



RIGHT OF LIGHT
CONSULTING
Chartered Surveyors

Daylight and Sunlight Report

(Within Development)

7 February 2024

35 Upper Wickham Lane
Welling
DA16 3AB

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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1 EXECUTIVE SUMMARY

1.1 Overview

- 1.1.1 Right of Light Consulting has been commissioned by Upper Wickham Limited to undertake a daylight and sunlight assessment in connection with the development at 35 Upper Wickham Lane, Welling DA16 3AB. 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 an overall high level of compliance with the BRE recommendations. Whilst there are instances where the Daylight Provision targets are not met, the results are not abnormal in the context of an urban location. The NPPF requires developments to provide acceptable living standards whilst making efficient use of land. The NPPG and BRE guide explain that acceptability is dependent on context and location. The BRE guide also 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:

T2S Architecture Ltd

127_PL1_GA_00	Proposed Ground Floor Plan	Rev C
127_PL1_GA_01	Proposed First Floor Plan	Rev C
127_PL1_GA_02	Proposed Second Floor Plan	Rev C
127_PL1_GA_03	Proposed Third Floor Plan	Rev D
127_PL1_GA_04	Proposed Roof Plan	Rev B
127_PL1_GA_05	Proposed Site Location Plan	Rev B
127_PL1_GA_06	Proposed Block Location Plan	Rev B
127_PL1_GE_01	Proposed West Elevation	Rev C
127_PL1_GE_02	Proposed East Elevation	Rev C
127_PL1_GE_03	Proposed South Elevation	Rev C
127_PL1_GE_04	Proposed North Elevation	Rev C
127_PL1_GS_01	Proposed Section A	Rev C
127_PL1_GS_02	Proposed Section B	Rev C

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 such as living rooms and bedrooms. 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 and is solely used for cooking purposes, then the accepted practice is to treat the kitchen as a non-habitable room. The BRE guide recommends that if the layout means that a small internal kitchen is inevitable, it should be directly linked to a well daylit 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 local authorities could use discretion here. The guide gives the example where 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
Ceilings	Dulux Light & Space Absolute White	0.93	0.8
Floors	Kahrs engineered wood (Ash Coral)	0.62	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.
- 3.5.3 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 All habitable rooms tested meet or surpass the BRE minimum illuminance recommendations, with the exception of 4 bedrooms. In total 19 of the 24 rooms therefore meet or surpass the recommendations. This is a high level of compliance in the context of an urban development site.

4.2.3 The results confirm that around 83% of all habitable rooms tested meet or surpass the BRE minimum illuminance recommendations (i.e. 19 out of 24 rooms). 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 All dwellings have at least one habitable room window which faces within 90 degrees of due south. All dwellings also have a habitable room which receives a total of at least 1.5 hours of sunlight on 21 March. The proposed development therefore satisfies the BRE exposure to sunlight requirements.

4.4 Conclusion

4.4.1 The numerical results demonstrate an overall high level of compliance with the BRE recommendations. Whilst there are instances where the Daylight Provision targets are not met, the results are not abnormal in the context of an urban location. The NPPF requires developments to provide acceptable living standards whilst making efficient use of land. The NPPG and BRE guide explain that acceptability is dependent on context and location. The BRE guide also 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 the 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 22 December 2023.
- 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



Upper Wickham Lane

Springfield Road

Proposed Development

19

12

4

20

21

13

14

5

22

15

6

7



Springfield Road

Proposed
Development

17

18

9

10

1

2

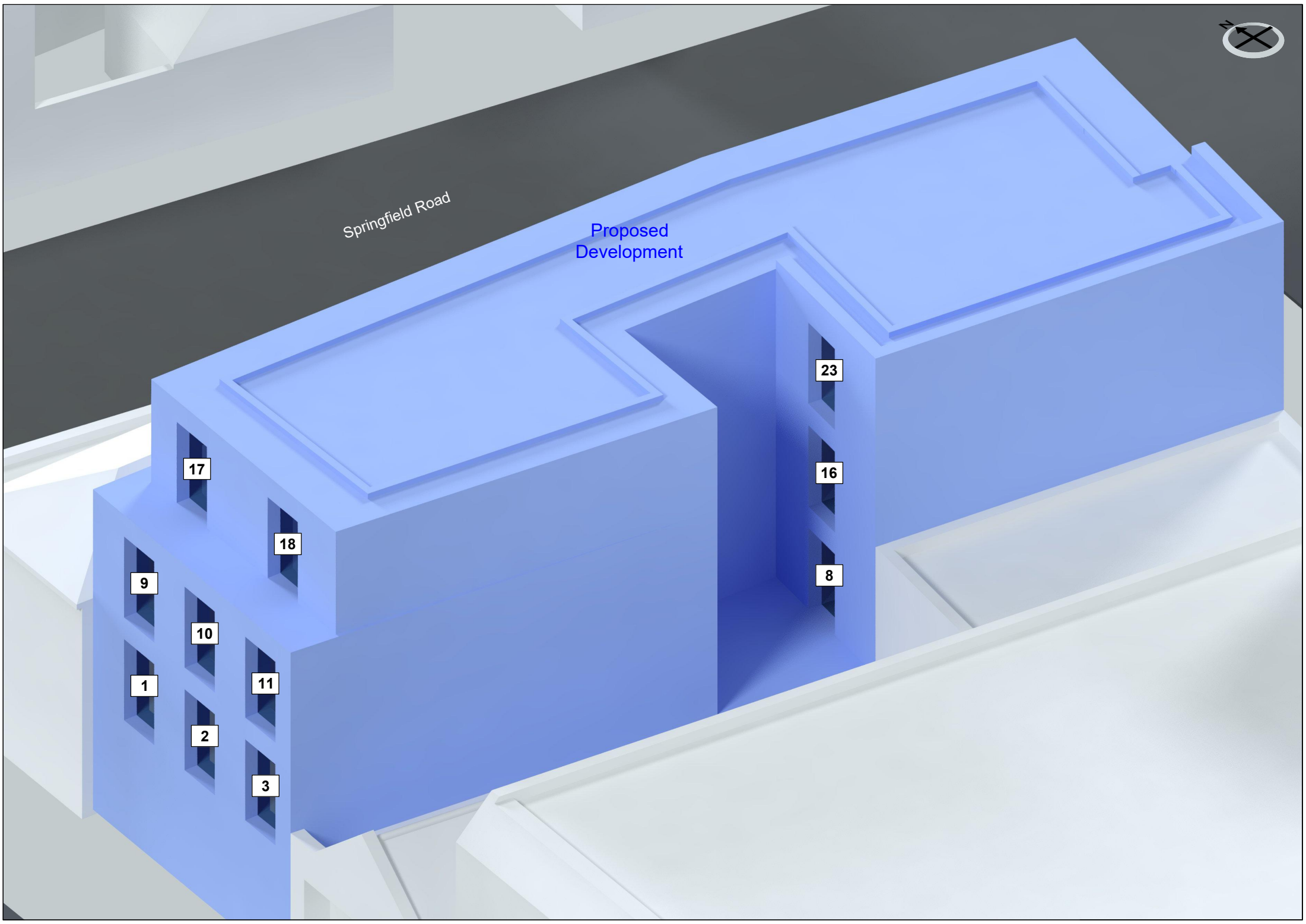
11

3

23

16

8





Proposed
Development

19

22

21

15

20

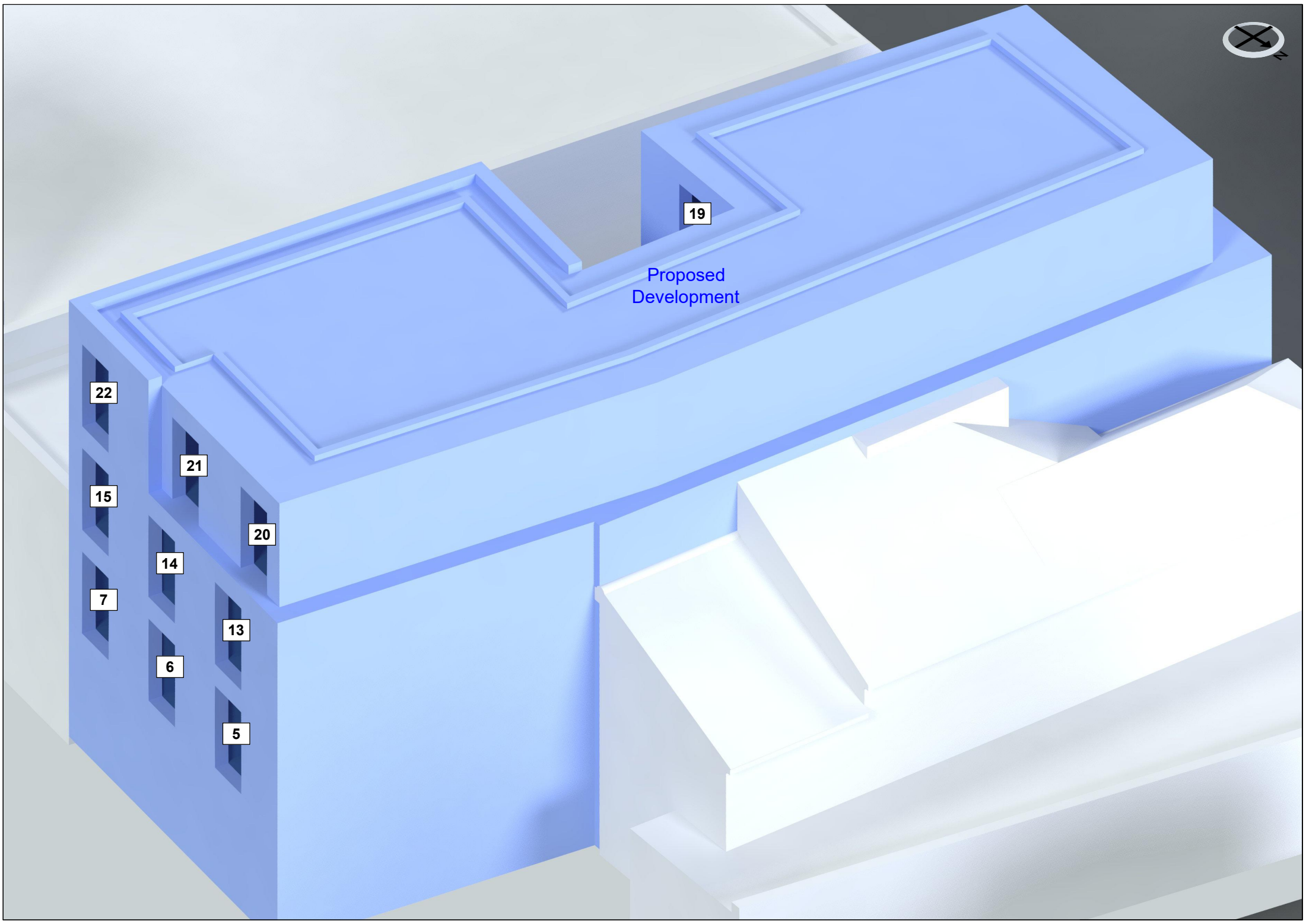
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14

13

6

5





Proposed
Development

23

18

17

11

10

9

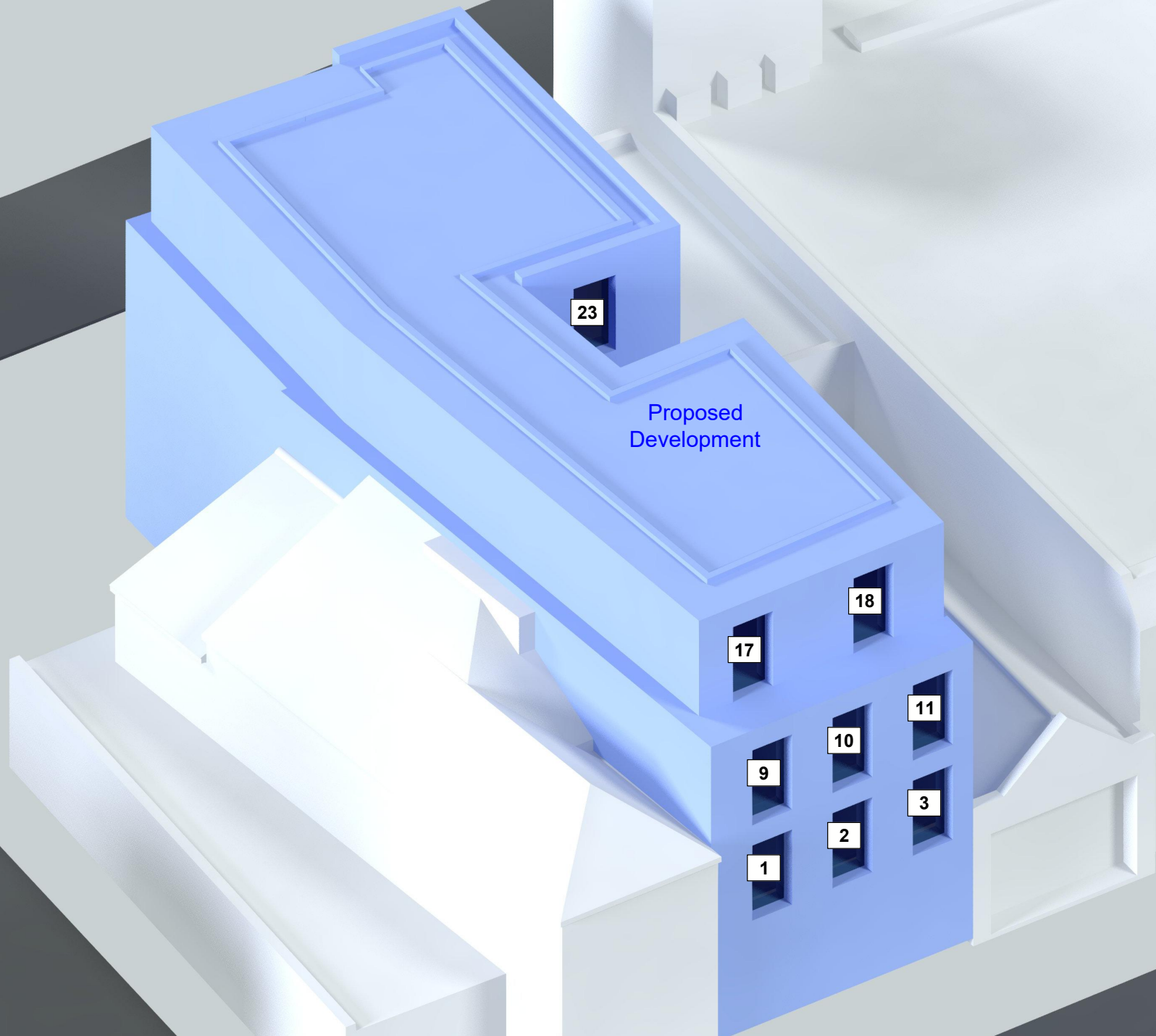
3

2

1

Springfield Road

Upper Wickham Lane



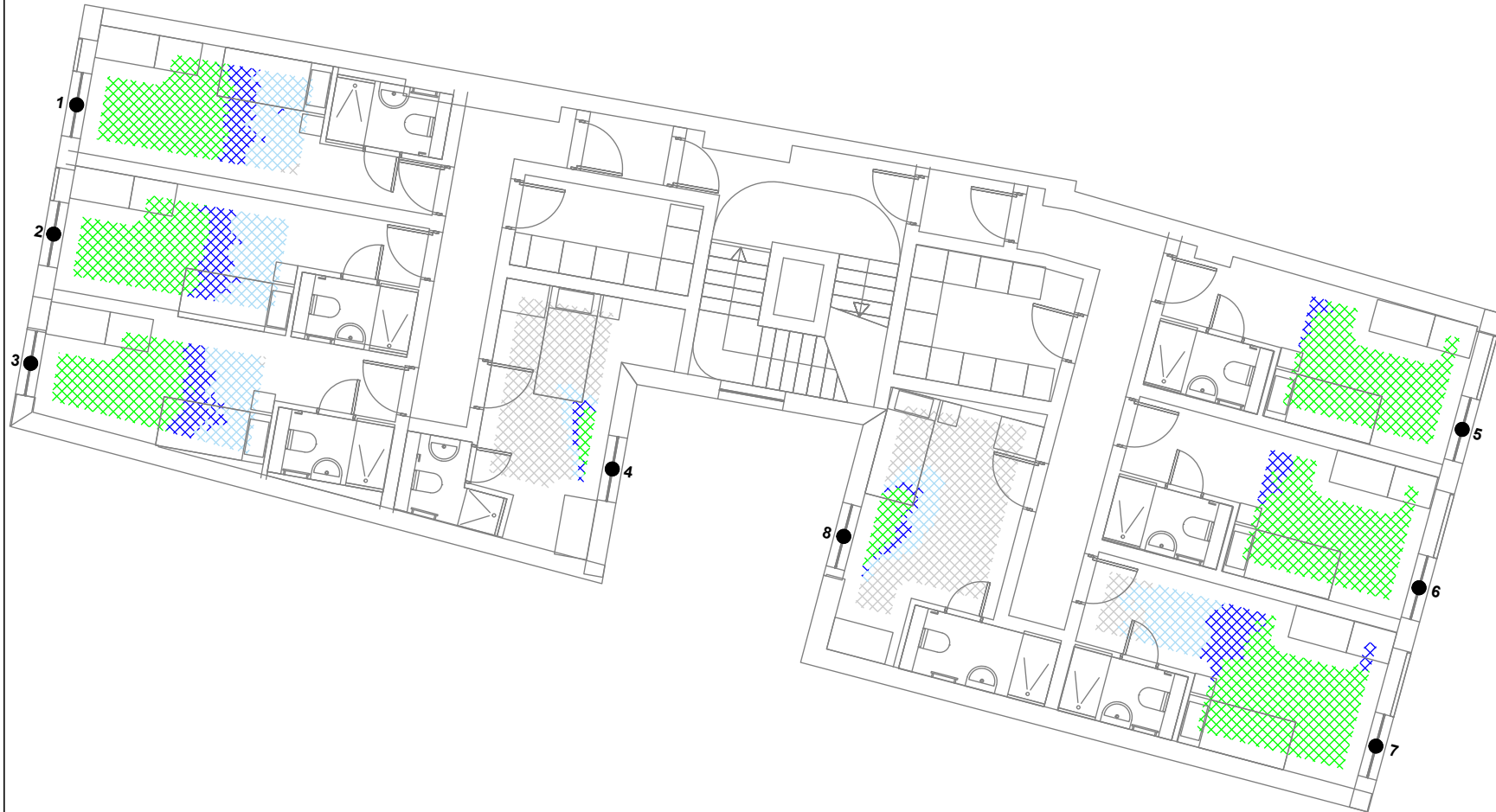
APPENDIX 2

DAYLIGHT PROVISION DATA & CONTOURS

Appendix 2 - Daylight Provision

35 Upper Wickham Lane, Welling DA16 3AB

Reference	Room Use	Min.Target Illuminance (Lux)	Target % of Reference Plane	% of Reference Plane Achieved	Target % Achieved	Median Illuminance (Lux)
<u>Unit 1.01</u>						
<u>First Floor</u>						
Window 1	Bedroom	100	50%	99%	Yes	217
Window 2	Bedroom	100	50%	100%	Yes	225
Window 3	Bedroom	100	50%	99%	Yes	216
Window 4	Bedroom	100	50%	14%	No	59
<u>Unit 1.02</u>						
<u>First Floor</u>						
Window 5	Bedroom	100	50%	100%	Yes	318
Window 6	Bedroom	100	50%	100%	Yes	305
Window 7	Bedroom	100	50%	91%	Yes	233
Window 8	Bedroom	100	50%	22%	No	66
<u>Unit 2.01</u>						
<u>Second Floor</u>						
Window 9	Bedroom	100	50%	100%	Yes	236
Window 10	Bedroom	100	50%	100%	Yes	245
Window 11	Bedroom	100	50%	100%	Yes	235
Window 12	Bedroom	100	50%	36%	No	86
<u>Unit 2.02</u>						
<u>Second Floor</u>						
Window 13	Bedroom	100	50%	100%	Yes	322
Window 14	Bedroom	100	50%	100%	Yes	314
Window 15	Bedroom	100	50%	93%	Yes	241
Window 16	Bedroom	100	50%	38%	No	87
<u>Unit 3.01</u>						
<u>Third Floor</u>						
Window 17	Bedroom	100	50%	100%	Yes	323
Window 18	Bedroom	100	50%	100%	Yes	256
Window 19	Bedroom	100	50%	92%	Yes	167
<u>Unit 3.02</u>						
<u>Third Floor</u>						
Window 20	Bedroom	100	50%	100%	Yes	333
Window 21	Bedroom	100	50%	100%	Yes	345
Window 22	Bedroom	100	50%	100%	Yes	256
Window 23	Bedroom	100	50%	97%	Yes	160



Key:

-  200 lux and above
-  150 lux to 199 lux
-  100 lux to 149 lux
-  Below 100 lux
-  Window reference

Drawing Title: Daylight Provision Contours

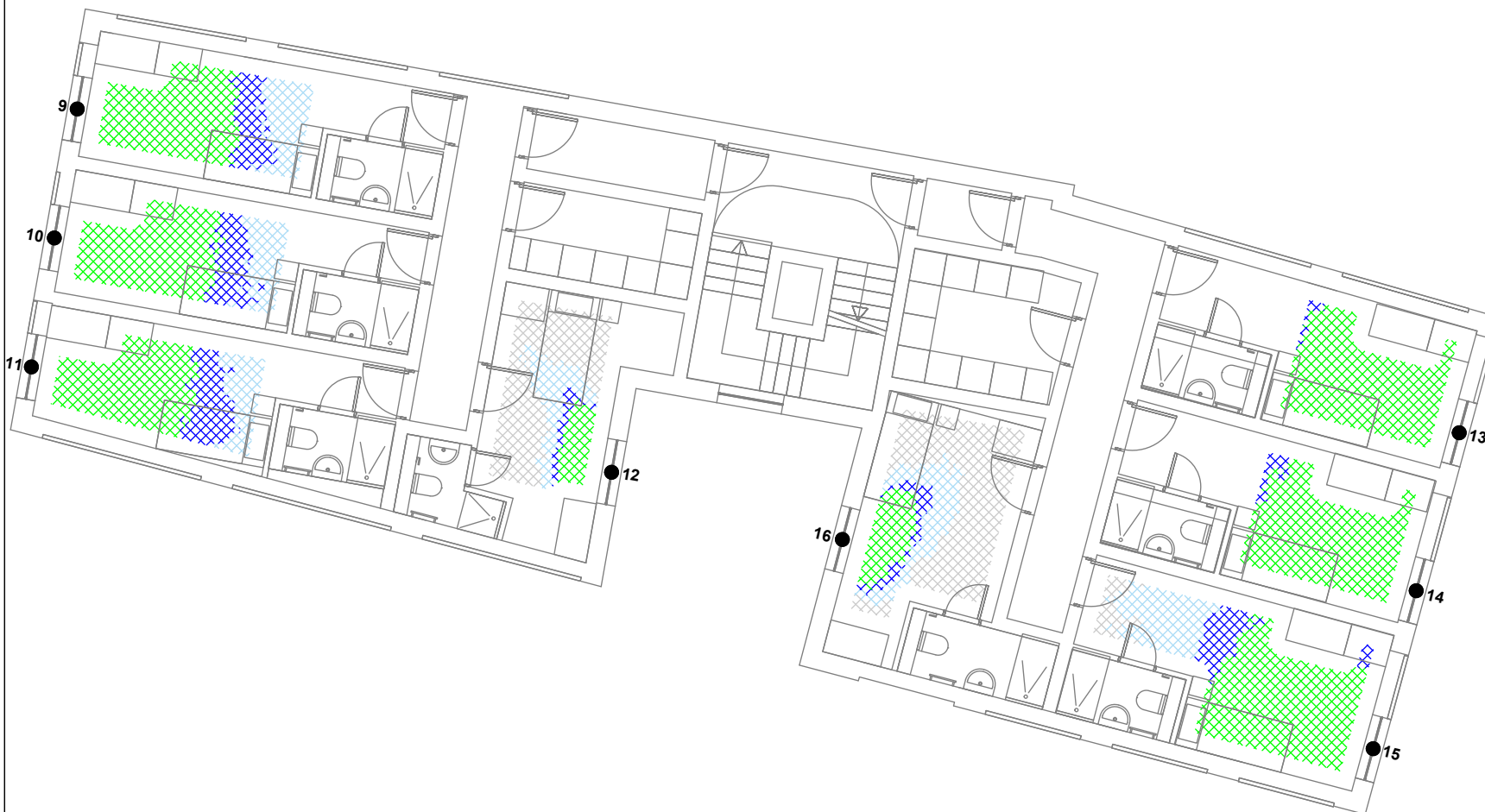
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Drawing No: 1 of 3 Rev. .

Rev	Date	Details of revision



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



Key:

-  200 lux and above
-  150 lux to 199 lux
-  100 lux to 149 lux
-  Below 100 lux
-  Window reference

Drawing Title: Daylight Provision Contours

Scale: Do not scale

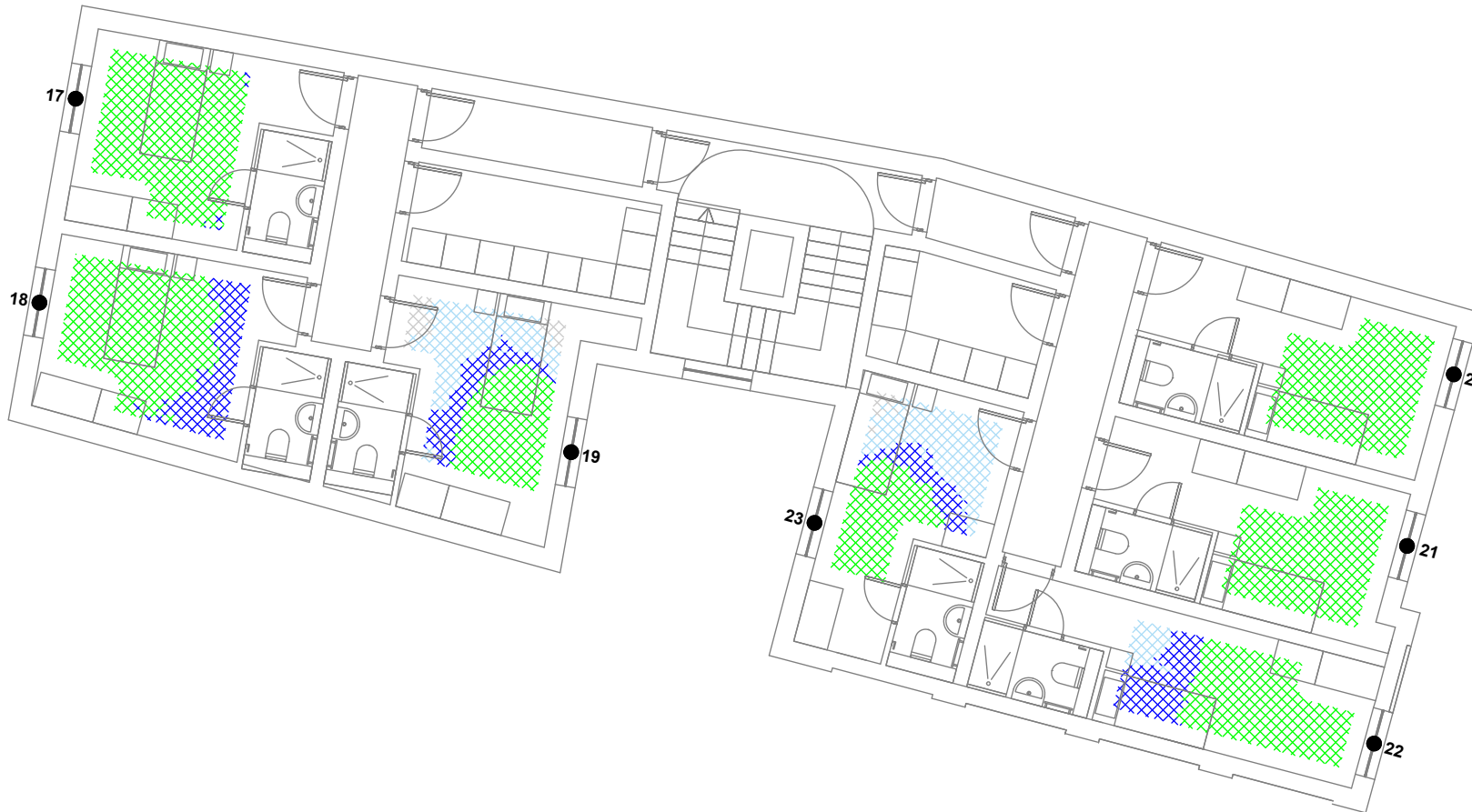
Drawing No: 2 of 3

Rev. .

Rev	Date	Details of revision



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Key:

-  200 lux and above
-  150 lux to 199 lux
-  100 lux to 149 lux
-  Below 100 lux
-  Window reference

Drawing Title: Daylight Provision Contours

Scale: Do not scale

Drawing No: 3 of 3 Rev. .

Rev	Date	Details of revision



Right of Light Consulting
 Burley House
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 Rayleigh
 Essex
 SS6 7EW
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 WEBSITE www.right-of-light.co.uk

APPENDIX 3

EXPOSURE TO SUNLIGHT DATA

Appendix 3 - Sunlight Exposure

35 Upper Wickham Lane, Welling DA16 3AB

Reference	Room Use	Target Sunlight Exposure	Sunlight Exposure Achieved	At least one room meets Sunlight Exposure Target
<u>Unit 1.01</u>				
<u>First Floor</u>				
Window 1	Bedroom	1.5 hours	2.2 hours	
Window 2	Bedroom	1.5 hours	2.2 hours	Yes
Window 3	Bedroom	1.5 hours	2.2 hours	
Window 4	Bedroom	1.5 hours	1.1 hours	
<u>Unit 1.02</u>				
<u>First Floor</u>				
Window 5	Bedroom	1.5 hours	4 hours	
Window 6	Bedroom	1.5 hours	4 hours	Yes
Window 7	Bedroom	1.5 hours	3.8 hours	
Window 8	Bedroom	1.5 hours	1 hours	
<u>Unit 2.01</u>				
<u>Second Floor</u>				
Window 9	Bedroom	1.5 hours	2.5 hours	
Window 10	Bedroom	1.5 hours	2.5 hours	Yes
Window 11	Bedroom	1.5 hours	2.5 hours	
Window 12	Bedroom	1.5 hours	1.5 hours	
<u>Unit 2.02</u>				
<u>Second Floor</u>				
Window 13	Bedroom	1.5 hours	4 hours	
Window 14	Bedroom	1.5 hours	4 hours	Yes
Window 15	Bedroom	1.5 hours	3.8 hours	
Window 16	Bedroom	1.5 hours	2.2 hours	
<u>Unit 3.01</u>				
<u>Third Floor</u>				
Window 17	Bedroom	1.5 hours	2.5 hours	
Window 18	Bedroom	1.5 hours	2.5 hours	Yes
Window 19	Bedroom	1.5 hours	1.5 hours	
<u>Unit 3.02</u>				
<u>Third Floor</u>				
Window 20	Bedroom	1.5 hours	4 hours	
Window 21	Bedroom	1.5 hours	3.8 hours	Yes
Window 22	Bedroom	1.5 hours	4 hours	
Window 23	Bedroom	1.5 hours	2.2 hours	