teddington TW11 9EJ



Right of Light Consulting Ltd

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

Tel: 0800 197 4836

www.right-of-light.co.uk

CONTENTS

			1
1 E)	KECUTIVE S	SUMMARY	2
1.1	Overviev	N	2
2 IN		N SOURCES	
2.1	Docume	nts Considered	3
3 MI	ETHODOLO	GY OF THE ASSESSMENT	4
3.1	Local Pla	anning Policy	4
3.2		Planning Policy Framework	
3.3		Planning Practice Guidance	
3.4		Daylighting	
3.5	Exposur	e to Sunlight	7
3.6		dowing to Gardens and Open Spaces	
3.7	Trees ar	nd Hedges	7
4 RE	ESULTS OF	THE ASSESSMENT	9
4.1	Windows	s and Amenity Areas Analysed	g
4.2		Daylighting	
4.3	Exposur	e to Sunlight	9
4.4		dowing to Gardens and Open Spaces	
4.5	Conclusi	on	10
5 CI	_ARIFICATI	ons	11
5.1	General.		11
APPI	ENDICES		
APPI APPI	ENDIX 1 ENDIX 2 ENDIX 3 ENDIX 4	WINDOW KEY DAYLIGHT PROVISION DATA & CONTOURS EXPOSURE TO SUNLIGHT DATA OVERSHADOWING DATA & CONTOURS	

1 EXECUTIVE SUMMARY

1.1 Overview

- 1.1.1 Right of Light Consulting has been commissioned by Richmond Housing Partnership Limited to undertake a daylight and sunlight assessment in connection with the development at Sheldon House, Cromwell Road, Teddington TW11 9EJ. The aim of the assessment is to check whether the proposed accommodation will provide its future occupiers with adequate levels of natural light.
- 1.1.2 The assessment is based on the numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a good practice guide, 3rd Edition' by P J Littlefair 2022.
- 1.1.3 Appendix 1 identifies the windows and amenity areas analysed in this assessment.
 Daylight provision data and contours for the habitable rooms are presented in Appendix
 2. Exposure to sunlight data is provided in Appendix 3. Overshadowing to gardens and opens spaces data and contours drawings are provided in Appendix 4.
- 1.1.4 The numerical results demonstrate that the proposed development design achieves a high level of compliance with the BRE recommendations. Whilst a number of rooms do not meet the recommendations, the results are not unusual in the context of an urban location. In our professional opinion, the proposed design will provide the development's future occupiers with adequate levels of natural light. We consider the proposed development to be consistent with the NPPF, which requires developments to provide acceptable living standards whilst making efficient use of land.

2 INFORMATION SOURCES

2.1 Documents Considered

2.1.1 This report is based on the following drawings:

Clive Chapman Architects

SH-02	Site Layout & Roof Plan	Rev -
SH-03	Site Layout & Ground Floor Plan	Rev -
SH-06	Floor Plans & Roof Plan	Rev -
SH-07	Block Elevations	Rev -

3 METHODOLOGY OF THE ASSESSMENT

3.1 Local Planning Policy

- 3.1.1 We understand that the Local Authority takes the conventional approach of considering daylight and sunlight amenity with reference to 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, 3rd Edition' by P J Littlefair 2022. The BRE guide is based on European standard BS EN 17037 'Daylight in Buildings', 2019 (BS EN 17037).
- 3.1.2 The standards set out in the BRE guide are intended to be used flexibly. The BRE guide states:
- 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."
- 3.1.4 In reference to applying different numerical target values in different locations, the BRE guide states:
- 3.1.5 "These values are purely advisory and different targets may be used based on the special requirements of the proposed development or its location."

3.2 National Planning Policy Framework

3.2.1 The BRE numerical guidelines should be considered in the context of the National Planning Policy Framework (NPPF), which stipulates that local planning authorities should take a flexible approach to daylight and sunlight to ensure the efficient use of land. The NPPF states:

"Local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards)."

3.3 National Planning Practice Guidance

3.3.1 The BRE numerical guidelines should also be considered in the context of the National Planning Practice Guidance (NPPG). The NPPG states that developments should maintain acceptable living standards. It goes on to explain that what this means in practice is that appropriate levels of sunlight and daylight, will depend to some extent on the context for the development. This is consistent with the BRE guide which as noted in paragraphs 3.1.4 to 3.1.5 above, states that site location is a relevant factor when setting sunlight and daylight targets.

3.4 Interior Daylighting

- 3.4.1 The BRE guide recommends that interior daylighting is checked using the daylight provision test set out in BS EN 17037. The test measures both the amount of daylight, as well as the distribution of daylight within a room. The test is applied to habitable rooms within domestic properties. A kitchen is generally deemed to be a habitable room if it is large enough to accommodate a dining area. If the kitchen is small, or if the property has a separate dining area, then the accepted practice is to treat the kitchen as a non-habitable room.
- 3.4.2 The assessment is carried out using a grid of points on a horizontal reference plane in each room. In accordance with the BRE recommendations, we have set the reference plane at 850mm above the floor and have excluded assessment points from a 0.3m wide band around the perimeter of each room.
- 3.4.3 The UK National Annex to BS EN 17037 gives UK specific minimum illuminance recommendations which we have set as the targets for this project. The targets comprise of 100 lux in bedrooms, 150 lux in living rooms and 200 lux in kitchens to be exceeded over at least 50% of the reference plane.
- 3.4.4 Where a room has a shared use, the highest target should apply. However, the BRE guide explains that there is a discretionary element to this. For example, the target for a living room could be used for a combined living/dining/kitchen area if the kitchens are not treated as habitable spaces, as it may avoid small separate kitchens in a design.
- 3.4.5 The data in Appendix 2 includes the lux target we have assigned to each room, together with the percentage of the reference plane that meets the target. The median illuminance (lux) achieved for each room is also presented. Where the median

- illuminance exceeds the lux target, this means the lux target has been achieved over at least 50% of the assessment grid.
- 3.4.6 The daylight provision test may be carried out using either the daylight factor method, or the interior illuminance method. For the purpose of this assessment, we have adopted the daylight factor method. Using the conversion table set out in the BRE guide, we have expressed the results in terms of lux.
- 3.4.7 Since the assessment is based on a computer simulation, it is necessary to set various surface reflectance values. For example, a 0.6 reflectance means that 60% of the light hitting the surface will be reflected. The BRE guide states that it is necessary to make an allowance for the deterioration of surface finishes. Furniture within the rooms will also have an impact on daylight provision. Since the computer model used in the simulation does not include furniture, the BRE guide recommends that an allowance for this is also made within the reflectance values. For this reason, we have set out below, both the manufacturer's reflectance values, and the values used in the simulation. The simulation values include allowances for furniture and the deterioration of the surfaces. Should product substitutions be required, products with equal reflectance values should be chosen to ensure the daylight results presented in this report are achieved.

Surface	Product	Product Reflectance	Simulation Reflectance
Interior walls	Dulux Light & Space Absolute White	0.93	0.8
Window reveals	Dulux Light & Space Absolute White	0.93	0.8
Ceilings	Dulux Light & Space Absolute White	0.93	0.8
Floors	Kahrs engineered wood (Ash Air)	0.76	0.4
Development cladding	BRE default value	n/a	0.2
Balcony floors	Portland Stone	0.6	0.5
Balcony soffits	Dulux Weathershield Brilliant White	0.92	0.6
Neighbouring buildings	BRE default value	n/a	0.2
Mirror	Generic value	n/a	0.95
Glass	Generic value	n/a	0.1
Exterior ground	BRE default value	n/a	0.2

3.4.8 The simulation is based on double-glazed windows with a glazed area that equates to 80% of the structural opening size. The glazing consists of a Pilkington 4mm Optifloat Clear outer pane and a Pilkington 6.4mm OptiLam K Glass S inner pane, which has an overall manufacturer's direct transmittance of 0.82. In accordance with the BRE guide, the simulation includes maintenance factors to allow for the effect of dirt on the glazing.

3.5 Exposure to Sunlight

- 3.5.1 The BRE guide states that the main requirement for sunlight is in living rooms, where it is valued at any time of day but especially in the afternoon. Sunlight is also required in conservatories. It is viewed as less important in bedrooms and in kitchens, where people prefer it in the morning rather than the afternoon.
- 3.5.2 The BRE guide states that, in general, a dwelling will appear reasonably sunlit provided:
 - at least one main window wall faces within 90 degrees of due south, and
 - a habitable room, preferably a main living room, can receive a total of at least
 1.5 hours of sunlight on 21 March.
- 3.3.1 The guide states that, where groups of dwellings are planned, site layout design should aim to maximise the number of dwellings with a main living room that meets the above recommendations.

3.6 Overshadowing to Gardens and Open Spaces

- 3.6.1 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.
- 3.6.2 The BRE guide recommends that, for an open space to appear adequately lit throughout the year, at least 50% of its area should receive two hours of sunlight on 21st March.

3.7 Trees and Hedges

3.7.1 Appendix G of the BRE guide gives guidance on trees and hedges. The guide states that trees and hedges vary in their effects on skylight and sunlight and most tree species will cast partial shade.

- 3.7.2 In accordance with the BRE guide, we have factored the transparency and reflectance characteristics of any nearby trees and hedges into the daylight and sunlight calculations. Tables G1 and G2 in Appendix G of the BRE guide outline the transparency and reflectance values for a number of common tree types, which we used as a basis for our assessment.
- 3.7.3 When applying the daylight provision test to a property which has deciduous trees surrounding it, the calculations are repeated for summer and winter conditions. In the winter, when the tree crown has a much higher transparency, more light is able to penetrate through the branches. Therefore, in the winter daylight provision is usually higher than in the summer when the tree is in full bloom.
- 3.7.4 The BRE guide notes that, if the recommended daylight provision targets are exceeded in both summer and winter, then daylight would be considered adequate. The guide adds that, for a room where the minimum value is exceeded in winter but not in summer, daylight provision year-round is still likely to be adequate, but it is clear that the trees are having some effect on daylight.
- 3.7.5 The BRE guide recommends that where trees may affect exposure to sunlight, the calculations should first be carried out with deciduous trees treated as opaque objects. The calculations should then be repeated without deciduous trees entirely. This gives the range of potential sunlight hours. Evergreen trees and hedges should also always be assessed as opaque objects.
- 3.7.6 If the minimum recommendation is met with opaque trees, then sunlight would be adequate. If the minimum recommendation is not reached with either opaque trees or no trees, then sunlight would be considered inadequate. For a room where the recommendation is exceeded without trees, but not with opaque trees, sunlight provision may be adequate, but the trees will have some effect on the sunlight received.
- 3.7.7 For the gardens and open spaces test, the guides states that trees and shrubs are not normally included in the calculation unless a dense belt or group of evergreens is specifically planned as a windbreak or for privacy purposes. This is partly because the dappled shade of a tree is more pleasant than the deep shadow of a building. For the purpose of our assessment, we have therefore discounted the overshadowing effect of deciduous trees.

4 RESULTS OF THE ASSESSMENT

4.1 Windows and Amenity Areas Analysed

- 4.1.1 Appendix 1 identifies the windows serving habitable rooms analysed in this assessment.
- 4.1.2 We have also identified the outdoor amenity areas that have been assessed.

4.2 Interior Daylighting

- 4.2.1 Daylight provision data and contours for the habitable rooms are presented in Appendix2.
- 4.2.2 The results confirm that a number of rooms fall short of the daylight provision targets during the summer. However, the BRE guide explains that providing the targets are met in the winter months, daylight year-round is likely to be adequate. In this case, around 59% of all habitable rooms tested meet or surpass the BRE minimum winter recommendations (i.e. 40 of the total 68 rooms pass their winter Daylight Factor targets). This is a very high level of compliance in the context of an urban development site.

4.3 Exposure to Sunlight

- 4.3.1 Exposure to sunlight data is provided in Appendix 3.
- 4.3.2 In the case of the proposed development, 23 of the 27 units have at least one habitable room window which faces within 90 degrees of due south. 23 units have a living room window which faces within 90 degrees of due south. When considering the deciduous trees as opaque objects, 25 of the 27 units have a living room which receives a total of at least 1.5 hours of sunlight on 21 March.
- 4.3.3 The BRE guide acknowledges that in some cases, it may not be possible for every dwelling to achieve ideal levels of sunlight. The guide explains that where groups of dwellings are planned, site layout design should aim to maximise the number of dwellings with a main living room that:
 - faces within 90 degrees of due south, and
 - can receive a total of at least 1.5 hours of sunlight on 21 March.

4.3.4 In our opinion, the proposed development represents good site layout design. Since the design maximises sunlight availability, as far as practically possible given the constraints of the site, the BRE exposure to sunlight recommendations for groups of dwellings have been met.

4.4 Overshadowing to Gardens and Open Spaces

- 4.4.1 Overshadowing to gardens and opens spaces data and contours drawings are provided in Appendix 4.
- 4.4.2 The results show that 83% or more of the area of each amenity space will receive at least two hours of sunlight on 21 March. This is significantly better than the BRE recommendation which states that at least 50% of any garden or amenity area should receive at least two hours of sunlight on 21 March. The proposed development therefore passes the BRE overshadowing to gardens and open spaces test.

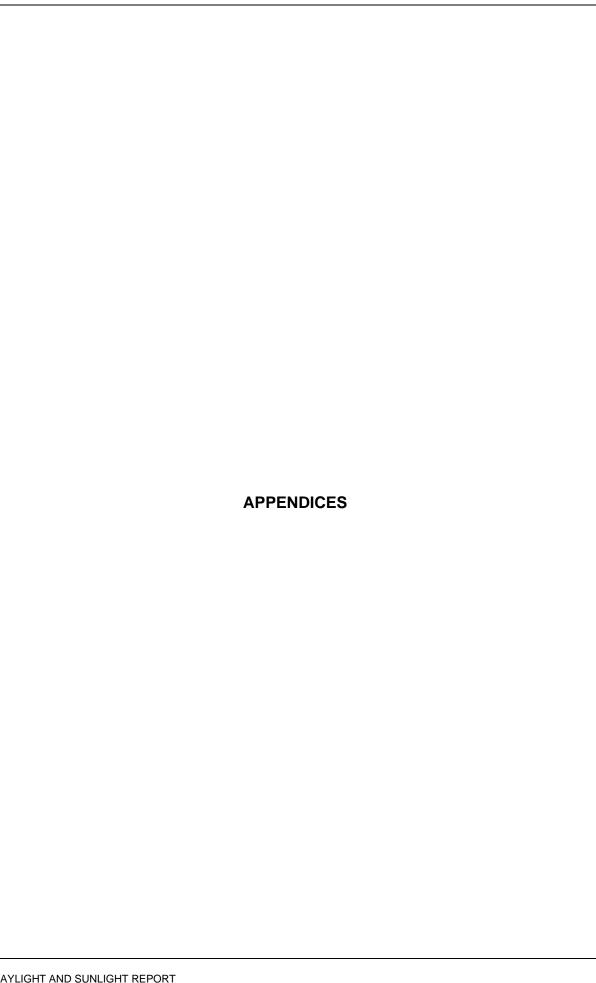
4.5 Conclusion

4.5.1 The numerical results demonstrate that the proposed development design achieves a high level of compliance with the BRE recommendations. Whilst a number of rooms do not meet the recommendations, the results are not unusual in the context of an urban location. In our professional opinion, the proposed design will provide the development's future occupiers with adequate levels of natural light. We consider the proposed development to be consistent with the NPPF, which requires developments to provide acceptable living standards whilst making efficient use of land.

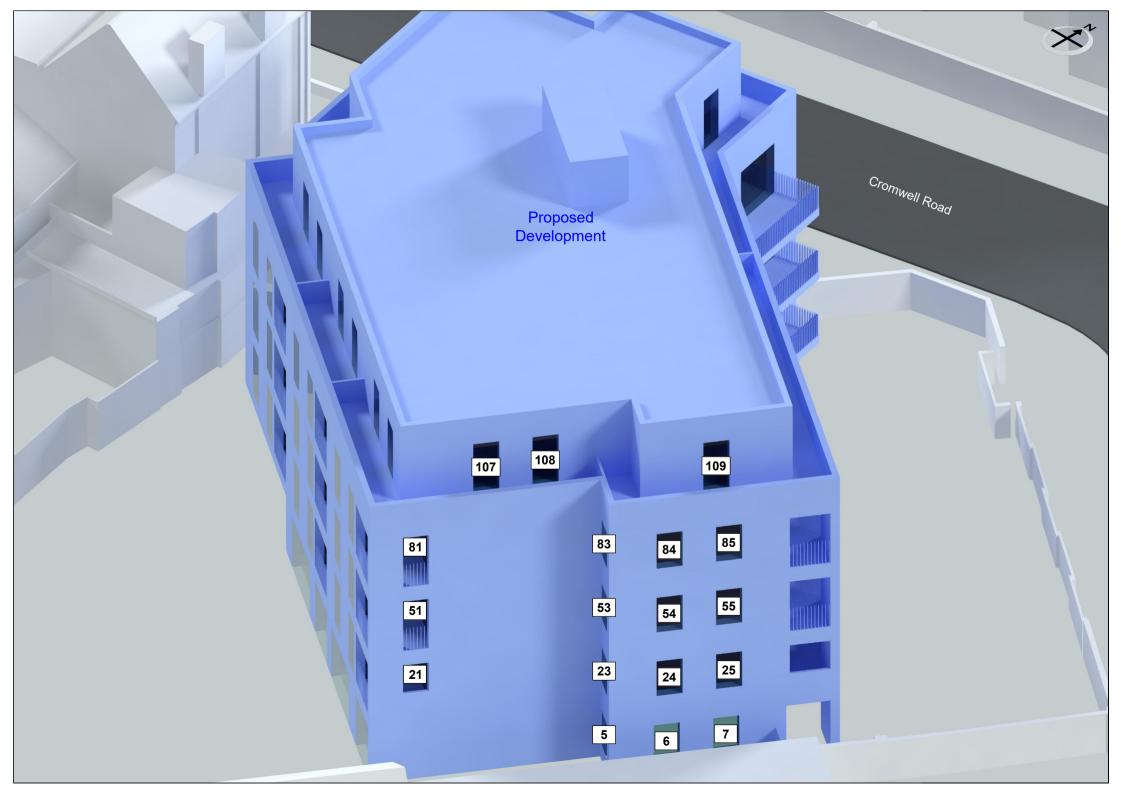
5 CLARIFICATIONS

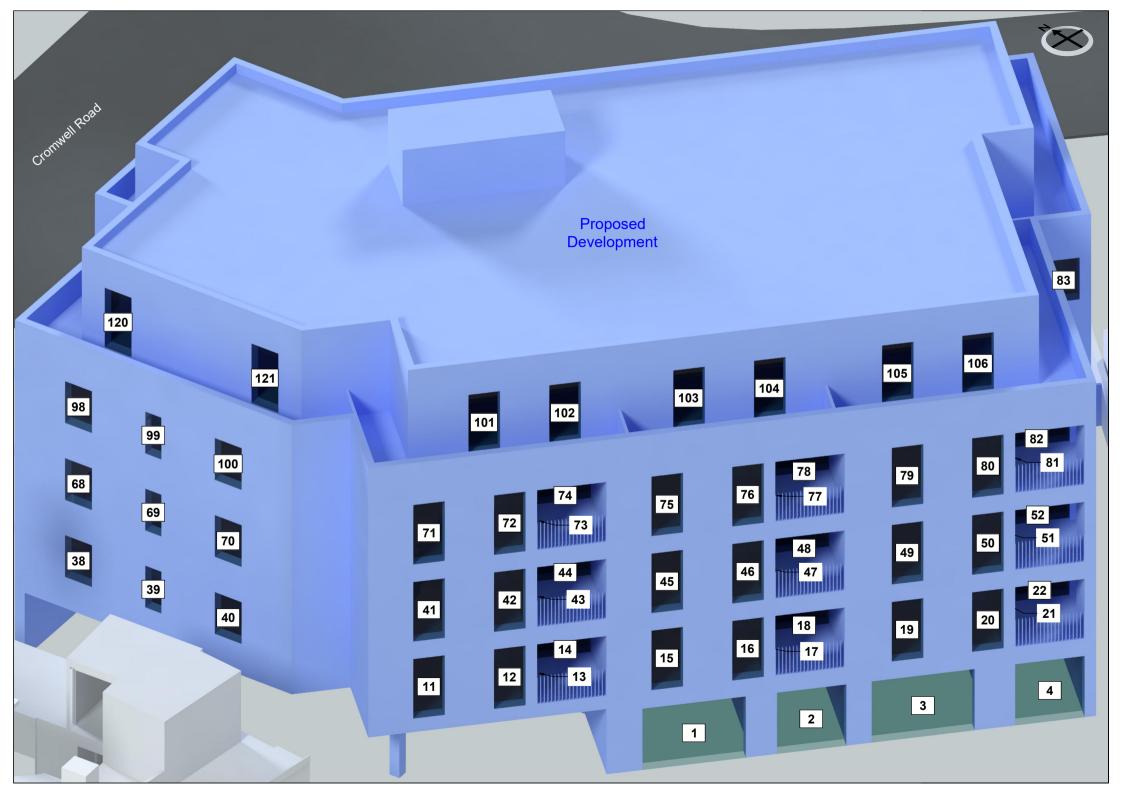
5.1 General

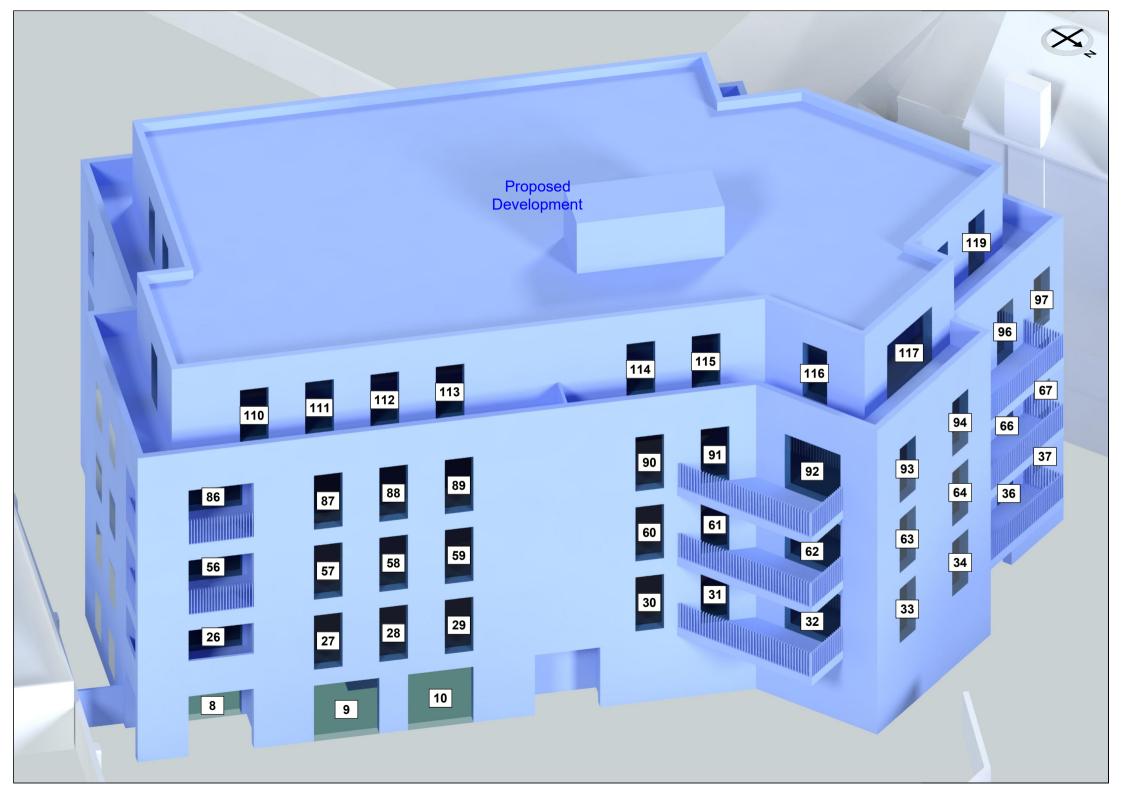
- 5.1.1 The report provided is solely for the use of the client and no liability to anyone else is accepted.
- 5.1.2 The assessment is limited to assessing daylight, sunlight and overshadowing of the proposed development as set out in section 2.1, 3.1 and 3.3 of the BRE guide.
- 5.1.3 The assessment is based on the information listed in section 2 of this report. The assessment has been undertaken without access to the proposed development site or neighbouring properties.
- 5.1.4 We have undertaken the survey following the guidelines of the RICS publication "Surveying Safely". Where limited access is available, assumptions will have been made.
- 5.1.5 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.

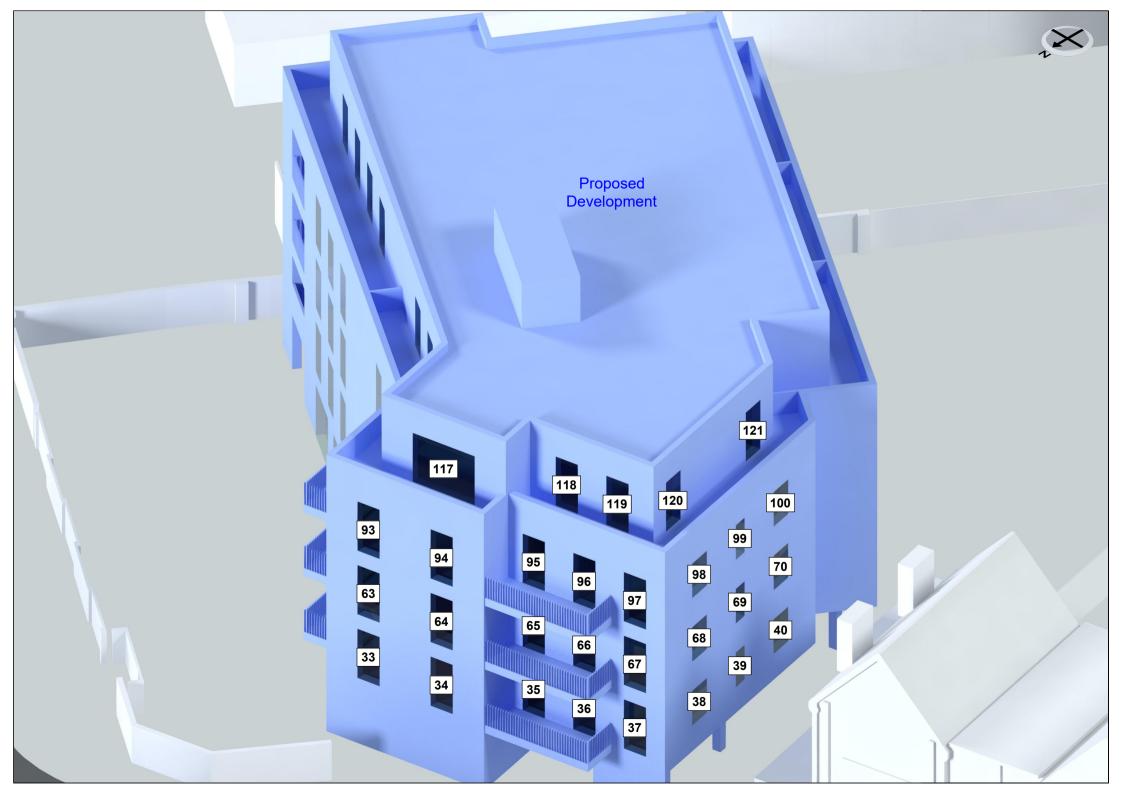


APPENDIX 1	
WINDOW KEY	
AYLIGHT AND SUNLIGHT REPORT	









	A DDENDIV O
	APPENDIX 2
	DAYLIGHT PROVISION DATA & CONTOURS
	DATLIGHT PROVISION DATA & CONTOURS
DAYLIGHT AND SUNLIGHT	REPORT ad, Teddington TW11 9EJ

Appendix 2 - Daylight Provision (Summer)
Sheldon House, Cromwell Road, Teddington TW11 9EJ

Reference	Room Use	Min.Target Illuminance (Lux)	Target % of Reference Plane	% of Reference Plane Achieved	Target % Achieved	Median Illuminance (Lux)
Flat 1						
Ground Floor						
Window 1 Window 2	Living/Dining/Kitchen Bedroom	200 100	50% 50%	57% 97%	Yes Yes	215 187
Flat 2						
Ground Floor						
Window 3 Window 4	Living/Dining/Kitchen Bedroom	200 100	50% 50%	47% 68%	No Yes	191 122
Flat 3						
Ground Floor						
Windows 5 to 8 Window 9 Window 10	Living/Dining/Kitchen Bedroom Bedroom	200 100 100	50% 50% 50%	27% 100% 100%	No Yes Yes	127 375 281
Flat 4						
First Floor						
Windows 11 to 13 Window 14	Living/Dining/Kitchen Bedroom	200 100	50% 50%	6% 1%	No No	68 50
Flat 5						
First Floor						
Windows 15 to 17 Window 18	Living/Dining/Kitchen Bedroom	200 100	50% 50%	15% 1%	No No	94 47
Flat 6						
First Floor						
Windows 19 to 21 Window 22	Living/Dining/Kitchen Bedroom	200 100	50% 50%	9% 0%	No No	70 34

Appendix 2 - Daylight Provision (Summer)
Sheldon House, Cromwell Road, Teddington TW11 9EJ

Reference	Room Use	Min.Target Illuminance (Lux)	Target % of Reference Plane	% of Reference Plane Achieved	Target % Achieved	Median Illuminance (Lux)
Flat 7						
First Floor						
Windows 23 to 26 Window 27 Window 28 Window 29	Living/Dining/Kitchen Bedroom Bedroom Bedroom	200 100 100 100	50% 50% 50% 50%	42% 71% 92% 87%	No Yes Yes Yes	175 115 146 139
Flat 8						
First Floor						
Window 30 Window 31 Windows 32 to 34	Bedroom Bedroom Living/Dining/Kitchen	100 100 200	50% 50% 50%	81% 45% 95%	Yes No Yes	144 91 334
Flat 9						
First Floor						
Window 35 Windows 36 to 39 Window 40	Bedroom Living/Dining/Kitchen Bedroom	100 200 100	50% 50% 50%	65% 19% 30%	Yes No No	109 121 62
Flat 10						
Second Floor						
Windows 41 to 43 Window 44	Living/Dining/Kitchen Bedroom	200 100	50% 50%	4% 0%	No No	47 35
Flat 11						
Custom Floor						
Windows 45 to 47 Window 48	Living/Dining/Kitchen Bedroom	200 100	50% 50%	20% 0%	No No	90 39
Flat 12						
Second Floor						
Windows 49 to 51 Window 52	Living/Dining/Kitchen Bedroom	200 100	50% 50%	14% 0%	No No	69 20

Appendix 2 - Daylight Provision (Summer)
Sheldon House, Cromwell Road, Teddington TW11 9EJ

Reference	Room Use	Min.Target Illuminance (Lux)	Target % of Reference Plane	% of Reference Plane Achieved	Target % Achieved	Median Illuminance (Lux)
Flat 13						
Second Floor						
Windows 53 to 56	Living/Dining/Kitchen	200	50%	44%	No	181
Window 57	Bedroom	100	50%	19%	No	72
Window 58	Bedroom	100	50%	37%	No	85
Window 59	Bedroom	100	50%	41%	No	92
Flat 14						
Custom Floor						
Window 60	Bedroom	100	50%	80%	Yes	132
Window 61	Bedroom	100	50%	37%	No	77
Windows 62 to 64	Living/Dining/Kitchen	200	50%	97%	Yes	332
<u>Flat 15</u>						
Second Floor						
Window 65	Bedroom	100	50%	58%	Yes	105
Windows 66 to 69	Living/Dining/Kitchen	200	50%	12%	No	96
Window 70	Bedroom	100	50%	59%	Yes	112
Flat 16						
Third Floor						
Windows 71 to 73	Living/Dining/Kitchen	200	50%	7%	No	41
Window 74	Bedroom	100	50%	0%	No	27
Flat 17						
Third Floor						
Windows 75 to 77	Living/Dining/Kitchen	200	50%	30%	No	108
Window 78	Bedroom	100	50%	1%	No	35

Appendix 2 - Daylight Provision (Summer)
Sheldon House, Cromwell Road, Teddington TW11 9EJ

Reference	Room Use	Min.Target Illuminance (Lux)	Target % of Reference Plane	% of Reference Plane Achieved	Target % Achieved	Median Illuminance (Lux)
Flat 18						
Third Floor						
Windows 79 to 81 Window 82	Living/Dining/Kitchen Bedroom	200 100	50% 50%	27% 0%	No No	87 19
<u>Flat 19</u>						
Third Floor						
Windows 83 to 86 Window 87 Window 88 Window 89	Living/Dining/Kitchen Bedroom Bedroom Bedroom	200 100 100 100	50% 50% 50% 50%	53% 7% 11% 15%	Yes No No No	207 47 50 60
Flat 20						
Third Floor						
Window 90 Window 91 Windows 92 to 94	Bedroom Bedroom Living/Dining/Kitchen	100 100 200	50% 50% 50%	69% 58% 99%	Yes Yes Yes	118 108 380
Flat 21						
Third Floor						
Window 95 Windows 96 to 99 Window 100	Bedroom Living/Dining/Kitchen Bedroom	100 200 100	50% 50% 50%	100% 75% 85%	Yes Yes Yes	234 284 155
Flat 22						
Fourth Floor						
Window 101 Window 102	Bedroom Living/Dining/Kitchen	100 200	50% 50%	80% 20%	Yes No	137 88
Flat 23						
Custom Floor						
Window 103 Window 104	Bedroom Living/Dining/Kitchen	100 200	50% 50%	67% 22%	Yes No	123 91

Appendix 2 - Daylight Provision (Summer)
Sheldon House, Cromwell Road, Teddington TW11 9EJ

Reference	Room Use	Min.Target Illuminance (Lux)	Target % of Reference Plane	% of Reference Plane Achieved	Target % Achieved	Median Illuminance (Lux)
Flat 24						
Fourth Floor						
Window 105 Windows 106 to 108	Bedroom Living/Dining/Kitchen	100 200	50% 50%	83% 100%	Yes Yes	147 398
Flat 25						
Custom Floor						
Windows 109 & 110 Windows 111 & 112 Window 113	Living/Dining/Kitchen Bedroom Bedroom	200 100 100	50% 50% 50%	40% 99% 40%	No Yes No	153 180 90
Flat 26						
Fourth Floor						
Windows 114 & 115 Windows 116 & 117	Bedroom Living/Dining/Kitchen	100 200	50% 50%	100% 97%	Yes Yes	285 433
Flat 27						
Custom Floor						
Windows 118 to 120 Window 121	Living/Dining/Kitchen Bedroom	200 100	50% 50%	94% 100%	Yes Yes	325 203











Appendix 2 - Daylight Provision (Winter)
Sheldon House, Cromwell Road, Teddington TW11 9EJ

Reference	Room Use	Min.Target Illuminance (Lux)	Target % of Reference Plane	% of Reference Plane Achieved	Target % Achieved	Median Illuminance (Lux)
Flat 1						
Ground Floor						
Window 1 Window 2	Living/Dining/Kitchen Bedroom	200 100	50% 50%	71% 99%	Yes Yes	260 230
Flat 2						
Ground Floor						
Window 3 Window 4	Living/Dining/Kitchen Bedroom	200 100	50% 50%	64% 84%	Yes Yes	238 158
Flat 3						
Ground Floor						
Windows 5 to 8 Window 9 Window 10	Living/Dining/Kitchen Bedroom Bedroom	200 100 100	50% 50% 50%	34% 100% 100%	No Yes Yes	138 425 318
Flat 4						
First Floor						
Windows 11 to 13 Window 14	Living/Dining/Kitchen Bedroom	200 100	50% 50%	22% 6%	No No	103 57
Flat 5						
First Floor						
Windows 15 to 17 Window 18	Living/Dining/Kitchen Bedroom	200 100	50% 50%	26% 4%	No No	116 55
Flat 6						
First Floor						
Windows 19 to 21 Window 22	Living/Dining/Kitchen Bedroom	200 100	50% 50%	18% 1%	No No	93 46

Appendix 2 - Daylight Provision (Winter)
Sheldon House, Cromwell Road, Teddington TW11 9EJ

Reference	Room Use	Min.Target Illuminance (Lux)	Target % of Reference Plane	% of Reference Plane Achieved	Target % Achieved	Median Illuminance (Lux)
Flat 7						
First Floor						
Windows 23 to 26	Living/Dining/Kitchen	200	50%	49%	No	195
Window 27	Bedroom	100	50%	92%	Yes	139
Window 28	Bedroom	100	50%	99%	Yes	188
Window 29	Bedroom	100	50%	97%	Yes	175
Flat 8						
First Floor						
Window 30	Bedroom	100	50%	85%	Yes	158
Window 31	Bedroom	100	50%	51%	Yes	100
Windows 32 to 34	Living/Dining/Kitchen	200	50%	97%	Yes	346
Flat 9						
First Floor						
Window 35	Bedroom	100	50%	78%	Yes	119
Windows 36 to 39	Living/Dining/Kitchen	200	50%	41%	No	174
Window 40	Bedroom	100	50%	31%	No	68
Flat 10						
Second Floor						
Windows 41 to 43	Living/Dining/Kitchen	200	50%	20%	No	89
Window 44	Bedroom	100	50%	1%	No	49
Flat 11						
Custom Floor						
Windows 45 to 47	Living/Dining/Kitchen	200	50%	29%	No	115
Window 48	Bedroom	100	50%	2%	No	49

Appendix 2 - Daylight Provision (Winter)
Sheldon House, Cromwell Road, Teddington TW11 9EJ

Reference	Room Use	Min.Target Illuminance (Lux)	Target % of Reference Plane	% of Reference Plane Achieved	Target % Achieved	Median Illuminance (Lux)
Flat 12						
Second Floor						
Windows 49 to 51 Window 52	Living/Dining/Kitchen Bedroom	200 100	50% 50%	24% 0%	No No	95 33
Flat 13						
Second Floor						
Windows 53 to 56 Window 57 Window 58 Window 59	Living/Dining/Kitchen Bedroom Bedroom Bedroom	200 100 100 100	50% 50% 50% 50%	55% 61% 80% 89%	Yes Yes Yes Yes	211 108 134 136
<u>Flat 14</u>						
Custom Floor						
Window 60 Window 61 Windows 62 to 64	Bedroom Bedroom Living/Dining/Kitchen	100 100 200	50% 50% 50%	85% 46% 98%	Yes No Yes	153 93 350
<u>Flat 15</u>						
Second Floor						
Window 65 Windows 66 to 69 Window 70	Bedroom Living/Dining/Kitchen Bedroom	100 200 100	50% 50% 50%	76% 42% 62%	Yes No Yes	118 178 117
Flat 16						
Third Floor						
Windows 71 to 73 Window 74	Living/Dining/Kitchen Bedroom	200 100	50% 50%	22% 2%	No No	86 43
Flat 17						
Third Floor						
Windows 75 to 77 Window 78	Living/Dining/Kitchen Bedroom	200 100	50% 50%	36% 4%	No No	130 46

Appendix 2 - Daylight Provision (Winter)
Sheldon House, Cromwell Road, Teddington TW11 9EJ

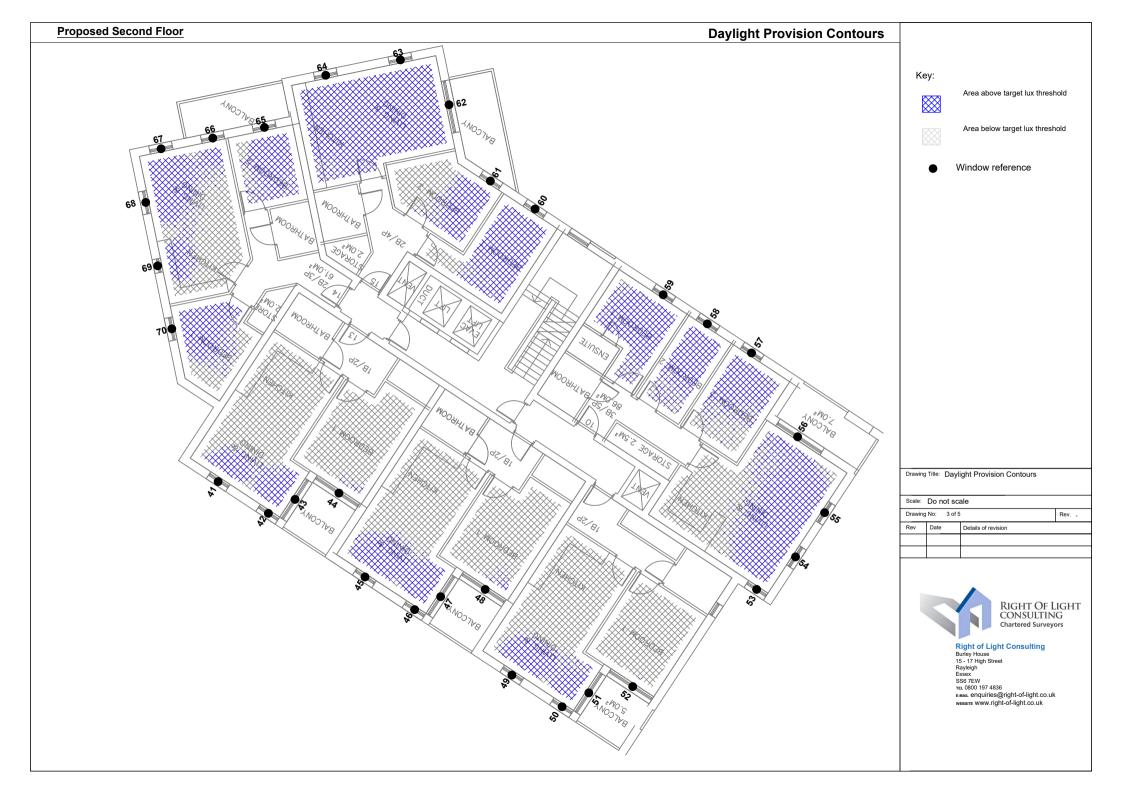
Flat 18 Third Floor Windows 79 to 81 Living/Dining/Kitchen 200 50% 33% No 113 Window 82 Bedroom 100 50% 2% No 34
Third Floor Windows 79 to 81 Living/Dining/Kitchen 200 50% 33% No 113
Windows 79 to 81 Living/Dining/Kitchen 200 50% 33% No 113
Window 82 Bedroom 100 50% 2% No 34
<u>Flat 19</u>
Third Floor
Windows 83 to 86 Living/Dining/Kitchen 200 50% 60% Yes 228
Window 87 Bedroom 100 50% 38% No 85
Window 88 Bedroom 100 50% 54% Yes 106
Window 89 Bedroom 100 50% 66% Yes 114
Flat 20
Third Floor
Window 90 Bedroom 100 50% 81% Yes 145
Window 91 Bedroom 100 50% 74% Yes 130
Windows 92 to 94 Living/Dining/Kitchen 200 50% 100% Yes 413
Flat 21
Third Floor
Window 95 Bedroom 100 50% 100% Yes 236
Windows 96 to 99 Living/Dining/Kitchen 200 50% 84% Yes 320
Window 100 Bedroom 100 50% 88% Yes 160
Flat 22
Fourth Floor
Window 101 Bedroom 100 50% 88% Yes 149
Window 102 Living/Dining/Kitchen 200 50% 22% No 96
<u>Flat 23</u>
Custom Floor
Window 103 Bedroom 100 50% 72% Yes 129
Window 104 Living/Dining/Kitchen 200 50% 23% No 97

Appendix 2 - Daylight Provision (Winter)
Sheldon House, Cromwell Road, Teddington TW11 9EJ

Reference	Room Use	Min.Target Illuminance (Lux)	Target % of Reference Plane	% of Reference Plane Achieved	Target % Achieved	Median Illuminance (Lux)
Flat 24						
Fourth Floor						
Window 105	Bedroom	100	50%	88%	Yes	154
Windows 106 to 108	Living/Dining/Kitchen	200	50%	100%	Yes	407
Flat 25						
Custom Floor						
Windows 109 & 110	Living/Dining/Kitchen	200	50%	44%	No	167
Windows 111 & 112	Bedroom	100	50%	100%	Yes	272
Window 113	Bedroom	100	50%	89%	Yes	143
Flat 26						
Fourth Floor						
Windows 114 & 115	Bedroom	100	50%	100%	Yes	329
Windows 116 & 117	Living/Dining/Kitchen	200	50%	97%	Yes	443
Flat 27						
Custom Floor						
Windows 118 to 120	Living/Dining/Kitchen	200	50%	94%	Yes	325
Window 121	Bedroom	100	50%	100%	Yes	205











	APPENDIX 3
	AFFENDIA 3
	EVECULE TO CLINILICATE DATA
	EXPOSURE TO SUNLIGHT DATA
AYLIGHT AND SUNLIGHT REPOR	Г

Room	Room Use	Target Sunlight Exposure	Actual Sunlight Exposure	At least one habitable room in dwelling meets Target Sunlight Exposure
Flat 1				
Ground Floor				
Window 1 Window 2	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	7.2 hours 6.8 hours	Yes
Flat 2				
Ground Floor				
Window 3 Window 4	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	7.2 hours 6.7 hours	Yes
Flat 3				
Ground Floor				
Windows 5 to 8 Window 9 Window 10	Living/Dining/Kitchen Bedroom Bedroom	1.5 hours 1.5 hours 1.5 hours	3.4 hours 0.2 hours 0.2 hours	Yes
Flat 4				
First Floor				
Windows 11 to 13 Window 14	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	6.2 hours 3 hours	Yes
Flat 5				
First Floor				
Windows 15 to 17 Window 18	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	6.3 hours 3 hours	Yes
Flat 6				
First Floor				
Windows 19 to 21 Window 22	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	7.2 hours 4.3 hours	Yes

Appendix 3 - Exposure To Sunlight (Including Trees)
Sheldon House, Cromwell Road, Teddington TW11 9EJ

Room	Room Use	Target Sunlight Exposure	Actual Sunlight Exposure	At least one habitable room in dwelling meets Target Sunlight Exposure
Flat 7				
First Floor				
Windows 23 to 26 Window 27 Window 28 Window 29	Living/Dining/Kitchen Bedroom Bedroom Bedroom	1.5 hours1.5 hours1.5 hours1.5 hours	6.9 hours 0 hours 0 hours	Yes
Flat 8				
First Floor				
Window 30 Window 31 Windows 32 to 34	Bedroom Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours 1.5 hours	0 hours 0 hours 1.4 hours	No
Flat 9				
First Floor				
Window 35 Windows 36 to 39 Window 40	Bedroom Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours 1.5 hours	0 hours 1.5 hours 1.6 hours	Yes
Flat 10				
Second Floor				
Windows 41 to 43 Window 44	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	6.3 hours 3 hours	Yes
Flat 11				
Custom Floor				
Windows 45 to 47 Window 48	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	6.3 hours 3 hours	Yes
Flat 12				
Second Floor				
Windows 49 to 51 Window 52	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	7.4 hours 4.3 hours	Yes

Room	Room Use	Target Sunlight Exposure	Actual Sunlight Exposure	At least one habitable room in dwelling meets Target Sunlight Exposure
Flat 13				
Second Floor				
Windows 53 to 56 Window 57 Window 58 Window 59	Living/Dining/Kitchen Bedroom Bedroom Bedroom	1.5 hours 1.5 hours 1.5 hours 1.5 hours	6.9 hours 0 hours 0 hours 0 hours	Yes
Flat 14				
Custom Floor				
Window 60 Window 61 Windows 62 to 64	Bedroom Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours 1.5 hours	0 hours 0 hours 1.6 hours	Yes
Flat 15				
Second Floor				
Window 65 Windows 66 to 69 Window 70	Bedroom Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours 1.5 hours	0 hours 2 hours 3.3 hours	Yes
Flat 16				
Third Floor				
Windows 71 to 73 Window 74	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	6.3 hours 3 hours	Yes
Flat 17				
Third Floor				
Windows 75 to 77 Window 78	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	6.3 hours 3 hours	Yes
Flat 18				
Third Floor				
Windows 79 to 81 Window 82	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	7.4 hours 4.3 hours	Yes

Room	Room Use	Target Sunlight Exposure	Actual Sunlight Exposure	At least one habitable room in dwelling meets Target Sunlight Exposure
Flat 19				
Third Floor				
Windows 83 to 86 Window 87 Window 88 Window 89	Living/Dining/Kitchen Bedroom Bedroom Bedroom	1.5 hours 1.5 hours 1.5 hours 1.5 hours	7.2 hours 0 hours 0 hours 0 hours	Yes
Flat 20				
Third Floor Window 90 Window 91 Windows 92 to 94	Bedroom Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours 1.5 hours	0 hours 0 hours 2 hours	Yes
Flat 21				
Third Floor				
Window 95 Windows 96 to 99 Window 100	Bedroom Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours 1.5 hours	0 hours 3.1 hours 3.3 hours	Yes
Flat 22				
Fourth Floor				
Window 101 Window 102	Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours	3.9 hours 3.9 hours	Yes
Flat 23				
Custom Floor				
Window 103 Window 104	Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours	3.9 hours	Yes

Room	Room Use	Target Sunlight Exposure	Actual Sunlight Exposure	At least one habitable room in dwelling meets Target Sunlight Exposure
Flat 24				
Fourth Floor				
Window 105 Windows 106 to 108	Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours	3.9 hours 5.7 hours	Yes
Flat 25				
Custom Floor				
Windows 109 & 110 Windows 111 & 112 Window 113	Living/Dining/Kitchen Bedroom Bedroom	1.5 hours 1.5 hours 1.5 hours	2.7 hours 0 hours 0 hours	Yes
Flat 26				
Fourth Floor				
Windows 114 & 115 Windows 116 & 117	Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours	0 hours 0.8 hours	No
Flat 27				
Custom Floor				
Windows 118 to 120 Window 121	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	1.8 hours 1.8 hours	Yes

Room	Room Use	Target Sunlight Exposure	Actual Sunlight Exposure	At least one habitable room in dwelling meets Target Sunlight Exposure
Flat 1				
Ground Floor				
Window 1 Window 2	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	7.2 hours 6.8 hours	Yes
Flat 2				
Ground Floor				
Window 3 Window 4	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	7.2 hours 6.7 hours	Yes
Flat 3				
Ground Floor				
Windows 5 to 8 Window 9 Window 10	Living/Dining/Kitchen Bedroom Bedroom	1.5 hours 1.5 hours 1.5 hours	3.4 hours 0.2 hours 0.2 hours	Yes
Flat 4				
First Floor				
Windows 11 to 13 Window 14	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	6.2 hours 3 hours	Yes
Flat 5				
First Floor				
Windows 15 to 17 Window 18	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	6.3 hours 3 hours	Yes
Flat 6				
First Floor				
Windows 19 to 21 Window 22	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	7.2 hours 4.3 hours	Yes

Room	Room Use	Target Sunlight Exposure	Actual Sunlight Exposure	At least one habitable room in dwelling meets Target Sunlight Exposure
Flat 7				
First Floor				
Windows 23 to 26 Window 27 Window 28 Window 29	Living/Dining/Kitchen Bedroom Bedroom Bedroom	1.5 hours 1.5 hours 1.5 hours 1.5 hours	6.9 hours 0 hours 0 hours	Yes
Flat 8				
First Floor				
Window 30 Window 31 Windows 32 to 34	Bedroom Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours 1.5 hours	0 hours 0 hours 1.4 hours	No
Flat 9				
First Floor				
Window 35 Windows 36 to 39 Window 40	Bedroom Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours 1.5 hours	0 hours 1.5 hours 1.6 hours	Yes
Flat 10				
Second Floor				
Windows 41 to 43 Window 44	Living/Dining/Kitchen Bedroom	1.5 hours	6.3 hours 3 hours	Yes
Flat 11				
Custom Floor				
Windows 45 to 47 Window 48	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	6.3 hours 3 hours	Yes
Flat 12				
Second Floor				
Windows 49 to 51 Window 52	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	7.4 hours 4.3 hours	Yes

Room	Room Use	Target Sunlight Exposure	Actual Sunlight Exposure	At least one habitable room in dwelling meets Target Sunlight Exposure
Flat 13				
Second Floor				
Windows 53 to 56 Window 57 Window 58 Window 59	Living/Dining/Kitchen Bedroom Bedroom Bedroom	1.5 hours 1.5 hours 1.5 hours 1.5 hours	6.9 hours 0 hours 0 hours	Yes
Flat 14				
Custom Floor				
Window 60 Window 61 Windows 62 to 64	Bedroom Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours 1.5 hours	0 hours 0 hours 1.6 hours	Yes
Flat 15				
Second Floor				
Window 65 Windows 66 to 69 Window 70	Bedroom Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours 1.5 hours	0 hours 2 hours 3.3 hours	Yes
Flat 16				
Third Floor				
Windows 71 to 73 Window 74	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	6.3 hours 3 hours	Yes
Flat 17				
Third Floor				
Windows 75 to 77 Window 78	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	6.3 hours 3 hours	Yes
Flat 18				
Third Floor				
Windows 79 to 81 Window 82	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	7.4 hours 4.3 hours	Yes

Room	Room Use	Target Sunlight Exposure	Actual Sunlight Exposure	At least one habitable room in dwelling meets Target Sunlight Exposure
Flat 19				
Third Floor				
Windows 83 to 86 Window 87 Window 88 Window 89	Living/Dining/Kitchen Bedroom Bedroom Bedroom	1.5 hours 1.5 hours 1.5 hours 1.5 hours	7.2 hours 0 hours 0 hours 0 hours	Yes
Flat 20				
Third Floor Window 90 Window 91 Windows 92 to 94	Bedroom Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours 1.5 hours	0 hours 0 hours 2 hours	Yes
Flat 21				
Third Floor				
Window 95 Windows 96 to 99 Window 100	Bedroom Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours 1.5 hours	0 hours 3.1 hours 3.3 hours	Yes
Flat 22				
Fourth Floor				
Window 101 Window 102	Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours	3.9 hours	Yes
Flat 23				
Custom Floor				
Window 103 Window 104	Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours	3.9 hours	Yes

Room	Room Use	Target Sunlight Exposure	Actual Sunlight Exposure	At least one habitable room in dwelling meets Target Sunlight Exposure
Flat 24				
Fourth Floor				
Windows 105 Windows 106 to 108	Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours	3.9 hours 5.7 hours	Yes
Flat 25				
Custom Floor				
Windows 109 & 110 Windows 111 & 112 Window 113	Living/Dining/Kitchen Bedroom Bedroom	1.5 hours 1.5 hours 1.5 hours	2.7 hours 0 hours 0 hours	Yes
Flat 26				
Fourth Floor				
Windows 114 & 115 Windows 116 & 117	Bedroom Living/Dining/Kitchen	1.5 hours 1.5 hours	0 hours 0.8 hours	No
Flat 27				
Custom Floor				
Windows 118 to 120 Window 121	Living/Dining/Kitchen Bedroom	1.5 hours 1.5 hours	1.8 hours 1.8 hours	Yes



Appendix 4 - Overshadowing to Gardens and Open Spaces Sheldon House, Cromwell Road, Teddington TW11 9EJ

Reference	Total Area	Area receiving at least 2 hours of sunligh on 21 March	
Sheldon House			
Ground Floor			
Garden 1	591.67 m2	583.5 m2	99%
Garden 2	271.85 m2	226.93 m2	83%

