RIGHT OF LIGHT CONSULTING
Chartered Surveyors

Daylight and Sunlight Report

(Within Development)

22 September 2022

Lupus House
11 to 13 Macklin Street
Strand
London
WC2B 5NE

RICS
Regulated by RICS

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

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APPENDICES

1 EXECUTIVE SUMMARY

1.1 Overview

1.1.1 Right of Light Consulting has been commissioned by Aviv Riverview Ltd to undertake a daylight and sunlight assessment in connection with the development at Lupus House, 11 to 13 Macklin Street, Strand, London WC2B 5NE. 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 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.

1.1.4 The numerical results demonstrate that the majority of the proposed rooms meet or surpass the BRE recommendations. Whilst a number do not meet the recommendations, the results are not unusual in the context of an urban location. The BRE guide explains that the numerical guidelines should be interpreted flexibly, since natural lighting is only one of many factors in site layout design. The local authority should therefore balance daylight and sunlight considerations against all other material planning considerations when deciding whether to grant planning permission.

2 INFORMATION SOURCES

2.1 Documents Considered

2.1.1 This report is based on the following drawings:

Apt

A_PL_P_100	Level 00 General Arrangement - Proposed	Rev 04
A_PL_P_101	Mezzanine Level General Arrangement - Proposed	Rev 04
A_PL_P_102	Level 01 General Arrangement - Proposed	Rev 04
A_PL_P_103	Level 02 General Arrangement - Proposed	Rev 04
A_PL_P_104	Level 03 General Arrangement - Proposed	Rev 04
A_PL_P_105	Level 04 General Arrangement - Proposed	Rev 04
A_PL_P_106	Level 05 General Arrangement - Proposed	Rev 04
A_PL_P_107	Roof Level General Arrangement - Proposed	Rev 04
A_PL_P_200	Section AA General Arrangement - Proposed	Rev 03
A_PL_P_201	Section BB General Arrangement - Proposed	Rev 04
A_PL_P_202	Section CC General Arrangement - Proposed	Rev 03
A_PL_P_203	Section DD General Arrangement - Proposed	Rev 03
A_PL_P_300	Elevation - West - Proposed General Arrangement - Proposed	Rev 03
A_PL_P_301	Elevation - East - Proposed General Arrangement - Proposed	Rev 03
A_PL_P_302	Context Section and Elevation - General Arrangement - Proposed	Rev 02

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 guide states that local authorities could use discretion here. 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 sets out the percentage of the reference plane that meets the relevant lux target for the given room use. 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. By example, a 0.6 reflectance means that 60% of the light hitting the surface will be reflected. For the purpose of this assessment, we have assumed the following reflectances:

Surface	**Reflectance**
Interior walls	0.84
Window reveals	0.7
Ceilings	0.94
Floors	0.61
Exterior walls and obstructions	0.2
Exterior ground	0.2
Exterior glazing	0.064

3.4.8 We have assumed that each window is double-glazed and has a glazed area that equates to 80% of the structural opening size. A diffuse glazing transmittance value, inclusive of a maintenance factor to allow for the effect of dirt on the glazing, of 0.66 has been used.

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.

4 RESULTS OF THE ASSESSMENT

4.1 Windows Analysed

4.1.1 Appendix 1 identifies the windows serving habitable rooms analysed in this assessment.

4.2 Interior Daylighting

4.2.1 Daylight provision data and contours for the habitable rooms are presented in Appendix 2.

4.2.2 The results confirm that around 59% of all habitable rooms tested meet or surpass the BRE minimum illuminance recommendations (i.e. 19 of the total 32 rooms surpass their Daylight Factor targets). This is a 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, 11 of the 14 units have at least one habitable room window which faces within 90 degrees of due south. 7 units have a living room window which faces within 90 degrees of due south. 5 of the 14 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 Conclusion

4.4.1 The numerical results demonstrate that the majority of the proposed rooms meet or surpass the BRE recommendations. Whilst a number do not meet the recommendations, the results are not unusual in the context of an urban location. The BRE guide explains that the numerical guidelines should be interpreted flexibly, since natural lighting is only one of many factors in site layout design. The local authority should therefore balance daylight and sunlight considerations against all other material planning considerations when deciding whether to grant planning permission.

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 and sunlight of the proposed development as set out in section 2.1 and 3.1 of the BRE guide.

5.1.3 The assessment is based on the information listed in section 2 of this report and a site visit undertaken on 20 September 2019.

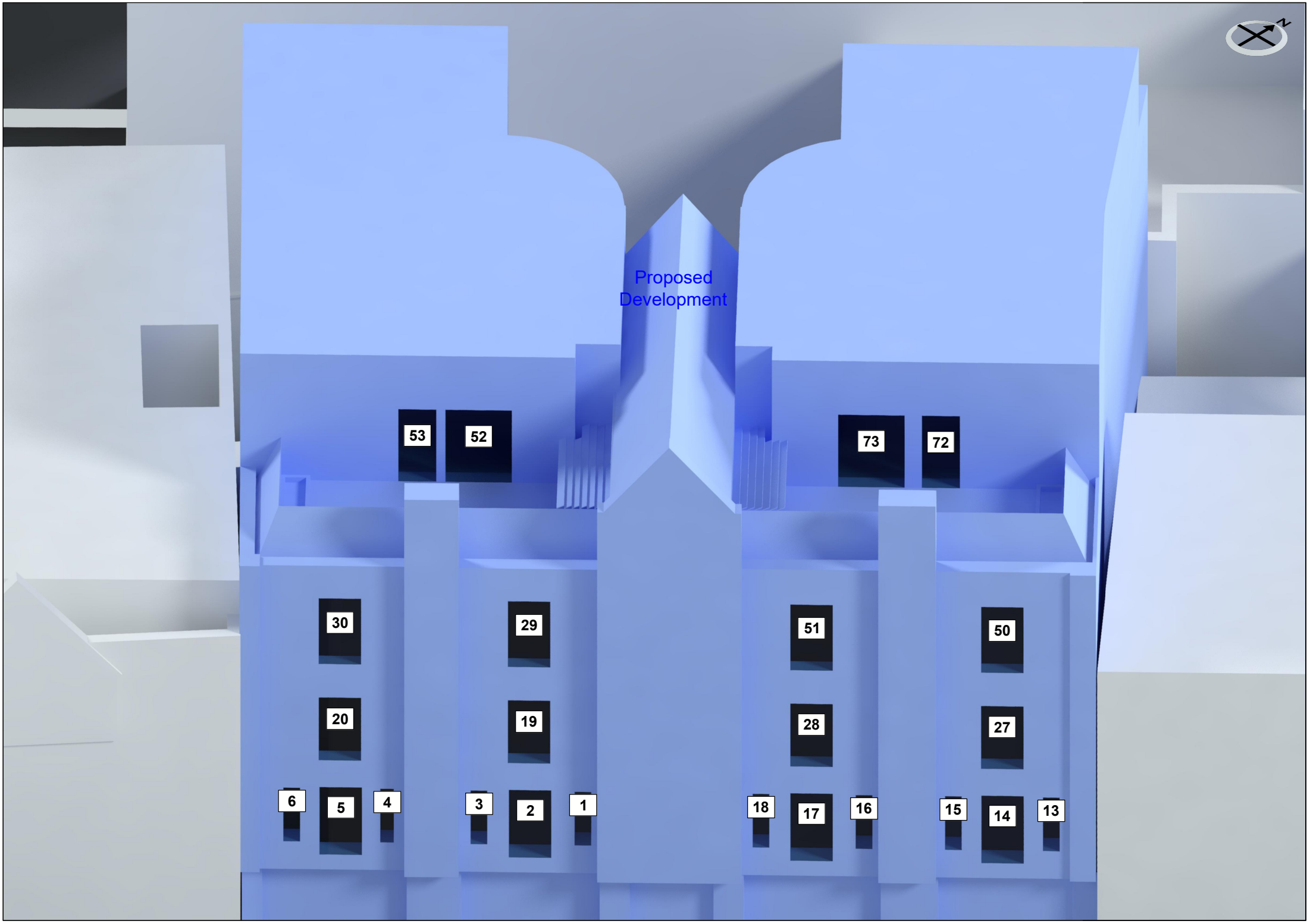
5.1.4 We have undertaken the survey following the guidelines of the RICS publication “Surveying Safely”. Where limited access is available, assumptions will have been made.

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.

APPENDICES

APPENDIX 1

WINDOW KEY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Proposed
Development
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Macklin Street


Macklin Street
Proposed
Development
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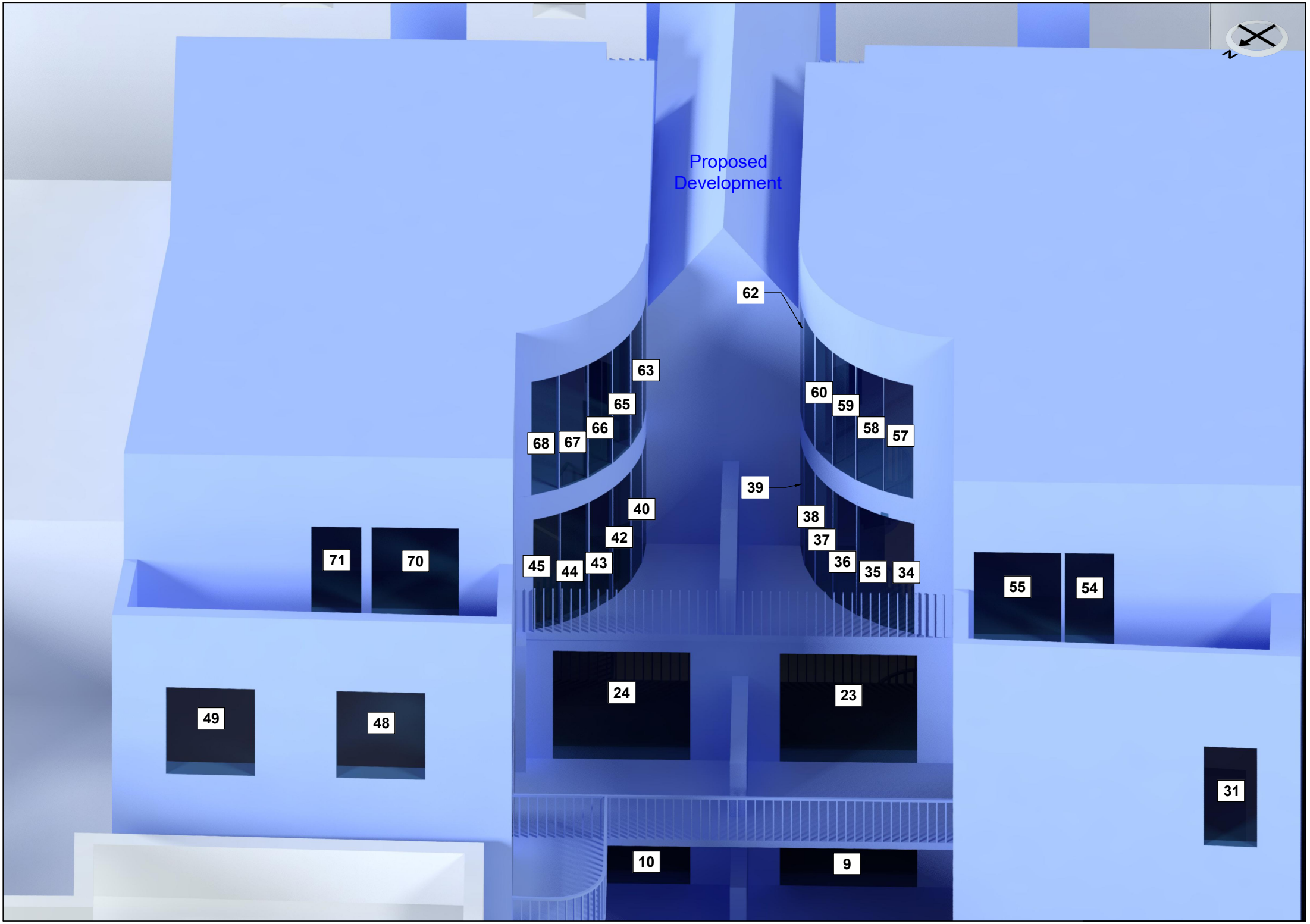
21


Proposed
Development
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APPENDIX 2

DAYLIGHT PROVISION DATA & CONTOURS

Appendix 2 - Daylight Provision

Lupus House, 11 to 13 Macklin Street, Strand, London WC2B 5NE

Reference	Room Use	Min.Target Illuminance (Lux)	Target % of Reference Plane	% of Reference Plane Achieved	Target % Achieved	Median Illuminance (Lux)
Unit 1						
Second Floor						
Windows 1 to 3	Living/Dining/Kitchen	200	50%	10%	No	54
Windows 4 to 6	Bedroom	100	50%	67%	Yes	124
Unit 2						
Second Floor						
Window 7	Bedroom	100	50%	81%	Yes	139
Window 8	Bedroom	100	50%	4%	No	35
Window 9	Living/Dining/Kitchen	200	50%	0%	No	12
Unit 3						
Second Floor						
Window 10	Living/Dining/Kitchen	200	50%	0%	No	7
Window 11	Bedroom	100	50%	0%	No	34
Window 12	Bedroom	100	50%	19%	No	66
Unit 4						
Second Floor						
Windows 13 to 15	Bedroom	100	50%	57%	Yes	108
Windows 16 to 18	Living/Dining/Kitchen	200	50%	10%	No	55
Unit 5						
Third Floor						
Window 19	Living/Dining/Kitchen	200	50%	9%	No	56
Window 20	Bedroom	100	50%	70%	Yes	123
Unit 6						
Third Floor						
Window 21	Bedroom	100	50%	92%	Yes	205
Window 22	Bedroom	100	50%	100%	Yes	203
Window 23	Living/Dining/Kitchen	200	50%	17%	No	77

Appendix 2 - Daylight Provision

Lupus House, 11 to 13 Macklin Street, Strand, London WC2B 5NE

Reference	Room Use	Min.Target Illuminance (Lux)	Target % of Reference Plane	% of Reference Plane Achieved	Target % Achieved	Median Illuminance (Lux)
Unit 7						
Third Floor						
Window 24	Living/Dining/Kitchen	200	50%	14%	No	57
Window 25	Bedroom	100	50%	100%	Yes	182
Window 26	Bedroom	100	50%	99%	Yes	207
Unit 8						
Third Floor						
Window 27	Bedroom	100	50%	72%	Yes	122
Window 28	Living/Dining/Kitchen	200	50%	10%	No	63
Unit 9						
Fourth Floor						
Window 29	Living/Dining/Kitchen	200	50%	11%	No	74
Window 30	Bedroom	100	50%	98%	Yes	173
Unit 10						
Fourth Floor						
Windows 31 to 39	Living/Dining/Kitchen	200	50%	70%	Yes	269
Unit 11						
Fourth Floor						
Windows 40 to 49	Living/Dining/Kitchen	200	50%	87%	Yes	338
Unit 12						
Fourth Floor						
Window 50	Bedroom	100	50%	98%	Yes	190
Window 51	Living/Dining/Kitchen	200	50%	12%	No	75

Appendix 2 - Daylight Provision

Lupus House, 11 to 13 Macklin Street, Strand, London WC2B 5NE

Reference	Room Use	Min.Target Illuminance (Lux)	Target % of Reference Plane	% of Reference Plane Achieved	Target % Achieved	Median Illuminance (Lux)
Unit 13						
Fifth Floor						
Windows 52 & 53	Bedroom	100	50%	100%	Yes	390
Windows 54 to 56	Bedroom	100	50%	100%	Yes	357
Windows 57 to 62	Bedroom	100	50%	100%	Yes	481
Unit 14						
Fifth Floor						
Windows 63 to 68	Bedroom	100	50%	100%	Yes	605
Windows 69 to 71	Bedroom	100	50%	100%	Yes	387
Windows 72 & 73	Bedroom	100	50%	100%	Yes	428

Proposed Second Floor

Daylight Provision Contours

Key:

- Area above target lux threshold
- Area below target lux threshold
- Window reference

Drawing Title:	Daylight Provision Contours
Scale:	Do not scale
Drawing No:	1 of 4
Rev.	-

Rev	Date	Details of revision

RIGHT OF LIGHT CONSULTING
Chartered Surveyors

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

Proposed Third Floor

Daylight Provision Contours

Key:

- Area above target lux threshold
- Area below target lux threshold
- Window reference

Drawing Title:	Daylight Provision Contours
Scale:	Do not scale
Drawing No:	2 of 4
Rev.	-

Rev	Date	Details of revision

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WEBSITE www.right-of-light.co.uk

Proposed Fourth Floor

Daylight Provision Contours

Key:

- Area above target lux threshold
- Area below target lux threshold
- Window reference

Drawing Title: Daylight Provision Contours

Scale: Do not scale

Drawing No: 3 of 4 | Rev. -

Rev	Date	Details of revision

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E-MAIL enquiries@right-of-light.co.uk
WEBSITE www.right-of-light.co.uk

Proposed Fifth Floor

Daylight Provision Contours

Key:

- Area above target lux threshold
- Area below target lux threshold
- Window reference

Drawing Title:	Daylight Provision Contours
Scale:	Do not scale
Drawing No:	4 of 4
Rev.	-

Rev	Date	Details of revision

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APPENDIX 3

EXPOSURE TO SUNLIGHT DATA

Appendix 3 - Exposure To Sunlight

Lupus House, 11 to 13 Macklin Street, Strand, London WC2B 5NE

Room	Room Use	Target Sunlight Exposure	Actual Sunlight Exposure	At least one habitable room in dwelling meets Target Sunlight Exposure
Unit 1				
Second Floor				
Windows 1 to 3	Living/Dining/Kitchen	1.5 hours	0.8 hours	Yes
Windows 4 to 6	Bedroom	1.5 hours	1.5 hours	
Unit 2				
Second Floor				
Window 7	Bedroom	1.5 hours	0 hours	No
Window 8	Bedroom	1.5 hours	0 hours	
Window 9	Living/Dining/Kitchen	1.5 hours	0 hours	
Unit 3				
Second Floor				
Window 10	Living/Dining/Kitchen	1.5 hours	0 hours	No
Window 11	Bedroom	1.5 hours	0 hours	
Window 12	Bedroom	1.5 hours	0.8 hours	
Unit 4				
Second Floor				
Windows 13 to 15	Bedroom	1.5 hours	1.4 hours	No
Windows 16 to 18	Living/Dining/Kitchen	1.5 hours	1.3 hours	
Unit 5				
Third Floor				
Window 19	Living/Dining/Kitchen	1.5 hours	1.9 hours	Yes
Window 20	Bedroom	1.5 hours	1.7 hours	
Unit 6				
Third Floor				
Window 21	Bedroom	1.5 hours	0 hours	No
Window 22	Bedroom	1.5 hours	0 hours	
Window 23	Living/Dining/Kitchen	1.5 hours	0 hours	

Appendix 3 - Exposure To Sunlight

Lupus House, 11 to 13 Macklin Street, Strand, London WC2B 5NE

Room	Room Use	Target Sunlight Exposure	Actual Sunlight Exposure	At least one habitable room in dwelling meets Target Sunlight Exposure
Unit 7				
Third Floor				
Window 24	Living/Dining/Kitchen	1.5 hours	0 hours	No
Window 25	Bedroom	1.5 hours	0 hours	
Window 26	Bedroom	1.5 hours	0.8 hours	
Unit 8				
Third Floor				
Window 27	Bedroom	1.5 hours	2.8 hours	Yes
Window 28	Living/Dining/Kitchen	1.5 hours	2.7 hours	
Unit 9				
Fourth Floor				
Window 29	Living/Dining/Kitchen	1.5 hours	3.5 hours	Yes
Window 30	Bedroom	1.5 hours	3.1 hours	
Unit 10				
Fourth Floor				
Windows 31 to 39	Living/Dining/Kitchen	1.5 hours	0.5 hours	No
Unit 11				
Fourth Floor				
Windows 40 to 49	Living/Dining/Kitchen	1.5 hours	2.6 hours	Yes
Unit 12				
Fourth Floor				
Window 50	Bedroom	1.5 hours	4.7 hours	Yes
Window 51	Living/Dining/Kitchen	1.5 hours	4.3 hours	
Unit 13				
Fifth Floor				
Windows 52 & 53	Bedroom	1.5 hours	4.8 hours	

Appendix 3 - Exposure To Sunlight

Lupus House, 11 to 13 Macklin Street, Strand, London WC2B 5NE

Room	Room Use	Target Sunlight Exposure	Actual Sunlight Exposure	At least one habitable room in dwelling meets Target Sunlight Exposure
Windows 54 to 56	Bedroom	1.5 hours	0 hours	Yes
Windows 57 to 62	Bedroom	1.5 hours	0 hours	
Unit 14				
Fifth Floor				
Windows 63 to 68	Bedroom	1.5 hours	0.1 hours	
Windows 69 to 71	Bedroom	1.5 hours	4.8 hours	Yes
Windows 72 & 73	Bedroom	1.5 hours	5.1 hours	