7th June 2022

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RE: DAYLIGHT ASSESSMENT FOR PROPOSED DEVELOPMENT ON BELGARD ROAD, DUBLIN 24.

To whom it may concern,

BPG3 has been engaged by Ravensbrook Ltd to assess the daylight levels associated with a proposed development on Belgard Road, Dublin 24. The outputs of this assessment are located within three separate daylight reports which are included with this application.

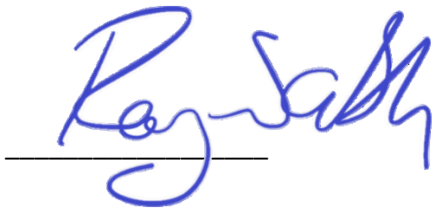
Daylight impact has been assessed with respect to the test methods detailed in the BRE (Building Research Establishment) guide *'Site layout planning for daylight and sunlight - A guide to good practice'* 2nd Edition. The results of this testing are presented in Daylight Report 1 of 3.

In accordance with the guidance provided in current ministerial guidelines, including *Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities, 2021* and *Urban Development and Building Heights – Guidelines for Planning Authorities, 2018*, daylight adequacy within the proposed development has been assessed with reference to the recommendations provided in the BRE (Building Research Establishment) guide *'Site layout planning for daylight and sunlight - A guide to good practice'* 2nd Edition and BS 8206-2: 2008 – *'Lighting for Buildings – Part 2: Code of Practice for Daylighting'*, British Standards Institute, 2008. This testing regime is reflective of the traditional testing regime which has been adopted in Ireland over the past decade. The results of this testing are presented in Daylight Report 2 of 3.

As some ambiguity exits in Ireland currently regarding the standing of BS 8206 relative to the new European Daylight Standard (*EN 17037 Daylight in Buildings*) a decision was made, in the interest of completeness, to assess daylight adequacy using a dual assessment approach. In this case BPG3 has been commissioned to repeat the assessment of daylight adequacy using the alternative testing regime detailed in Irelands implementation of the new European Standard (I.S. EN 17037); see

Daylight Report 3 of 3. While some overlap exists between Daylight Report 2 of 3 and Daylight Report 3 of 3 it is important to note that they have been drafted as stand-alone reports which are to be read independently of each other.

Yours sincerely,



Rory Walsh BEng MEngSc MScSP PhD MIPI
Principal Daylight Consultant
BPG3.

DAYLIGHT IMPACT REPORT: ASSESSMENT OF DAYLIGHT IMPACTS ASSOCIATED WITH A PROPOSED RESIDENTIAL DEVELOPMENT ON BELGARD ROAD, DUBLIN 24.

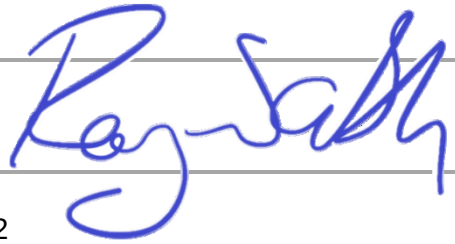
Daylight Report 1 of 3

Prepared for Ravensbrook Limited
Date: 7th June 2022
REV 03

BPG3.

Rev.	Description	Issued by	Date	Checked
Rev 01	Assessment of daylight impacts associated with a proposed residential development	RW	4th May 2022	KR
Rev 02	Minor edits	RW	25th May 2022	KR
Rev 03	Minor edits	RW	7th June 2022	KR

This report has been prepared for the sole benefit, use and information of Ravensbrook Limited for the purposes set out in the report or instructions in commissioning it. The liability of BPG3 in respect of the information contained in the report will not extend to any third party.

author	Rory Walsh
signature	
date	7th June 2022
approved	Karen Rock
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CONTENTS

Glossary

Annual Probable Sunlight Hours (APSH)	the long-term average of the total number of hours during the year in which direct sunlight reaches the unobstructed ground (when clouds are considered)
Daylight	combined sunlight and skylight
Skylight	part of solar radiation that reaches the earth's surface as a result of scattering in the atmosphere.
Sunlight	part of solar radiation that reaches the earth's surface as parallel rays after selective attenuation by the atmosphere.
Vertical Sky Component	ratio of the part of illuminance, at a point on a given vertical plane, that is received directly from a CIE (Commission Internationale De L'Eclairge) standard overcast sky, to illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. The VSC does not include reflected light, either from the ground of from other buildings
Winter Probable Sunlight Hours (WPSH)	the long-term average of the total number of hours between the 21st of September and the 21st of March in which direct sunlight reaches the unobstructed ground (when clouds are considered)

Introduction

BPG3 have been engaged by Ravensbrook Limited to assess the daylight levels associated with a proposed residential development at Belgard Square East, Belgard Road, Dublin 24.

The proposal relates to the construction of a mixed-use development including 318 no. "Build-to-Rent" residential apartments and commercial use (c. 2,206 sqm) on a c. 1.25 ha site at Belgard Square East, Belgard Road and Blessington Road, Tallaght, Dublin 24.

This assessment has been carried out in accordance with the methods presented in the guide *'Site layout planning for daylight and sunlight – A guide to good practice'* 2nd Edition, published by the Building Research Establishment (BRE) in 2011. The assessment responds to point 5 of the opinion received from An Bord Pleanála:

> *"Relevant reports/drawings etc that considers the impact of the proposed development on the development potential of neighbouring sites and consideration of any potential impacts of adjacent development on the amenity of future occupiers of this proposed development."*

The assessment investigates the degree to which the proposed development would impact on the levels of daylight available to neighbouring properties. The assessment of light levels within the proposed development is presented in separate reports; see Daylight Report 2 of 3 and Daylight Report 3 of 3.

A total of three separate daylight studies are presented in this report. These studies include:

Study A: Assessment of skylight access levels available to neighbouring accommodation: An assessment of the extent to which the proposed development could impact on the skylight access levels available to the accommodation located in neighbouring properties.

Study B: Assessment of sunlight access levels available to neighbouring accommodation: An assessment of the extent to which the proposed development could impact on the levels of sunlight access available to accommodation in neighbouring residences.

Study C: Assessment of sunlight levels available to neighbouring recreation areas: An assessment of the extent to which the proposed development would impact on the levels of sunlight access available to neighbouring outdoor recreation areas.

As recommended in the BRE guide, a quantitative approach to the assessment of daylight impacts has been adopted in this study. Numeric calculations have been carried out to predict the daylight levels which would be available at a number of test points and areas. The results of these calculations are presented in tables.

The quantitative assessment has been carried out using computational methods. Three-dimensional computer models of the existing site, the existing buildings, and the proposed development have all been generated and simulated under appropriate sky conditions.

As is customary, impacts have been assessed by comparing the levels of light which would be available in an after-development scenario to the levels which would be provided in a baseline scenario. The baseline scenario adopted in this case is illustrated in Figure 1; the after-development scenario is illustrated in Figure 2.

Information relating to the proposed development and the surrounding areas has been supplied to BPG3 by Henry J Lyons in electronic format. The study assumes that the information provided is accurate and that no omissions have been made. The particular information sources which have been used to develop the models used in this study are outlined in Appendix D: Source Material.

In accordance with guidance provided in Appendix H of the BRE guide the effect which trees have on light levels has not been considered in this impact assessment.

It is important to note that whilst the methods presented in the BRE guide provide designers and planners with a clear and objective way of assessing daylight levels, the associated performance targets are not mandatory standards. This is clarified within the introductory section of the BRE guide:

> *"The advice given here is not mandatory and this document 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 because natural lighting is only one of many factors in site layout design."*

While it is accepted that advisory targets should always be aspired to, the associated imperatives which exist to create sustainable levels of urban density, to encourage the development of compact urban form and to make best use of scarce urban land will always place restrictions on the degree to which it is appropriate to pursue full conformity with advisory minimums.

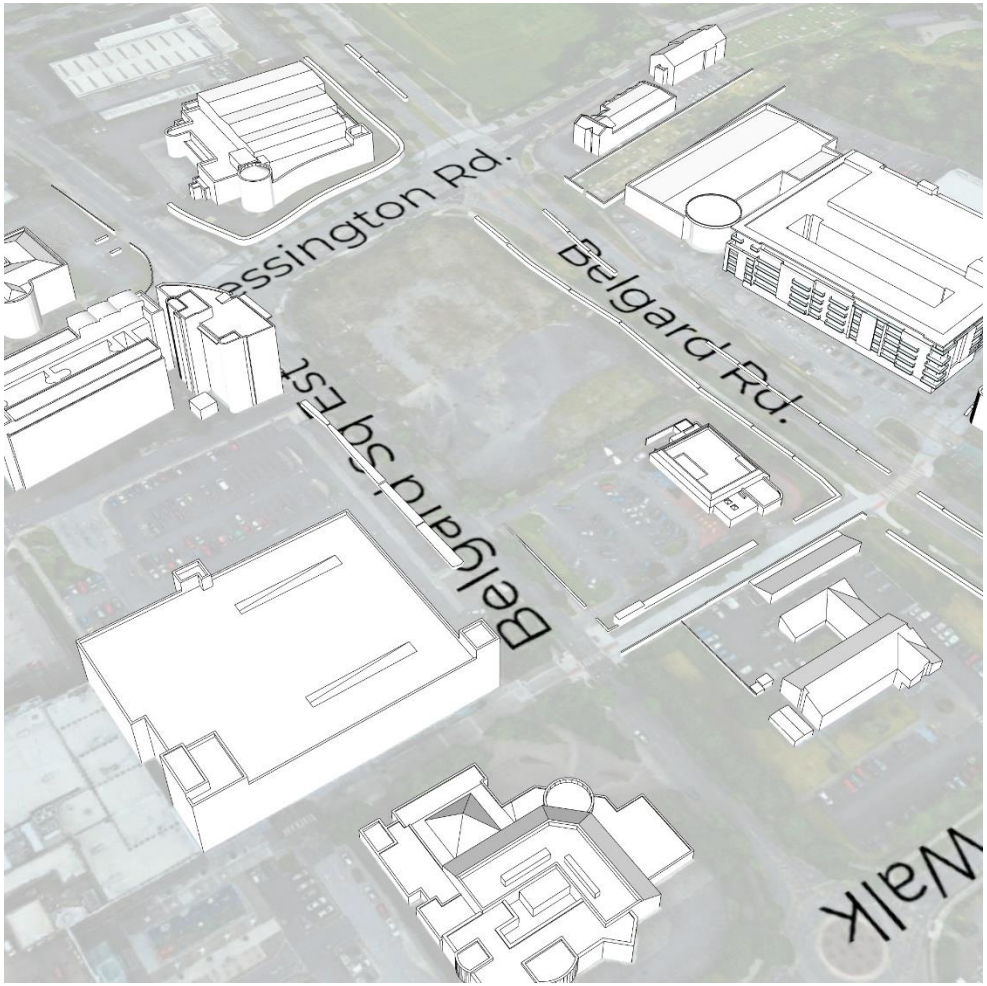


Figure 1 Image depicting the baseline scenario adopted in all impact assessments

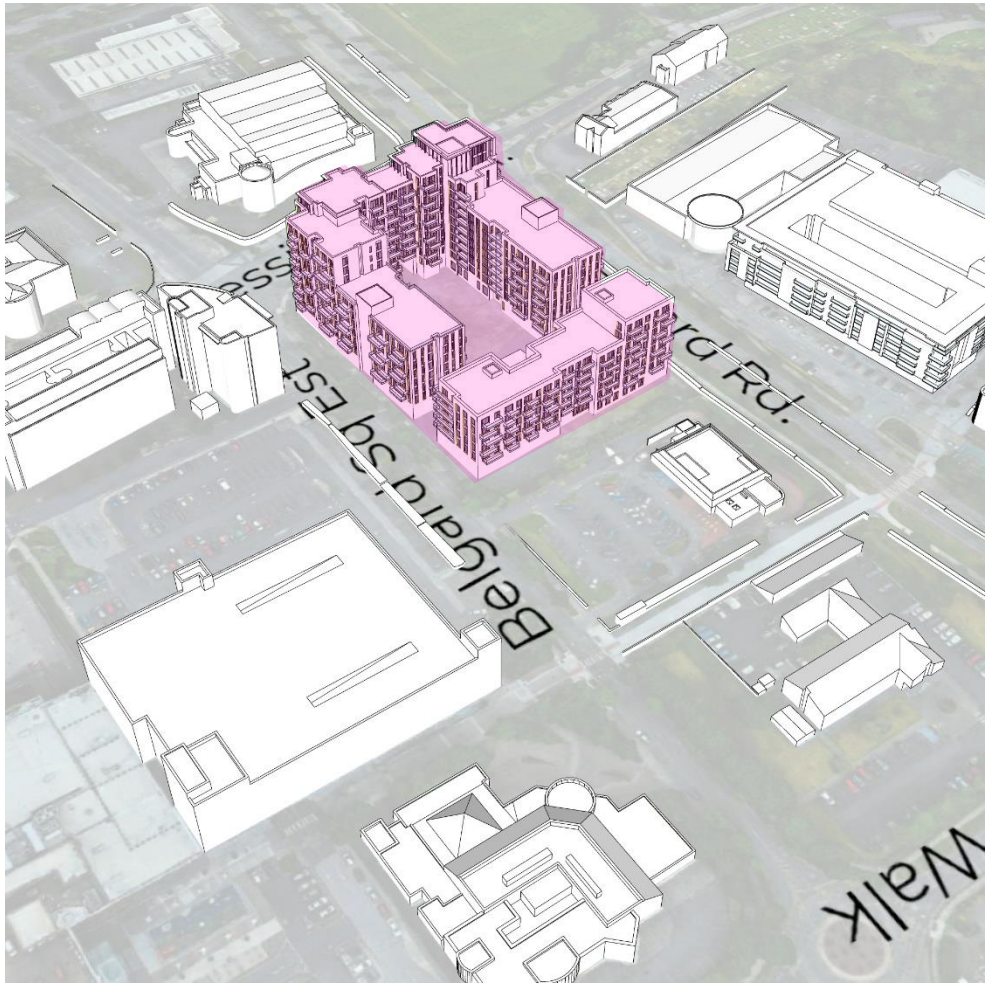


Figure 2 Image depicting the after-development scenario adopted in all impact assessments (proposed development highlighted in pink).

In instances where it can be shown that reasonable levels of daylight would be retained, or in instances where the impacts registering are determined to be of reduced significance, it is BPG3's view that a justifiable basis, for accepting light levels which fall below advisory minimums, will have been established. It is on this basis that both a primary assessment (as ascertained with reference to conventional testing) and secondary assessments (based on a professional opinion/interpretation which is informed by wider considerations) have been provided within this report. BPG3 recommends that the merits of the secondary assessments should only be considered having first considered the findings of the primary assessments. A deeper consideration of primary and secondary assessments is provided in Appendix C: Primary / Secondary Assessments.

The framework which BPG3 adopts to determine the significance of impacts is presented in Appendix E: Conventions used to Assess the Significance of Impacts. Where significant impacts are identified these impacts should also be deemed acceptable in instances where wider planning objectives or compensatory design measures countervail. Guidance regarding the discretion which is available to consent authorities on this matter is provided in Appendix B: Discretion available to consent authorities.

Study A: Assessment of skylight levels available to neighbouring accommodation

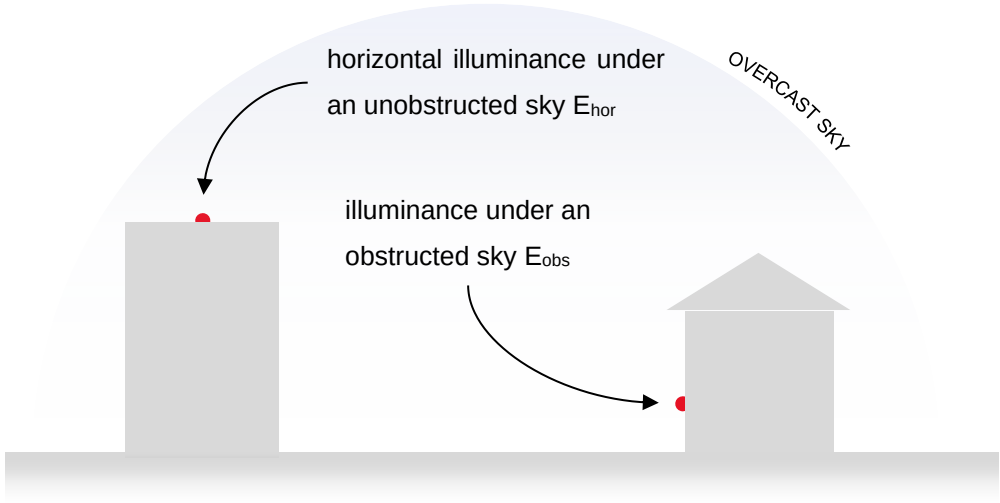
Study A: Assessment Overview

This assessment considers the degree to which the proposed development would affect the levels of diffuse skylight which would be available to neighbouring accommodation.

As recommended in national planning guidance[1] the assessment is carried out in the first instance with regard to the conventional tests recommended in the BRE guide *'Site layout planning for daylight and sunlight – A guide to good practice'* 2nd Edition.

According to the BRE guide, the potential for good daylighting can be assessed with respect to a measure called the Vertical Sky Component (VSC). In circumstances where a proposed development blocks a significant amount of the sky that can be seen from a neighbouring window the proposed development could potentially have a negative effect on the level of daylight that a neighbouring property receives. In order to investigate this possibility, the VSC is calculated and assessed.

The Vertical Sky Component is described as *the ratio of the direct sky illuminance falling on the vertical wall at a reference point, to the simultaneous horizontal illuminance under an unobstructed sky;* see below. When calculating VSC the sky is assumed to be a CIE standard overcast sky and reflected light from the ground or neighbouring obstructions is not accounted for.



$$VSC = \frac{E_{obs}}{E_{hor}} \times 100\%$$ equation 1.

[1] See Appendix A: Policy Basis for Daylight Standards

VSC is tested at a point which is taken to be positioned in the middle of the window being analysed and located on the same plane as the external surface of the attendant wall.

The BRE recommends that the potential for good daylighting exists where a Vertical Sky Component of 27% or higher is available to the windows serving habitable accommodation. In instances where impact on neighbouring properties is being assessed the BRE provide the following recommendation:

> '*If the vertical sky component, with the new development in place, is both less than 27% and 0.8 times its former value, then the occupants of the existing building will notice a reduction in the amount of skylight.'*

In certain circumstances, where the BRE's standard test procedures are thought to be providing unreliable guidance[2], supplementary testing is carried out to more thoroughly investigate the significance of any departures which have been identified.

In the circumstances of this project the assessment has been extended to include a consideration of the skylight access which would be available to accommodation located within future development on neighbouring sites.

Study A: Assessment Points

A careful appraisal of the neighbouring environment identifies a number of existing properties which could potentially experience some form of altered lighting conditions as a result of the proposed development. The properties identified are located within the Abberley Square Apartment Complex to the east of the proposed development.

This study has assessed the levels of skylight access available to a total of 119 windows in the immediate neighbourhood, see Appendix G: Windows Identified for Testing in Studies A & B. These windows have been selected to capture the worst-case impacts which could register on neighbouring properties.

In circumstances where a room is served by more than one window it is permissible to assess compliance with reference to the average[3] of the levels which register on individual windows. On examination, the 119 windows identified for testing are found to serve 104 rooms in neighbouring properties.

[2] See Appendix C: Primary / Secondary Assessments

[3] *Where a room is served by more than one window the BRE advise that the VSC results can be averaged in instances where the windows are the same size. A sensible extension of this approach, which can be used in instances where a room is served by windows of different sizes, is to adopt an area weighted approach in the calculation of average VSC. In instances where the windows serving a room are not all the same size the contribution which individual window results make to the overall room result has been determined with reference to the size of each individual window; this approach relies on an area weighted calculation procedure. When window areas are being determined only section of glazing located above a height of 0.85m are considered.*

Study A: Results

This study has assessed the levels of skylight access (assessed with respect to Vertical Sky Component) available to a number of properties located in the immediate vicinity of the proposed development. In order to determine the levels of impact arising skylight access levels have been calculated for both “before development” and “after development” scenarios.

The results of this study (see Table 1) indicate that compliance with BRE guidelines would be achieved in most cases. Of the 104 rooms assessed in this study 99 of them are found to retain skylight access levels which satisfy advisory minimums (proposed levels are either greater than 27% VSC or greater than 0.8 times their former value); on the basis that compliance with BRE guidelines has been demonstrated it is safe to assume that reasonable levels of skylight would remain available to these rooms with the proposed development in place.

In the small number of cases (Rooms 15, 16, 17, 19 & 39 , see 2nd column of Table 1) where it has not been possible to demonstrate full compliance with BRE guidelines it is BPG3’s view that the significance of the associated impacts falls at the lower end of the scale in all cases (see 2nd last column of Table 1). It is on this basis that these impacts are assumed to fall within tolerable bounds.

Further to this it is important to recognise that all of the rooms which fall short of advisory minimums are served by windows which are located below overhanging balconies. A significant amount of latitude needs to be exercised when assessing the significance of these departures as the self-shading produced by these overhanging balconies makes it unduly difficult for compliance to be demonstrated. The need to assess departures of this nature flexibly is recognised within Section 2.2.11 of the BRE guide:

> *“Existing windows with balconies above them typically receive less daylight because the balcony cuts out light from the top part of the sky,* ***even a modest obstruction opposite*** *may result in a large relative impact on the VSC, and on the area receiving direct skylight”.* ***[Emphasis added]***

When assessing the significance of the departures identified in this study it is important to recognise a number of compensating factors:

- A residential offer which will help to address housing shortages in the immediate neighbourhood.
- The provision of additional public amenity space in the immediate neighbourhood.
- Improved street frontage and concomitant passive supervision along public roads and footpaths.

Table 1 Results of skylight testing; assessed with regard to VSC. (Standard BRE testing highlighted in blue; Professional interpretation of test results highlighted in orange)

Window ID [1]	Associated Room ID	Assumed Room Type [2]	VSC Levels (%)					BRE Guidelines Satisfied?	Professional Opinion			
			At Window		For Room (Weighted Average)				Magnitude of Impact [4]	Sensitivity of Room to Impact [4]	Significance of Impact [4]	Professional Opinion *(see notes at end of table for expanded explanation)*
			Existing	Proposed	Existing	Advisory Minimum [3]	Proposed					
1	1	L	13.5	12.5	13.5	10.8	12.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
2	2	L	34.9	33.6	34.9	27.0	33.6	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
3	3	L	27.0	25.5	27.0	21.6	25.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
4	4	B	26.2	24.6	26.2	21.0	24.6	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
5	5	L	21.3	19.6	21.3	17.0	19.6	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
6	6	L	22.9	21.4	22.9	18.3	21.4	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
7	7	B	38.2	36.0	38.2	27.0	36.0	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
8	8	L	23.2	21.4	23.2	18.6	21.4	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
9	9	L	23.8	21.0	23.8	19.0	21.0	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
10	10	L	23.8	20.7	23.8	19.0	20.7	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
11	11	B	24.9	21.4	24.9	19.9	21.4	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
12	12	L	26.6	22.5	26.6	21.3	22.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
13	13	L	26.6	22.2	26.6	21.3	22.2	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
14	14	B	37.5	32.7	37.5	27.0	32.7	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
15	15	L	23.3	18.0	23.3	18.6	18.0	No	*Negligible/Low*	*Medium/High*	*Negligible/Low*	*Impact falls within tolerable bounds (Δ)*
16	16	L	22.6	17.4	22.6	18.1	17.4	No	*Negligible/Low*	*Medium/High*	*Negligible/Low*	*Impact falls within tolerable bounds (Δ)*
17	17	B	22.6	16.6	22.6	18.1	16.6	No	*Low*	*Low*	*Negligible/Low*	*Impact falls within tolerable bounds (Δ)*
18	18	B	38.1	31.2	38.1	27.0	31.2	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
19	19	L	10.4	5.1	20.3	16.2	16.0	No	*Negligible/Low*	*Medium/High*	*Negligible/Low*	*Impact falls within tolerable bounds (Δ)*
20	19	L	33.7	30.7	20.3	16.2	16.0	No	*Negligible/Low*	*Medium/High*	*Negligible/Low*	*Impact falls within tolerable bounds (Δ)*
21	20	B	31.2	28.6	31.2	25.0	28.6	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*

Window ID [1]	Associated Room ID	Assumed Room Type [2]	VSC Levels (%)					BRE Guidelines Satisfied?	Professional Opinion			
			At Window		For Room (Weighted Average)				Magnitude of Impact [4]	Sensitivity of Room to Impact [4]	Significance of Impact [4]	Professional Opinion *(see notes at end of table for expanded explanation)*
			Existing	Proposed	Existing	Advisory Minimum [3]	Proposed					
22	21	L	18.3	16.3	18.3	14.6	16.3	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
23	22	B	26.3	24.3	26.3	21.0	24.3	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
24	23	L	13.6	12.8	13.6	10.9	12.8	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
25	24	L	35.0	33.9	35.0	27.0	33.9	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
26	25	L	27.1	25.9	27.1	21.7	25.9	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
27	26	B	26.3	24.9	26.3	21.0	24.9	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
28	27	L	21.4	19.9	21.4	17.1	19.9	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
29	28	L	23.0	21.7	23.0	18.4	21.7	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
30	29	B	38.4	36.4	38.4	27.0	36.4	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
31	30	L	23.3	21.8	23.3	18.6	21.8	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
32	31	L	24.0	21.5	24.0	19.2	21.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
33	32	L	24.0	21.3	24.0	19.2	21.3	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
34	33	B	25.0	22.0	25.0	20.0	22.0	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
35	34	L	26.7	23.2	26.7	21.4	23.2	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
36	35	L	26.8	23.0	26.8	21.4	23.0	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
37	36	B	37.7	33.5	37.7	27.0	33.5	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
38	37	L	23.4	18.8	23.4	18.7	18.8	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
39	38	L	22.7	18.3	22.7	18.2	18.3	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
40	39	B	22.8	17.5	22.8	18.2	17.5	No	*Negligible/Low*	*Low*	*Negligible*	*Impact falls within tolerable bounds (Δ)*
41	40	B	38.2	32.3	38.2	27.0	32.3	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
42	41	L	10.5	6.0	23.1	18.5	19.4	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
43	41	L	36.9	34.2	23.1	18.5	19.4	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
44	42	B	36.1	33.8	36.1	27.0	33.8	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*

Window ID [1]	Associated Room ID	Assumed Room Type [2]	VSC Levels (%)					BRE Guidelines Satisfied?	Professional Opinion			
			At Window		For Room (Weighted Average)				Magnitude of Impact [4]	Sensitivity of Room to Impact [4]	Significance of Impact [4]	Professional Opinion *(see notes at end of table for expanded explanation)*
			Existing	Proposed	Existing	Advisory Minimum [3]	Proposed					
45	43	L	24.0	22.3	24.0	19.2	22.3	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
46	44	B	32.7	30.9	32.7	26.2	30.9	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
47	45	L	13.7	13.1	13.7	11.0	13.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
48	46	L	35.4	34.5	35.4	27.0	34.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
49	47	L	27.3	26.3	27.3	21.8	26.3	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
50	48	B	26.4	25.3	26.4	21.1	25.3	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
51	49	L	21.5	20.3	21.5	17.2	20.3	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
52	50	L	23.1	22.0	23.1	18.5	22.0	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
53	51	B	38.5	36.9	38.5	27.0	36.9	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
54	52	L	23.5	22.2	23.5	18.8	22.2	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
55	53	L	24.1	22.1	24.1	19.3	22.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
56	54	L	24.1	21.9	24.1	19.3	21.9	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
57	55	B	25.2	22.7	25.2	20.2	22.7	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
58	56	L	26.9	23.9	26.9	21.5	23.9	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
59	57	L	26.9	23.7	26.9	21.5	23.7	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
60	58	B	38.0	34.5	38.0	27.0	34.5	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
61	59	L	23.6	19.7	23.6	18.9	19.7	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
62	60	L	22.9	19.1	22.9	18.3	19.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
63	61	B	22.3	17.9	22.3	17.8	17.9	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
64	62	B	38.4	33.3	38.4	27.0	33.3	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
65	63	L	9.4	5.6	23.2	18.6	20.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
66	63	L	38.5	36.1	23.2	18.6	20.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
67	64	B	38.5	36.4	38.5	27.0	36.4	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*

Window ID [1]	Associated Room ID	Assumed Room Type [2]	VSC Levels (%)					BRE Guidelines Satisfied?	Professional Opinion			
			At Window		For Room (Weighted Average)				Magnitude of Impact [4]	Sensitivity of Room to Impact [4]	Significance of Impact [4]	Professional Opinion *(see notes at end of table for expanded explanation)*
			Existing	Proposed	Existing	Advisory Minimum [3]	Proposed					
68	65	L	26.8	25.3	26.8	21.4	25.3	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
69	66	B	35.8	34.2	35.8	27.0	34.2	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
70	67	L	23.6	23.1	23.6	18.9	23.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
71	68	L	37.8	37.0	37.8	27.0	37.0	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
72	69	L	38.3	37.5	38.3	27.0	37.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
73	70	B	38.5	37.6	38.5	27.0	37.6	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
74	71	L	21.9	21.0	21.9	17.5	21.0	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
75	72	L	19.9	19.1	19.9	15.9	19.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
76	73	B	38.6	37.3	38.6	27.0	37.3	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
77	74	L	20.3	19.3	20.3	16.2	19.3	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
78	75	L	37.6	35.9	37.6	27.0	35.9	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
79	76	L	38.3	36.5	38.3	27.0	36.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
80	77	B	37.6	35.6	37.6	27.0	35.6	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
81	78	L	38.6	36.1	38.6	27.0	36.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
82	79	L	38.6	36.0	38.6	27.0	36.0	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
83	80	B	38.5	35.7	38.5	27.0	35.7	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
84	81	L	37.4	34.2	37.4	27.0	34.2	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
85	82	L	37.9	34.4	37.9	27.0	34.4	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
86	83	B	26.0	22.2	26.0	20.8	22.2	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
87	84	B	34.5	30.6	34.5	27.0	30.6	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
88	85	L	25.0	20.8	23.3	18.6	20.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
89	85	L	22.4	20.4	23.3	18.6	20.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
90	86	B	30.3	28.6	30.3	24.2	28.6	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*

Window ID [1]	Associated Room ID	Assumed Room Type [2]	VSC Levels (%)					BRE Guidelines Satisfied?	Professional Opinion			
			At Window		For Room (Weighted Average)				Magnitude of Impact [4]	Sensitivity of Room to Impact [4]	Significance of Impact [4]	Professional Opinion *(see notes at end of table for expanded explanation)*
			Existing	Proposed	Existing	Advisory Minimum [3]	Proposed					
91	87	L	26.9	25.3	26.9	21.5	25.3	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
92	88	B	38.6	37.2	38.6	27.0	37.2	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
93	89	L	18.4	17.8	18.1	14.5	17.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
94	89	L	17.1	16.5	18.1	14.5	17.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
95	90	L	25.0	24.4	25.0	20.0	24.4	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
96	91	B	25.6	24.9	25.6	20.5	24.9	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
97	92	L	25.9	25.1	25.9	20.7	25.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
98	93	L	25.9	25.0	25.9	20.7	25.0	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
99	94	B	25.9	24.9	25.9	20.7	24.9	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
100	95	L	26.1	25.1	26.1	20.9	25.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
101	96	L	13.5	12.3	16.5	13.2	15.2	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
102	96	L	17.4	16.1	16.5	13.2	15.2	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
103	96	L	18.0	16.6	16.5	13.2	15.2	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
104	97	L	18.1	16.6	18.1	14.5	16.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
105	97	L	18.1	16.5	18.1	14.5	16.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
106	97	L	18.1	16.4	18.1	14.5	16.5	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
107	98	L	18.1	16.3	18.1	14.5	16.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
108	98	L	18.1	16.2	18.1	14.5	16.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
109	98	L	18.1	16.0	18.1	14.5	16.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
110	99	L	18.0	15.7	17.2	13.8	15.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
111	99	L	17.8	15.3	17.2	13.8	15.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
112	99	L	15.5	13.8	17.2	13.8	15.1	Yes	*Negligible*	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
113	100	B	31.8	28.8	31.8	25.4	28.8	Yes	*Negligible*	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*

Window ID [1]	Associated Room ID	Assumed Room Type [2]	VSC Levels (%)					BRE Guidelines Satisfied?
			At Window		For Room (Weighted Average)			
			Existing	Proposed	Existing	Advisory Minimum [3]	Proposed	
114	101	L	29.0	26.0	24.1	19.3	21.8	Yes
115	101	L	31.2	28.0	24.1	19.3	21.8	Yes
116	101	L	19.6	17.9	24.1	19.3	21.8	Yes
117	102	B	16.9	15.4	16.9	13.5	15.4	Yes
118	103	L	18.7	17.4	18.7	15.0	17.4	Yes
119	104	B	18.7	17.5	18.7	15.0	17.5	Yes

Professional Opinion			
Magnitude of Impact [4]	Sensitivity of Room to Impact [4]	Significance of Impact [4]	Professional Opinion *(see notes at end of table for expanded explanation)*
Negligible	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
Negligible	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
Negligible	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
Negligible	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*
Negligible	*Medium/High*	*Negligible*	*Reasonable skylight access retained (∂)*
Negligible	*Low*	*Negligible*	*Reasonable skylight access retained (∂)*

1 The location of these windows is illustrated within Appendix G: Windows Identified for Testing in Studies A & B

2 See Appendix E: Conventions used to Assess the Significance of Impacts for Room Type codes

3 Advisory minimum is 27% unless 0.8 times former value is lower

4 The framework used to classify impacts is described within Appendix E: Conventions used to Assess the Significance of Impacts

(∂) On the basis that full conformity with BRE guidelines has been demonstrated it can be concluded with confidence that a reasonable level of skylight would remain available to this room with the proposed development in place.

(Δ) On the basis that the significance of impact has been determined to register at the lower end of the scale and having regard to the wider planning benefits which this development would bring, the impact identified is considered to fall within tolerable bounds in this instance.

Study B: Assessment of sunlight levels available to neighbouring living rooms

Study B: Assessment Approach

Sunlight access is assessed with respect to a measure called Annual Probable Sunlight Hours (APSH). This measure relates to the total number of hours in the year that the sun is typically expected to shine on unobstructed ground, allowing for average levels of cloudiness for the location in question.

According to the BRE guide a dwelling, or non -domestic building which has a particular requirement for sunlight, will appear reasonably sunlit provided:

- At least one main window wall faces within 90° of due south and
- The centre of at least one window to a main living room can receive 25% annual probable sunlight hours, including at least 5% of annual probable sunlight hours in winter months (taken to fall between the 21st of September and the 21st of March).

Further to this the BRE advise that the sunlighting of existing dwellings may be adversely affected if the centre of the window in question:

- Receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between the 21st of September and the 21st of 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.

Study B: Assessment Points

The windows assessed in Study A are considered again within this study. As previously established the 119 windows identified (see Appendix G: Windows Identified for Testing in Studies A & B) are associated with 104 separate rooms. In accordance with BRE guidance, sunlight testing is generally only applicable to residential living rooms with south facing windows; applying these criteria a total of 62 rooms are identified for testing.

Study B: Results

This study has assessed the levels of sunlight access available to all accommodation in the immediate neighbourhood of the proposed development. In order to assess impacts both the “before development” and “after development” levels have been calculated. Further to this both annual and winter sunlight levels have been considered.

The results obtained for both annual sunlight access (see Table 2) and winter sunlight access (see Table 3) indicate that conformity with BRE guidelines would be achieved in most cases. When annual sunlight access is tested 60 of the 62 assessable rooms (equivalent to 97%) are found to received advisory minimum levels of sunlight access. When winter sunlight access is tested 62 of the 62 assessable rooms (equivalent to 100%) are found to received advisory minimum levels of sunlight access. On the basis that full

compliance with BRE guidelines has been demonstrated in these instances it is safe to assume that a reasonable level of both annual and winter sunlight would remain available to all these rooms with the proposed development in place.

In the small number of cases (Rooms 19 & 41 , see 2nd column of Table 2) where it has not been possible to demonstrate full compliance with BRE guidelines for annual sunlight access it is BPG3's view that the significance of the associated impacts falls at the lower end of the scale in all cases (see 2nd last column of Table 2). It is on this basis that these impacts are assumed to fall within tolerable bounds.

When assessing the significance of the departures identified in this study it is important to recognise a number of compensating factors:

- A residential offer which will help to address housing shortages in the immediate neighbourhood.
- The provision of additional public amenity space in the immediate neighbourhood.
- Improved street frontage and concomitant passive supervision along public roads and footpaths.

Table 2 Results of annual sunlight testing assessed with respect to APSH. (Standard BRE testing highlighted in blue; Professional interpretation of test results highlighted in orange)

Window ID (1)	Associated Room ID	Assumed Room Type (2)	Orientation	APSH Levels (%)					BRE Guidelines Satisfied?	Professional Opinion			
				At Window		For Room				Magnitude of Impact (4)	Sensitivity of Room to Impact (4)	Significance of Impact (4)	Professional Opinion *(see notes at end of table for expanded explanation)*
				Existing	Proposed	Existing	Advisory Minimum (3)	Proposed					
1	1	L	S	25	25	25	20	25	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
2	2	L	S	49	49	49	25	49	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
3	3	L	S	44	44	44	25	44	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
4	4	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
5	5	L	S	34	34	34	25	34	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
6	6	L	S	35	34	35	25	34	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
7	7	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
8	8	L	S	35	32	35	25	32	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
9	9	L	S	39	36	39	25	36	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
10	10	L	S	39	35	39	25	35	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
11	11	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
12	12	L	S	47	41	47	25	41	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
13	13	L	S	42	37	42	25	37	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
14	14	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
15	15	L	S	37	31	37	25	31	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
16	16	L	S	39	32	39	25	32	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
17	17	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
18	18	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
19	19	L	S	18	11	18	14	11	No	*Low/Medium*	*Low/Medium*	*Low*	*Impact falls within tolerable bounds (Δ)*
20	19	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
21	20	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
22	21	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*

Window ID [1]	Associated Room ID	Assumed Room Type [2]	Orientation	APSH Levels (%)						Professional Opinion			
				At Window		For Room			BRE Guidelines Satisfied?	Magnitude of Impact [4]	Sensitivity of Room to Impact [4]	Significance of Impact [4]	Professional Opinion *(see notes at end of table for expanded explanation)*
				Existing	Proposed	Existing	Advisory Minimum [3]	Proposed					
23	22	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
24	23	L	S	25	25	25	20	25	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
25	24	L	S	49	49	49	25	49	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
26	25	L	S	44	44	44	25	44	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
27	26	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
28	27	L	S	34	34	34	25	34	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
29	28	L	S	35	34	35	25	34	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
30	29	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
31	30	L	S	35	32	35	25	32	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
32	31	L	S	39	36	39	25	36	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
33	32	L	S	39	35	39	25	35	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
34	33	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
35	34	L	S	47	42	47	25	42	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
36	35	L	S	42	38	42	25	38	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
37	36	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
38	37	L	S	37	32	37	25	32	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
39	38	L	S	39	33	39	25	33	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
40	39	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
41	40	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
42	41	L	S	18	13	18	14	13	No	*Low*	*Low/Medium*	*Negligible/Low*	*Impact falls within tolerable bounds (Δ)*
43	41	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
44	42	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
45	43	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
46	44	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*

Window ID (1)	Associated Room ID	Assumed Room Type (2)	Orientation	APSH Levels (%) At Window Existing	At Window Proposed	For Room Existing	For Room Advisory Minimum (3)	For Room Proposed	BRE Guidelines Satisfied?	Professional Opinion: Magnitude of Impact (4)	Sensitivity of Room to Impact (4)	Significance of Impact (4)	Professional Opinion *(see notes at end of table for expanded explanation)*
47	45	L	S	25	25	25	20	25	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
48	46	L	S	51	50	51	25	50	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
49	47	L	S	45	45	45	25	45	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
50	48	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
51	49	L	S	34	34	34	25	34	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
52	50	L	S	35	34	35	25	34	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
53	51	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
54	52	L	S	35	34	35	25	34	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
55	53	L	S	39	38	39	25	38	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
56	54	L	S	39	37	39	25	37	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
57	55	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
58	56	L	S	46	44	46	25	44	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
59	57	L	S	42	39	42	25	39	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
60	58	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
61	59	L	S	37	34	37	25	34	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
62	60	L	S	39	35	39	25	35	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
63	61	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
64	62	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
65	63	L	S	15	12	15	11	12	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
66	63	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
67	64	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
68	65	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
69	66	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
70	67	L	S	44	44	44	25	44	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*

Window ID (1)	Associated Room ID	Assumed Room Type (2)	Orientation	APSH Levels (%)					BRE Guidelines Satisfied?	Professional Opinion			
				At Window		For Room				Magnitude of Impact (4)	Sensitivity of Room to Impact (4)	Significance of Impact (4)	Professional Opinion *(see notes at end of table for expanded explanation)*
				Existing	Proposed	Existing	Advisory Minimum (3)	Proposed					
71	68	L	S	60	60	60	25	60	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
72	69	L	S	60	59	60	25	59	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
73	70	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
74	71	L	S	35	35	35	25	35	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
75	72	L	S	32	32	32	25	32	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
76	73	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
77	74	L	S	33	32	33	25	32	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
78	75	L	S	52	51	52	25	51	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
79	76	L	S	58	57	58	25	57	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
80	77	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
81	78	L	S	62	61	62	25	61	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
82	79	L	S	62	61	62	25	61	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
83	80	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
84	81	L	S	53	51	53	25	51	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
85	82	L	S	59	57	59	25	57	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
86	83	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
87	84	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
88	85	L	S	44	42	44	25	42	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
89	85	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
90	86	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
91	87	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
92	88	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
93	89	L	S	36	36	36	25	36	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
94	89	L	S	24	24	36	25	36	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*

Window ID [1]	Associated Room ID	Assumed Room Type [2]	Orientation	APSH Levels (%)					BRE Guidelines Satisfied?
				At Window		For Room			
				Existing	Proposed	Existing	Advisory Minimum [3]	Proposed	
95	90	L	S	38	38	38	25	38	Yes
96	91	B	S	-	-	-	-	-	-
97	92	L	S	41	41	41	25	41	Yes
98	93	L	S	41	41	41	25	41	Yes
99	94	B	S	-	-	-	-	-	-
100	95	L	S	41	41	41	25	41	Yes
101	96	L	S	20	20	29	23	29	Yes
102	96	L	S	28	27	29	23	29	Yes
103	96	L	S	29	29	29	23	29	Yes
104	97	L	S	30	30	30	24	30	Yes
105	97	L	S	30	30	30	24	30	Yes
106	97	L	S	30	30	30	24	30	Yes
107	98	L	S	30	30	30	24	30	Yes
108	98	L	S	30	30	30	24	30	Yes
109	98	L	S	30	29	30	24	30	Yes
110	99	L	S	30	29	30	24	29	Yes
111	99	L	S	30	29	30	24	29	Yes
112	99	L	S	30	29	30	24	29	Yes
113	100	B	S	-	-	-	-	-	-
114	101	L	S	47	45	47	25	46	Yes
115	101	L	S	47	46	47	25	46	Yes
116	101	L	N	-	-	-	-	-	-
117	102	B	N	-	-	-	-	-	-
118	103	L	N	-	-	-	-	-	-

Professional Opinion			
Magnitude of Impact [4]	Sensitivity of Room to Impact [4]	Significance of Impact [4]	Professional Opinion *(see notes at end of table for expanded explanation)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
-	-	-	*Testing only applicable to living rooms*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
-	-	-	*Testing only applicable to living rooms*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
-	-	-	*Testing only applicable to living rooms*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
Negligible	*Low/Medium*	*Negligible*	*Reasonable annual sunlight retained (∂)*
-	-	-	*Testing only applicable to south windows*
-	-	-	*Testing only applicable to living rooms*
-	-	-	*Testing only applicable to south windows*

Window ID [1]	Associated Room ID	Assumed Room Type [2]	Orientation	APSH Levels (%)					BRE Guidelines Satisfied?
				At Window		For Room			
				Existing	Proposed	Existing	Advisory Minimum [3]	Proposed	
119	104	B	N	-	-	-	-	-	-

Professional Opinion			
Magnitude of Impact [4]	Sensitivity of Room to Impact [4]	Significance of Impact [4]	Professional Opinion *(see notes at end of table for expanded explanation)*
-	-	-	*Testing only applicable to living rooms*

1 *The location of these windows is illustrated within Appendix G: Windows Identified for Testing in Studies A & B*

2 *See Appendix E: Conventions used to Assess the Significance of Impacts for Room Type codes*

3 *Advisory minimum is 25% unless 0.8 times former value or former value less 4% APSH is lower*

4 *The framework used to classify impacts is described within Appendix E: Conventions used to Assess the Significance of Impacts*

(∂) *On the basis that full conformity with BRE guidelines has been demonstrated it can be concluded with confidence that a reasonable level of annual sunlight would remain available to this room with the proposed development in place.*

(Δ) *On the basis that the significance of impact has been determined to register at the lower end of the scale (Negligible, Negligible/Low or Low) the impact is considered to fall within tolerable bounds.*

Table 3 Results of winter sunlight testing assessed with respect to APSH available during winter months (September 21st to March 21st); (Standard BRE testing highlighted in blue; Professional interpretation of test results highlighted in orange).

Window ID (1)	Associated Room ID	Assumed Room Type (2)	Orientation	WINTER APSH Levels (%)					BRE Guidelines Satisfied?	Professional Opinion			
				At Window		For Room							
				Existing	Proposed	Existing	Advisory Minimum (3)	Proposed		Magnitude of Impact (4)	Sensitivity of Room to Impact (4)	Significance of Impact (4)	Professional Opinion *(see notes at end of table for expanded explanation)*
1	1	L	S	14	14	14	0	14	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
2	2	L	S	15	15	15	0	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
3	3	L	S	17	17	17	0	17	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
4	4	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
5	5	L	S	11	11	11	0	11	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
6	6	L	S	8	8	8	0	8	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
7	7	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
8	8	L	S	8	8	8	0	8	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
9	9	L	S	15	15	15	0	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
10	10	L	S	15	15	15	0	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
11	11	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
12	12	L	S	21	21	21	5	21	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
13	13	L	S	16	16	16	5	16	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
14	14	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
15	15	L	S	13	13	13	5	13	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
16	16	L	S	15	15	15	5	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
17	17	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
18	18	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
19	19	L	S	5	5	5	4	5	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
20	19	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
21	20	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*

Window ID (1)	Associated Room ID	Assumed Room Type (2)	Orientation	WINTER APSH Levels (%)					BRE Guidelines Satisfied?	Professional Opinion			
				At Window		For Room				Magnitude of Impact (4)	Sensitivity of Room to Impact (4)	Significance of Impact (4)	Professional Opinion *(see notes at end of table for expanded explanation)*
				Existing	Proposed	Existing	Advisory Minimum (3)	Proposed					
22	21	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
23	22	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
24	23	L	S	14	14	14	0	14	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
25	24	L	S	15	15	15	0	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
26	25	L	S	17	17	17	0	17	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
27	26	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
28	27	L	S	11	11	11	0	11	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
29	28	L	S	8	8	8	0	8	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
30	29	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
31	30	L	S	8	8	8	0	8	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
32	31	L	S	15	15	15	0	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
33	32	L	S	15	15	15	0	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
34	33	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
35	34	L	S	21	21	21	5	21	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
36	35	L	S	16	16	16	0	16	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
37	36	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
38	37	L	S	13	13	13	5	13	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
39	38	L	S	15	14	15	5	14	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
40	39	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
41	40	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
42	41	L	S	6	5	6	5	5	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
43	41	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
44	42	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
45	43	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*

Window ID (1)	Associated Room ID	Assumed Room Type (2)	Orientation	WINTER APSH Levels (%) At Window Existing	At Window Proposed	For Room Existing	For Room Advisory Minimum (3)	For Room Proposed	BRE Guidelines Satisfied?	Magnitude of Impact (4)	Sensitivity of Room to Impact (4)	Significance of Impact (4)	Professional Opinion *(see notes at end of table for expanded explanation)*
46	44	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
47	45	L	S	14	14	14	0	14	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
48	46	L	S	15	15	15	0	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
49	47	L	S	18	18	18	0	18	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
50	48	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
51	49	L	S	11	11	11	0	11	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
52	50	L	S	8	8	8	0	8	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
53	51	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
54	52	L	S	8	8	8	0	8	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
55	53	L	S	15	15	15	0	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
56	54	L	S	15	15	15	0	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
57	55	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
58	56	L	S	21	21	21	0	21	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
59	57	L	S	16	16	16	0	16	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
60	58	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
61	59	L	S	13	13	13	0	13	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
62	60	L	S	15	15	15	5	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
63	61	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
64	62	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
65	63	L	S	6	5	6	0	5	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
66	63	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
67	64	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
68	65	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
69	66	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*

Window ID (1)	Associated Room ID	Assumed Room Type (2)	Orientation	WINTER APSH Levels (%) At Window Existing	WINTER APSH Levels (%) At Window Proposed	WINTER APSH Levels (%) For Room Existing	WINTER APSH Levels (%) For Room Advisory Minimum (3)	WINTER APSH Levels (%) For Room Proposed	BRE Guidelines Satisfied?	Magnitude of Impact (4)	Sensitivity of Room to Impact (4)	Significance of Impact (4)	Professional Opinion *(see notes at end of table for expanded explanation)*
70	67	L	S	20	20	20	0	20	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
71	68	L	S	21	21	21	0	21	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
72	69	L	S	21	21	21	0	21	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
73	70	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
74	71	L	S	12	12	12	0	12	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
75	72	L	S	8	8	8	0	8	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
76	73	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
77	74	L	S	8	8	8	0	8	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
78	75	L	S	15	15	15	0	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
79	76	L	S	17	17	17	0	17	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
80	77	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
81	78	L	S	21	21	21	0	21	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
82	79	L	S	21	21	21	0	21	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
83	80	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
84	81	L	S	13	13	13	0	13	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
85	82	L	S	18	18	18	0	18	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
86	83	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
87	84	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
88	85	L	S	17	17	17	0	17	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
89	85	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
90	86	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
91	87	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
92	88	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
93	89	L	S	21	21	21	0	21	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*

Window ID (1)	Associated Room ID	Assumed Room Type (2)	Orientation	WINTER APSH Levels (%)					BRE Guidelines Satisfied?	Professional Opinion			
				At Window		For Room				Magnitude of Impact (4)	Sensitivity of Room to Impact (4)	Significance of Impact (4)	Professional Opinion *(see notes at end of table for expanded explanation)*
				Existing	Proposed	Existing	Advisory Minimum (3)	Proposed					
94	89	L	S	11	11	21	0	21	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
95	90	L	S	12	12	12	0	12	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
96	91	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
97	92	L	S	15	15	15	0	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
98	93	L	S	15	15	15	0	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
99	94	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
100	95	L	S	15	15	15	0	15	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
101	96	L	S	3	3	11	0	11	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
102	96	L	S	10	10	11	0	11	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
103	96	L	S	11	11	11	0	11	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
104	97	L	S	12	12	12	0	12	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
105	97	L	S	12	12	12	0	12	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
106	97	L	S	12	12	12	0	12	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
107	98	L	S	12	12	12	0	12	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
108	98	L	S	12	12	12	0	12	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
109	98	L	S	12	12	12	0	12	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
110	99	L	S	12	12	12	0	12	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
111	99	L	S	12	12	12	0	12	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
112	99	L	S	12	12	12	0	12	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
113	100	B	S	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*
114	101	L	S	17	17	17	0	17	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
115	101	L	S	16	16	17	0	17	Yes	*Negligible*	*Low/Medium*	*Negligible*	*Reasonable winter sunlight retained (∂)*
116	101	L	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to south windows*
117	102	B	N	-	-	-	-	-	-	-	-	-	*Testing only applicable to living rooms*

Window ID [1]	Associated Room ID	Assumed Room Type [2]	Orientation	WINTER APSH Levels (%)					BRE Guidelines Satisfied?
				At Window		For Room			
				Existing	Proposed	Existing	Advisory Minimum [3]	Proposed	
118	103	L	N	-	-	-	-	-	-
119	104	B	N	-	-	-	-	-	-

Professional Opinion			
Magnitude of Impact [4]	Sensitivity of Room to Impact [4]	Significance of Impact [4]	Professional Opinion *(see notes at end of table for expanded explanation)*
-	-	-	*Testing only applicable to south windows*
-	-	-	*Testing only applicable to living rooms*

1 *The location of these windows is illustrated within Appendix G: Windows Identified for Testing in Studies A & B*

2 *See Appendix E: Conventions used to Assess the Significance of Impacts for Room Type codes*

3 *Advisory minimum is 5% unless 0.8 times former value is lower. Alternatively, if the absolute drop in annual APSH levels is less than 4% than the advisory minimum level of winter sunlight is 0%.*

4 *The framework used to classify impacts is described within Appendix E: Conventions used to Assess the Significance of Impacts*

(∂) *On the basis that full conformity with BRE guidelines has been demonstrated it can be concluded with confidence that a reasonable level of winter sunlight would remain available to this room with the proposed development in place.*

(Δ) *On the basis that the significance of impact has been determined to register at the lower end of the scale (Negligible, Negligible/Low or Low) the impact is considered to fall within tolerable bounds.*

Study C: Assessment of sunlight levels available to neighbouring recreation areas.

Study C: Assessment Approach

The BRE recommends that a garden or amenity area will appear adequately sunlit throughout the year if at least half of it can receive at least two hours of sunlight on the 21st of March.

When impacts are being assessed the BRE advises that a noticeable loss of sunlight will register on a neighbouring recreation space if as a result of a new development less than 50% of the area is capable of receiving 2hrs of sunshine on the 21st of March and the area which is capable of receiving two hours is less than 0.8 times its former value.

In order to assess a particular amenity space an analysis grid is specified across its area. At each point on this grid the cumulative number of sunlight hours registering are calculated for the course of a specified day (21st of March). The percentage of the assessed area which receives more than 2 hours of sunlight on that day is then obtained.

Study C: Assessment Areas

The BRE recommends that the availability of sunlight should be checked for all open spaces where it would be required and that this would normally include:

- Gardens, usually the main back garden of a house
- Parks, playing fields
- Children's playground
- 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

A survey of the neighbouring environment identifies one neighbouring outdoor recreation space where altered sunlighting levels could potentially register, see Figure 3.

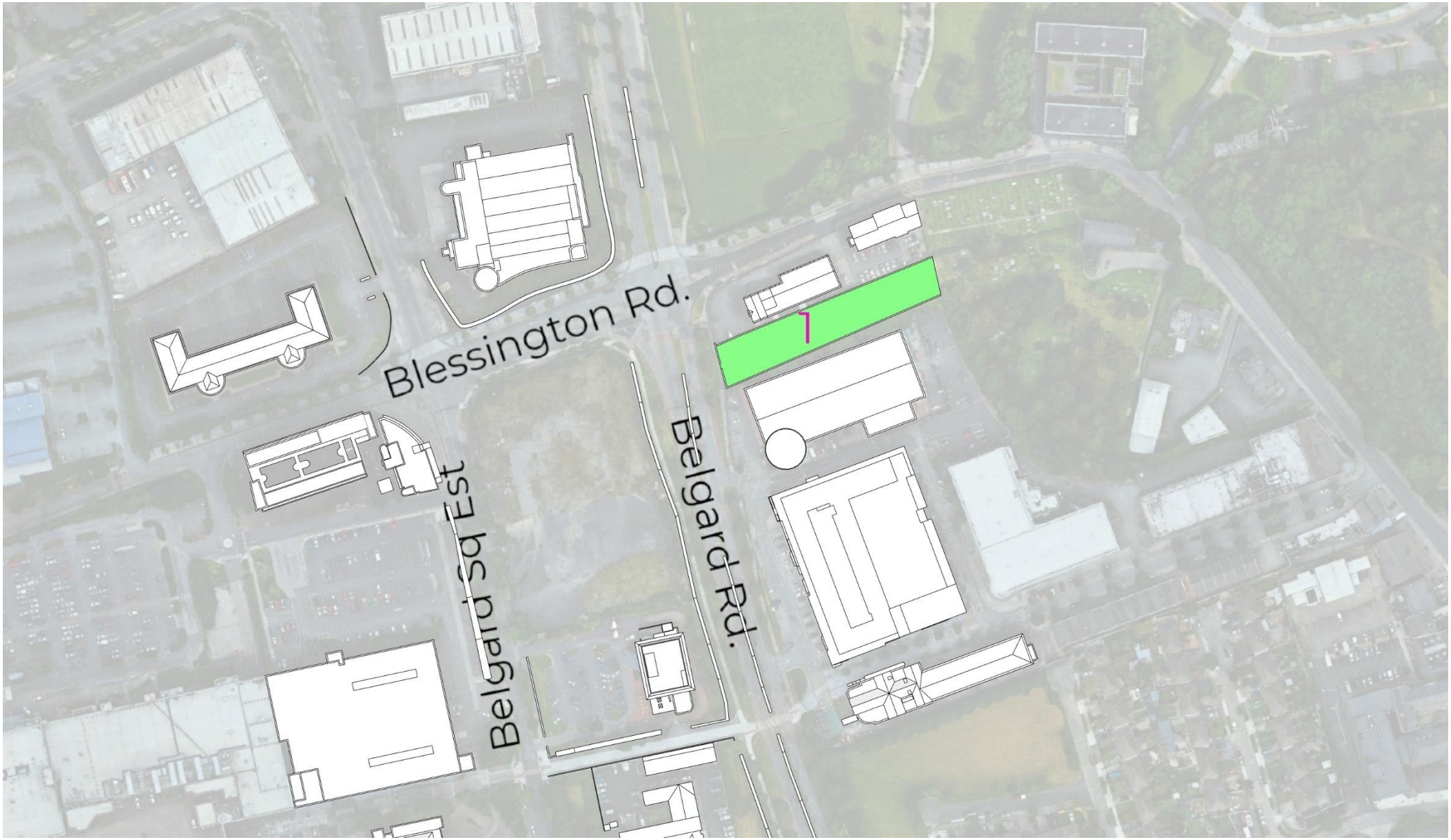


Figure 3 Plan showing the neighbouring recreation spaces (highlighted in green) which have been assessed in this study.

Study C: Results

This study has assessed the degree to which the proposed development would impact on the levels of sunlight available to an outdoor space located to the east of the proposed development. Numeric results are presented in Table 4, the associated solar distribution diagrams are presented in Figure 4 & Figure 5. Supplementary shadow casting imagery has been included within Appendix H: Shadow Casting Imagery.

The results of this study (see Table 4) indicate that full compliance with BRE guidelines would be achieved. The outdoor recreation space tested in this study satisfies the advisory minimums recommended by the BRE; it follows that no significant impacts can be reasonably anticipated.

Table 4 Sunlight amenity levels available to neighbouring outdoor areas

Area ID	Area Type [1]	BRE Testing of Solar Access Levels				Professional Opinion			
		% Area capable of receiving at least 2hrs of sunshine on the 21st of March			BRE conformity Demonstrated?	Magnitude of Impact [3]	Sensitivity of Area to Impact [3]	Significance of Impact [3]	Professional Opinion *(see notes at end of table for expanded explanation)*
		Existing	Advisory Minimum [2]	Proposed					
1	CEM	92%	50%	85%	Yes	Negligible	Low	Negligible	*Reasonable solar access retained (∂)*

1 *See Appendix E: Conventions used to Assess the Significance of Impacts for Area Type codes*

2 *Advisory minimum is 50% unless 0.8 times former value is lower*

3 *The framework used to classify impacts is described within Appendix E: Conventions used to Assess the Significance of Impacts*

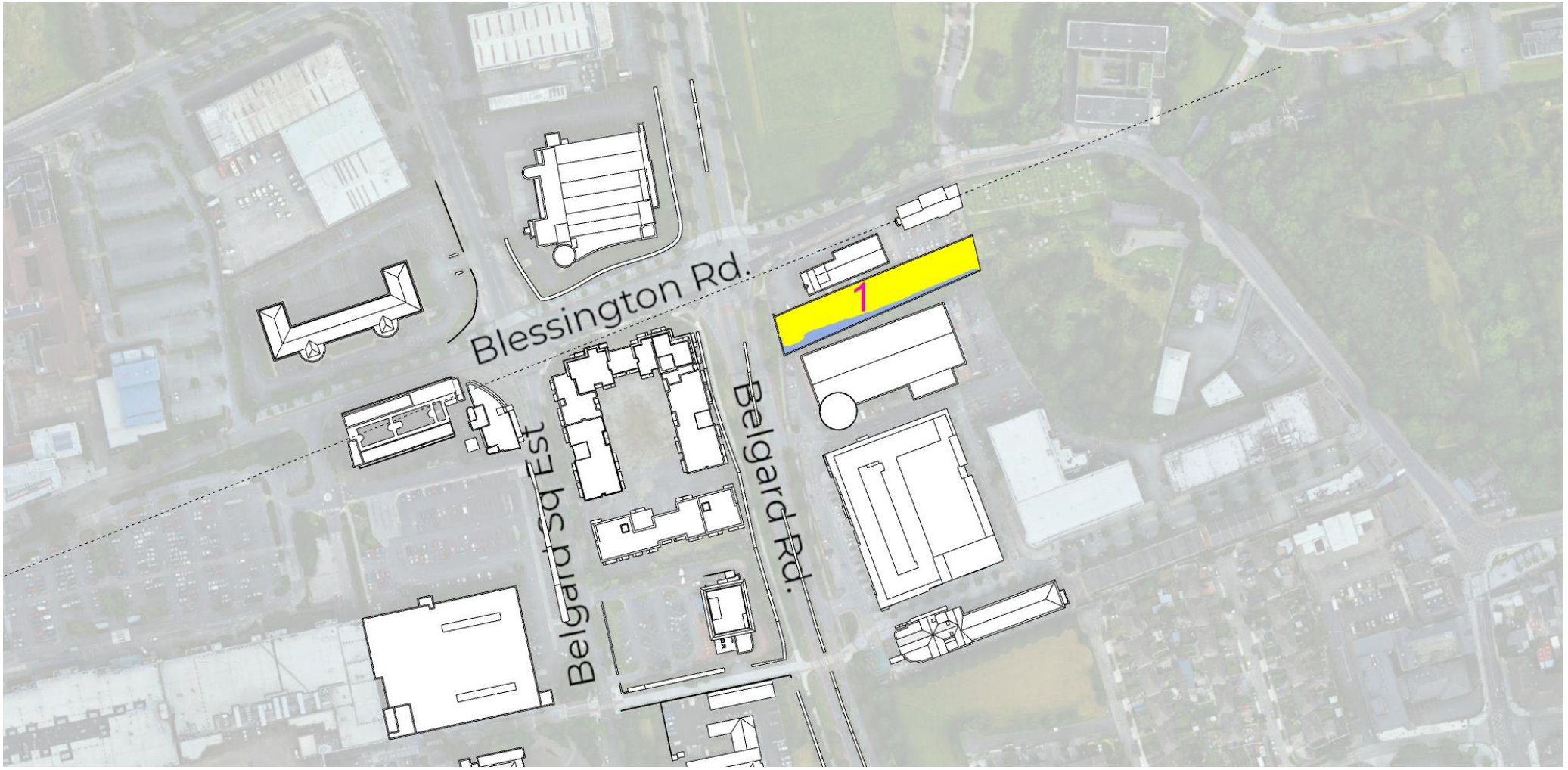
(∂) *On the basis that full conformity with BRE guidelines has been demonstrated it can be concluded with confidence that a reasonable level of solar access would remain available with the proposed development in place.*

Figure 4 Solar access distribution predicted for neighbouring recreation spaces (Existing Scenario). Areas highlighted in yellow can receive at least 2hrs of sunshine on the 21st of March

TOTAL NO. SUNLIGHT HOURS ON THE 21ST OF MARCH (HRS)

0 to 2	> 2

Figure 5 Solar access distribution predicted for neighbouring recreation spaces (Proposed Scenario). Areas highlighted in yellow can receive at least 2hrs of sunshine on the 21st of March



TOTAL NO. SUNLIGHT HOURS ON THE 21ST OF MARCH (HRS)

0 to 2	> 2

The Importance of Interpreting Daylight Results Flexibly

As outlined in the BRE guide, the results presented in this report should be interpreted with a degree of flexibility. The flexibility available in the BRE guide is outlined in the introductory section as follows:

> *"The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the designer. Although it gives numerical targets these should be interpreted flexibly because natural lighting is only one of many factors in site layout design."*

This approach is also supported by recently published ministerial guidelines. Specific guidance is provided within Section 3.2 of the DHLGH Urban Development and Building Height Guidelines 2018:

> *"Where a proposal may not be able to fully meet all the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

Conclusions

This report has been prepared to assess the daylight levels associated with a proposed development on Belgard Square East, Dublin 24. More specifically this report considers the effect that the proposed development would have on the light levels available to neighbouring properties. The light levels which would be provided within the proposed development are reported separately, see Daylight Reports 2 of 3 and 3 of 3.

In assessing the significance of the daylight levels which have been predicted for this development it is important to bear a number of factors in mind.

In the first instance it is clear that this development conforms to and experiences many of the typical issues (e.g., daylight/traffic/visual impacts) which arise when new developments are proposed on urban sites. Having regard to the governments stated aims to support an increase in housing supply and to encourage sustainable development patterns, it is reasonable to propose that lands located at close proximity to urban centres must now be developed at higher densities. It is in this regard that it may not now always be appropriate to pursue full conformity with the guideline targets recommended in the BRE Guide or BS 8206. While care should be taken to ensure that substantial levels of conformity with the recommendations in these guides are achieved, it is often the case that the particulars of a given site place insurmountable restrictions on the ability of a development to achieve full conformity at all points of assessment. In this regard it is

important to weigh up the isolated cases where full conformity with guideline targets has not been satisfied against the broader benefits which a development can provide to the compactness, vitality and viability of an urban neighbourhood.

In conducting this assessment regard has been paid to the recommendations provided in the BRE guide *'Site layout planning for daylight and sunlight – A guide to good practice'* 2nd Edition and BS 8206-2: 2008 – *'Lighting for Buildings – Part 2: Code of Practice for Daylighting'*, British Standards Institute. A number of component studies have been carried out.

Within these guides three specific tests have been identified which relate to the assessment of impact on neighbouring properties. The findings from these studies are reported in the following paragraphs.

Study A assessed the impact that the proposed development would have on the levels of skylight access which would be available to neighbouring accommodation. The results of this assessment indicate that skylight access levels, with the proposed development in place, would comply with guidelines in almost all cases (99 of 104 rooms). In the small number of cases where it has not been possible to demonstrate full compliance it is BPG3's view that the impacts fall within tolerable bounds. Additional latitude is required when assessing the significance of these shortfalls as the self-shading caused by overhanging balconies has made it unduly difficult to demonstrate full compliance with BRE recommendations.

Study B assessed the impact that the proposed development would have on the levels of sunlight available to neighbouring accommodation. The results obtained for both annual sunlight access and winter sunlight access indicate that compliance with BRE guidelines would be achieved in most cases. In the small number of cases where it has not been possible to demonstrate full compliance with BRE guidelines for annual sunlight access it is BPG3's view that the resulting impacts fall within tolerable bounds.

Study C assessed the impact that the proposed development would have on the levels of sunlight available to one neighbouring outdoor area. In this case full compliance with BRE guidelines has been demonstrated. It follows that no significant loss of sunlight amenity can be reasonably anticipated.

When all testing is considered, it is reasonable to conclude that the development proposed demonstrates substantial levels of conformity with daylight guidelines. In making best use of this site it is inevitable that some departures from advisory targets will be encountered; provision is made within current planning policy to accommodate departures of this nature in instances where wider planning objectives countervail, see Appendix B: Discretion available to consent authorities.

Appendix A: Policy Basis for Daylight Standards

The particular provisions which have been made to promote good daylighting in planning guidance are identified as follows:

Sustainable Residential Development in Urban Areas, DoEHLG 2009

Published by the Department of Environment Housing and Local Government in 2009, this guide includes a number of provisions related to daylight. Section 7.9 of the guide is particularly relevant:

> "*7.9 – Overshadowing will generally only cause problems where buildings of significant height are involved or where new buildings are located very close to adjoining buildings. Planning authorities should require that daylight and shadow projection diagrams be submitted in all such proposals. The recommendations of "Site Layout Planning for Daylight and Sunlight: A Guide to good Practice" (BRE 1991) or BS 8206 "Lighting for Buildings, Part 2 1992: Code of Practice for Daylighting" should be followed in this regard."*

Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities

Published by the Department of Environment Housing and Local Government in March 2018 (Updated 2021), provisions are made to safeguard daylight within Section 6.6 and 6.7:

> "6.6 – *Planning authorities should have regard to quantitative performance approaches to daylight provision outlined in guides like the BRE guide 'Site Layout Planning for Daylight and Sunlight' (2nd Edition) or BS 8206-2:2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting' when undertaken by development proposers which offer the capability to satisfy minimum standards of daylight provision.*
>
> *6.7 – Where an applicant cannot fully meet all of the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, which planning authorities should apply their discretion in accepting taking account of its assessment of specific. This may arise due to a design constraint associated with the site or location and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

Urban Development and Building Heights – Guidelines for Planning Authorities

Published by the Department of Environment Housing and Local Government in March 2018, provisions are made to safeguard daylight within Section 3.2. The specific guidance is provided within the part of Section 3.2 which deals with development management at the scale of the site/building:

"At the scale of the site/building

- *The form, massing and height of proposed developments should be carefully modulated so as to maximise access to natural daylight, ventilation and views and minimise overshadowing and loss of light.*
- *Appropriate and reasonable regard should be taken of quantitative performance approaches to daylight provision outlined in guides like the Building Research Establishment's 'Site Layout Planning for Daylight and Sunlight' (2nd edition) or BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting'.*
- *Where a proposal may not be able to fully meet all the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

Appendix B: Discretion available to consent authorities

Irish planning policy advises that in instances where it is not possible to demonstrate full conformity with advisory minimums consent-authorities are entitled to accept departures where other planning objective are found to countervail.

Specific guidance on this matter is provided within Section 4.5 of the National Planning Framework[4] (Section 4.5). The guidance provided is as follows:

> *"**To enable brownfield development, planning policies and standards need to be flexible**, focusing on design led and performance-based outcomes, rather than specifying absolute requirements in all cases. Although sometimes necessary to safeguard against poor quality design, **planning standards should be flexibly applied in response to well-designed development proposals that can achieve urban infill and brownfield development objectives** in settlements of all sizes. This is in recognition of the fact that many current urban planning standards were devised for application to greenfield development sites and cannot account for the evolved layers of complexity in existing built-up areas." **[Emphasis added]***

The NPF goes further and introduces the need for tolerances and alternative solutions as a National Policy Objective. National Policy Objective 13 of the NPF is stated as follows:

> *"In urban areas, planning and related standards, including in particular building height and car parking will be based on performance criteria that seek to achieve well-designed high-quality outcomes in order to achieve targeted growth. **These standards will be subject to a range of tolerance that enables alternative solutions to be proposed to achieve stated outcomes,** provided public safety is not compromised and the environment is suitably protected." **[Emphasis added]***

On the basis that this guidance is applicable to daylight standards it is reasonable to propose that a clear basis exists for the consent authorities to accept shortfalls from advisory minimums in instances where a countervailing planning objective exists.

Additional support for this facility is provided within the Urban Design Manual published by the Department of Energy Heritage and Local Government, 2009. On page 43 of this manual the following guidance is provided:

[4] *DoHPLG 2018 National Planning Framework*

"Where design standards are to be used (such as the UK document Site Layout Planning for Daylight and Sunlight, published by the BRE), it should be acknowledged that for higher density proposals in urban areas ***it may not be possible to achieve the specified criteria, and standards may need to be adjusted locally to recognise the need for appropriate heights or street widths."*** ***[Emphasis added]***

The need for tolerance and flexibility to be exercised when interpreting the significance of daylight results is reflected in the wording which has been adopted in recent building height guidelines[5]. Specific guidance is provided within Section 3.2 of the guidelines:

"At the scale of the site/building

- *The form, massing and height of proposed developments should be carefully modulated so as to maximise access to natural daylight, ventilation and views and minimise overshadowing and loss of light.*
- ***Appropriate and reasonable regard*** *should be taken of quantitative performance approaches to daylight provision outlined in guides like the Building Research Establishment's 'Site Layout Planning for Daylight and Sunlight' (2nd edition) or BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting'.*
- ***Where a proposal may not be able to fully meet all the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution." [Emphasis added]***

[5] *DoHPLG 2018 – Urban Development and Building Heights – Guidelines for Planning Authorities*

Appendix C: Primary / Secondary Assessments

Both the Building Height Guidelines[6] and the Apartment Guidelines[7] ask that efforts must be made to clearly identify instances where it has not been possible to fully meet all the requirements/recommendations of relevant daylight standards.

It is BPG3's view that this requirement is satisfied within this report in the following way:

- All tests have been carried out on a quantitative basis against the most sensible/obvious interpretation of the guidelines
- The numeric outputs of this quantitative testing are presented within tables.
- In instances where the light levels predicted do not satisfy the advisory minimums recommended in daylight guidelines this is clearly identified within the tables. All relevant tables include a dedicated column which expresses this status in binary terms.
- Where additional commentary is provided within the results section for each test, these sections generally begin with a consideration of the proportion of instances where conventional advisory minimums have been satisfied.

Having clearly communicated the degree to which the light levels predicted for a given design accord with the conventional advisory minimums detailed in daylight guidelines (primary assessment) BPG3 goes on in many instances to consider the significance/meaning of these primary test results (secondary assessment).

In this regard it is important for the reader to be aware that the professional opinions/interpretations which attend these primary test results go beyond the meaning of the BRE guide in some instance and that the opinions/interpretations expressed are informed by a wider understanding of daylight and its relationship to urban planning.

It is BPG3's view that this approach is necessary as the outputs from conventional daylight testing do not always provide a reliable indication of daylight acceptability. Some of the reasons why this can be true include:

- Many of the test methods detailed in daylight guidelines were originally developed in the late 80's at a time when it was assumed practitioners would conduct their assessments using pencil and paper. For a phenomenon as complex as natural light to be quantified

[6] Urban Development and Building Height Guidelines for Planning Authorities, issued by the Department of Housing Planning and Local Government in December 2018

[7] Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities issued by the Department of Housing, Local Government and Heritage 2020.

using a pencil and paper approach a number of very significant simplifications had to be adopted.

- The simplifications involved in conventional daylight testing place limitations on the degree to which results accurately represent the reality of daylight acceptability, as observed by a human observer.
- Further to this BPG3 is aware of certain scenarios where the simplifications present in conventional test methods produce results which are not only rough approximations of reality but are gross misrepresentations of the reality which would be experienced by a human observer[8].
- It is also important to recognise that many of the performance targets recommended in daylight guidelines are presented as a one -size-fits-all indicator of daylight acceptability. It is BPG3's view that daylight requirements are, in practice, very varied and that factors such as the functional use of a space, occupant expectations, as well as wider contextual factors are all capable of acting as upward or downward modifiers to the conventional one-size-fits-all minimums detailed in daylight guidelines.
- Further to this it is important to recognise that the conventional daylight targets recommended in daylight guidelines were set independently, and with little regard for, current planning policy. It is important to note that many of the minimum standards recommended in daylight guidelines were set over thirty years ago at a time when sustainable development and urban consolidation would not have been as pressing a priority as they are today.

For reasons like the above BPG3 maintains that it is important in some instance to offer a professional opinion regarding the significance/meaning of primary test results. Where a basis exists to support the opinion BPG3 will in some instances conclude that light levels are likely to be acceptable even though the conventional minimums detailed in daylight guidelines have not been satisfied.

It is of fundamental importance for a reader to understand that the opinions/interpretations presented within this report are not intended to replace the results/findings of primary testing. In this regard it is advisable for a reader to take care to locate and consider the results of primary testing

[8] *By way of example the BRE's procedure for assessing the adequacy of skylight amenity within affected accommodation is determined with reference to a measure called the Vertical Sky Component (VSC). Before placing to much weight on the meaning of the results obtained in reliance on VSC testing it is important to recognise that this testing ignores many of the factors which contribute in a very direct way to the daylight performance of a room. The factors which this test procedure ignores include window size, room size, room and window orientation as well as the transmittance of window glazing. Further to this VSC only accounts for skylight which travels directly from the sky; the benefit of reflected light is ignored. When testing impact using VSC the BRE advise that occupants will notice a drop light levels in circumstances where VSC levels drop by more than 20% with the proposed development in place. A very serious shortcoming of impact testing can be observed in instance where the affected room secures most of it's light from secondary sources in the baseline scenario (i.e., very little access to light directly from the sky; most or the light available in baseline scenario is reflected from external surfaces). In this scenario, where direct skylight contributes very little to the daylighting of a space, a 20% drop in VSC is unlikely to be detectable by occupants.*

in the first instance. Having first established how well a given design performs against conventional daylight testing it is BPG3's view that it is appropriate to then go on to consider the significance/meaning of primary test results. It is on this basis that BPG3 has included opinions/interpretations within this report. BPG3 would encourage the reader to accept or to reject these opinions/interpretations on their merit.

Appendix D: Source Material

The 3D models used in our analysis were generated using information garnered from the following sources.

Model Elements	Source	Drawing No. / File Name /	Title / Description	Date Issued / Accessed
Proposed Development	HJL	BR-HJL--00-DR-A-1010	Ground Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1011	First Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1012	Second Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1013	Third Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1014	Fourth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1015	Fifth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1016	Sixth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1017	Seventh Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1018	Eight Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1019	Ninth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1020	Tenth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1021	Eleventh Floor Plan	6th April 2022
		BR-HJL--ZZ-DR-A-2001	Elevation West	6th April 2022
		BR-HJL--ZZ-DR-A-2002	Elevation North	6th April 2022
		Email communications	Design Amendments	14th April 2022
Neighbouring Buildings - Site Levels	Land Surveys		Belgard Square East	25th May 2021
Macro Landscape and Wider Context	Google Earth	-	-	-

Appendix E: Conventions used to Assess the Significance of Impacts

The impacts identified in this assessment have been classified with reference to the guidance provided in Section 3.7 of the EPA guidance document *'Guidelines on the information to be contained in Environmental Impact Assessment Reports'* 2017 and to Appendix I of the BRE guide *'Site layout planning for daylight and sunlight – A guide to good practice'* 2011.

A justification for why impacts are assessed using the framework outlined below is used is detailed in Appendix F: Justification for the adoption of expanded impact classification scheme.

As some level of daylight impact is often inevitable, especially where new developments are proposed within urban neighbourhoods, it is often necessary for planning authorities to carry out a balancing exercise between local impacts and wider planning benefits. In striking an appropriate balance between these competing concerns it is often helpful for daylight impact results to be expressed in terms of their significance[9].

Having regard to the general approach recommended within the EPA guidelines, the significance of the impact registering on each receptor has been evaluated. For the purpose of this assessment the significance of an impact has been determined with reference to both the magnitude of the impact and the sensitivity of the space to change. Both factors are attributed the same weight and significance is determined as a direct product of these factors. The sensitivity of the space (room/outdoor area) to change is determined with regard to two principal factors including 1) The likelihood that occupants would expect high levels of indoor skylight/sunlight 2) the likelihood that the space would be occupied during daylight hours. The sensitivity rating which is attributed to various different room types when assessing the significance of indoor skylight impacts is presented in Table 6; the sensitivity rating attributed to various rooms when assessing the significance of indoor sunlight impacts is presented in Table 7; the sensitivity rating attributed to various outdoor spaces when assessing the significance of outdoor sunlight impacts is presented in Table 8.

Magnitude of impact is calculated with reference to the relative departure from advisory minimums. It is categorised on a seven-point scale with zero level of departure being categorised as Negligible and departures greater than 40% being categorised as high.

Table 5 Conventions used to categorise the magnitude of impact.

Relative Departure from Advisory Minimum	Magnitude of Impact
No Departure	Negligible
0% to 8%	Negligible/Low
8% to 16%	Low
16% to 24%	Low/Medium
24% to 32%	Medium
32% to 40%	Medium/High
>40%	High

[9] Within the EPA guidelines the significance of an effect is described as "the importance of the outcome of the effects (the consequence of the change)"

Table 6 Sensitivity ratings attribute to various rooms when assessing internal skylight impacts.

		(A)	*(B)*	*(C)= Product of (A) and (B)*
ID	Room Type	Likelihood that occupants would expect high levels of indoor skylight amenity	Likelihood that space would be occupied during daylight hours	Sensitivity Rating (Indoor Skylight)
CLR	Communal living space in retirement/care home	High	High	High
RW	Recovery ward in hospital	High	High	High
PLR	Private living space in retirement/care home	High	Medium/High	High
L	Principal living room in dwelling	Medium/High	Medium/High	Medium/High
C	Classroom in primary/secondary school or creche facility	Medium/High	Medium/High	Medium/High
CRB	Café/ Restaurant / Bar where ambiance is particularly reliant on natural light	Medium	Medium/High	Medium
K	Kitchen in dwelling	Medium/High	Medium	Medium
SO	Special office/studio where there is a reliance on natural light to carry out work-based tasks	Medium/High	Medium	Medium
CH	Place of worship	Medium	Low/Medium	Low
CLS	Communal living space in 3rd level student accommodation	Medium	Medium	Low/Medium
S	Study in Domestic Residence	Medium	Medium	Low/Medium
B	Bedroom in dwelling	Medium	Low/Medium	Low
O	Typical office/studio where natural light is welcomed but not essential for work activities	Low/Medium	Medium	Low
CRBD	Café/ Restaurant / Bar where ambiance does not rely on the presence of natural light	Low	Medium/High	Low
BS	Bedroom in 3rd level student accommodation	Low/Medium	Low/Medium	Low
RL	Retail space which relies primarily on artificial light for displaying products	Low	Medium	Low
BH	Bedroom in hotel	Low	Low/Medium	Negligible/Low
W	Warehouse / Storage Facility	Negligible/Low	Low	Negligible

Table 7 Sensitivity ratings attribute to various rooms when assessing internal sunlight impacts.

		(A)	*(B)*	*(C)= Product of (A) and (B)*
ID	Room Type	Likelihood that occupants would expect high levels of indoor sunlight amenity	Likelihood that space would be occupied during daylight hours	Sensitivity Rating (Indoor Sunlight)
CLR	Communal living space in retirement/care home	Low/Medium	High	Medium
RW	Recovery ward in hospital	Low/Medium	High	Medium
PLR	Private living space in retirement/care home	Low/Medium	Medium/High	Low/Medium
L	Principal living room in dwelling	Low/Medium	Medium/High	Low/Medium
C	Classroom in primary/secondary school or creche facility	Low	Medium/High	Low
CRB	Café/ Restaurant / Bar where ambiance is particularly reliant on natural light	Low	Medium/High	Low
K	Kitchen in dwelling	Low	Medium	Low
SO	Special office/studio where there is a reliance on natural light to carry out work-based tasks	Negligible/Low	Medium	Negligible/Low
CH	Place of worship	Low	Low/Medium	Negligible/Low
CLS	Communal living space in 3rd level student accommodation	Low	Medium	Low
S	Study in Domestic Residence	Low	Medium	Low
B	Bedroom in dwelling	Low	Low/Medium	Negligible/Low
O	Typical office/studio where natural light is welcomed but not essential for work activities	Negligible	Medium	Negligible
CRBD	Café/ Restaurant / Bar where ambiance does not rely on the presence of natural light	Negligible	Medium/High	Negligible
BS	Bedroom in 3rd level student accommodation	Negligible/Low	Low/Medium	Negligible/Low
RL	Retail space which relies primarily on artificial light for displaying products	Negligible	Medium	Negligible
BH	Bedroom in hotel	Negligible/Low	Low/Medium	Negligible/Low
W	Warehouse / Storage Facility	Negligible	Low	Negligible

Table 8 Sensitivity ratings attribute to various outdoor spaces when assessing outdoor sunlight impacts.

		(A)	*(B)*	*(C)=Product of (A) by (B)*
Identifier	Type of Outdoor Space	Likelihood that users would expect high levels of outdoor sunlight amenity	Likelihood that space would be occupied during daylight hours	Sensitivity Rating (Outdoor Sunlight)
G	Small Residential Garden	High	Low/Medium	Medium
LO	Large Public Park	High	Medium/High	High
PRL	Public Realm with potential for lingering	Medium/High	High	High
PRT	Public Realm with transient use	Low/Medium	Medium	Low
CEM	Cemetery	Low/Medium	Low/Medium	Low
PP	Playground within public park	High	High	High
PS	Playground on school grounds	Medium/High	Medium/High	Medium/High
CR	Private Communal Recreation Space	Medium	Medium/High	Medium
SO	Small Public Open Space (Pocket Park, etc.)	Medium	High	Medium/High
Y	Small Residential Yard	Low	Low	Negligible/Low

Appendix F: Justification for the adoption of expanded impact classification scheme

Appendix I of the BRE Guide provides guidance on language which should be used to describe impacts. More specifically Section I6 of the BRE guide provides the following advice:

> *"Where the loss of skylight or sunlight does not meet the guidelines in this book, the impact is assessed as minor, moderate or major adverse.*
>
> *Factors tending towards a minor adverse impact include:*
> - *Only a small number of windows or limited area of open space are affected*
> - *The loss of light is only marginally outside the guidelines*
> - *An affected room has other sources of skylight or sunlight*
> - *The affected building or open space only has a low-level requirement for skylight or sunlight*
> - *There are particular reasons why an alternative, less stringent, guideline should be applied (see Appendix F).*
>
> *Factors tending towards a major adverse impact include:*
> - *A large number of windows or large area of open space are affected*
> - *The loss of light is substantially outside the guidelines*
> - *All the windows in a particular property are affected*
> - *The affected indoor or outdoor spaces have a particularly strong requirement for skylight or sunlight, e.g., Living room in a dwelling or a children's playground*. "

It is BPG3's view that while this guidance provides a rough indication of how impacts should be classified it is not sufficiently detailed to address the requirements of current environmental impact guidance.

Notable shortcomings in the BRE's guidance include:

- The thresholds at which it is reasonable for a practitioner to conclude that only a small/large number of windows are affected is not defined.
- The thresholds at which a loss of light is considered to be, either only marginally outside the guidelines, or substantially outside the guidelines, is not defined.
- The degree to which the assumed lighting requirements of subject rooms can be used to as either an upward or downward modifier in the categorisation of impact is not defined
- The classification scale provided is relatively course with only three categories proposed (Minor, Moderate, Major). A finer classification scale is needed to identify the impacts which fall in the margins between.

The primary upshot of this lack of precision is that it is very hard for a daylight consultant to reliably communicate the reasons why a particular classification has been attributed to the specific impacts which have been

identified within a daylight assessment. It is BPG3's view that in instances where the reasons a particular impact classification has been attributed are not clear the validity of the classification is undermined. Further to this it is BPG3's view that without some form of systematic categorisation framework it is very difficult for a daylight consultant to attribute reliable categorisations to the multitude of impacts which can register within an assessment.

In order to address this BPG3 has expanded and adapted the BRE's proposed classification scheme to align more closely with the best practice approaches detailed in Section 3.7 of the EPA guidance document *'Guidelines on the information to be contained in Environmental Impact Assessment Reports'* 2017.

The resulting impact classification framework is presented in Appendix E: Conventions used to Assess the Significance of Impacts.

Appendix G: Windows Identified for Testing in Studies A & B

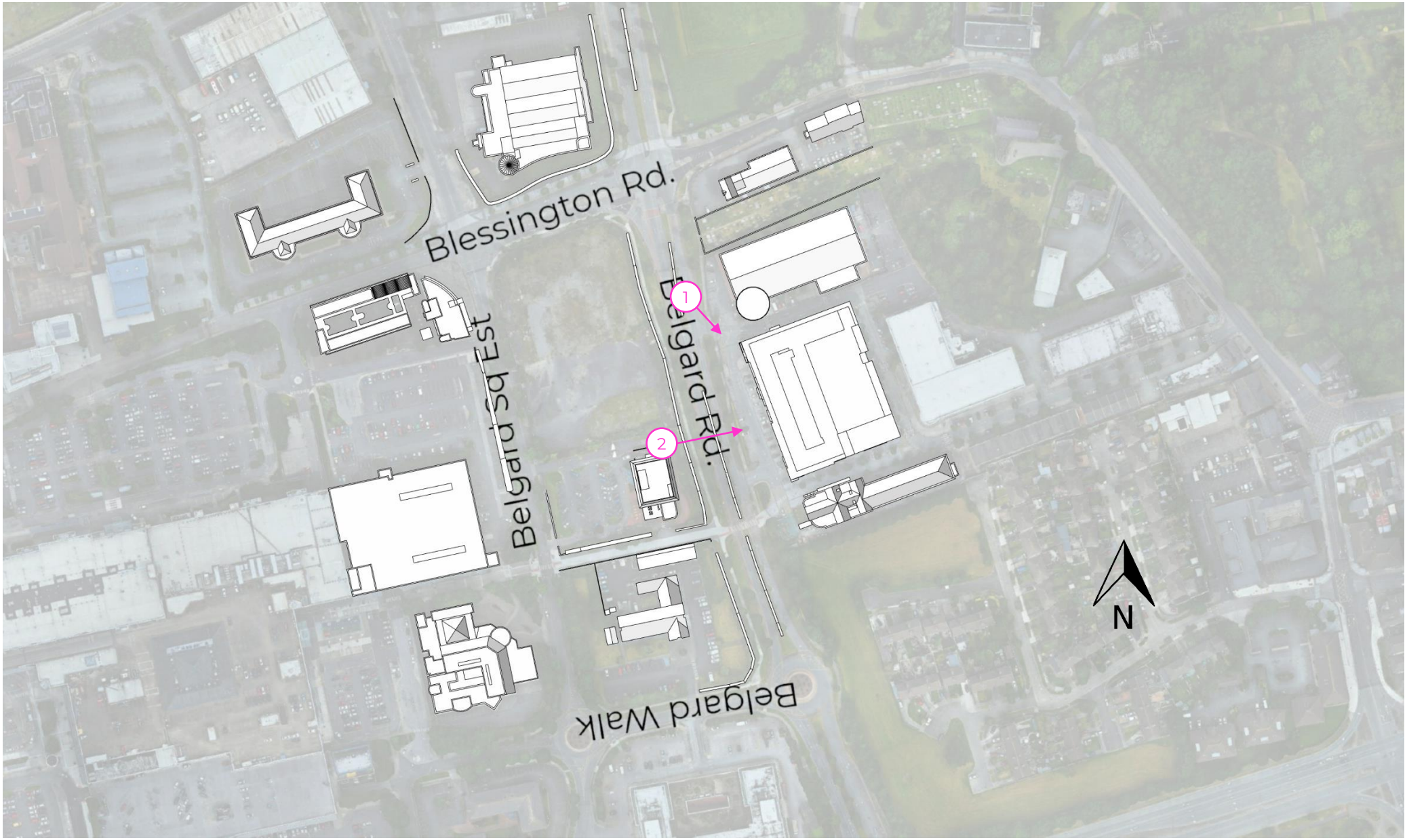


Figure 6 Overview image showing the location and direction of the views used to present the windows selected for analysis in Studies A and B; see following pages.

View 1

Figure 7 Windows visible within View 1 which have been identified for analysis, see Figure 6 for location and direction of view.

View 2

Figure 8 Windows visible within View 2 which have been identified for analysis, see Figure 6 for location and direction of view.

Appendix H: Shadow Casting Imagery

The set of overshadowing diagrams which accompany this report are discretionary and are not an integral part of the recommended assessment procedure. They have been included simply to provide the reader with some context regarding the orientation of the site with respect to the sun.

The BRE Guide provides the following guidance with respect to shadow plots:

> *"When there are existing buildings as well as the proposed one, 'before' and 'after' shadow plots showing the difference that the proposed building makes may be helpful. In interpreting the impact of such differences, it must be borne in mind that nearly all structures will create areas of new shadow, and some degree of transient overshadowing of a space is to be expected. "*

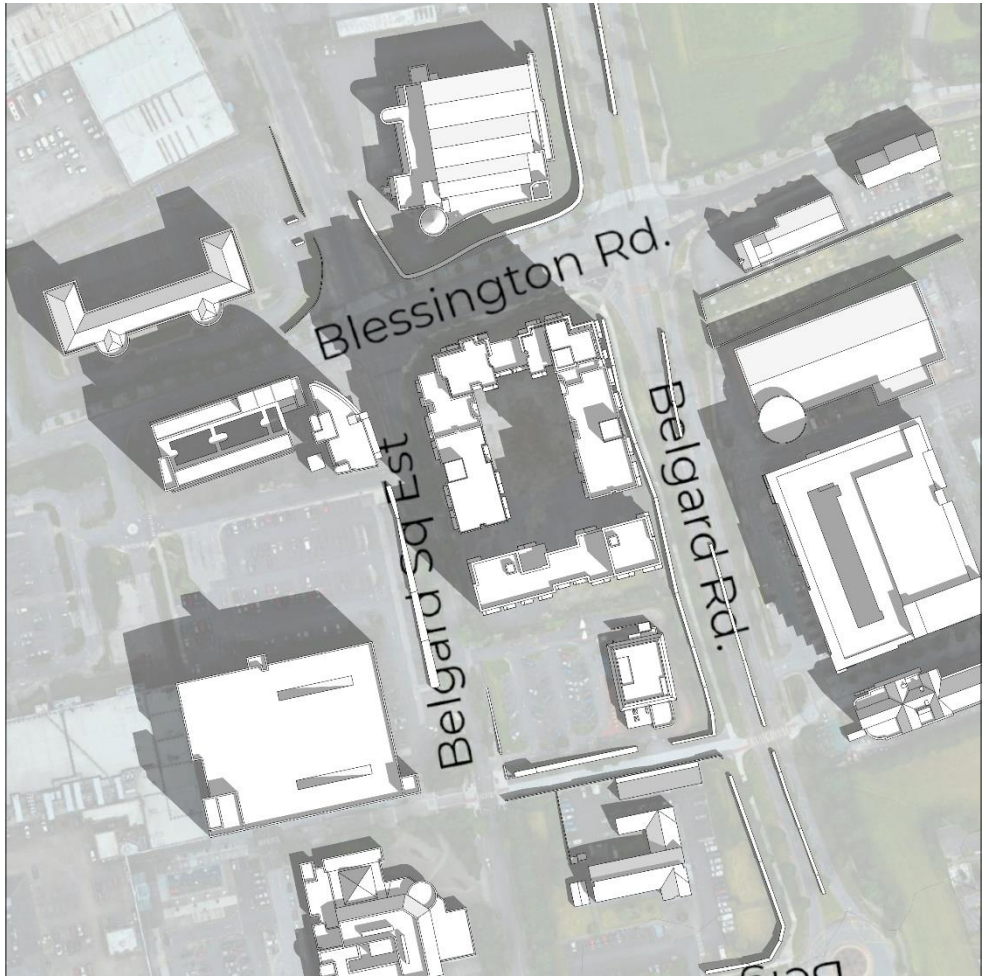
Further to this the BRE guide recommends that if a space is used all year round, that the spring equinox is the best date for which to prepare shadow plots as it gives an average level of overshadowing. Shadow casting imagery for salient times on the 21st of March have been generated for this project.

Shadows Cast at 8am (UTC+0) on the 21st March - Before Development Scenario

Shadows Cast at 8am (UTC+0) on the 21st March - After Development Scenario

Pursuant to Section 6.6 of the DoHPLG guideline document *'Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities'* 2018 the information conveyed in this imagery cannot be relied upon to adduce impacts.

Shadows Cast at 10am (UTC+0) on the 21st March - Before Development Scenario



Shadows Cast at 10am (UTC+0) on the 21st March - After Development Scenario

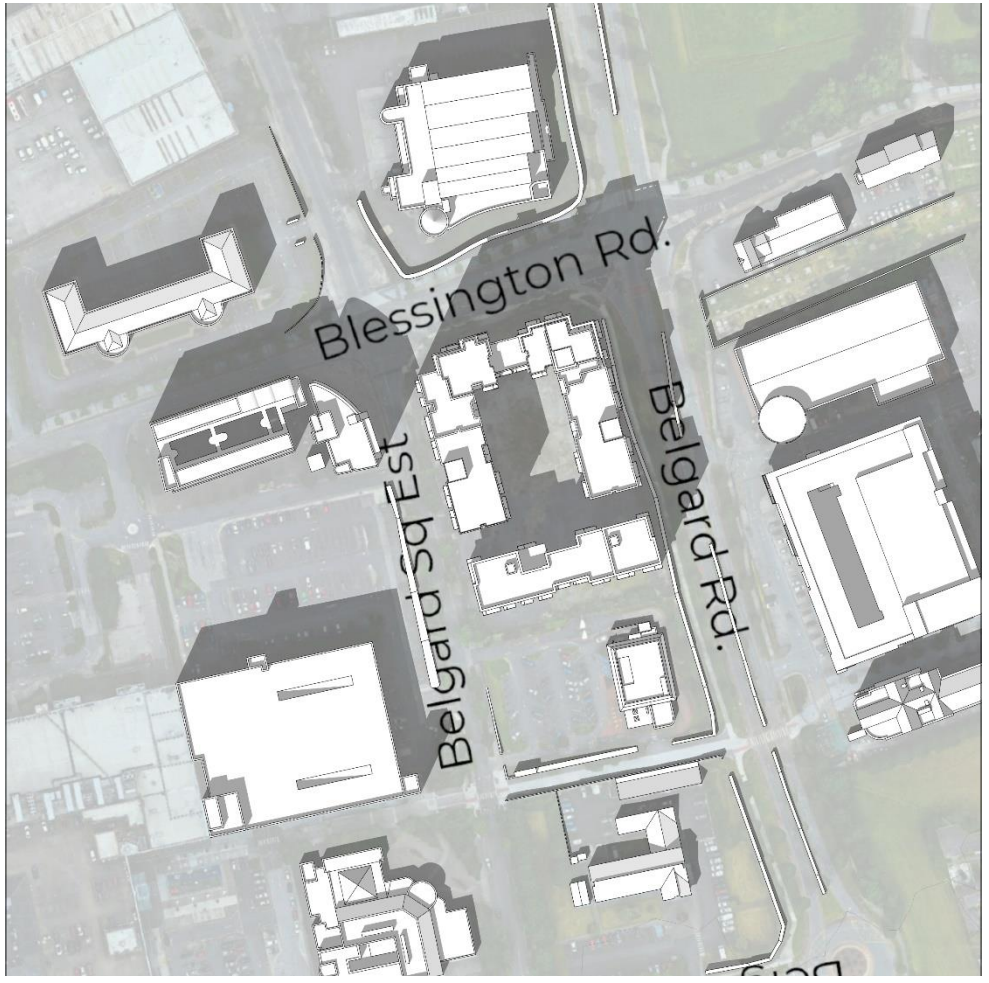
Pursuant to Section 6.6 of the DoHPLG guideline document *'Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities'* 2018 the information conveyed in this imagery cannot be relied upon to adduce impacts.

Shadows Cast at 12pm (UTC+0) on the 21st March - Before Development Scenario

Shadows Cast at 12pm (UTC+0) on the 21st March - After Development Scenario

Pursuant to Section 6.6 of the DoHPLG guideline document *'Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities'* 2018 the information conveyed in this imagery cannot be relied upon to adduce impacts.

Shadows Cast at 2pm (UTC+0) on the 21st March - Before Development Scenario



Shadows Cast at 2pm (UTC+0) on the 21st March - After Development Scenario

Pursuant to Section 6.6 of the DoHPLG guideline document *'Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities'* 2018 the information conveyed in this imagery cannot be relied upon to adduce impacts.

Shadows Cast at 4pm (UTC+0) on the 21st March - Before Development Scenario

Shadows Cast at 4pm (UTC+0) on the 21st March - After Development Scenario

Pursuant to Section 6.6 of the DoHPLG guideline document *'Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities'* 2018 the information conveyed in this imagery cannot be relied upon to adduce impacts.

Shadows Cast at 6pm (UTC+0) on the 21st March - Before Development Scenario

Shadows Cast at 6pm (UTC+0) on the 21st March - After Development Scenario

Pursuant to Section 6.6 of the DoHPLG guideline document *'Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities'* 2018 the information conveyed in this imagery cannot be relied upon to adduce impacts.

Appendix I: About the Author

Rory Walsh BEng MEngSc MScSP PhD MIPI is a building performance engineer with key competencies in energy, comfort, and daylight modelling. Specialising in the assessment of daylight adequacy in a planning and development context Rory has had cause to write and review many daylight reports over the past ten years. Rory acts as principal consultant with BPG3.

Education & Experience:

- Bachelor's degree in mechanical engineering, awarded by NUIG
- Master's in Engineering Science awarded for research on the subject of thermal mass in non-domestic buildings with the Energy Research Group, UCD
- Doctorate awarded for research on the subject of natural ventilation in non-domestic buildings with TrinityHaus, Trinity College Dublin.
- Master's in Spatial Planning, awarded by TU Dublin.
- 10 years practice as a daylight consultant working with Aurea Consult and BPG3.

ASSESSMENT OF DAYLIGHT ADEQUACY WITHIN A PROPOSED DEVELOPMENT ON BELGARD SQUARE EAST, DUBLIN 24. (TRADITIONAL TESTING)

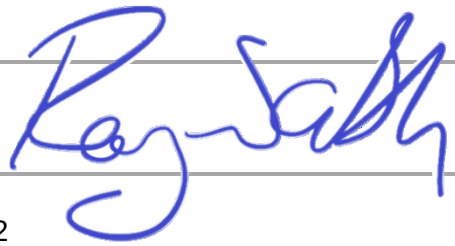
Daylight Report 2 of 3

Prepared for Ravensbrook Limited
Date: 7th June 2020
REV 04

BPG3.

Rev.	Description	Issued by	Date	Checked
Rev 01	Assessment of daylight levels within a proposed residential development	RW	04/05/2022	KR
Rev 02	Updated to account for design amendments	RW	17/05/2022	KR
Rev 03	Minor edits throughout	RW	25/05/2022	KR
Rev 04	Minor changed to format throughout	RW	07/06/2022	KR

This report has been prepared for the sole benefit, use and information of Ravensbrook Limited for the purposes set out in the report or instructions in commissioning it. The liability of BPG3 in respect of the information contained in the report will not extend to any third party.

author	Rory Walsh
signature	
date	7th June 2022
approved	Karen Rock
signature	
date	7th June 2022

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CONTENTS

Glossary

Average Daylight Factor	ratio of total daylight flux incident on a reference area to the total area of the reference area, expressed as a percentage of outdoor illuminance on a horizontal plane due to an unobstructed sky of assumed or known luminance distribution.
Annual Probable Sunlight Hours (APSH)	the long-term average of the total number of hours during the year in which direct sunlight reaches the unobstructed ground (when clouds are considered)
Daylight	combined sunlight and skylight
Daylight Factor	the ratio of the illuminance at a particular point within an enclosure to the simultaneous unobstructed outdoor illuminance under the same sky conditions, expressed as a percentage.
Skylight	part of solar radiation that reaches the earth's surface as a result of scattering in the atmosphere.
Sunlight	part of solar radiation that reaches the earth's surface as parallel rays after selective attenuation by the atmosphere.
Vertical Sky Component	ratio of the part of illuminance, at a point on a given vertical plane, that is received directly from a CIE (Commission Internationale De L'Eclairge) standard overcast sky, to illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. The VSC does not include reflected light, either from the ground of from other buildings
Winter Probable Sunlight Hours (WPSH)	the long-term average of the total number of hours between the 21st of September and the 21st of March in which direct sunlight reaches the unobstructed ground (when clouds are considered)
Working Plane	horizontal, vertical, or inclined plane in which a visual task lies. Normally the working plane may be taken to be horizontal, 0.85m above the floor in houses and factories, 0.7 m above the floor in offices.

Introduction

BPG3 have been engaged by Ravensbrook Limited to assess the daylight levels associated with a proposed residential development at Belgard Square East, Dublin 24.

The proposal relates to the construction of a mixed-use development including 318 no. "Build-to-Rent" residential apartments and commercial use (c. 2,206 sqm) on a c. 1.25 ha site at Belgard Square East, Belgard Road and Blessington Road, Tallaght, Dublin 24.

As mandated in Irish planning policy[1] the assessments presented in this report have been carried out with reference to the methods detailed in the BRE (Building Research Establishment) guide *'Site layout planning for daylight and sunlight - A guide to good practice'* 2nd Edition and BS 8206-2: 2008 – *'Lighting for Buildings – Part 2: Code of Practice for Daylighting'*, British Standards Institute, 2008. In the interest of completeness, Ravensbrook Limited have also commissioned BPG3 to assess daylight adequacy with reference to the testing regime detailed in I.S EN 17037. This alternative assessment is presented as a self-standing report; see report Daylight Report 3 of 3, titled '*Assessment of Daylight Adequacy Within a Proposed Development on Ravens Rock Road, Sandyford, Dublin 18. (EN 17037 Testing)'.*

This assessment investigates the levels of daylight amenity which would be provided within the accommodation which is being proposed as part of this development. Sunlight available to outdoor recreation spaces has also been considered. The assessment of impact to neighbouring properties is presented in a separate report; see Daylight Report 1 of 3.

A total of three separate daylight studies are presented within this report:

Study D: Assessment of skylight amenity available within proposed accommodation: An assessment of the skylight amenity which would be provided within the accommodation which is being proposed as part of this development.

Study E: Assessment of sunlight amenity available to proposed accommodation: An assessment of the sunlight amenity which would be available to the accommodation which is being proposed as part of this development.

Study F: Assessment of sunlight amenity available within proposed outdoor recreation areas: An assessment of the degree to which the potential for good sunlighting exists within the main outdoor recreation space which is being proposed as part of this development.

[1] Please refer to Appendix A: Policy Basis for Daylight Standards

As recommended in the BRE guide, a quantitative approach to the assessment of daylight conditions has been adopted in this study. Numeric calculations have been carried out to predict the daylight levels which would be available at a number of test points and areas. The results of these calculations are presented in tables.

The quantitative assessment has been carried out using computational methods. Three-dimensional computer models of the existing site, the existing buildings, and the proposed development have all been generated and simulated under appropriate sky conditions in order to obtain accurate predictions.

Information relating to the proposed development and the surrounding areas has been supplied to BPG3 by Henry J Lyons in electronic format. The study assumes that the information provided is accurate and that no omissions have been made. The particular information sources which have been used to develop the models used in this study are outlined in Appendix D: Source Material.

It is important to note that whilst the methods presented in the BRE guide provide designers and planners with a clear and objective way of assessing daylight levels, the associated performance targets are not mandatory standards. This is clarified within the introductory section of the BRE guide:

> *"The advice given here is not mandatory and this document 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 because natural lighting is only one of many factors in site layout design."*

While it is accepted that advisory targets should always be aspired to, the associated imperatives which exist to create sustainable levels of urban density, to encourage the development of compact urban form and to make best use of scarce urban land will often place restrictions on the degree to which it is appropriate to pursue full compliance with advisory minimums.

In instances where it can be shown that reasonable levels of daylight would be provided it is BPG3's view that a clear basis for accepting light levels which fall below advisory minimums will have been established. It is on this basis that both primary assessments (as ascertained with reference to conventional testing) and secondary assessments (based on a professional opinion/interpretation which is informed by wider considerations) have been provided within this report. BPG3 recommend that the merits of the secondary assessments should only be consider having first considered the findings of primary assessments. A deeper consideration of primary and secondary assessments is provided in Appendix C: Primary / Secondary Assessments.

In instances where significant departures are identified it is BPG3's view that shortfalls of this nature can still be deemed acceptable in instances where wider planning objectives countervail. Guidance regarding the discretion which is available to consent authorities on this matter is provided in Appendix B Discretion available to consent authorities.

Study D: Assessment of skylight amenity available within proposed accommodation

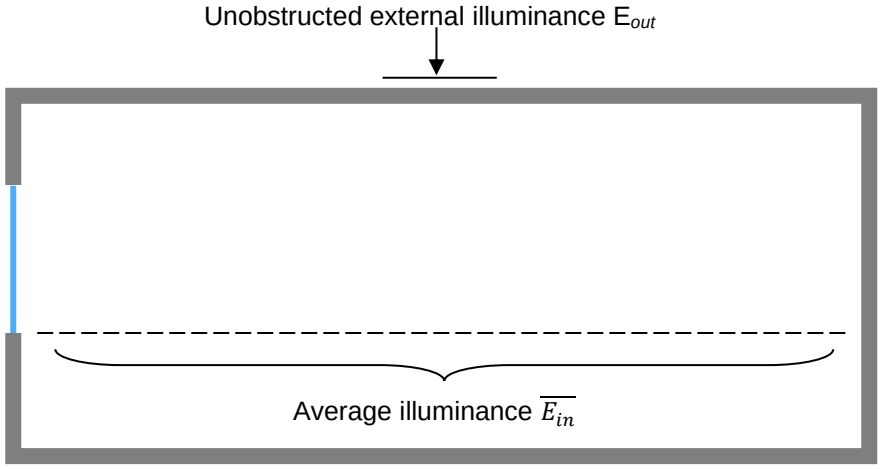
Skylight amenity relates to the general impression of brightness which is provided within a room. For the purpose of this study, it relates to the general illumination achieved within a room as a consequence of the diffuse light which enters, directly and indirectly, from an overcast sky.

Skylight amenity is assessed with respect to a parameter called the average daylight factor[2]. Rooms with a high average daylight factor are capable of accepting a relatively large proportion of the diffuse skylight which is available outside; BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting', British Standards Institute, 2008 advises that a predominantly daylit appearance can be expected in rooms where an average daylight factor above 2% is achieved.

Study D: Assessment Approach

The Average Daylight Factor (ADF) assessment is carried out with regard to the methodology outlined in BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting', British Standards Institute, 2008.

The ADF is a measure of the overall amount of daylight in a space. It is defined as the average illuminance on the working plane in a room, divided by the illuminance on the unobstructed horizontal surface outdoors; see below.



$$ADF = \frac{\overline{E_{in}}}{E_{out}} \times 100\%$$ equation 2.

When the unobstructed outdoor illuminance level is 10,000 lux and the average internal daylight level is 200 lux within a given room, then the average daylight factor for that room will be 2%.

For a given room the daylight factor is a permanent factor, which occurs on days with overcast skies. The daylight factor is calculated under a standard

[2] Regrettably, the terms skylight and daylight are used interchangeably within BS 8206 and the BRE Guide. While daylight is defined within the glossary at the start of the BRE guide as an umbrella term which covers both skylight and sunlight, the average daylight factor test presented in this section actually only considers skylight.

overcast sky, which means that the calculation is per definition independent of window orientation.

BS 8206-2 recommends that a minimum average daylight factor of 2%, 1.5% and 1% should be sought for kitchens, living rooms and bedrooms, respectively. BS 8206-2 recommends that in situations where an open plan space includes both a living room and a kitchen, the room should be assessed against the higher of the two thresholds.

In order to obtain an average daylight factor figure for each room, the daylight factor at an array of points within the room is assessed first. This exercise has been carried out by computational means.

Recognising that the intention of this test is to investigate the daylit appearance of internal spaces it follows that all portions of a room that are easily visible to the future occupants (including rear kitchen areas etc.) should be considered. It is BPG3's view that running an assessment which captures all the light levels within a room (including the darker sections which register to the rear of rooms) is the most sensible way to interpret the intentions of the BRE Guide and BS 8206. To this end the Average Daylight Factors predicted in this assessment have been calculated with reference to a grid of point daylight factors which extend across the full extent of the room under consideration. In some circumstances portions of narrow corridor which link from the main entrance door to the main open plan living space have been omitted but care has been taken to only omit the portions of these corridors which cannot readily fall within the occupant's field of view[3].

As the average daylight factor approach takes account of light which has been reflected from both external and internal surfaces, care has been taken to attribute reasonable reflectance values to all the surfaces which are present within the computational model. The particular reflectance values adopted in this study are detailed in Appendix E: Reflectance Values Adopted in Average Daylight Factor Calculations.

In accordance with guidance provided in Appendix H of the BRE guide large existing trees (which are to be retained) have been represented in their winter state. This is the most instructive state to represent trees as skylight provision is more important in winter[4]. Where advisory minimums are satisfied with these trees present in their winter state it is reasonable to assume that skylight provision will be adequate throughout the year.

Study D: Assessment Points

The level of skylight amenity which would be provided within all the habitable rooms which are being proposed as part of this development have been assessed; internal communal facilities located at ground and first floor have also been assessed. A total of 847 rooms have been tested.

[3] Based on direct line of sight from locations in the room that would be occupied for extended periods, i.e. sofas, dining rooms chairs etc.

[4] *Outdoor illuminances are lower in winter so less light will be available.*

Study D: Results

The Average Daylight Factors (ADFs) calculated for each of the rooms assessed in this study are presented in Table 1; the associated daylight factor distributions are presented in Figure 1 to Figure 12.

The results of this study indicate that high levels of compliance with guidelines would be achieved. Of the 847 rooms assessed in this study, 751 (equivalent to 89% of total) have been found to either meet or exceed the advisory minimums recommended in BS 8206. In these cases, where full compliance has been demonstrated, it is safe to assume that reasonable levels of internal skylight would be provided.

Where daylight factors are predicted to fall short of advisory minimums it is BPG3's view that internal skylight can still be considered reasonable in certain circumstances. More specifically it is BPG3's view that, notwithstanding the fact that BS 8206 recommends a minimum ADF target of 2.0% for open plan rooms which contain a kitchen, skylight levels can still be considered reasonable in instances where the ADF levels predicted for open plan kitchen/living/dining rooms remain above the 1.5% average daylight factor threshold which is recommended for living rooms. It is reasonable to make this assumption as ADF levels commensurate with the rooms predominant use (living room) would be available. It is BPG3's view that if an ADF of 1.5% is sufficient to provide an adequate daylit appearance within a living room that it should also provide an adequate daylit appearance within an open plan living room which includes a kitchen. Further to this BPG3 note that the origins of the higher ADF target for kitchens appears to relate to an assumption that a higher level of light is needed to assist with the functional activities which are often conducted in kitchens (food preparation, cleaning, etc)[5]. To the extent that the purpose of the higher ADF standard for kitchens relates principally to the support of functional activities it is BPG3's view that a carefully designed task lighting strategy can be validly substituted to address this need.

The results of this assessment indicate 96 of the rooms proposed within this development would fall short of advisory minimums; of these 96 rooms 61 relate to open plan kitchen/living/dining rooms. When the result for these 61 open plan kitchen/living/dining rooms are examined 42 are found to achieve ADF levels which exceed the relaxed 1.5% minimum. When the results for these 42 rooms are considered, in combination with the 751 rooms where full conformity with guidelines has been demonstrated, it is BPG3's view that

[5] *b. While no rationale for the elevated kitchen ADF target is provided within BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting', British Standards Institute, 2008 the origins of the 2% ADF target can be traced back through a number of preceding standards to guidance which is provided in Chapter 1: Part 1 of the British Standard Code of Practice CP3 (1964). Advice provided in this standard indicates that the overriding reason why a higher ADF target of 2% is recommended for kitchens is because the tasks carried out around the cooker, sink and preparation table are thought to be visually demanding.*

reasonable levels of internal skylight amenity can be safely assumed for 793 of the 847 rooms assessed in this study (equivalent to 94%).

While artificial light is expected to play a significant role in the lighting of the remaining spaces it is important to note that significant portions of most of these rooms (34 rooms identified; equivalent to 4% of total) would benefit from reasonable levels of internal skylight (see daylight factor distributions presented in Figure 1 to Figure 12) in local areas. On occasions where occupants are orientated towards these areas a significant portion of the room will appear adequately daylit. To the extent that artificial lighting can be relied upon to balance light levels within this type of space it is reasonable to assume that a bright and attractive appearance could be maintained.

When assessing the significance of the departures identified in this study it is important to recognise a number of compensating factors:

- A carefully designed artificial lighting strategy is envisaged to balance the light levels which would be present to the rear of the rooms with the light levels which would be provided to the front.
- Supplementary task lighting is envisaged above the sink, the cooker, and the counter areas.
- The residents of this development will be provided with access to a number of ancillary amenities including, a number of residents lounges, a gym and a co-working space.
- A significant proportion (37%) of the apartments proposed within this development exceed minimum space requirements by more than 10%.
- Private open space (balconies) will be provided to all apartments. HJL advise that the aggregate provision of private open space exceeds minimum requirements by 19%.
- Relative to the minimum proportion of dual aspect apartments required (33%) HJL advise that 45% of the apartments provided within the scheme achieve a dual aspect.
- The wider scheme has been designed to a high standard with high quality internal finishes and external landscaping envisaged.
- Additional features which would contribute to the attractiveness of these apartments include the proximity to essential services as well as the favourable location relative to retail and recreational destinations.

Table 1 Average daylight factors predicted for proposed accommodation. (Standard BS8206 testing highlighted in blue; Professional interpretation of test results highlighted in orange)

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
0	1	C	1.50	1.32	No	*Reasonable levels of skylight would be provided locally; see Note C*
0	2	C	1.50	1.26	No	*Reasonable levels of skylight would be provided locally; see Note C*
0	3	C	1.50	0.60	No	*A reliance on artificial light is anticipated; see Note D*
0	4	C	1.50	1.77	Yes	*Reasonable levels of skylight would be provided; see Note A*
0	5	C	1.50	2.56	Yes	*Reasonable levels of skylight would be provided; see Note A*
0	6	C	1.50	2.23	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	1	B	1.00	1.46	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	2	KLD	2.00	3.03	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	3	B	1.00	2.32	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	4	B	1.00	3.81	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	5	KLD	2.00	4.72	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	6	B	1.00	3.59	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	7	B	1.00	3.17	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	8	KLD	2.00	1.88	No	*Reasonable levels of skylight would be provided; see Note B*
1	9	B	1.00	3.20	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	10	B	1.00	3.02	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	11	KLD	2.00	1.84	No	*Reasonable levels of skylight would be provided; see Note B*
1	12	B	1.00	3.46	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	13	KLD	2.00	2.73	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	14	KLD	2.00	2.91	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	15	B	1.00	4.21	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	16	KLD	2.00	2.17	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	17	B	1.00	3.56	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	18	KLD	2.00	2.09	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
1	19	B	1.00	3.58	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	20	KLD	2.00	2.07	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	21	B	1.00	3.14	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	22	KLD	2.00	5.04	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	23	B	1.00	3.11	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	24	B	1.00	2.02	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	25	KLD	2.00	2.69	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	26	B	1.00	1.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	27	B	1.00	1.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	28	KLD	2.00	0.68	No	*A reliance on artificial light is anticipated; see Note D*
1	29	B	1.00	2.74	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	30	B	1.00	1.71	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	31	B	1.00	2.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	32	B	1.00	2.07	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	33	B	1.00	1.71	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	34	B	1.00	1.77	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	35	KLD	2.00	0.72	No	*A reliance on artificial light is anticipated; see Note D*
1	36	B	1.00	1.36	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	37	B	1.00	1.48	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	38	KLD	2.00	3.64	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	39	B	1.00	3.75	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	40	B	1.00	3.38	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	41	KLD	2.00	1.84	No	*Reasonable levels of skylight would be provided; see Note B*
1	42	B	1.00	3.73	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	43	B	1.00	3.53	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	44	KLD	2.00	1.98	No	*Reasonable levels of skylight would be provided; see Note B*
1	45	B	1.00	3.87	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
1	46	C	1.50	2.27	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	47	C	1.50	1.16	No	*??????*
1	48	B	1.00	1.98	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	49	KLD	2.00	1.54	No	*Reasonable levels of skylight would be provided; see Note B*
1	50	B	1.00	0.81	No	*Reasonable levels of skylight would be provided locally; see Note C*
1	51	B	1.00	0.72	No	*Reasonable levels of skylight would be provided locally; see Note C*
1	52	KLD	2.00	1.79	No	*Reasonable levels of skylight would be provided; see Note B*
1	53	B	1.00	1.38	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	54	KLD	2.00	1.02	No	*A reliance on artificial light is anticipated; see Note D*
1	55	B	1.00	2.61	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	56	B	1.00	2.48	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	57	KLD	2.00	2.19	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	58	B	1.00	1.29	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	59	C	1.50	2.25	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	60	B	1.00	3.92	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	61	KLD	2.00	1.18	No	*Reasonable levels of skylight would be provided locally; see Note C*
1	62	B	1.00	0.89	No	*Reasonable levels of skylight would be provided locally; see Note C*
1	63	KLD	2.00	2.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	64	B	1.00	3.81	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	65	KLD	2.00	2.33	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	66	B	1.00	3.81	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	67	B	1.00	3.08	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	68	KLD	2.00	3.77	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	69	B	1.00	1.44	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	70	KLD	2.00	4.95	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	71	B	1.00	2.20	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	72	KLD	2.00	2.29	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
1	73	B	1.00	1.48	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	74	B	1.00	2.59	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	75	KLD	2.00	1.48	No	*Reasonable levels of skylight would be provided locally; see Note C*
1	76	B	1.00	1.48	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	77	B	1.00	2.90	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	78	KLD	2.00	1.42	No	*Reasonable levels of skylight would be provided locally; see Note C*
1	79	B	1.00	2.71	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	80	B	1.00	3.79	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	81	KLD	2.00	2.36	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	82	B	1.00	2.24	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	83	B	1.00	3.73	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	84	KLD	2.00	3.68	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	85	B	1.00	2.00	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	86	B	1.00	1.67	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	87	KLD	2.00	2.73	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	88	B	1.00	1.11	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	89	B	1.00	2.44	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	90	KLD	2.00	1.17	No	*A reliance on artificial light is anticipated; see Note D*
1	91	B	1.00	0.94	No	*Reasonable levels of skylight would be provided locally; see Note C*
1	92	KLD	2.00	1.45	No	*Reasonable levels of skylight would be provided locally; see Note C*
1	93	B	1.00	0.63	No	*A reliance on artificial light is anticipated; see Note D*
1	94	B	1.00	0.72	No	*Reasonable levels of skylight would be provided locally; see Note C*
1	95	KLD	2.00	1.62	No	*Reasonable levels of skylight would be provided; see Note B*
1	96	B	1.00	1.87	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	97	KLD	2.00	2.02	Yes	*Reasonable levels of skylight would be provided; see Note A*
1	98	B	1.00	0.51	No	*A reliance on artificial light is anticipated; see Note D*
1	99	B	1.00	0.63	No	*A reliance on artificial light is anticipated; see Note D*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
1	100	KLD	2.00	1.60	No	*Reasonable levels of skylight would be provided; see Note B*
2	1	B	1.00	1.80	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	2	KLD	2.00	3.08	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	3	B	1.00	2.36	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	4	B	1.00	4.34	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	5	KLD	2.00	5.48	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	6	B	1.00	2.44	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	7	B	1.00	3.57	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	8	KLD	2.00	2.28	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	9	B	1.00	2.23	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	10	B	1.00	3.62	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	11	KLD	2.00	2.17	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	12	B	1.00	2.42	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	13	KLD	2.00	2.92	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	14	KLD	2.00	2.65	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	15	B	1.00	3.41	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	16	KLD	2.00	2.79	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	17	B	1.00	3.63	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	18	KLD	2.00	2.24	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	19	B	1.00	3.68	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	20	KLD	2.00	2.22	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	21	B	1.00	2.36	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	22	KLD	2.00	5.17	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	23	B	1.00	3.13	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	24	B	1.00	2.16	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	25	KLD	2.00	2.98	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	26	B	1.00	1.79	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
2	27	B	1.00	0.81	No	*Reasonable levels of skylight would be provided locally; see Note C*
2	28	KLD	2.00	0.84	No	*A reliance on artificial light is anticipated; see Note D*
2	29	B	1.00	3.34	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	30	B	1.00	1.82	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	31	B	1.00	2.23	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	32	B	1.00	2.22	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	33	B	1.00	1.82	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	34	B	1.00	3.46	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	35	KLD	2.00	0.70	No	*A reliance on artificial light is anticipated; see Note D*
2	36	B	1.00	1.18	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	37	B	1.00	1.64	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	38	KLD	2.00	3.61	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	39	B	1.00	2.44	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	40	B	1.00	3.74	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	41	KLD	2.00	2.00	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	42	B	1.00	2.51	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	43	B	1.00	3.82	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	44	KLD	2.00	2.08	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	45	B	1.00	2.37	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	46	B	1.00	3.95	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	47	KLD	2.00	2.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	48	B	1.00	2.41	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	49	B	1.00	1.64	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	50	KLD	2.00	3.99	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	51	B	1.00	4.09	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	52	KLD	2.00	4.77	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	53	B	1.00	3.25	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
2	54	B	1.00	6.79	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	55	KLD	2.00	2.53	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	56	B	1.00	2.33	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	57	B	1.00	3.41	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	58	B	1.00	4.17	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	59	B	1.00	5.15	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	60	B	1.00	4.44	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	61	B	1.00	3.84	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	62	KLD	2.00	2.66	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	63	B	1.00	4.44	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	64	B	1.00	1.88	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	65	KLD	2.00	4.87	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	66	B	1.00	2.12	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	67	KLD	2.00	5.50	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	68	B	1.00	1.72	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	69	KLD	2.00	3.60	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	70	B	1.00	0.77	No	*Reasonable levels of skylight would be provided locally; see Note C*
2	71	B	1.00	1.52	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	72	KLD	2.00	1.32	No	*Reasonable levels of skylight would be provided locally; see Note C*
2	73	B	1.00	3.13	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	74	B	1.00	1.68	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	75	KLD	2.00	1.66	No	*Reasonable levels of skylight would be provided; see Note B*
2	76	B	1.00	3.50	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	77	B	1.00	2.19	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	78	KLD	2.00	1.89	No	*Reasonable levels of skylight would be provided; see Note B*
2	79	B	1.00	3.66	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	80	B	1.00	2.17	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
2	81	KLD	2.00	4.33	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	82	B	1.00	2.14	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	83	B	1.00	2.00	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	84	KLD	2.00	2.08	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	85	B	1.00	2.67	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	86	B	1.00	1.11	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	87	KLD	2.00	0.94	No	*A reliance on artificial light is anticipated; see Note D*
2	88	B	1.00	2.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	89	KLD	2.00	1.58	No	*Reasonable levels of skylight would be provided; see Note B*
2	90	B	1.00	0.70	No	*A reliance on artificial light is anticipated; see Note D*
2	91	B	1.00	0.86	No	*Reasonable levels of skylight would be provided locally; see Note C*
2	92	KLD	2.00	1.74	No	*Reasonable levels of skylight would be provided; see Note B*
2	93	B	1.00	2.02	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	94	KLD	2.00	2.19	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	95	B	1.00	0.61	No	*A reliance on artificial light is anticipated; see Note D*
2	96	B	1.00	0.66	No	*A reliance on artificial light is anticipated; see Note D*
2	97	KLD	2.00	1.70	No	*Reasonable levels of skylight would be provided; see Note B*
2	98	B	1.00	2.07	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	99	KLD	2.00	2.25	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	100	B	1.00	1.72	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	101	KLD	2.00	1.37	No	*Reasonable levels of skylight would be provided locally; see Note C*
2	102	KLD	2.00	3.11	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	103	B	1.00	0.94	No	*Reasonable levels of skylight would be provided locally; see Note C*
2	104	KLD	2.00	1.70	No	*Reasonable levels of skylight would be provided; see Note B*
2	105	B	1.00	1.45	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	106	KLD	2.00	1.77	No	*Reasonable levels of skylight would be provided; see Note B*
2	107	B	1.00	0.74	No	*Reasonable levels of skylight would be provided locally; see Note C*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
2	108	B	1.00	0.62	No	*A reliance on artificial light is anticipated; see Note D*
2	109	KLD	2.00	2.37	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	110	B	1.00	2.43	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	111	KLD	2.00	1.85	No	*Reasonable levels of skylight would be provided; see Note B*
2	112	B	1.00	0.84	No	*Reasonable levels of skylight would be provided locally; see Note C*
2	113	B	1.00	0.81	No	*Reasonable levels of skylight would be provided locally; see Note C*
2	114	KLD	2.00	1.94	No	*Reasonable levels of skylight would be provided; see Note B*
2	115	B	1.00	2.72	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	116	KLD	2.00	1.01	No	*A reliance on artificial light is anticipated; see Note D*
2	117	B	1.00	1.23	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	118	B	1.00	2.79	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	119	KLD	2.00	2.08	Yes	*Reasonable levels of skylight would be provided; see Note A*
2	120	B	1.00	1.49	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	1	B	1.00	1.68	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	2	KLD	2.00	3.09	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	3	B	1.00	2.57	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	4	B	1.00	3.94	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	5	KLD	2.00	4.82	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	6	B	1.00	3.58	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	7	B	1.00	3.19	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	8	KLD	2.00	1.96	No	*Reasonable levels of skylight would be provided; see Note B*
3	9	B	1.00	3.38	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	10	B	1.00	3.07	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	11	KLD	2.00	1.91	No	*Reasonable levels of skylight would be provided; see Note B*
3	12	B	1.00	3.44	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	13	KLD	2.00	2.72	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	14	KLD	2.00	3.01	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
3	15	B	1.00	4.13	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	16	KLD	2.00	2.40	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	17	B	1.00	3.67	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	18	KLD	2.00	2.03	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	19	B	1.00	3.61	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	20	KLD	2.00	2.05	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	21	B	1.00	3.32	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	22	KLD	2.00	5.08	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	23	B	1.00	3.16	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	24	B	1.00	2.17	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	25	KLD	2.00	3.11	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	26	B	1.00	2.03	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	27	B	1.00	2.47	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	28	KLD	2.00	3.79	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	29	B	1.00	1.33	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	30	B	1.00	2.81	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	31	KLD	2.00	1.54	No	*Reasonable levels of skylight would be provided; see Note B*
3	32	B	1.00	1.32	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	33	KLD	2.00	1.74	No	*Reasonable levels of skylight would be provided; see Note B*
3	34	B	1.00	0.86	No	*Reasonable levels of skylight would be provided locally; see Note C*
3	35	B	1.00	0.88	No	*Reasonable levels of skylight would be provided locally; see Note C*
3	36	KLD	2.00	1.93	No	*Reasonable levels of skylight would be provided; see Note B*
3	37	B	1.00	2.30	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	38	KLD	2.00	2.40	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	39	B	1.00	0.74	No	*Reasonable levels of skylight would be provided locally; see Note C*
3	40	B	1.00	0.80	No	*Reasonable levels of skylight would be provided locally; see Note C*
3	41	KLD	2.00	1.81	No	*Reasonable levels of skylight would be provided; see Note B*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
3	42	B	1.00	2.17	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	43	KLD	2.00	4.54	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	44	B	1.00	3.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	45	B	1.00	4.57	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	46	KLD	2.00	2.54	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	47	B	1.00	3.90	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	48	B	1.00	4.46	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	49	B	1.00	2.90	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	50	B	1.00	4.01	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	51	B	1.00	2.52	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	52	B	1.00	3.86	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	53	KLD	2.00	2.02	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	54	B	1.00	6.43	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	55	B	1.00	3.24	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	56	KLD	2.00	4.74	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	57	B	1.00	3.85	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	58	KLD	2.00	3.16	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	59	B	1.00	2.59	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	60	B	1.00	4.30	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	61	KLD	2.00	1.99	No	*Reasonable levels of skylight would be provided; see Note B*
3	62	B	1.00	3.62	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	63	B	1.00	3.89	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	64	KLD	2.00	1.95	No	*Reasonable levels of skylight would be provided; see Note B*
3	65	B	1.00	3.57	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	66	B	1.00	4.21	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	67	KLD	2.00	2.08	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	68	B	1.00	3.56	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
3	69	B	1.00	4.18	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	70	KLD	2.00	3.39	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	71	B	1.00	1.87	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	72	B	1.00	1.80	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	73	KLD	2.00	2.84	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	74	B	1.00	2.88	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	75	B	1.00	3.19	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	76	KLD	2.00	1.52	No	*Reasonable levels of skylight would be provided; see Note B*
3	77	B	1.00	1.74	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	78	KLD	2.00	2.08	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	79	B	1.00	0.97	No	*Reasonable levels of skylight would be provided locally; see Note C*
3	80	B	1.00	0.99	No	*Reasonable levels of skylight would be provided locally; see Note C*
3	81	KLD	2.00	2.05	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	82	B	1.00	2.63	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	83	KLD	2.00	2.64	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	84	B	1.00	0.79	No	*Reasonable levels of skylight would be provided locally; see Note C*
3	85	B	1.00	0.87	No	*Reasonable levels of skylight would be provided locally; see Note C*
3	86	KLD	2.00	1.81	No	*Reasonable levels of skylight would be provided; see Note B*
3	87	B	1.00	1.52	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	88	KLD	2.00	1.82	No	*Reasonable levels of skylight would be provided; see Note B*
3	89	B	1.00	1.32	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	90	KLD	2.00	2.89	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	91	KLD	2.00	1.98	No	*Reasonable levels of skylight would be provided; see Note B*
3	92	B	1.00	1.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	93	KLD	2.00	2.48	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	94	B	1.00	2.07	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	95	KLD	2.00	4.86	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
3	96	B	1.00	2.71	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	97	KLD	2.00	2.71	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	98	B	1.00	1.81	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	99	B	1.00	3.26	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	100	KLD	2.00	2.09	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	101	B	1.00	1.68	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	102	B	1.00	3.47	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	103	KLD	2.00	1.68	No	*Reasonable levels of skylight would be provided; see Note B*
3	104	B	1.00	2.87	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	105	B	1.00	4.14	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	106	KLD	2.00	2.49	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	107	B	1.00	2.43	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	108	B	1.00	3.79	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	109	KLD	2.00	4.07	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	110	B	1.00	2.76	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	111	B	1.00	2.26	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	112	KLD	2.00	0.84	No	*A reliance on artificial light is anticipated; see Note D*
3	113	B	1.00	3.58	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	114	B	1.00	1.98	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	115	B	1.00	2.42	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	116	B	1.00	2.43	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	117	B	1.00	1.99	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	118	B	1.00	2.62	Yes	*Reasonable levels of skylight would be provided; see Note A*
3	119	KLD	2.00	0.92	No	*A reliance on artificial light is anticipated; see Note D*
3	120	B	1.00	1.61	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	1	KLD	2.00	2.03	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	2	B	1.00	1.01	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
4	3	B	1.00	0.95	No	*Reasonable levels of skylight would be provided locally; see Note C*
4	4	KLD	2.00	2.90	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	5	B	1.00	2.88	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	6	KLD	2.00	2.24	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	7	B	1.00	1.13	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	8	B	1.00	1.14	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	9	KLD	2.00	2.25	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	10	B	1.00	3.26	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	11	KLD	2.00	1.39	No	*Reasonable levels of skylight would be provided locally; see Note C*
4	12	B	1.00	1.61	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	13	B	1.00	3.22	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	14	KLD	2.00	2.89	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	15	B	1.00	2.23	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	16	B	1.00	2.28	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	17	KLD	2.00	3.85	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	18	B	1.00	2.49	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	19	B	1.00	3.88	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	20	KLD	2.00	2.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	21	B	1.00	2.40	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	22	B	1.00	3.85	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	23	KLD	2.00	2.01	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	24	B	1.00	2.54	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	25	B	1.00	3.93	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	26	KLD	2.00	2.05	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	27	B	1.00	2.47	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	28	B	1.00	1.69	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	29	KLD	2.00	3.98	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
4	30	B	1.00	4.07	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	31	KLD	2.00	4.78	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	32	B	1.00	3.22	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	33	B	1.00	6.66	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	34	KLD	2.00	2.59	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	35	B	1.00	2.47	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	36	B	1.00	3.29	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	37	B	1.00	4.31	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	38	B	1.00	5.24	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	39	B	1.00	4.52	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	40	B	1.00	3.94	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	41	KLD	2.00	2.59	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	42	B	1.00	4.48	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	43	B	1.00	1.94	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	44	KLD	2.00	4.88	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	45	B	1.00	2.18	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	46	KLD	2.00	5.63	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	47	B	1.00	2.25	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	48	KLD	2.00	4.22	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	49	B	1.00	0.97	No	*Reasonable levels of skylight would be provided locally; see Note C*
4	50	B	1.00	1.90	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	51	KLD	2.00	1.58	No	*Reasonable levels of skylight would be provided; see Note B*
4	52	B	1.00	3.62	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	53	B	1.00	2.00	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	54	KLD	2.00	1.84	No	*Reasonable levels of skylight would be provided; see Note B*
4	55	B	1.00	3.73	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	56	B	1.00	2.36	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
4	57	KLD	2.00	1.95	No	*Reasonable levels of skylight would be provided; see Note B*
4	58	B	1.00	3.77	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	59	B	1.00	2.26	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	60	KLD	2.00	4.77	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	61	B	1.00	3.26	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	62	B	1.00	3.14	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	63	KLD	2.00	3.01	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	64	B	1.00	3.05	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	65	B	1.00	1.46	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	66	KLD	2.00	1.33	No	*Reasonable levels of skylight would be provided locally; see Note C*
4	67	B	1.00	3.16	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	68	KLD	2.00	1.88	No	*Reasonable levels of skylight would be provided; see Note B*
4	69	B	1.00	1.09	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	70	B	1.00	1.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	71	KLD	2.00	2.14	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	72	B	1.00	2.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	73	KLD	2.00	2.65	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	74	B	1.00	0.87	No	*Reasonable levels of skylight would be provided locally; see Note C*
4	75	B	1.00	1.01	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	76	KLD	2.00	2.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	77	B	1.00	2.26	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	78	KLD	2.00	2.72	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	79	B	1.00	1.88	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	80	KLD	2.00	1.66	No	*Reasonable levels of skylight would be provided; see Note B*
4	81	KLD	2.00	3.17	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	82	B	1.00	1.05	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	83	KLD	2.00	2.09	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
4	84	B	1.00	1.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	85	B	1.00	2.43	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	86	KLD	2.00	3.23	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	87	B	1.00	2.68	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	88	B	1.00	4.45	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	89	KLD	2.00	5.57	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	90	B	1.00	2.47	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	91	B	1.00	3.66	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	92	KLD	2.00	2.37	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	93	B	1.00	2.33	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	94	B	1.00	3.69	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	95	KLD	2.00	2.19	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	96	B	1.00	2.51	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	97	KLD	2.00	3.01	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	98	B	1.00	3.45	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	99	KLD	2.00	2.61	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	100	B	1.00	3.78	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	101	KLD	2.00	2.28	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	102	B	1.00	3.73	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	103	KLD	2.00	2.32	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	104	B	1.00	2.39	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	105	KLD	2.00	5.34	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	106	B	1.00	3.18	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	107	B	1.00	2.09	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	108	KLD	2.00	3.41	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	109	B	1.00	2.54	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	110	B	1.00	2.23	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
4	111	KLD	2.00	2.21	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	112	B	1.00	3.91	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	113	B	1.00	2.18	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	114	KLD	2.00	2.71	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	115	B	1.00	2.16	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	116	B	1.00	2.65	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	117	B	1.00	2.67	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	118	B	1.00	4.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
4	119	KLD	2.00	0.96	No	*A reliance on artificial light is anticipated; see Note D*
4	120	B	1.00	1.57	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	1	B	1.00	2.41	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	2	KLD	2.00	3.31	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	3	B	1.00	2.64	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	4	B	1.00	4.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	5	KLD	2.00	4.90	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	6	B	1.00	3.79	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	7	B	1.00	3.35	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	8	KLD	2.00	1.97	No	*Reasonable levels of skylight would be provided; see Note B*
5	9	B	1.00	3.30	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	10	B	1.00	3.53	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	11	KLD	2.00	2.90	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	12	B	1.00	3.58	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	13	KLD	2.00	4.33	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	14	KLD	2.00	4.30	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	15	B	1.00	4.40	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	16	KLD	2.00	3.70	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	17	B	1.00	3.84	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
5	18	KLD	2.00	3.29	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	19	B	1.00	3.83	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	20	KLD	2.00	3.32	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	21	B	1.00	4.10	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	22	KLD	2.00	5.98	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	23	B	1.00	3.10	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	24	B	1.00	3.10	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	25	KLD	2.00	5.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	26	B	1.00	2.70	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	27	B	1.00	2.89	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	28	B	1.00	2.78	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	29	B	1.00	2.82	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	30	B	1.00	2.33	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	31	B	1.00	4.60	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	32	KLD	2.00	2.12	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	33	B	1.00	2.25	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	34	B	1.00	2.71	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	35	KLD	2.00	3.82	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	36	B	1.00	3.26	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	37	B	1.00	3.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	38	KLD	2.00	1.72	No	*Reasonable levels of skylight would be provided; see Note B*
5	39	B	1.00	2.21	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	40	KLD	2.00	2.44	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	41	B	1.00	1.27	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	42	B	1.00	1.37	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	43	KLD	2.00	2.42	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	44	B	1.00	3.12	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
5	45	KLD	2.00	3.12	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	46	B	1.00	1.00	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	47	B	1.00	1.18	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	48	KLD	2.00	2.14	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	49	B	1.00	1.67	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	50	KLD	2.00	2.28	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	51	B	1.00	1.51	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	52	KLD	2.00	3.04	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	53	KLD	2.00	2.29	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	54	B	1.00	1.25	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	55	KLD	2.00	3.00	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	56	B	1.00	2.32	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	57	KLD	2.00	2.19	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	58	B	1.00	1.12	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	59	B	1.00	0.93	No	*Reasonable levels of skylight would be provided locally; see Note C*
5	60	KLD	2.00	2.93	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	61	B	1.00	2.86	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	62	KLD	2.00	2.35	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	63	B	1.00	1.29	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	64	B	1.00	1.39	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	65	KLD	2.00	2.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	66	B	1.00	1.69	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	67	KLD	2.00	1.99	No	*Reasonable levels of skylight would be provided; see Note B*
5	68	B	1.00	3.52	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	69	B	1.00	1.73	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	70	KLD	2.00	4.91	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	71	B	1.00	3.80	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
5	72	B	1.00	3.88	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	73	KLD	2.00	4.53	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	74	B	1.00	3.95	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	75	B	1.00	2.54	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	76	KLD	2.00	2.67	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	77	B	1.00	4.15	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	78	B	1.00	3.15	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	79	KLD	2.00	1.97	No	*Reasonable levels of skylight would be provided; see Note B*
5	80	B	1.00	4.05	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	81	B	1.00	2.10	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	82	KLD	2.00	2.39	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	83	B	1.00	3.69	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	84	B	1.00	2.07	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	85	KLD	2.00	3.20	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	86	B	1.00	3.33	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	87	KLD	2.00	5.22	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	88	B	1.00	2.24	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	89	KLD	2.00	4.67	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	90	B	1.00	3.14	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	91	B	1.00	4.60	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	92	KLD	2.00	2.62	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	93	B	1.00	3.98	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	94	B	1.00	4.48	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	95	B	1.00	3.18	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	96	B	1.00	4.28	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	97	B	1.00	2.57	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	98	B	1.00	3.95	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
5	99	KLD	2.00	2.12	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	100	B	1.00	6.51	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	101	B	1.00	3.26	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	102	KLD	2.00	4.82	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	103	B	1.00	3.88	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	104	KLD	2.00	2.98	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	105	B	1.00	2.60	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	106	B	1.00	3.89	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	107	KLD	2.00	2.13	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	108	B	1.00	3.79	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	109	B	1.00	4.00	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	110	KLD	2.00	2.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	111	B	1.00	3.60	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	112	B	1.00	4.16	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	113	KLD	2.00	1.98	No	*Reasonable levels of skylight would be provided; see Note B*
5	114	B	1.00	3.67	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	115	B	1.00	4.15	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	116	KLD	2.00	3.75	Yes	*Reasonable levels of skylight would be provided; see Note A*
5	117	B	1.00	2.69	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	1	KLD	2.00	2.46	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	2	B	1.00	1.28	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	3	B	1.00	1.16	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	4	KLD	2.00	3.29	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	5	B	1.00	3.20	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	6	KLD	2.00	2.76	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	7	B	1.00	3.81	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	8	B	1.00	3.75	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
6	9	KLD	2.00	2.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	10	B	1.00	3.96	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	11	KLD	2.00	3.27	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	12	B	1.00	3.51	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	13	B	1.00	3.90	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	14	KLD	2.00	5.95	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	15	B	1.00	4.04	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	16	B	1.00	4.19	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	17	KLD	2.00	6.54	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	18	B	1.00	4.14	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	19	B	1.00	4.17	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	20	KLD	2.00	3.70	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	21	B	1.00	4.07	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	22	B	1.00	3.48	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	23	KLD	2.00	3.27	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	24	B	1.00	3.50	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	25	B	1.00	3.96	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	26	KLD	2.00	1.96	No	*Reasonable levels of skylight would be provided; see Note B*
6	27	B	1.00	2.28	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	28	B	1.00	1.33	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	29	KLD	2.00	4.68	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	30	B	1.00	2.45	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	31	KLD	2.00	5.84	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	32	B	1.00	2.26	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	33	KLD	2.00	4.93	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	34	B	1.00	1.98	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	35	B	1.00	4.59	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
6	36	KLD	2.00	2.65	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	37	B	1.00	4.12	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	38	B	1.00	4.57	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	39	KLD	2.00	2.01	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	40	B	1.00	2.07	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	41	KLD	2.00	3.54	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	42	B	1.00	2.53	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	43	KLD	2.00	3.38	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	44	B	1.00	5.34	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	45	B	1.00	4.36	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	46	B	1.00	3.32	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	47	B	1.00	2.46	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	48	KLD	2.00	2.64	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	49	B	1.00	6.84	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	50	B	1.00	3.27	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	51	KLD	2.00	4.97	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	52	B	1.00	4.12	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	53	KLD	2.00	4.03	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	54	B	1.00	1.69	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	55	B	1.00	2.48	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	56	KLD	2.00	2.16	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	57	B	1.00	4.13	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	58	B	1.00	2.51	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	59	KLD	2.00	2.22	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	60	B	1.00	4.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	61	B	1.00	2.43	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	62	KLD	2.00	2.12	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
6	63	B	1.00	3.97	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	64	B	1.00	2.56	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	65	KLD	2.00	4.39	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	66	B	1.00	3.30	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	67	B	1.00	3.35	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	68	KLD	2.00	3.72	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	69	B	1.00	3.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	70	B	1.00	1.93	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	71	KLD	2.00	1.79	No	*Reasonable levels of skylight would be provided; see Note B*
6	72	B	1.00	3.82	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	73	KLD	2.00	2.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	74	B	1.00	1.44	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	75	B	1.00	1.49	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	76	KLD	2.00	2.56	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	77	B	1.00	3.31	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	78	KLD	2.00	3.37	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	79	B	1.00	1.44	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	80	B	1.00	1.33	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	81	KLD	2.00	2.37	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	82	B	1.00	1.73	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	83	KLD	2.00	2.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	84	B	1.00	1.34	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	85	B	1.00	3.57	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	86	KLD	2.00	4.05	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	87	B	1.00	2.78	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	88	B	1.00	4.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	89	KLD	2.00	5.58	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
6	90	B	1.00	2.56	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	91	B	1.00	3.73	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	92	KLD	2.00	2.43	Yes	*Reasonable levels of skylight would be provided; see Note A*
6	93	B	1.00	7.50	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	1	B	1.00	3.83	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	2	KLD	2.00	6.18	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	3	B	1.00	3.70	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	4	B	1.00	3.86	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	5	KLD	2.00	3.42	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	6	B	1.00	3.65	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	7	KLD	2.00	3.01	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	8	B	1.00	3.90	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	9	B	1.00	3.99	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	10	KLD	2.00	3.05	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	11	B	1.00	3.59	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	12	KLD	2.00	3.59	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	13	B	1.00	1.61	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	14	B	1.00	1.49	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	15	KLD	2.00	2.60	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	16	B	1.00	1.90	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	17	KLD	2.00	2.86	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	18	B	1.00	1.62	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	19	KLD	2.00	3.26	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	20	KLD	2.00	2.61	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	21	B	1.00	1.43	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	22	KLD	2.00	3.62	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	23	B	1.00	2.58	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
7	24	KLD	2.00	2.58	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	25	B	1.00	1.42	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	26	B	1.00	1.41	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	27	KLD	2.00	6.97	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	28	B	1.00	6.86	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	29	KLD	2.00	2.61	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	30	B	1.00	4.03	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	31	B	1.00	2.45	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	32	KLD	2.00	3.53	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	33	B	1.00	3.38	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	34	KLD	2.00	5.39	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	35	B	1.00	2.31	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	36	KLD	2.00	4.71	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	37	B	1.00	3.13	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	38	B	1.00	4.65	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	39	KLD	2.00	2.65	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	40	B	1.00	4.21	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	41	B	1.00	4.58	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	42	B	1.00	3.16	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	43	B	1.00	4.13	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	44	B	1.00	2.61	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	45	B	1.00	3.98	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	46	KLD	2.00	2.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	47	B	1.00	6.59	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	48	B	1.00	3.31	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	49	KLD	2.00	4.78	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	50	B	1.00	3.96	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
7	51	KLD	2.00	3.29	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	52	B	1.00	2.85	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	53	B	1.00	4.19	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	54	KLD	2.00	3.71	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	55	B	1.00	4.33	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	56	B	1.00	4.39	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	57	KLD	2.00	3.83	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	58	B	1.00	4.10	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	59	B	1.00	4.37	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	60	KLD	2.00	3.78	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	61	B	1.00	3.99	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	62	B	1.00	4.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	63	KLD	2.00	5.45	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	64	B	1.00	3.83	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	65	B	1.00	3.79	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	66	KLD	2.00	6.32	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	67	B	1.00	4.00	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	68	B	1.00	4.11	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	69	KLD	2.00	5.91	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	70	B	1.00	4.07	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	71	B	1.00	3.61	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	72	KLD	2.00	3.16	Yes	*Reasonable levels of skylight would be provided; see Note A*
7	73	B	1.00	6.73	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	1	KLD	2.00	3.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	2	B	1.00	5.84	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	3	B	1.00	4.77	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	4	B	1.00	3.54	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
8	5	B	1.00	2.49	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	6	KLD	2.00	2.72	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	7	B	1.00	7.01	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	8	B	1.00	3.33	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	9	KLD	2.00	5.00	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	10	B	1.00	4.19	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	11	KLD	2.00	4.43	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	12	B	1.00	4.18	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	13	B	1.00	2.01	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	14	KLD	2.00	3.16	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	15	B	1.00	1.30	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	16	KLD	2.00	2.90	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	17	B	1.00	3.96	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	18	B	1.00	4.76	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	19	B	1.00	4.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	20	KLD	2.00	2.69	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	21	B	1.00	4.59	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	22	B	1.00	2.02	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	23	KLD	2.00	5.14	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	24	B	1.00	2.33	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	25	KLD	2.00	6.26	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	26	B	1.00	2.65	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	27	KLD	2.00	4.98	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	28	B	1.00	1.49	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	29	B	1.00	2.42	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	30	KLD	2.00	2.06	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	31	B	1.00	8.93	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
8	32	KLD	2.00	7.03	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	33	B	1.00	1.55	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	34	B	1.00	1.60	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	35	KLD	2.00	2.94	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	36	B	1.00	2.83	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	37	KLD	2.00	4.27	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	38	B	1.00	2.39	Yes	*Reasonable levels of skylight would be provided; see Note A*
8	39	KLD	2.00	2.26	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	1	B	1.00	6.95	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	2	KLD	2.00	3.71	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	3	B	1.00	4.32	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	4	B	1.00	3.58	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	5	B	1.00	7.56	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	6	B	1.00	5.60	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	7	KLD	2.00	4.16	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	8	KLD	2.00	4.11	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	9	B	1.00	3.01	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	10	KLD	2.00	4.59	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	11	B	1.00	3.17	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	12	B	1.00	4.77	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	13	B	1.00	7.36	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	14	KLD	2.00	3.13	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	15	B	1.00	5.04	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	16	B	1.00	3.69	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	17	KLD	2.00	5.62	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	18	B	1.00	2.50	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	19	KLD	2.00	6.65	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
9	20	B	1.00	4.83	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	21	KLD	2.00	5.41	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	22	B	1.00	3.29	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	23	B	1.00	4.29	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	24	KLD	2.00	3.77	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	25	B	1.00	8.51	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	26	KLD	2.00	7.74	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	27	B	1.00	4.31	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	28	B	1.00	4.10	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	29	KLD	2.00	3.65	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	30	B	1.00	2.69	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	31	KLD	2.00	3.65	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	32	B	1.00	2.26	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	33	B	1.00	3.46	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	34	KLD	2.00	6.52	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	35	B	1.00	4.18	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	36	KLD	2.00	5.08	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	37	B	1.00	5.82	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	38	KLD	2.00	3.69	Yes	*Reasonable levels of skylight would be provided; see Note A*
9	39	B	1.00	6.54	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	1	B	1.00	2.42	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	2	B	1.00	4.14	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	3	KLD	2.00	6.91	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	4	KLD	2.00	7.54	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	5	B	1.00	2.80	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	6	B	1.00	9.37	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	7	B	1.00	12.26	Yes	*Reasonable levels of skylight would be provided; see Note A*

Level in Building	Room ID	Room Type; see Note E	Advisory minimum Average Daylight Factor (BS 8206)	Predicted Average Daylight Factor	Conformity with with BS 8206 demonstrated?	Professional Opinion
10	8	KLD	2.00	8.70	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	9	B	1.00	8.32	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	10	KLD	2.00	7.46	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	11	B	1.00	3.75	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	12	B	1.00	4.30	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	13	KLD	2.00	9.23	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	14	B	1.00	11.03	Yes	*Reasonable levels of skylight would be provided; see Note A*
10	15	KLD	2.00	4.85	Yes	*Reasonable levels of skylight would be provided; see Note A*
11	1	B	1.00	10.21	Yes	*Reasonable levels of skylight would be provided; see Note A*
11	2	KLD	2.00	7.59	Yes	*Reasonable levels of skylight would be provided; see Note A*
11	3	B	1.00	7.74	Yes	*Reasonable levels of skylight would be provided; see Note A*
11	4	B	1.00	7.92	Yes	*Reasonable levels of skylight would be provided; see Note A*
11	5	KLD	2.00	10.24	Yes	*Reasonable levels of skylight would be provided; see Note A*

Note A *As the average daylight factor predicted for this room exceeds the minimum level recommended in BS 8206 it is safe to assume that reasonable levels of skylight would be available within this room*

Note B *The potential for reasonable levels of internal skylight is assumed as the advisory minimum associated with this rooms predominant use (living room - 1.5% ADF) has been satisfied. In achieving an ADF of 1.5% it is safe to assume that light levels which are commensurate with minimum living room standards would be provided within this space.*

Note C *While artificial light is expected to play a significant role in the lighting of this space the predicted daylight factor distribution indicates that reasonable amounts of natural light would be provided to significant areas proximate to external windows. On occasions where occupants are orientated towards these areas a significant portion of the room would appear adequately daylit. To the extent that artificial lighting can be relied upon to balance light levels within this space it is reasonable to assume that a bright and attractive appearance could be maintained.*

Note D *While artificial lighting is expected to play the predominant role in the lighting of this space the predicted daylight factor distribution indicates that a meaningful amount of natural light would be provided to the areas immediately in front of external windows. The level of light predicted would be sufficient to provide occupants with a sense of connection with the outdoor environment.*

Note E *K=Kitchen; L=Living Room; D=Dining Room; B=Bedroom; KLD= Kitchen/Living/Dining Room; C=Communal Space*

Figure 1 Daylight factor distribution diagram for rooms assessed at Level 00

Figure 2 Daylight factor distribution diagram for rooms assessed at Level 01

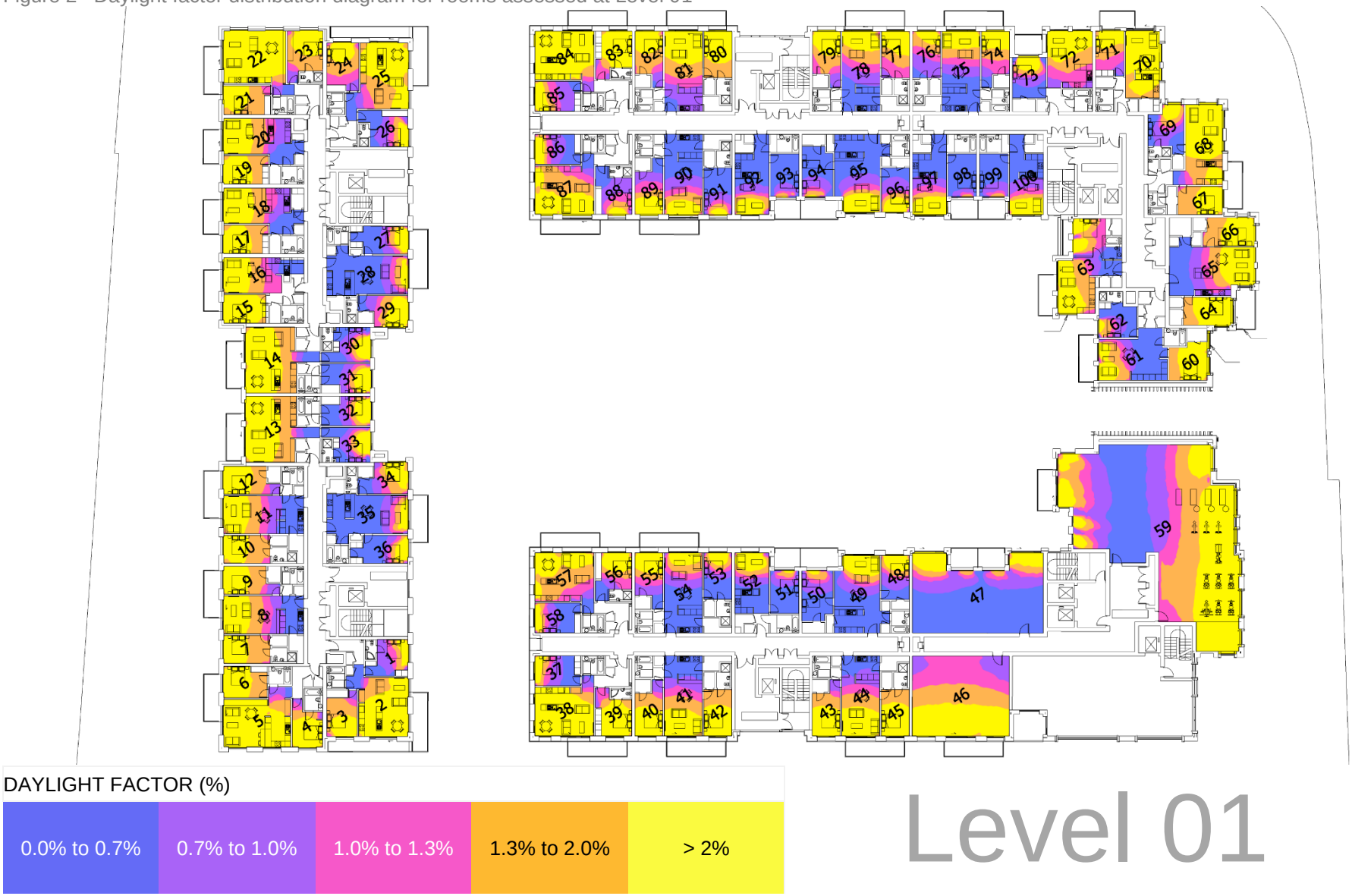


Figure 3 Daylight factor distribution diagram for rooms assessed at Level 02

Figure 4 Daylight factor distribution diagram for rooms assessed at Level 03

Figure 5 Daylight factor distribution diagram for rooms assessed at Level 04

Figure 6 Daylight factor distribution diagram for rooms assessed at Level 05

Figure 7 Daylight factor distribution diagram for rooms assessed at Level 06

Figure 8 Daylight factor distribution diagram for rooms assessed at Level 07

Figure 9 Daylight factor distribution diagram for rooms assessed at Level 08

Figure 10 Daylight factor distribution diagram for rooms assessed at Level 09

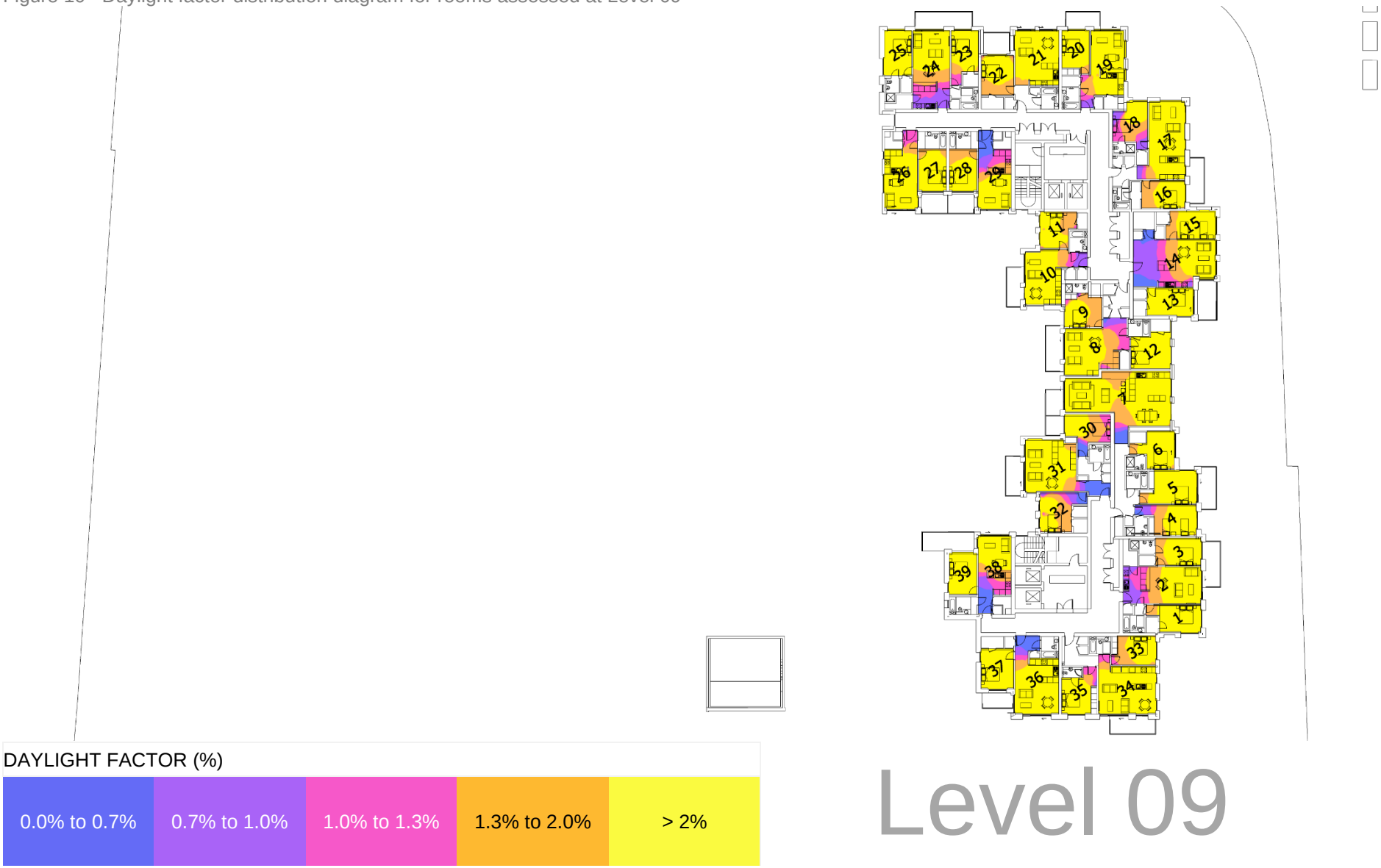


Figure 11 Daylight factor distribution diagram for rooms assessed at Level 10

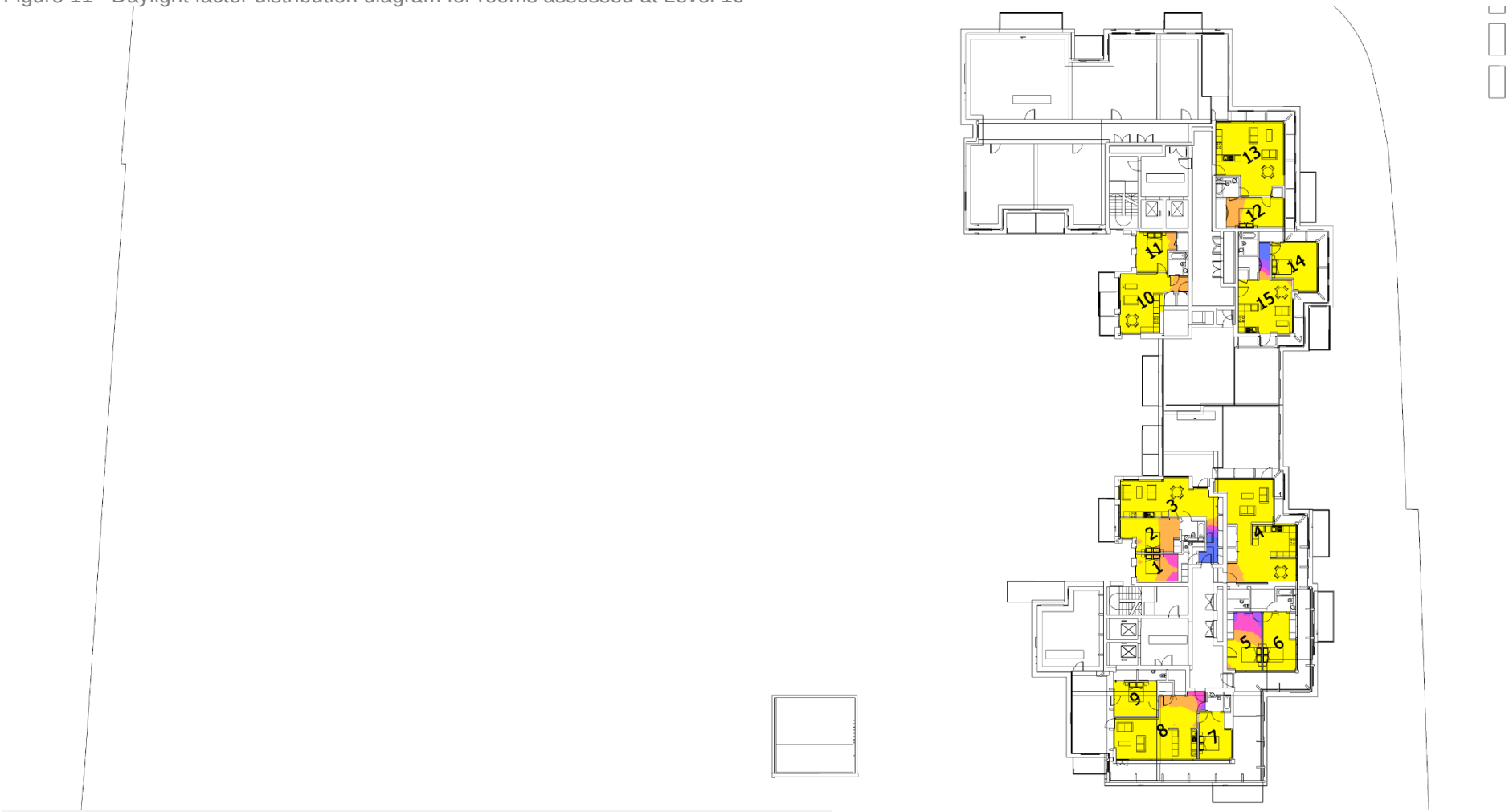
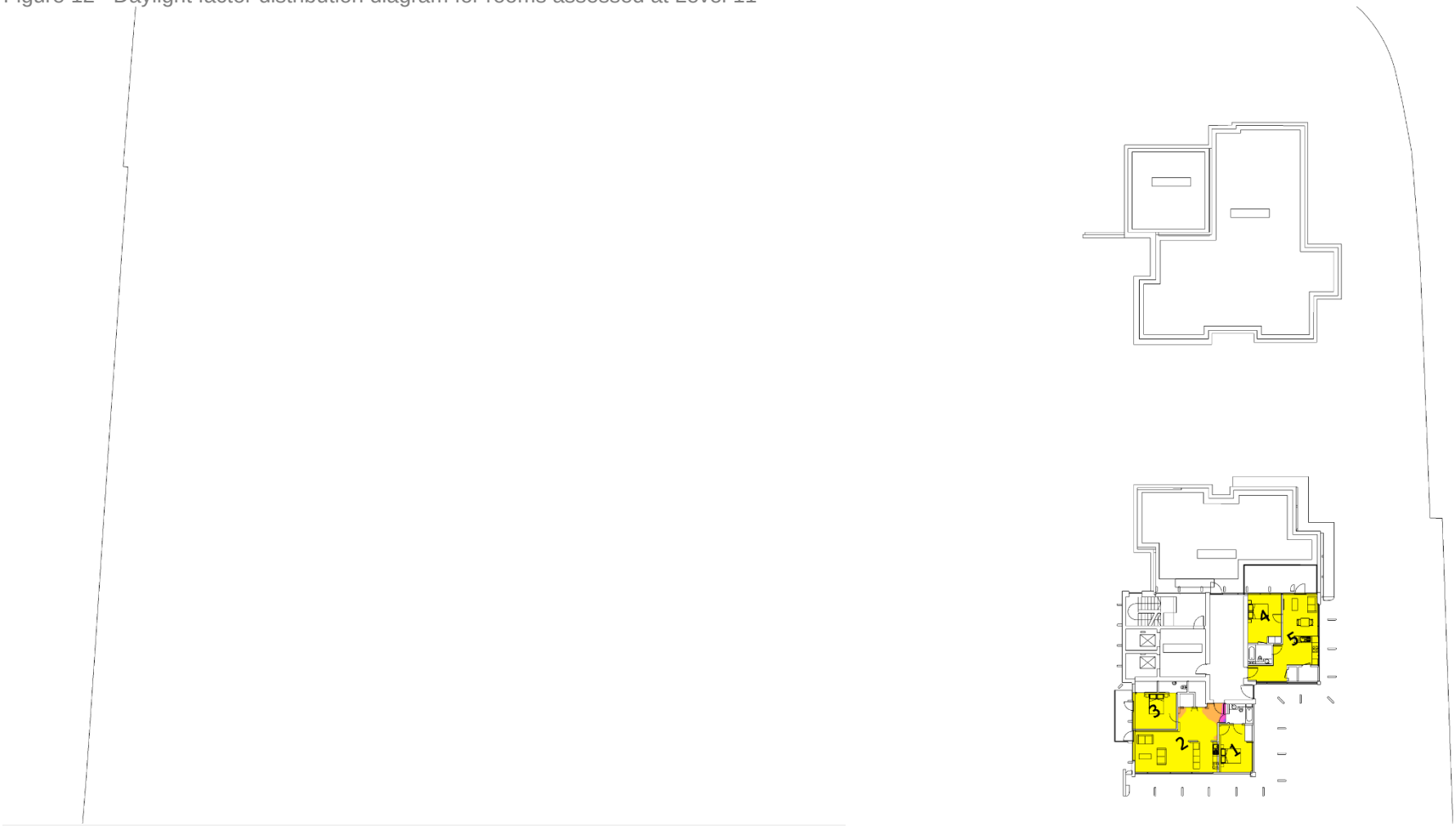


Figure 12 Daylight factor distribution diagram for rooms assessed at Level 11



Study E: Assessment of direct sunlight access available to proposed accommodation.

Sunlight, within the meaning of BS 8206 and the BRE Guide, is understood to relate to the visible portion of direct beam radiation; it is the visible light which travels directly from the sun as parallel rays.

From an amenity point of view, direct sunlight is generally welcomed for its ability to enliven the appearance of an interior (direct sunlight creates dynamic patches of brilliant light on walls, floors and furniture) but also for its ability to provide warmth and heat to a space.

In Ireland, due to the prevalence of overcast conditions, the availability of direct sunlight is typically limited to a small number of hours in the day. Over the course of a typical year, the average daily duration when direct sunlight is available in Dublin is approximately four hours[6]. The number of hours in a day when sunlight can enter a given window will be much lower because of its particular orientation and the presence of occluding obstructions.

It is on this basis that sunlight cannot be relied upon to provide basic daylighting within interior spaces. Basic daylighting within interior spaces is provided by diffuse light from the sky[7], which while not as bright as direct sunlight, is always available during daytime hours.

Following from this, it is reasonable to propose that in Ireland the daylight amenity within a space is not as critically reliant on the presence of sunlight as it is on the presence of skylight.

In recognition of the secondary importance which sunlight plays in the provision of internal daylight amenity, it is reasonable to propose that a lenient and flexible approach should be adopted when interpreting the significance of sunlight results. This approach is advocated within both the BRE Guide and BS 8206. Further to this it is important to note that the BRE guide recognises that it is not realistic for every unit within an apartment block to achieve full compliance with sunlight standards[8].

Study E: Assessment Approach

Sunlight access is assessed with respect to a measure called Annual Probable Sunlight Hours (APSH). This measure relates to the total number of hours in the year that the sun is typically expected to shine on unobstructed ground, allowing for average levels of cloudiness for the location in question.

According to the BRE guide a dwelling, or non-domestic building which has a particular requirement for sunlight, will appear reasonably sunlit provided:

- At least one main window wall faces within 90° of due south and

[6] https://www.met.ie/climate-ireland/1981-2010/dublin.html
[7] The degree to which the spaces in this development would be lit by diffuse light from the sky has been assessed in Study A.
[8] This view is supported by the information provided in Figure 26 on page 15 of the BRE guide, 'Site layout planning for daylight and sunlight. A guide to good practice.' 2nd Edition.

- The centre of at least one window to a main living room can receive 25% annual probable sunlight hours, including at least 5% of annual probable sunlight hours in winter months (taken to fall between the 21st of September and the 21st of March).

As these particular criteria are often challenging to meet the BRE advocates that the assessment criteria should be applied with a degree of flexibility.

Adopting a flexible approach in the assessment of sunlight amenity is necessary as the performance targets recommended in BS 8206 and the BRE Guide can be challenging to meet in many circumstances. The performance targets for sunlight provision are particularly challenging to meet in urban locations where neighbouring buildings and site orientation can often conspire to restrict access to direct sunlight. Guidance on this matter is provided within Section 5.3 of the British Standards, BS 8206:

> *"The degree of satisfaction is related to the expectation of sunlight. If a room is necessarily north facing or if the building is in a densely built urban area, the absence of sunlight is more acceptable than when its exclusion seems arbitrary."*

Further to this the BRE advise that, in cases where it is not possible to demonstrate full compliance with sunlight targets at living room windows, it is possible to conclude that occupants would still maintain access to sufficient sunlight in scenarios where the targets can be satisfied at a window serving an alternative room within the dwelling[9].

Additional information has been generated within this study which identifies instances where advisory minimum levels of sunlight access would be secured when the unique levels of sunlight access available to the individual rooms within an apartment are combined. Accepting that this approach represents a relaxation of the standard BRE approach, it is BPG3's view that the supplementary information generated is instructive.

Study E: Assessment Points

Sunlight access (APSH) has been assessed at all of the main windows serving habitable accommodation within this development; a total of 2850 windows have been considered.

Study E: Results

In line with the recommendations provided within the BRE guide, sunlight access has been assessed with principal regard to the main living rooms which are present in each apartment.

The results obtained for annual sunlight levels are presented in Table 2 & Table 3; the results are illustrated in Appendix F: Annual Probable Sunlight

[9] The validity of this approach is confirmed within section 5.5 of review document which was prepared by the author of the BRE guide (PJ Littlefair) in support of the planning application which was lodged for the ESB Headquarters on Lower Fitzwilliam Street, DCC Reg. Ref.: 3052/14.

Hour Results; results for winter sunlight levels are presented in Table 4 & Table 5; these results are illustrated in Appendix G: Annual Probable Sunlight Hour Results (Winter Months).

The results of this study demonstrate that the majority of apartments within this development would be capable of receiving advisory minimum levels of sunlight access. When a strict interpretation of the BRE guidelines is adopted an overall compliance rate of 65% is identified for annual sunlight access (see Table 2); the equivalent compliance rate for winter sunlight access is found to be 78% (see Table 4).

In assessing the significance of these compliance rates, it is important to bear a number of factors in mind.

Of principal importance is the need to recognise that many of the rooms which are found to fall short of advisory sunlight minimums have already been shown to receive reasonable levels of skylight, (see Study D). Accepting that the amenity of an interior space is far more reliant on the levels of skylight it receives, relative to the amount of sunlight, it is important to recognise that sunlight departures do not automatically indicate that the unit in question will be insufficiently lit.

It is also important to appreciate that in some cases the level of sunlight access predicted at main living room windows falls short of target because they are shaded by a balcony above. In these instances, it is important to recognise that the direct sunlight which does not reach the interior living space will be available to an exterior balcony space. Where sunlight amenity is provided to the exterior balcony space it is reasonable to propose that a significant amount of leniency should be extended to departures predicted for associated living spaces.

Finally, it is important to recognise that the compliance rates reported above have been determined with reference to a strict interpretation of the BRE guidelines. This strict interpretation assumes that the levels of sunlight provided within a unit are linked exclusively to the sunlight levels which register within the main living room. Having regard to the possibility that occupants are also likely to seek and enjoy sunlight which registers in other rooms within their apartments, at other times of the day, it is reasonable to propose that this additional sunlight should be accounted for.

When sunlight access is assessed with regard to the unique number of probable sunlight hours which register within both the main living room and the other habitable rooms which are present within a given unit a higher proportion of units are found to satisfy the minimum 25% APSH target recommended by the BRE. When this relaxation is adopted 80% of the units within this development are found to either meet or exceed an APSH target of 25% (see Table 3); when winter sunlight is assessed on this basis 82% of units are also found to receive at least 5% of APSH during winter months (see Table 5).

When assessing the significance of the departures identified in this study it is important to recognise a number of compensating factors:

- Balconies have been provided which would benefit from good levels of sunlight amenity in many cases.
- Occupants would also have access to high levels of sunlight amenity within the proposed outdoor amenity spaces.
- To the extent that sunlight is relied upon to provide passive solar heating, this reliance is significantly offset by the low U-values which are proposed for the fabric of this building.
- The wider scheme has been designed to a high standard with high quality internal finishes and external landscaping envisaged.
- A significant proportion (37%) of the apartments proposed within this development exceed minimum space requirements by more than 10%.
- Private open space (balconies) provided to all apartments. HJL advise that the aggregate provision of private open space exceeds minimum requirements by 19%.
- Relative to the minimum proportion of dual aspect apartments required (33%) HJL advise that 45% of the apartments provided within the scheme achieve a dual aspect.
- The residents of this development will be provided with access to a number of ancillary amenities including, a number of residents lounges, a gym and a co-working space.
- Additional features which would contribute to the attractiveness of these apartments include the proximity to essential services as well as the favourable location relative to retail and recreational destinations.

Table 2 Proportion of units which conform with strict interpretation of BRE guidelines for annual sunlight access.

	Total No. Units	No. Units which conform with strict interpretation of guidelines for annual probable sunlight hours	Conformity Rate
Level 00	0	0	-
Level 01	36	15	42%
Level 02	44	22	50%
Level 03	44	21	48%
Level 04	44	31	70%
Level 05	43	31	72%
Level 06	34	27	79%
Level 07	27	22	81%
Level 08	15	13	87%
Level 09	15	13	87%
Level 10	6	5	83%
Level 11	2	2	100%
	310	202	65%

Table 3 Proportion of units which conform with relaxed interpretation of BRE guidelines for annual sunlight access.

	Total No. Units	No. Units which conform with relaxed interpretation of guidelines for annual probable sunlight hours	Conformity Rate
Level 00	0	0	-
Level 01	36	21	58%
Level 02	44	31	70%
Level 03	44	30	68%
Level 04	44	37	84%
Level 05	43	37	86%
Level 06	34	31	91%
Level 07	27	23	85%
Level 08	15	13	87%
Level 09	15	13	87%
Level 10	6	5	83%
Level 11	2	2	100%
	310	243	78%

Table 4 Proportion of units which conform with strict interpretation of BRE guidelines for winter sunlight access (21st September to 21st March)

	Total No. Units	No. Units which conform with strict interpretation of guidelines for annual probable sunlight hours registering during winter months	Conformity Rate
Level 00	0	0	-
Level 01	36	21	58%
Level 02	44	30	68%
Level 03	44	34	77%
Level 04	44	36	82%
Level 05	43	38	88%
Level 06	34	31	91%
Level 07	27	24	89%
Level 08	15	13	87%
Level 09	15	13	87%
Level 10	6	5	83%
Level 11	2	2	100%
	310	247	80%

Table 5 Proportion of units which conform with relaxed interpretation of BRE guidelines for winter sunlight access (21st September to 21st March)

	Total No. Units	No. Units which conform with relaxed interpretation of guidelines for annual probable sunlight hours registering during winter months	Conformity Rate
Level 00	0	0	-
Level 01	36	23	64%
Level 02	44	33	75%
Level 03	44	36	82%
Level 04	44	37	84%
Level 05	43	38	88%
Level 06	34	31	91%
Level 07	27	24	89%
Level 08	15	13	87%
Level 09	15	13	87%
Level 10	6	5	83%
Level 11	2	2	100%
	310	255	82%

Study F: Assessment of sunlight amenity available to proposed recreation areas.

This study relates to the assessment of sunlight amenity within the outdoor recreations spaces which are being proposed as part of this development.

Study F: Assessment Approach

Of particular importance in the assessment of sunlight adequacy is the fact that the BRE guide accepts that different spaces will have different sunlighting requirements. Guidance to this effect is provided in Section 3.3.4 of the BRE guide:

> *"Each of these spaces will have different sunlighting requirements and* ***it is difficult to suggest a hard and fast rule****. However, it is clear that the worst-case situation is to have significant areas on which the sun only shines for a limited period over a large part of the year."* ***[emphasis added]***

Accepting that a degree of flexibility and discretion must be used in the assessment of sunlight adequacy the BRE does propose that a garden or amenity area will appear adequately sunlit throughout the year if at least half of it can receive at least two hours of sunlight on the 21st of March.

In order to assess a particular amenity space an analysis grid is specified across its area. At each point on this grid the cumulative number of sunlight hours are calculated for the course of a specified day (the 21st of March in this case). The percentage of the analysed area which is capable of receiving more than 2 hours of sunlight over the course of the test day is then obtained.

Study F: Assessment Points

The BRE recommends that the availability of sunlight should be checked for all open spaces where it would be required and that this would normally include:

- Gardens, usually the main back garden of a house
- Parks, playing fields
- Children's playground
- 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

A total of ten outdoor recreation spaces have been considered within this study, see Figure 13. The spaces selected for assessment relate to four areas of public open space located at ground level and six areas of communal open space located at ground and roof levels within the development.

Figure 13 Outdoor areas assessed

Study F: Results

This study has assessed the levels of sunlight amenity that would be available to a number of outdoor recreation spaces that are being proposed as part of this development. The results obtained in this study indicate that the recommendations of the BRE guide would be satisfied in the majority of cases, see Table 6.

When assessed in aggregate a total of 2065m^2 (see Table 7) of outdoor communal amenity space is found to be well sunlit. When this figure (2065m^2) is expressed as a percentage of the communal outdoor amenity space requirements for this scheme (calculated as 2012m^2) a figure of 102% is obtained. Having regard to this finding it is reasonable to conclude that the residents of this scheme would have access to more than adequate levels of outdoor sunlight amenity.

In the singular instance (Area 7) where it has not been possible to demonstrate full compliance with BRE guidelines on the recommended test day (21st of March), it has been possible to show that increased levels of sunlight access would be available during summer months, see Appendix H: Outdoor Solar Access in Summer Months.

When assessing the significance of the departures identified in this study it is important to recognise a number of compensating factors:

- In instances where one particular outdoor amenity space may be overshadowed it is likely that there will always by at least one alternative outdoor amenity area receiving increased levels of sunlight. To the extent that residents will have access to all of the communal outdoor spaces proposed within this development it is reasonable to propose that the availability of good solar access within one outdoor amenity area can legitimately compensate for low solar access in another.
- HJL advise that the quantum of communal outdoor amenity space proposed within this development exceeds minimum requirements by 10%.
- The wider scheme has been designed to a high standard with high quality internal finishes and external landscaping envisaged.
- The residents of this development will be provided with access to a number of ancillary amenities including, a number of residents lounges, a gym and a co-working space.
- Additional features which would contribute to the attractiveness of these apartments include the proximity to essential services as well as the favourable location relative to retail and recreational destinations.

Figure 14 Sunlight access levels predicted for outdoor recreation space on the recommended test day (21st of March)

TOTAL NO. SUNLIGHT HOURS ON THE 21ST OF MARCH (HRS)

0 to 2	> 2

Table 6 Sunlight access predicted for outdoor recreation spaces proposed within the development. (Standard BRE testing highlighted in blue; Professional interpretation of test results highlighted in orange)

Space ID	Space Type (See Note C)	Approximate Area (m2)	% Area capable of receiving at least 2hrs of sunshine on the 21st of March [%]	Area capable of receiving at least 2hrs of sunshine on the 21st of March [m2]	More than 50% of garden area can receive at least 2hrs of sunlight on the 21st of March?	Conformity with BRE Guidelines Demonstrated?	Professional Opinion
1	P	203	100%	203	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
2	P	2329	75%	1750	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
3	P	421	100%	421	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
4	C	393	100%	393	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
5	P	1032	72%	744	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
6	C	59	100%	59	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
7	C	74	22%	17	No	No	*Sunlight availability restricted to summer months; see Note B*
8	C	350	92%	321	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
9	C	587	94%	550	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
10	C	760	95%	725	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
	P	6208	83%	5182			

Note A *As the proportion of this area which can receive 2hrs of direct sunlight on the 21st of March exceeds the minimum level recommended by the BRE it can be concluded with confidence that reasonable levels of year-round sunlight amenity would be available.*

Note B *As the proportion of this area which can receive 2hrs of direct sunlight on the 21st of March falls short of the minimum level recommended by the BRE sunlight provision is likely to be limited to summer months; see Appendix H: Outdoor Solar Access in Summer Months for supporting analysis.*

Note C *C = Communal Open Space P = Public Open Space*

Table 7 Solar access results for aggregate areas

Space Type	Aggregate Area (m2)	Aggregate area capable of receiving at least 2hrs of sunshine on the 21st of March [m2]	% Area capable of receiving at least 2hrs of sunshine on the 21st of March [%]
Public Open Space	3,985	3,118	78%
Communal Open Space	2,224	2,065	93%

The Importance of Interpreting Daylight Results Flexibly

As outlined in the BRE guide, the results presented in this report should be interpreted with a degree of flexibility. The flexibility available in the BRE guide is outlined in the introductory section as follows:

> *"The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the designer. Although it gives numerical targets these should be interpreted flexibly because natural lighting is only one of many factors in site layout design."*

This approach is also supported by recently published ministerial guidelines. Specific guidance is provided within Section 3.2 of the DoHPLG Building Height Design Guidelines 2018:

> *"Where a proposal may not be able to fully meet all the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

Conclusions

This report has been prepared to assess the levels of daylight which would be provided within a proposed development at Belgard Square East, Dublin 24. More specifically this report considers the level of light which would be provided within the proposed development; the impact the proposed development would have on light levels available to neighbouring properties has been reported separately (see Report 1 of 2).

In assessing the significance of the daylight predictions which have been obtained for this development it is important to bear a number of factors in mind.

In the first instance it is clear that this development conforms to and experiences many of the typical issues which arise when developments are proposed on urban sites. Having regard to the governments stated aims to support an increase in housing supply and to encourage sustainable development patterns, it is reasonable to propose that lands located close to urban centres and transport hubs must now be developed at higher densities. It is in this regard that it may not now always be appropriate to pursue full compliance with the guideline targets recommended in the BRE Guide or BS 8206. While care should be taken to ensure that substantial levels of compliance with the recommendations in these guides are achieved, it is often the case that the particulars of a given site structurally impede the ability of a development to achieve full compliance at all points

of assessment. In this regard it is important to weigh up the isolated cases where full compliance with guideline targets have not been satisfied against the compensatory design measures which have been provided and against the broader benefits which a development can provide to the compactness, vitality, and viability of an urban neighbourhood.

In conducting this assessment reasonable and appropriate regard has been paid to the recommendations provided in the BRE guide *'Site layout planning for daylight and sunlight - A guide to good practice'* 2nd Edition and BS 8206-2: 2008 – *'Lighting for Buildings – Part 2: Code of Practice for Daylighting'*, British Standards Institute.

Within these guides three specific tests have been identified which relate to the adequacy of daylight levels within a proposed development. The findings from these studies are reported in the following paragraphs.

Study D assessed the level of skylight amenity which would be available within the proposed accommodation. The results of this study indicate that advisory minimums would be satisfied in a clear majority of cases (a conformity rate of 89% is calculated). With the benefit of closer examination it is BPG3's view that it is appropriate to assume that 94% of the habitable rooms proposed within this development would be provided with reasonable levels of internal skylight amenity (see pages 11 & 12). While artificial light is expected to play a significant role in the lighting of the remaining rooms the analysis identifies that a significant portion of many of these rooms would benefit from reasonable levels of skylight (see page 12). To the extent that artificial lighting can be relied upon to balance light levels within this type of space it is reasonable to assume that a bright and attractive appearance could be maintained.

Study E assessed the levels of sunlight amenity which would be available to the accommodation which is being proposed as part of this development. The results of this assessment indicate that 65% and 78% of units would meet or exceed advisory minimums for annual and winter sunlight access, respectively. The proportion of units capable of securing advisory minimum levels of annual and winter sunlight access increases when the unique levels of sunlight available to secondary rooms (bedrooms etc.) are accounted for. When this relaxation is applied the proportion of units which can secure the advisory minimum levels of annual sunlight access is found to be 80%; the equivalent compliance rate identified for winter sunlight levels is found to be 82%. When assessing the significance of the sunlight departures which have been identified, it is important to recognise that in many instances it has been possible to show that reasonable levels of skylight access would be provided (see Study D). Accepting that the amenity of an interior space is far more reliant on the levels of skylight it receives, relative to the amount of sunlight, it is important to recognise that the departures identified Study E do not automatically indicate that the unit in question would be insufficiently lit. Further to this, it is important to recognise that in some instances, where sunlight

amenity is provided to the exterior balcony space it is reasonable to propose that a significant amount of leniency should be extended to departures predicted for associated living spaces.

Study F assessed the levels of sunlight amenity which would be available to the outdoor recreation spaces which are being proposed as part of this development. The results of this study demonstrate that the residents of this scheme would have access to acceptable levels of outdoor sunlight amenity.

When assessed in the round it is reasonable to conclude that the development proposed demonstrates substantial levels of conformity with daylight guidelines. In making best use of this site it is inevitable that some departures from advisory targets will be encountered; provision is made within current planning policy to accommodate departures of this nature in instances where wider planning objectives countervail, see Appendix B Discretion available to consent authorities.

Appendix A: Policy Basis for Daylight Standards

This appendix replicates material which has already been provided in Report 1 of 3.

The particular provisions which have been made to promote good daylighting in planning guidance are identified as follows:

Sustainable Residential Development in Urban Areas, DoEHLG 2009

Published by the Department of Environment Housing and Local Government in 2009, this guide includes a number of provisions related to daylight. Section 7.9 of the guide is particularly relevant:

> "*7.9 - Overshadowing will generally only cause problems where buildings of significant height are involved or where new buildings are located very close to adjoining buildings. Planning authorities should require that daylight and shadow projection diagrams be submitted in all such proposals. The recommendations of "Site Layout Planning for Daylight and Sunlight: A Guide to good Practice" (BRE 1991) or BS 8206 "Lighting for Buildings, Part 2 1992: Code of Practice for Daylighting" should be followed in this regard."*

Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities

Published by the Department of Environment Housing and Local Government in March 2018 (Updated 2021), provisions are made to safeguard daylight within Section 6.6 and 6.7:

> "6.6 - *Planning authorities should have regard to quantitative performance approaches to daylight provision outlined in guides like the BRE guide 'Site Layout Planning for Daylight and Sunlight' (2nd Edition) or BS 8206-2:2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting' when undertaken by development proposers which offer the capability to satisfy minimum standards of daylight provision.*
>
> *6.7 - Where an applicant cannot fully meet all of the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, which planning authorities should apply their discretion in accepting taking account of its assessment of specific. This may arise due to a design constraint associated with the site or location and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

Urban Development and Building Heights – Guidelines for Planning Authorities

Published by the Department of Environment Housing and Local Government in March 2018, provisions are made to safeguard daylight within Section 3.2. The specific guidance is provided within the part of Section 3.2 which deals with development management at the scale of the site/building:

"At the scale of the site/building

- *The form, massing and height of proposed developments should be carefully modulated so as to maximise access to natural daylight, ventilation and views and minimise overshadowing and loss of light.*
- *Appropriate and reasonable regard should be taken of quantitative performance approaches to daylight provision outlined in guides like the Building Research Establishment's 'Site Layout Planning for Daylight and Sunlight' (2nd edition) or BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting'.*
- *Where a proposal may not be able to fully meet all the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

Appendix B Discretion available to consent authorities

This appendix replicates material which has already been provided in Report 1 of 3.

Irish planning policy advises that in instances where it is not possible to demonstrate full compliance with advisory minimums consent-authorities are entitled to accept departures where other planning objective are found to countervail.

Specific guidance on this matter is provided within Section 4.5 the National Planning Framework[12] (Section 4.5). The guidance provided is as follows:

> *"**To enable brownfield development, planning policies and standards need to be flexible**, focusing on design led and performance-based outcomes, rather than specifying absolute requirements in all cases. Although sometimes necessary to safeguard against poor quality design, **planning standards should be flexibly applied in response to well-designed development proposals that can achieve urban infill and brownfield development objectives** in settlements of all sizes. This is in recognition of the fact that many current urban planning standards were devised for application to greenfield development sites and cannot account for the evolved layers of complexity in existing built-up areas." **[Emphasis added]***

The NPF goes further and introduces the need for tolerances and alternative solutions as a National Policy Objective. National Policy Objective 13 of the NPF is stated as follows:

> *"In urban areas, planning and related standards, including in particular building height and car parking will be based on performance criteria that seek to achieve well-designed high-quality outcomes in order to achieve targeted growth. **These standards will be subject to a range of tolerance that enables alternative solutions to be proposed to achieve stated outcomes,** provided public safety is not compromised and the environment is suitably protected." **[Emphasis added]***

On the basis that this guidance is applicable to daylight standards it is reasonable to propose that a clear basis exists for the consent authorities to accept shortfalls from advisory minimums in instances where a countervailing planning objective exists.

[12] *DoHPLG 2018 National Planning Framework*

Additional support for this facility is provided within the Urban Design Manual published by the Department of Energy Heritage and Local Government, 2009. On page 43 of this manual the following guidance is provided:

> *"Where design standards are to be used (such as the UK document Site Layout Planning for Daylight and Sunlight, published by the BRE), it should be acknowledged that for higher density proposals in urban areas* ***it may not be possible to achieve the specified criteria, and standards may need to be adjusted locally to recognise the need for appropriate heights or street widths."*** ***[Emphasis added]***

The need for tolerance and flexibility to be exercised when interpreting the significance of daylight results is reflected in the wording which has been adopted in recent building height guidelines[13]. Specific guidance is provided within Section 3.2 of the guidelines:

> *"At the scale of the site/building*
>
> - *The form, massing and height of proposed developments should be carefully modulated so as to maximise access to natural daylight, ventilation and views and minimise overshadowing and loss of light.*
> - ***Appropriate and reasonable regard*** *should be taken of quantitative performance approaches to daylight provision outlined in guides like the Building Research Establishment's 'Site Layout Planning for Daylight and Sunlight' (2nd edition) or BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting'.*
> - ***Where a proposal may not be able to fully meet all the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution." [Emphasis added]***

[13] *DoHPLG 2018 – Urban Development and Building Heights – Guidelines for Planning Authorities*

Appendix C: Primary / Secondary Assessments

This appendix replicates material which has already been provided in Report 1 of 3.

Both the Building Height Guidelines[14] and the Apartment Guidelines[15] ask that efforts must be made to clearly identify instances where it has not been possible to fully meet all the requirements/recommendations of relevant daylight standards.

It is BPG3's view that this requirement is satisfied within this report in the following way:

- All tests have been carried out on a quantitative basis against the most obvious interpretation of the guidelines
- The numeric outputs of this quantitative testing are presented within tables.
- In instances where the light levels predicted do not satisfy the advisory minimums recommended in daylight guidelines this is clearly identified within the tables. All relevant tables include a dedicated column which expresses this status in binary terms.
- Where additional commentary is provided within the results section for each test, these sections generally begin with a consideration of the proportion of instances where conventional advisory minimums have been satisfied.

Having clearly communicated the degree to which the light levels predicted for a given design accord with the conventional advisory minimums detailed in daylight guidelines (primary assessment) BPG3 goes on in many instances to consider the significance/meaning of these primary test results (secondary assessment).

In this regard it is important for the reader to be aware that the professional opinions/interpretations which attend these primary test results go beyond the meaning of the BRE guide in some instance and that the opinions/interpretations expressed are informed by a wider understanding of daylight and its relationship to urban planning.

It is BPG3's view that this approach is necessary as the outputs from conventional daylight testing do not always provide a reliable indication of daylight acceptability. Some of the reasons why this can be true include:

[14] Urban Development and Building Height Guidelines for Planning Authorities, issued by the Department of Housing Planning and Local Government in December 2018

[15] Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities issued by the Department of Housing, Planning and Local Government in December 2020.

- Many of the test methods detailed in daylight guidelines were originally developed in the late 80's at a time when it was assumed practitioners would conduct their assessments using pencil and paper. For a phenomenon as complex as natural light to be quantified using a pencil and paper approach a number of very significant simplifications had to be adopted.
- The simplifications involved in conventional daylight testing place limitations on the degree to which results accurately represent the reality of daylight acceptability, as observed by a human observer.
- Further to this BPG3 is aware of certain scenarios where the simplifications present in conventional test methods produce results which are not only rough approximations of reality but are gross misrepresentations of the reality which would be experienced by a human observer.[16]
- It is also important to recognise that many of the performance targets recommended in daylight guidelines are presented as a one -size-fits-all indicator of daylight acceptability. It is BPG3's view that daylight requirements are, in practice, very varied and that factors such as the functional use of a space, occupant expectations, as well as wider contextual factors are all capable of acting as upward or downward modifiers to the conventional one-size-fits-all minimums detailed in daylight guidelines.
- Further to this it is important to recognise that the conventional daylight targets recommended in daylight guidelines were set independently, and with little regard for, current planning policy. It is important to note that many of the minimum standards recommended in daylight guidelines were set over thirty years ago at a time when sustainable development and urban consolidation would not have been as pressing a priority as they are today.

For reasons like the above BPG3 maintains that it is important in some instance to offer a professional opinion regarding the significance/meaning of primary test results. Where a basis exists to support the opinion BPG3 will in some instances conclude that light levels are likely to be acceptable even

[16] *By way of example the BRE's procedure for assessing the adequacy of skylight amenity within affected accommodation is determined with reference to a measure called the Vertical Sky Component (VSC). Before placing to much weight on the meaning of the results obtained in reliance on VSC testing it is important to recognise that this testing ignores many of the factors which contribute in a very direct way to the daylight performance of a room. The factors which this test procedure ignores include window size, room size, room and window orientation as well as the transmittance of window glazing. Further to this VSC only accounts for skylight which travels directly from the sky; the benefit of reflected light is ignored. When testing impact using VSC the BRE advise that occupants will notice a drop light levels in circumstances where VSC levels drop by more than 20% with the proposed development in place. A very serious shortcoming of impact testing can be observed in instance where the affected room secures most of it's light from secondary sources in the baseline scenario (i.e., very little access to light directly from the sky; most or the light available in baseline scenario is reflected from external surfaces). In this scenario, where direct skylight contributes very little to the daylighting of a space, a 20% drop in VSC is unlikely to be detectable by occupants. Extending this further, where a room is lit almost exclusively by secondary skylight in the baseline scenario a 100% loss of VSC (which the BRE would classify as a major adverse impact) would in practice have almost no effect on the lighting levels within the room under consideration.*

though the conventional minimums detailed in daylight guidelines have not been satisfied.

It is of fundamental importance for a reader to understand that the opinions/interpretations presented within this report are not intended to replace the results/findings of primary testing. In this regard it is advisable for a reader to take care to locate and consider the results of primary testing in the first instance. Having first established how well a given design performs against conventional daylight testing it is BPG3's view that it is appropriate to then go on to consider the significance/meaning of primary test results. It is on this basis that BPG3 has included opinions/interpretations within this report. BPG3 would encourage the reader to accept or to reject these opinions/interpretations on their merit.

Appendix D: Source Material

The 3D models used in our analysis were generated using information garnered from the following sources.

Model Elements	Source	Drawing No. / File Name /	Title / Description	Date Issued / Accessed
Proposed Development	HJL	BR-HJL--00-DR-A-1010	Ground Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1011	First Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1012	Second Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1013	Third Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1014	Fourth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1015	Fifth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1016	Sixth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1017	Seventh Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1018	Eight Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1019	Ninth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1020	Tenth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1021	Eleventh Floor Plan	6th April 2022
		BR-HJL--ZZ-DR-A-2001	Elevation West	6th April 2022
		BR-HJL--ZZ-DR-A-2002	Elevation North	6th April 2022
		Email communications	Design Amendments	April/May
Neighbouring Buildings - Site Levels	Land Surveys		Belgard Square East	25th May 2021
Macro Landscape and Wider Context	Google Earth	-	-	-

Appendix E: Reflectance Values Adopted in Average Daylight Factor Calculations

Surface Category	Element	Finish/Composition	Reflectance	Source
Surface of Surrounding Context	Building	Mid Grey	0.45	BS8206
Surface of Surrounding Context	Ground- Garden	Vegetation	0.1	BS 8206
Surface of Surrounding Context	Ground- General	Paving	0.2	BS8206
Surface of Surrounding Context	Roof	Mid Grey	0.45	BS8208
Surface of Surrounding Context	Wall	Mid Grey	0.45	BS8206
Surface of Surrounding Context	Window	Glazing	0.1	BS8207
Exterior Surface of Development	Balcony Deck	Mid Grey	0.45	BS 8206
Exterior Surface of Development	Balcony Soffit	Light Grey	0.68	BS 8206
Exterior Surface of Development	Landscaping - Vegetation	Vegetation	0.1	BS 8206
Exterior Surface of Development	Landscaping - Hard surface	Concrete	0.4	BS 8206
Exterior Surface of Development	Railing	Light Grey	0.68	BS 8207
Exterior Surface of Development	Reveal	Buff Brick	0.4	BS 8206
Exterior Surface of Development	Shading	Light Grey	0.68	BS 8207
Exterior Surface of Development	Wall	Buff Brick	0.4	BS 8206
Interior Surface of Development	Ceiling	White	0.85	BS 8206
Interior Surface of Development	Floor	Wood (Light Veneers)	0.4	BS 8206
Interior Surface of Development	Wall	Light Grey	0.68	BS 8206
Interior Surface of Development	Window Frame	Light Grey	0.68	BS 8206

Surface Category	Element	Finish/Composition	Diffuse Light Transmittance	Maintenance Factor	Effective Diffuse Light Transmittance	Source
Exterior Surface of Development	Balustrade	Clear Glass Single Pane	0.8	0.92**	0.74	BS 8206
Interior Surface of Development	Window Glazing Wintergarden	Clear Glass Single Pane	0.8	0.92**	0.74	BS 8206
Interior Surface of Development	Window Glazing	Double Glazing Low E	0.69	0.92**	0.63	LG 10

	Maintenance Factor - Loss Due to Dirt **	
(A)	Percentage loss of light	8
(B)	Exposure Multiplying Factor	1
(C)	Special Exposure Multiplying Factor	1
(D)	Total Percentage Loss (A x B x C)	8
	Maintenance Factor (100-D)/100	0.92

Appendix F: Annual Probable Sunlight Hour Results

Figure 15 Annual probable sunlight hours predicted for windows located at Level 00

ANNUAL PROBABLE SUNLIGHT HOURS (%)					
00% to 05%	05% to 10%	10% to 15%	15% to 20%	20% to 25%	> 25%

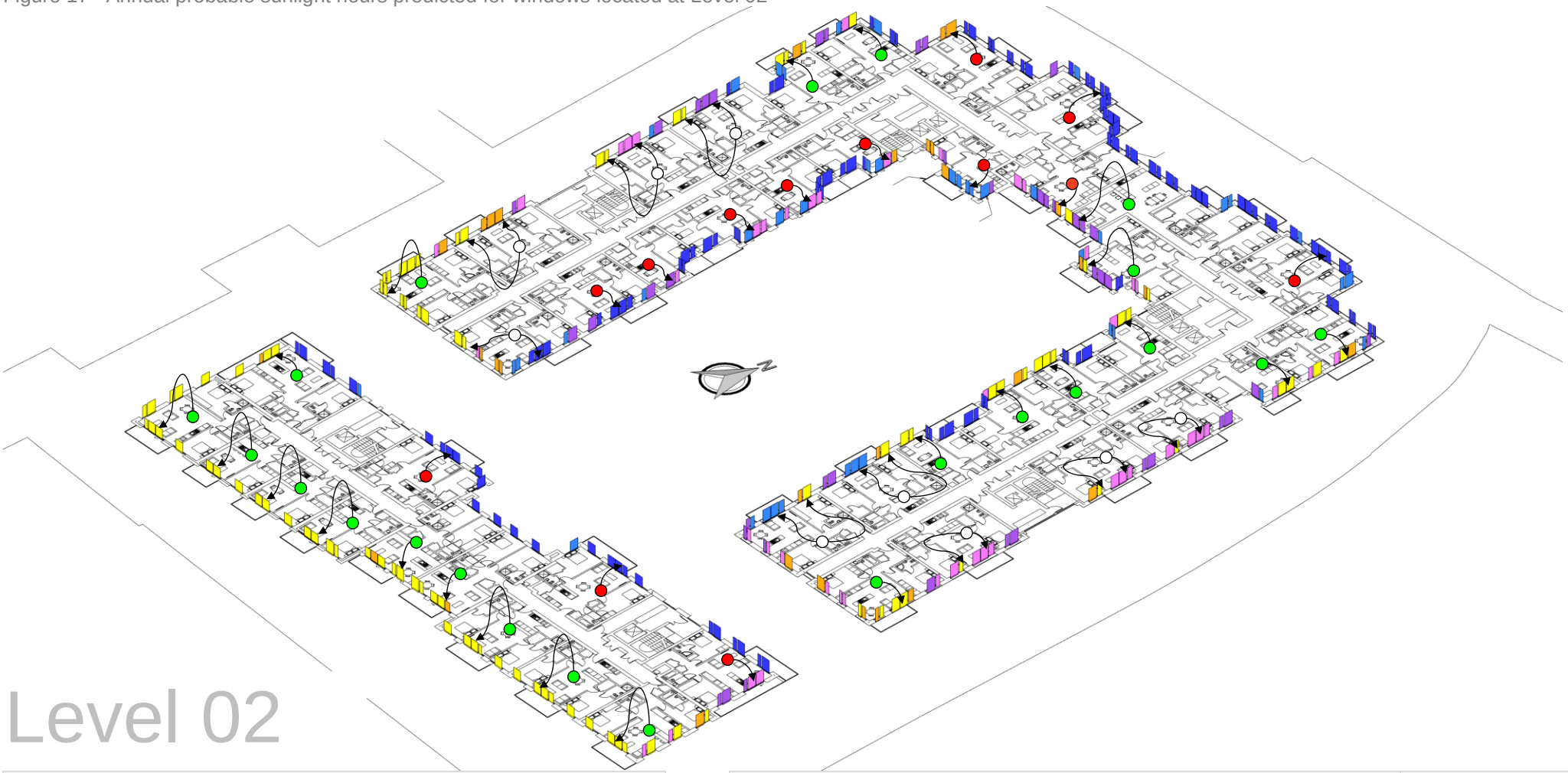
CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	0	
Instance conforms with permissive interpretation of guidelines only	0	
Instance falls short of both strict and permissive interpretation of guidelines	0	

Figure 16 Annual probable sunlight hours predicted for windows located at Level 01

ANNUAL PROBABLE SUNLIGHT HOURS (%)					
00% to 05%	05% to 10%	10% to 15%	15% to 20%	20% to 25%	> 25%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	15	
Instance conforms with permissive interpretation of guidelines only	6	
Instance falls short of both strict and permissive interpretation of guidelines	15	

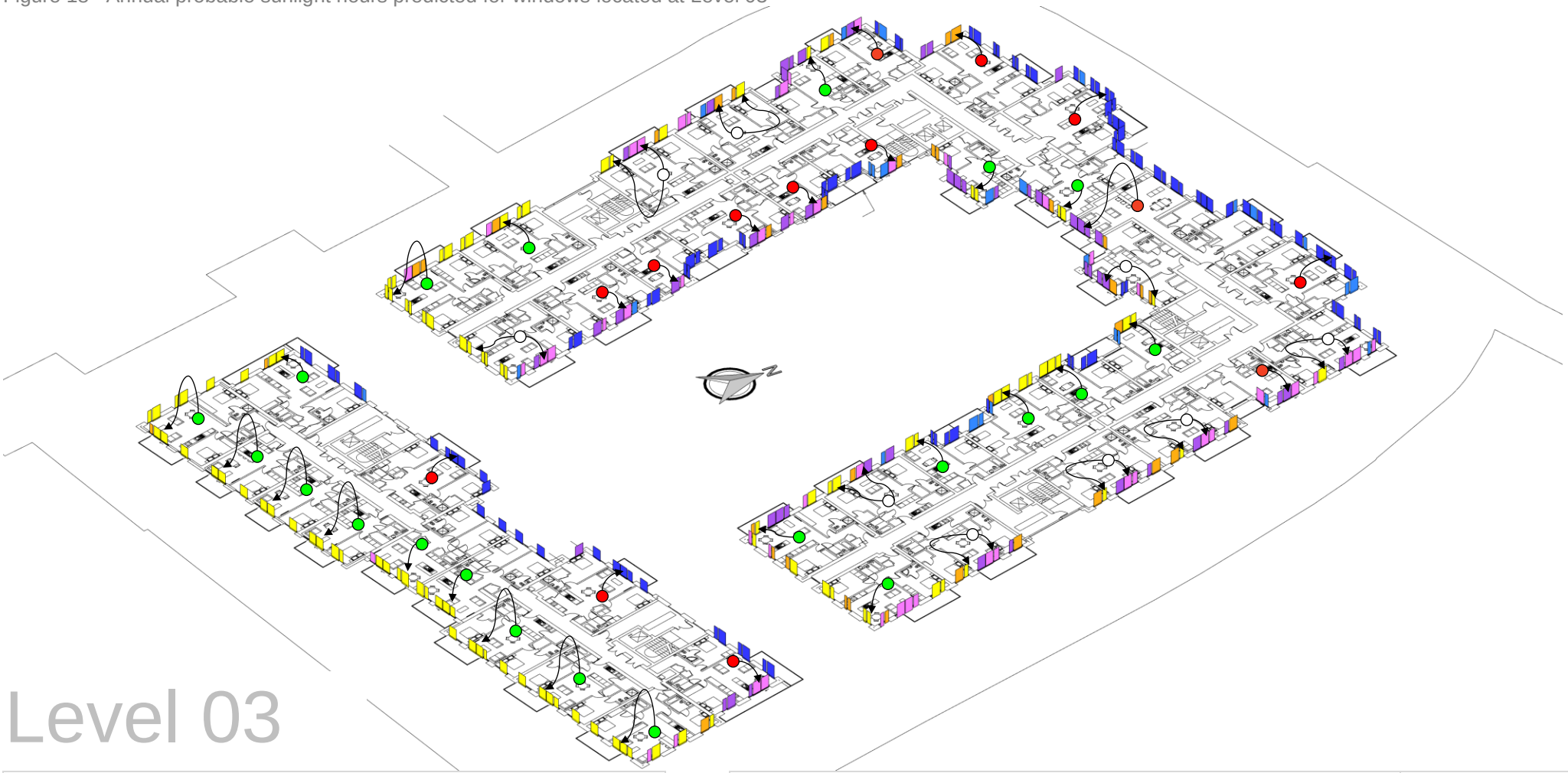
Figure 17 Annual probable sunlight hours predicted for windows located at Level 02



ANNUAL PROBABLE SUNLIGHT HOURS (%)					
00% to 05%	05% to 10%	10% to 15%	15% to 20%	20% to 25%	> 25%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	22	
Instance conforms with permissive interpretation of guidelines only	9	
Instance falls short of both strict and permissive interpretation of guidelines	13	

Figure 18 Annual probable sunlight hours predicted for windows located at Level 03



ANNUAL PROBABLE SUNLIGHT HOURS (%)					
00% to 05%	05% to 10%	10% to 15%	15% to 20%	20% to 25%	> 25%

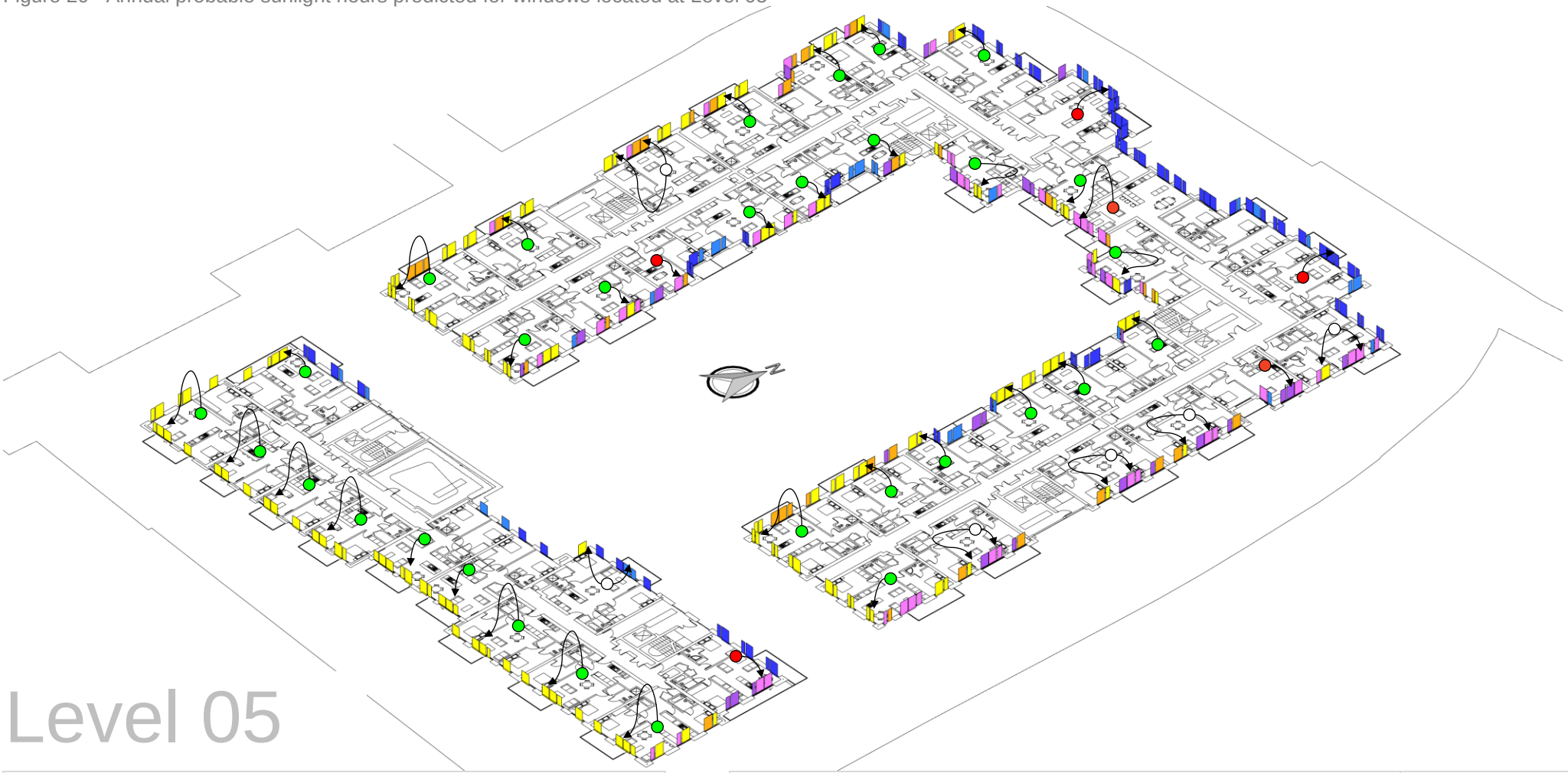
CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	21	
Instance conforms with permissive interpretation of guidelines only	9	
Instance falls short of both strict and permissive interpretation of guidelines	14	

Figure 19 Annual probable sunlight hours predicted for windows located at Level 04

ANNUAL PROBABLE SUNLIGHT HOURS (%)					
00% to 05%	05% to 10%	10% to 15%	15% to 20%	20% to 25%	> 25%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	31	
Instance conforms with permissive interpretation of guidelines only	6	
Instance falls short of both strict and permissive interpretation of guidelines	7	

Figure 20 Annual probable sunlight hours predicted for windows located at Level 05



ANNUAL PROBABLE SUNLIGHT HOURS (%)					
00% to 05%	05% to 10%	10% to 15%	15% to 20%	20% to 25%	> 25%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	31	
Instance conforms with permissive interpretation of guidelines only	6	
Instance falls short of both strict and permissive interpretation of guidelines	6	

Figure 21 Annual probable sunlight hours predicted for windows located at Level 06

ANNUAL PROBABLE SUNLIGHT HOURS (%)					
00% to 05%	05% to 10%	10% to 15%	15% to 20%	20% to 25%	> 25%

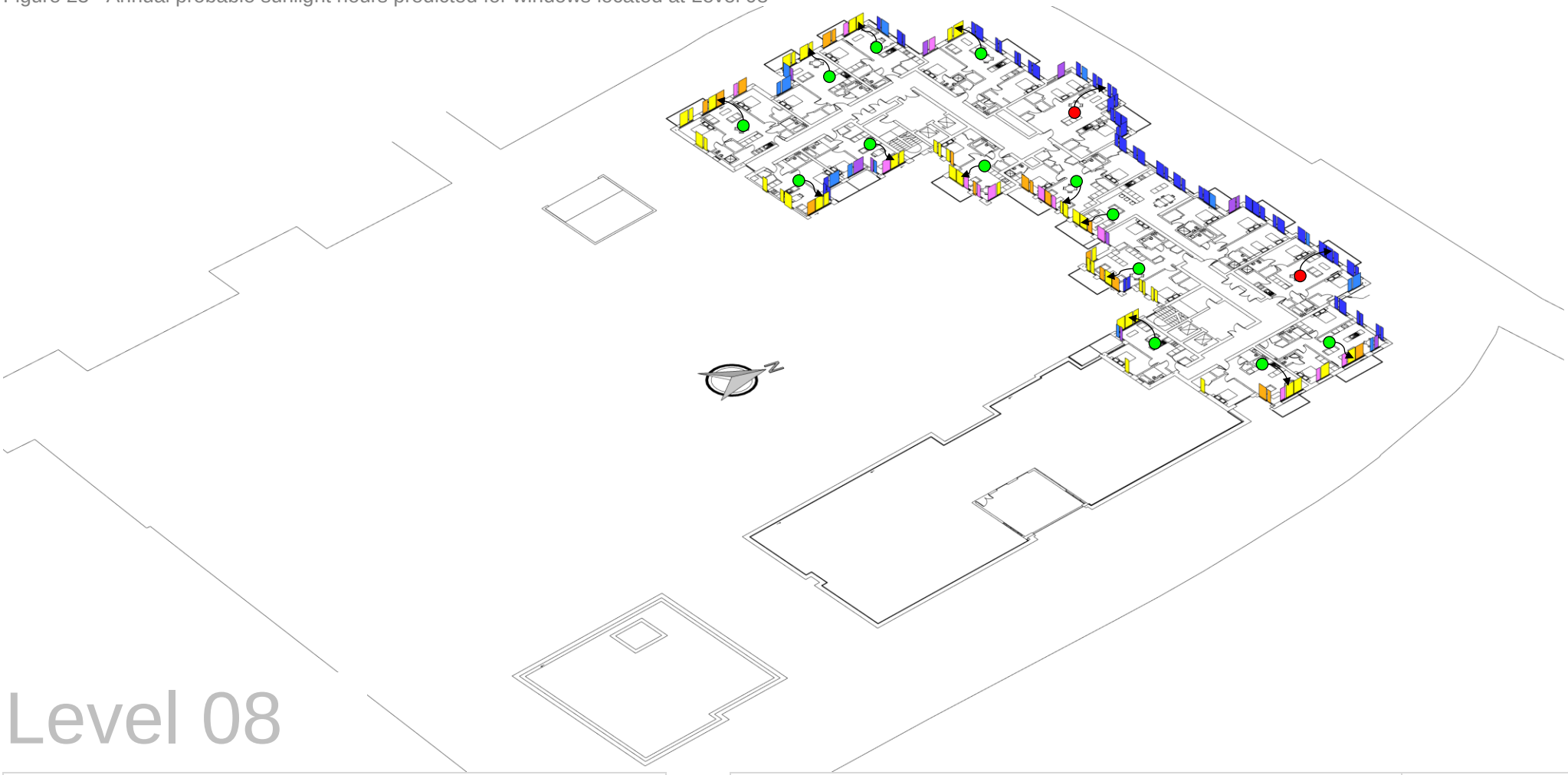
CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	27	
Instance conforms with permissive interpretation of guidelines only	4	
Instance falls short of both strict and permissive interpretation of guidelines	3	

Figure 22 Annual probable sunlight hours predicted for windows located at Level 07

ANNUAL PROBABLE SUNLIGHT HOURS (%)					
00% to 05%	05% to 10%	10% to 15%	15% to 20%	20% to 25%	> 25%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	22	
Instance conforms with permissive interpretation of guidelines only	1	
Instance falls short of both strict and permissive interpretation of guidelines	4	

Figure 23 Annual probable sunlight hours predicted for windows located at Level 08

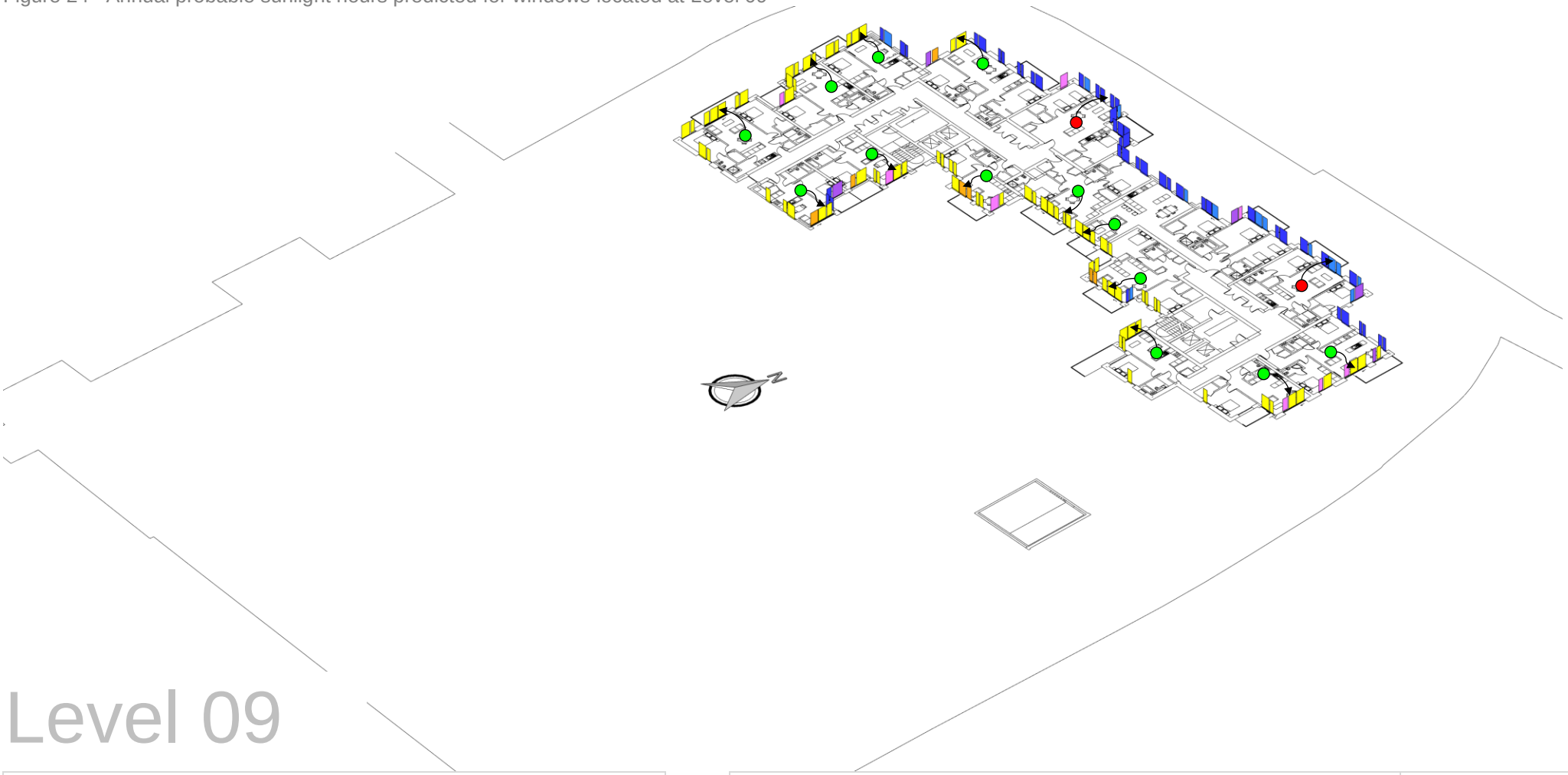


Level 08

ANNUAL PROBABLE SUNLIGHT HOURS (%)					
00% to 05%	05% to 10%	10% to 15%	15% to 20%	20% to 25%	> 25%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	13	
Instance conforms with permissive interpretation of guidelines only	0	
Instance falls short of both strict and permissive interpretation of guidelines	2	

Figure 24 Annual probable sunlight hours predicted for windows located at Level 09

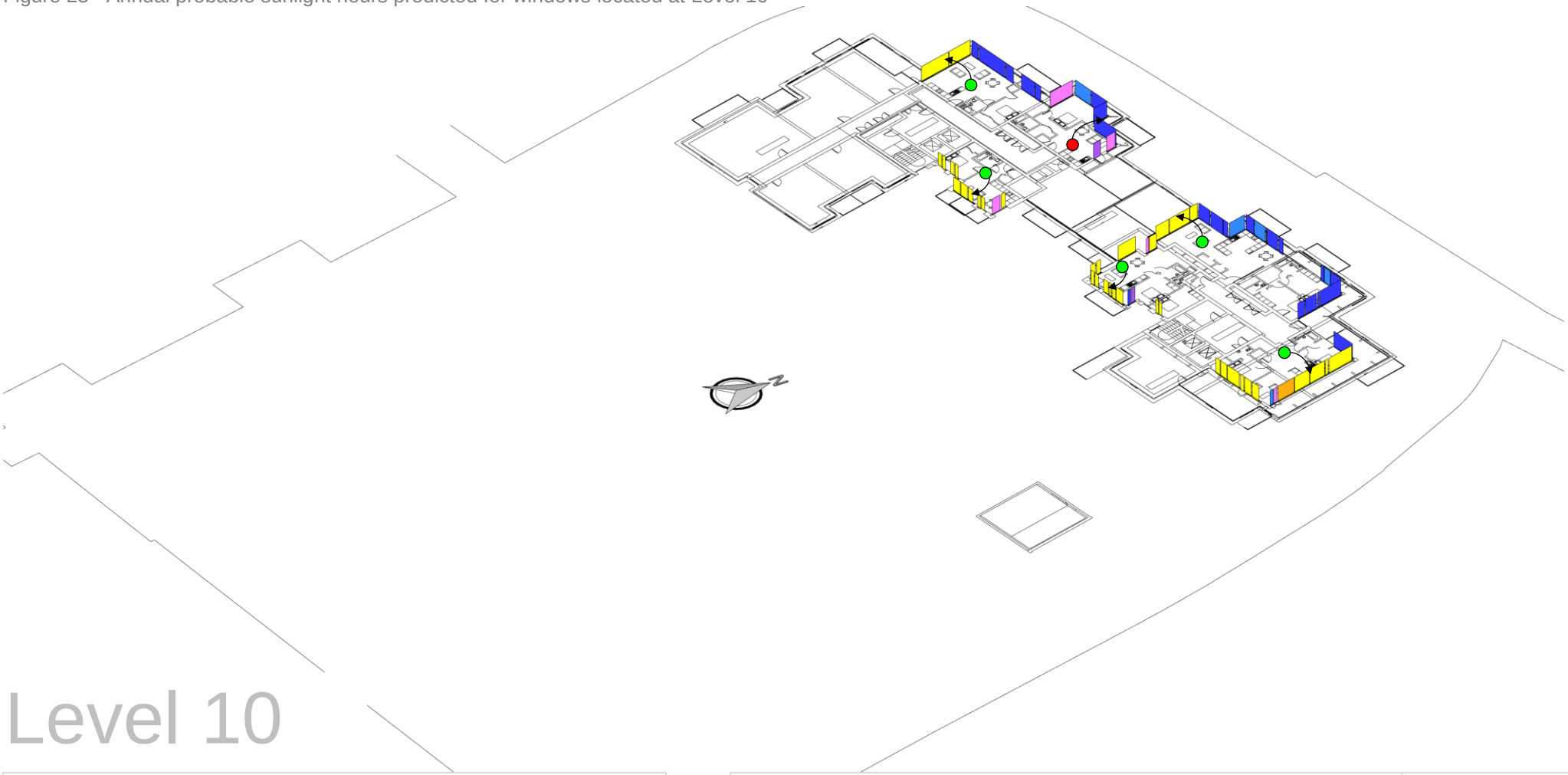


Level 09

ANNUAL PROBABLE SUNLIGHT HOURS (%)					
00% to 05%	05% to 10%	10% to 15%	15% to 20%	20% to 25%	> 25%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	13	
Instance conforms with permissive interpretation of guidelines only	0	
Instance falls short of both strict and permissive interpretation of guidelines	2	

Figure 25 Annual probable sunlight hours predicted for windows located at Level 10

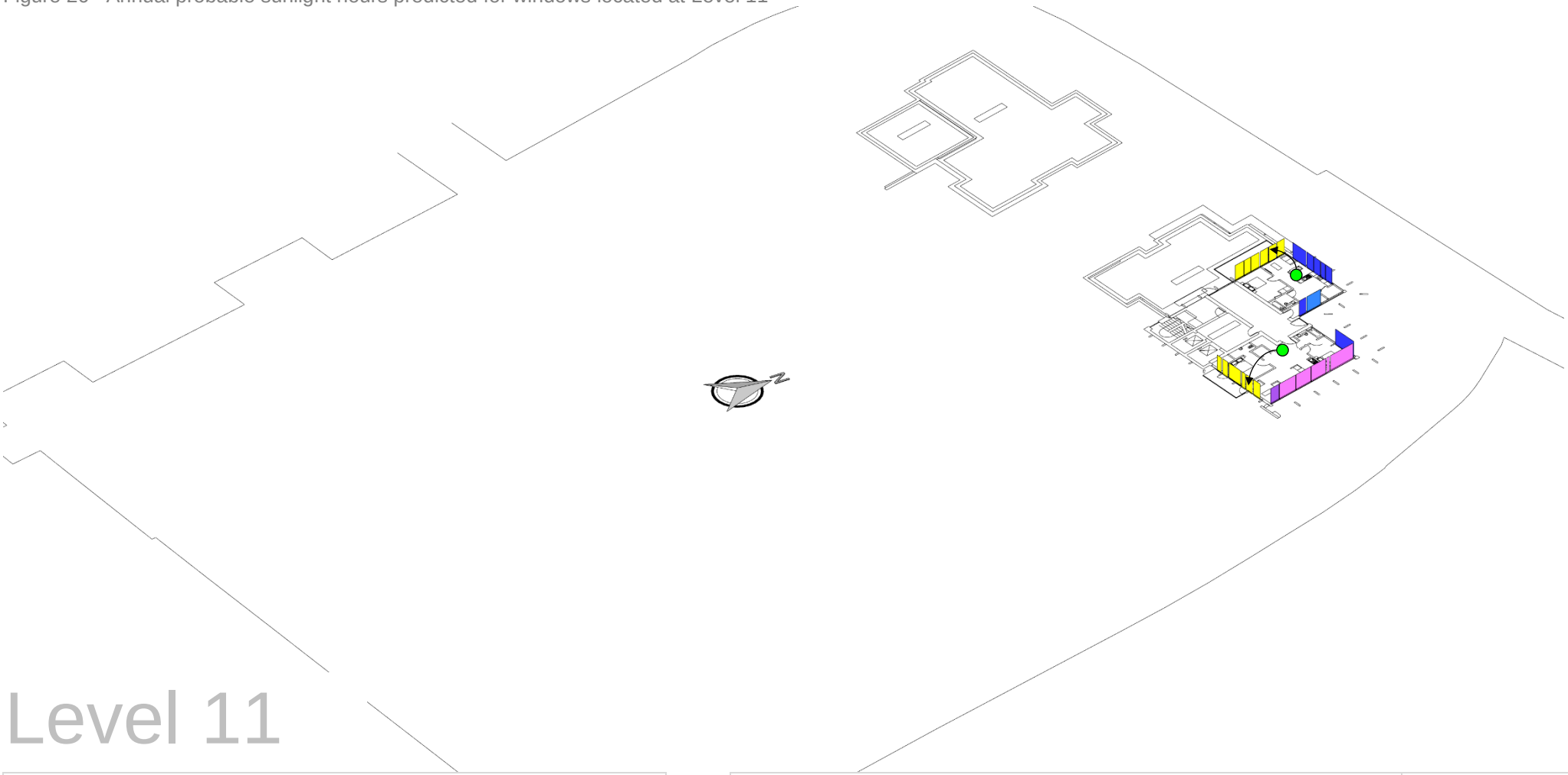


Level 10

ANNUAL PROBABLE SUNLIGHT HOURS (%)					
00% to 05%	05% to 10%	10% to 15%	15% to 20%	20% to 25%	> 25%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	5	
Instance conforms with permissive interpretation of guidelines only	0	
Instance falls short of both strict and permissive interpretation of guidelines	1	

Figure 26 Annual probable sunlight hours predicted for windows located at Level 11



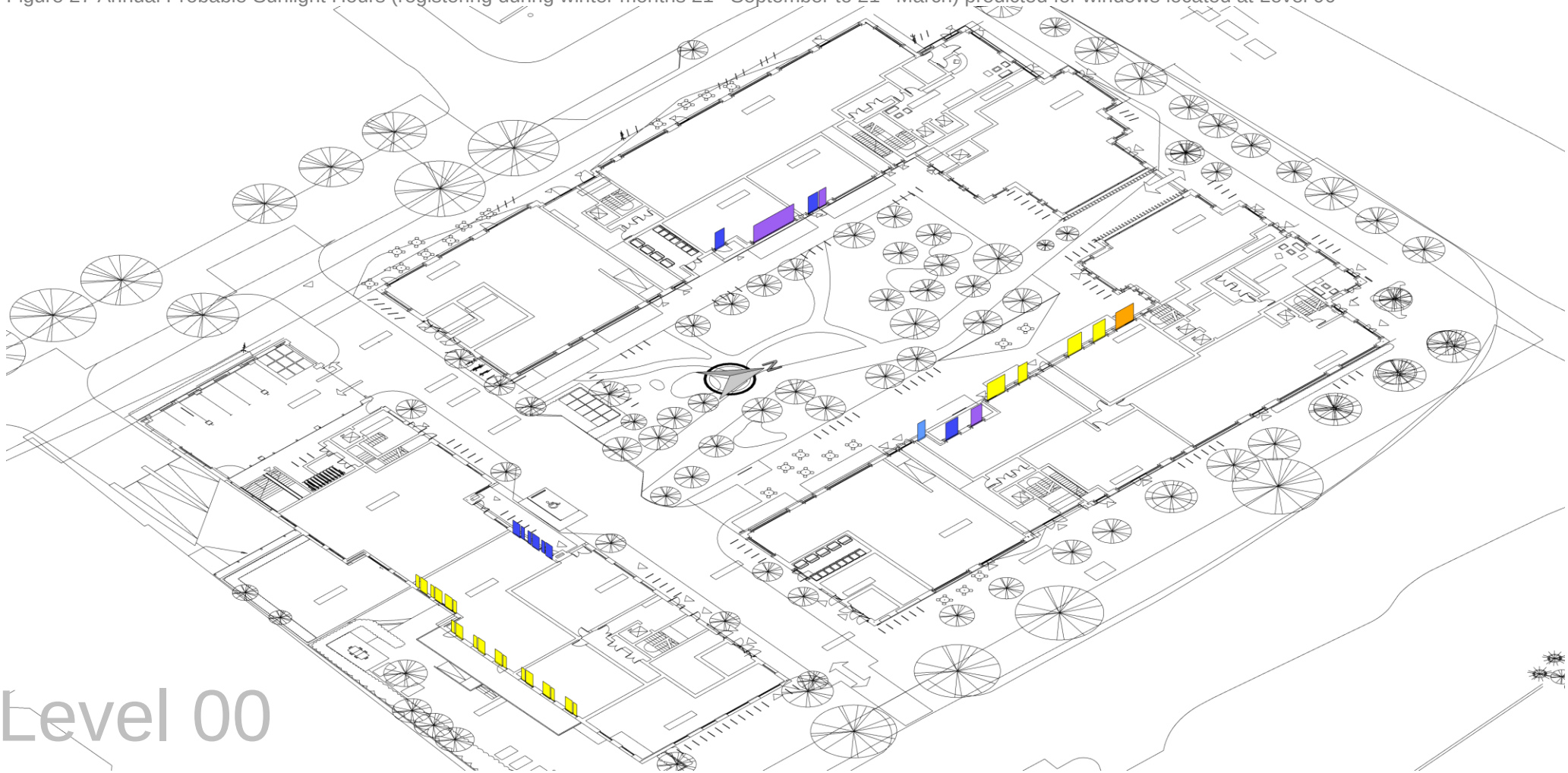
Level 11

ANNUAL PROBABLE SUNLIGHT HOURS (%)					
00% to 05%	05% to 10%	10% to 15%	15% to 20%	20% to 25%	> 25%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	2	
Instance conforms with permissive interpretation of guidelines only	0	
Instance falls short of both strict and permissive interpretation of guidelines	0	

Appendix G: Annual Probable Sunlight Hour Results (Winter Months)

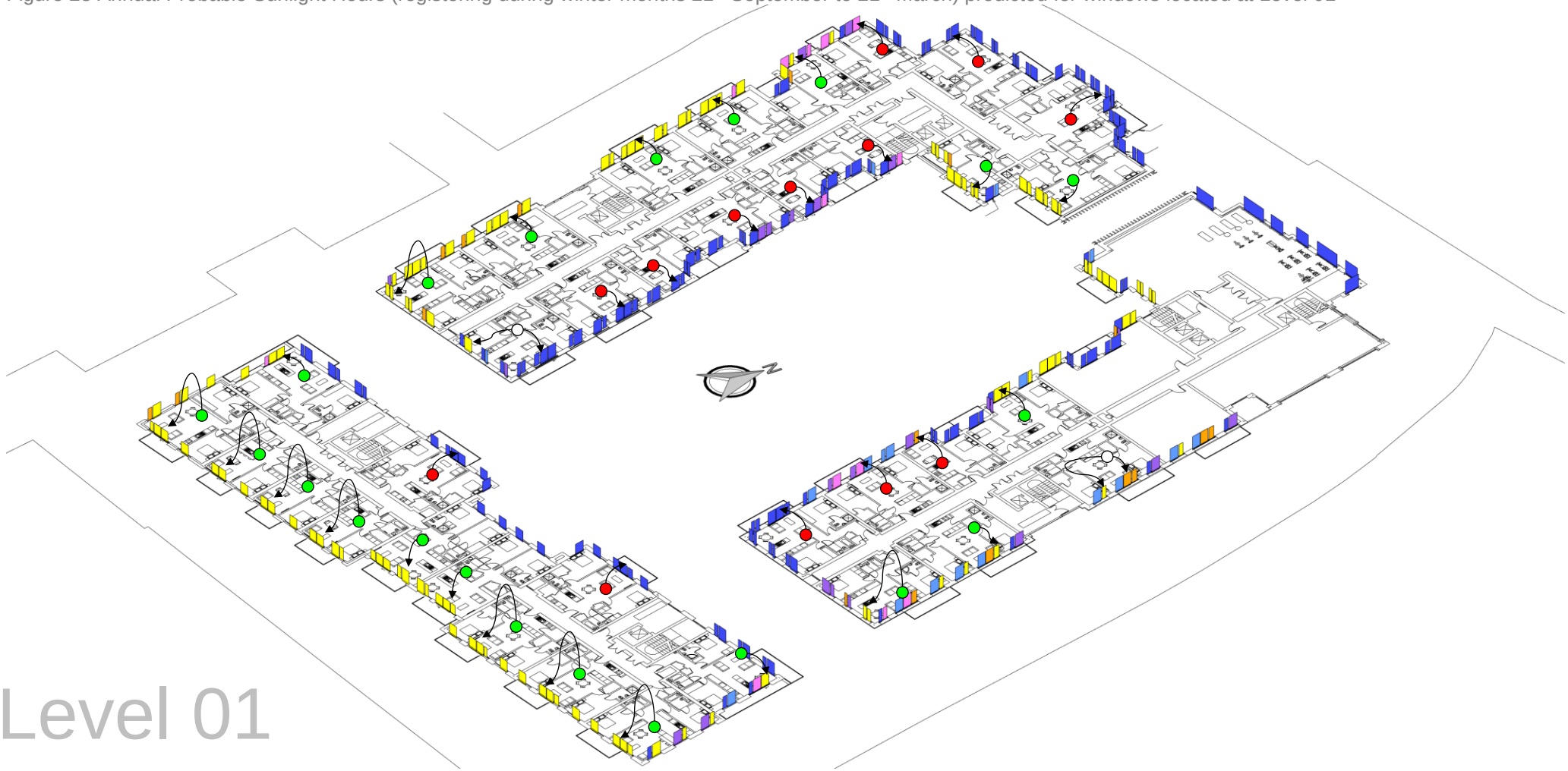
Figure 27 Annual Probable Sunlight Hours (registering during winter months 21st September to 21st March) predicted for windows located at Level 00



ANNUAL PROBABLE SUNLIGHT HOURS DURING WINTER MONTHS (%)					
00% to 01%	01% to 02%	02% to 03%	03% to 04%	04% to 05%	> 5%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS FOR WINTER MONTHS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	0	
Instance conforms with relaxed interpretation of guidelines only	0	
Instance falls short of both strict and relaxed interpretation of guidelines	0	

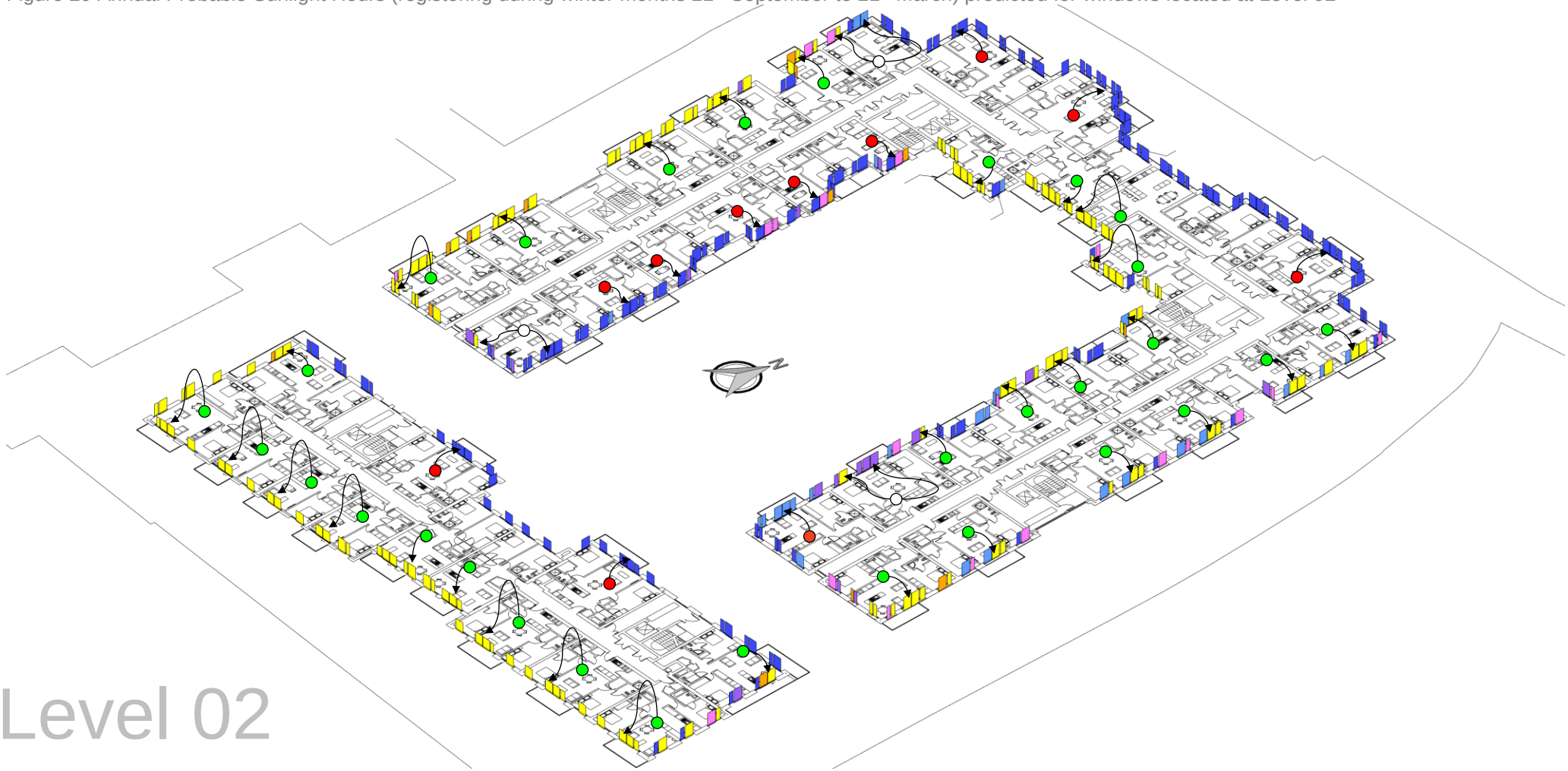
Figure 28 Annual Probable Sunlight Hours (registering during winter months 21st September to 21st March) predicted for windows located at Level 01



ANNUAL PROBABLE SUNLIGHT HOURS DURING WINTER MONTHS (%)					
00% to 01%	01% to 02%	02% to 03%	03% to 04%	04% to 05%	> 5%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS FOR WINTER MONTHS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	21	●
Instance conforms with relaxed interpretation of guidelines only	2	○
Instance falls short of both strict and relaxed interpretation of guidelines	13	●

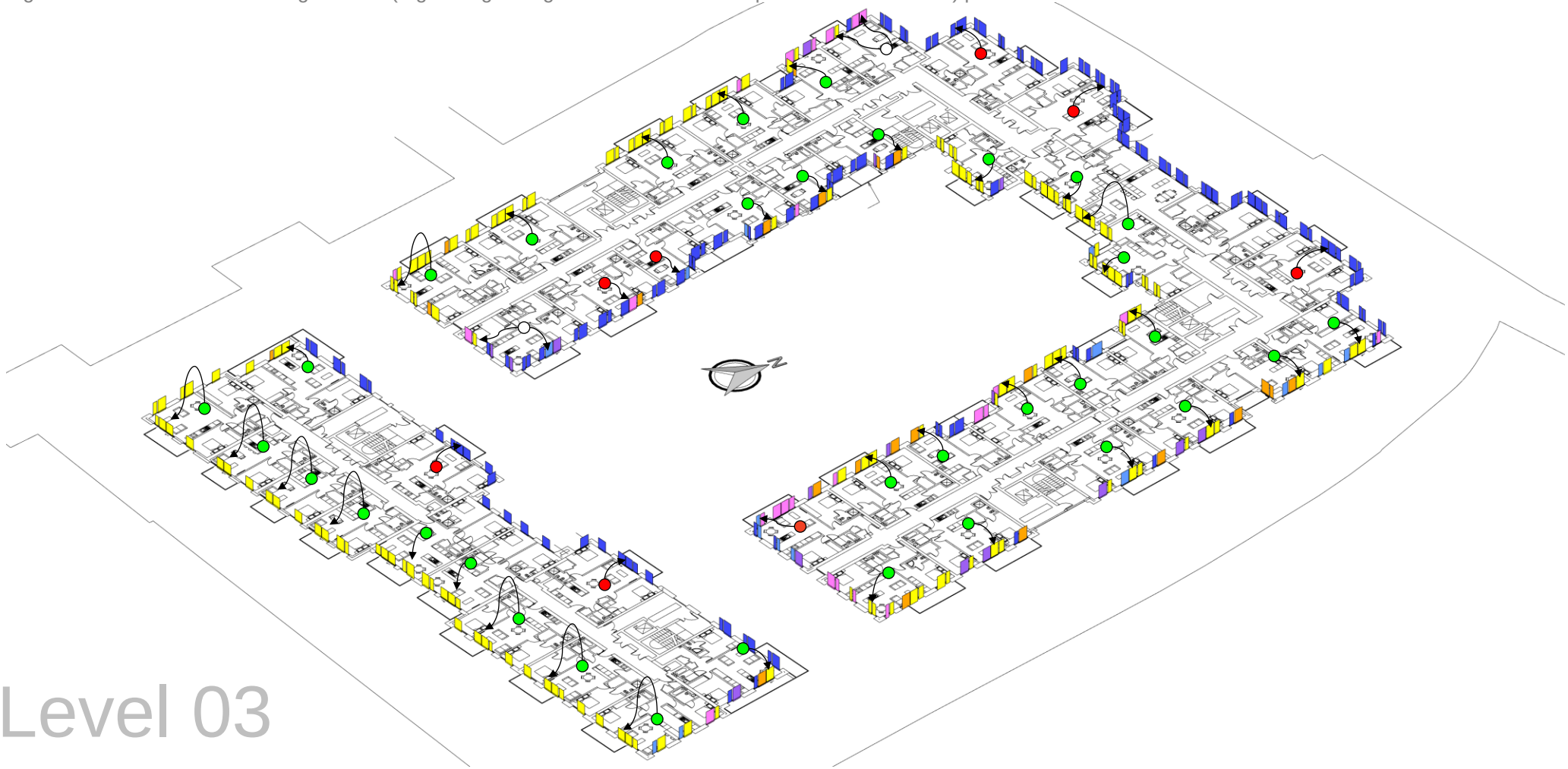
Figure 29 Annual Probable Sunlight Hours (registering during winter months 21st September to 21st March) predicted for windows located at Level 02



ANNUAL PROBABLE SUNLIGHT HOURS DURING WINTER MONTHS (%)					
00% to 01%	01% to 02%	02% to 03%	03% to 04%	04% to 05%	> 5%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS FOR WINTER MONTHS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	30	●
Instance conforms with relaxed interpretation of guidelines only	3	○
Instance falls short of both strict and relaxed interpretation of guidelines	11	●

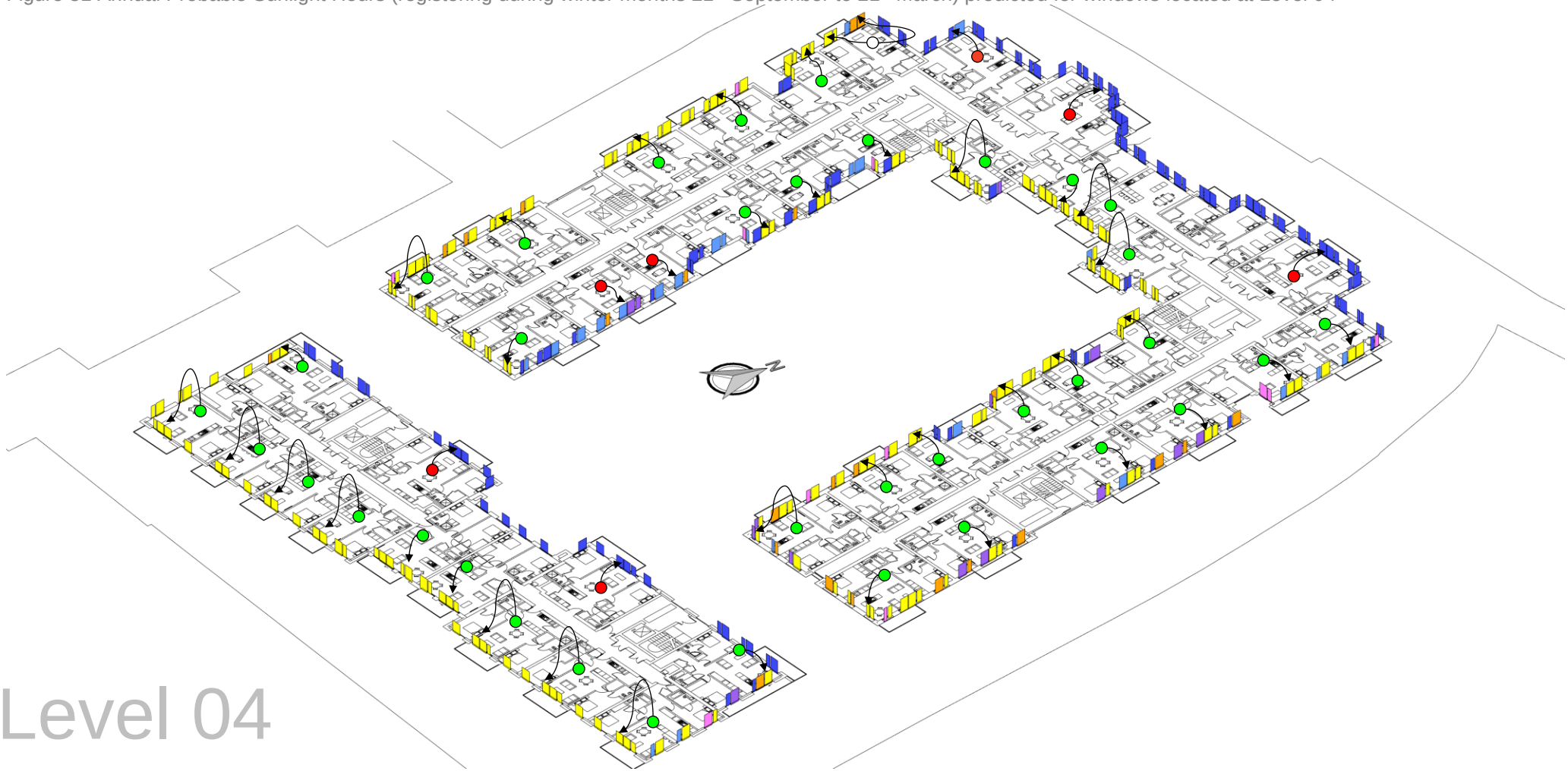
Figure 30 Annual Probable Sunlight Hours (registering during winter months 21st September to 21st March) predicted for windows located at Level 03



ANNUAL PROBABLE SUNLIGHT HOURS DURING WINTER MONTHS (%)					
00% to 01%	01% to 02%	02% to 03%	03% to 04%	04% to 05%	> 5%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS FOR WINTER MONTHS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	34	●
Instance conforms with relaxed interpretation of guidelines only	2	○
Instance falls short of both strict and relaxed interpretation of guidelines	8	●

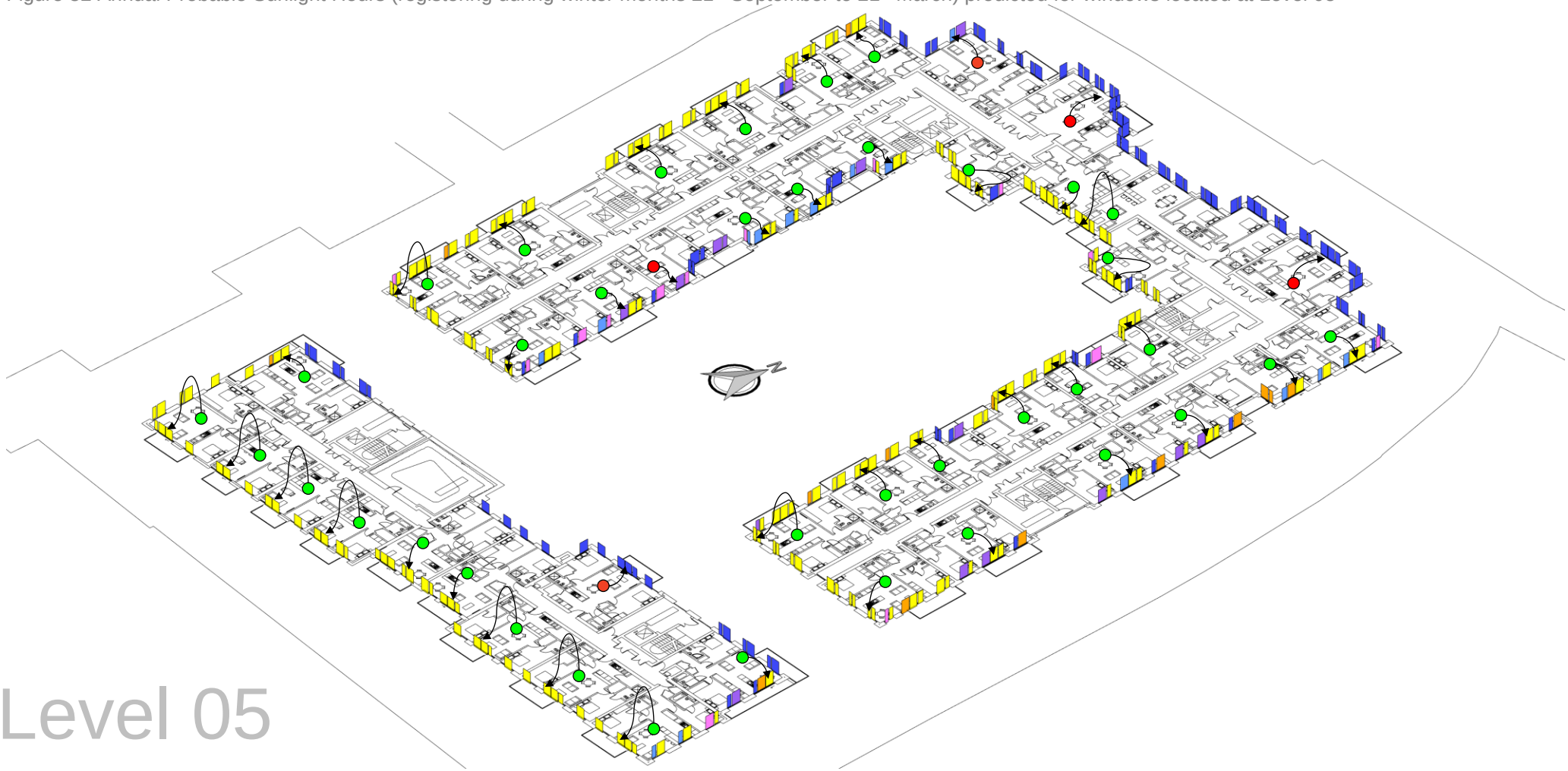
Figure 31 Annual Probable Sunlight Hours (registering during winter months 21st September to 21st March) predicted for windows located at Level 04



ANNUAL PROBABLE SUNLIGHT HOURS DURING WINTER MONTHS (%)					
00% to 01%	01% to 02%	02% to 03%	03% to 04%	04% to 05%	> 5%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS FOR WINTER MONTHS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	36	●
Instance conforms with relaxed interpretation of guidelines only	1	○
Instance falls short of both strict and relaxed interpretation of guidelines	7	●

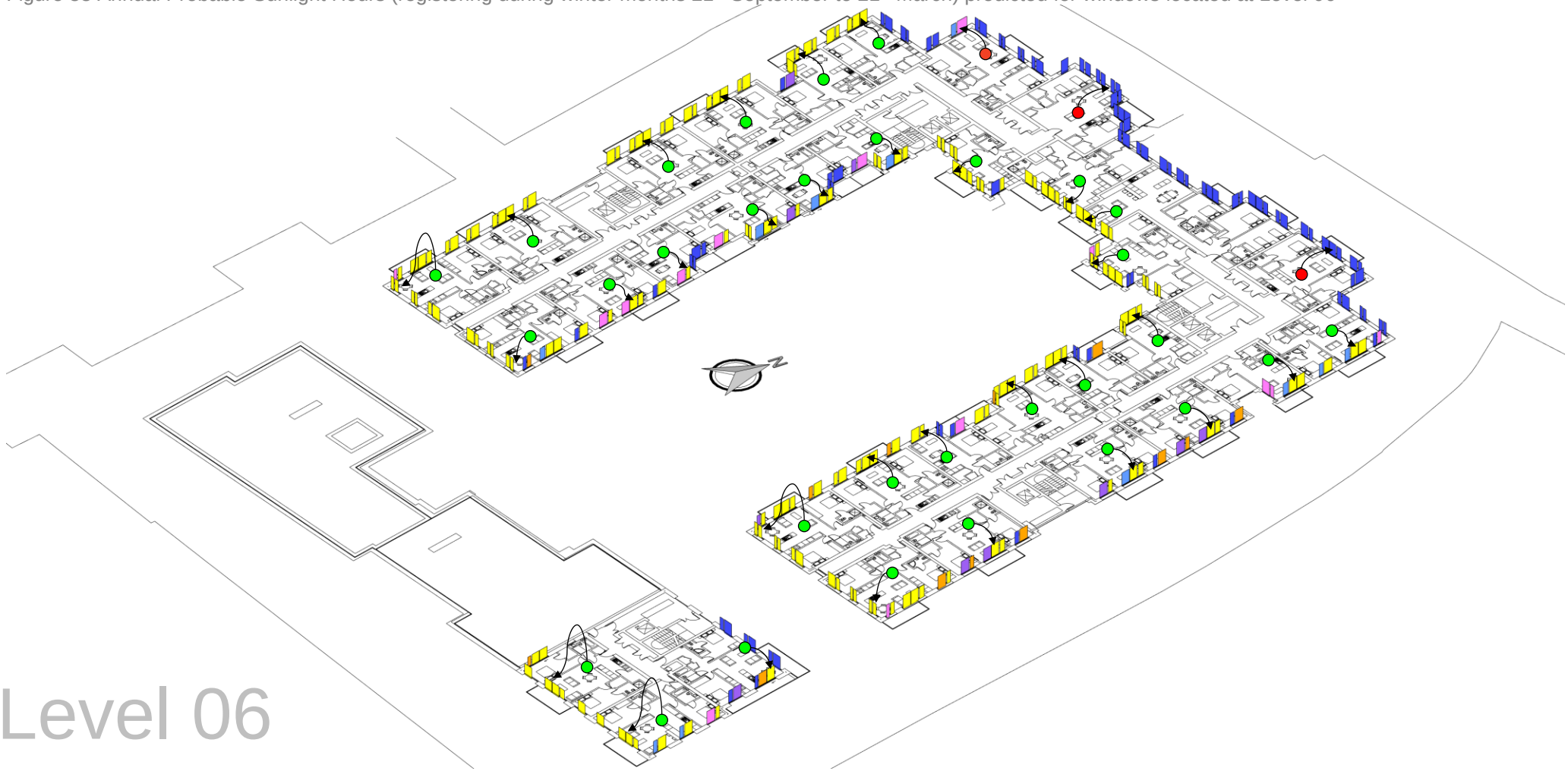
Figure 32 Annual Probable Sunlight Hours (registering during winter months 21st September to 21st March) predicted for windows located at Level 05



ANNUAL PROBABLE SUNLIGHT HOURS DURING WINTER MONTHS (%)					
00% to 01%	01% to 02%	02% to 03%	03% to 04%	04% to 05%	> 5%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS FOR WINTER MONTHS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	38	●
Instance conforms with relaxed interpretation of guidelines only	0	○
Instance falls short of both strict and relaxed interpretation of guidelines	5	●

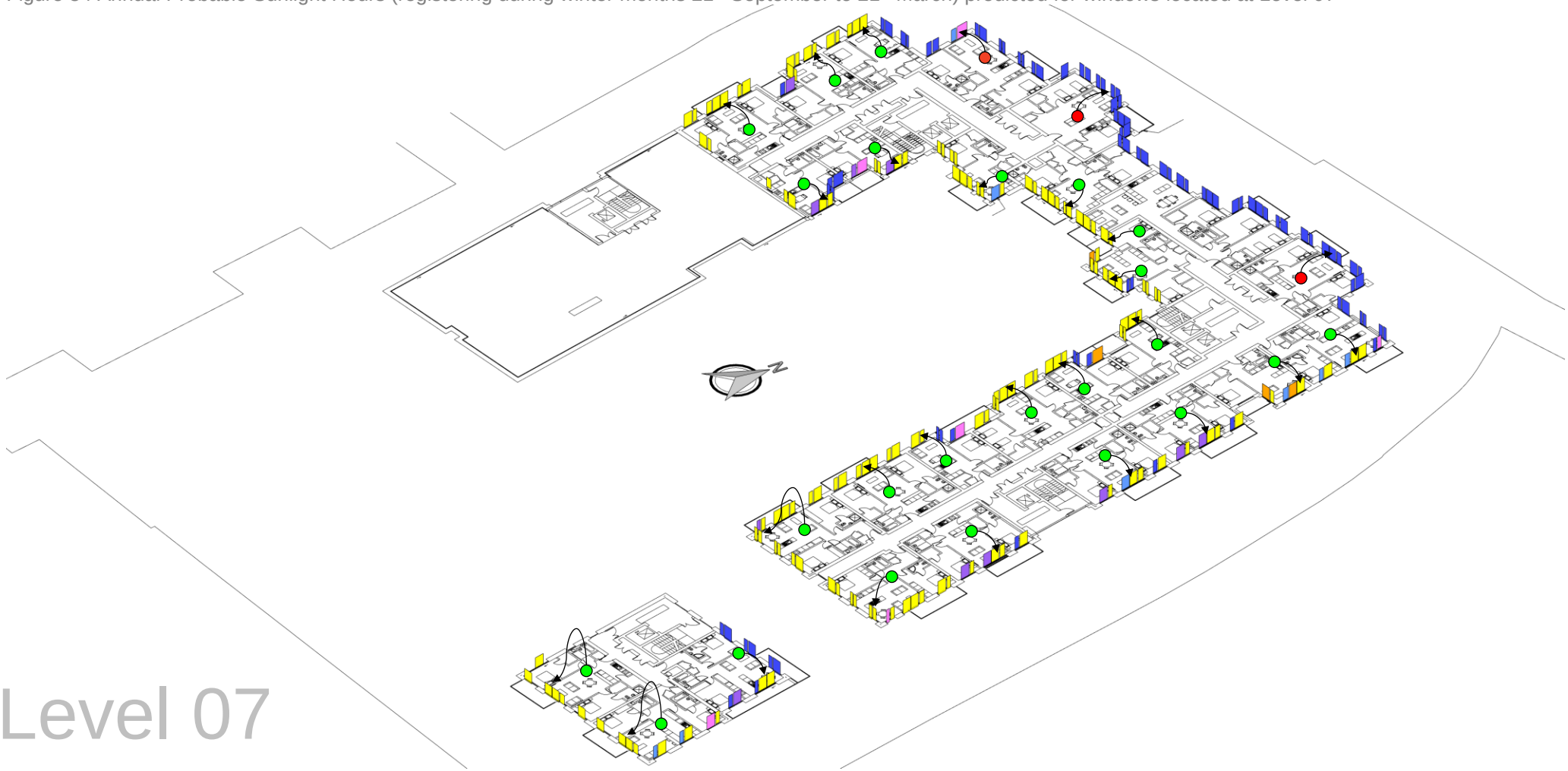
Figure 33 Annual Probable Sunlight Hours (registering during winter months 21st September to 21st March) predicted for windows located at Level 06



ANNUAL PROBABLE SUNLIGHT HOURS DURING WINTER MONTHS (%)					
00% to 01%	01% to 02%	02% to 03%	03% to 04%	04% to 05%	> 5%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS FOR WINTER MONTHS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	31	●
Instance conforms with relaxed interpretation of guidelines only	0	○
Instance falls short of both strict and relaxed interpretation of guidelines	3	●

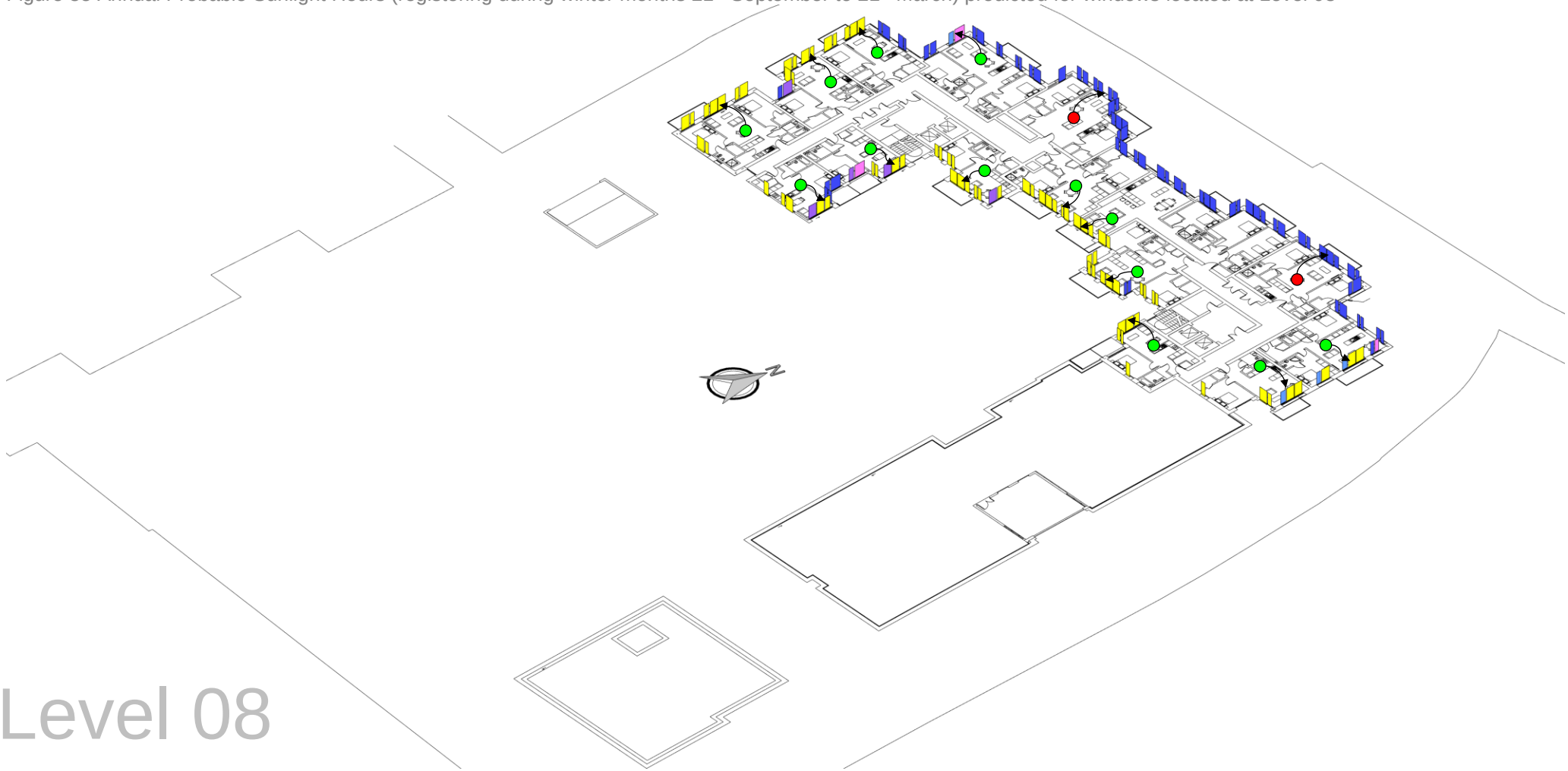
Figure 34 Annual Probable Sunlight Hours (registering during winter months 21st September to 21st March) predicted for windows located at Level 07



ANNUAL PROBABLE SUNLIGHT HOURS DURING WINTER MONTHS (%)					
00% to 01%	01% to 02%	02% to 03%	03% to 04%	04% to 05%	> 5%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS FOR WINTER MONTHS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	24	●
Instance conforms with relaxed interpretation of guidelines only	0	○
Instance falls short of both strict and relaxed interpretation of guidelines	3	●

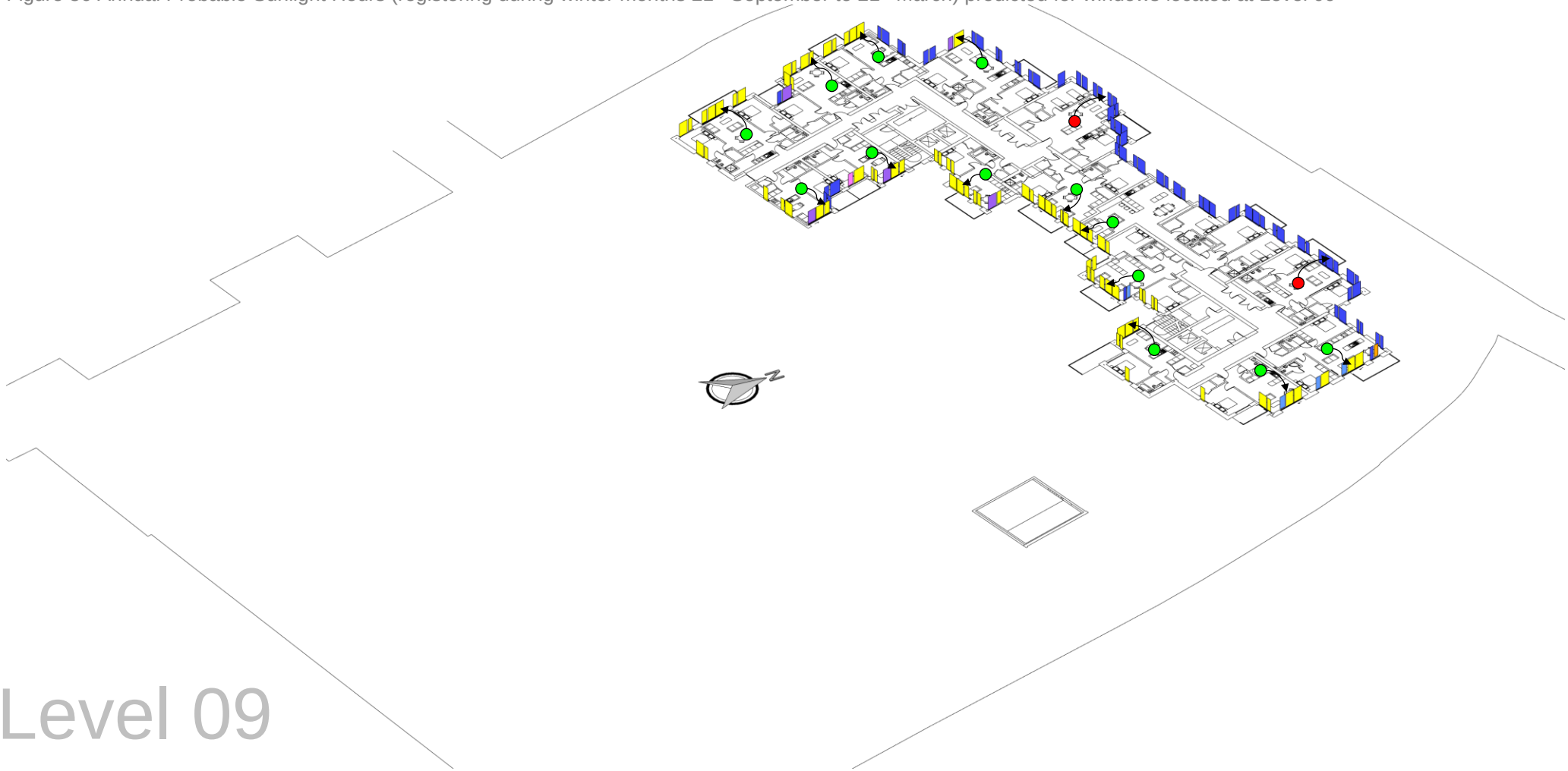
Figure 35 Annual Probable Sunlight Hours (registering during winter months 21st September to 21st March) predicted for windows located at Level 08



ANNUAL PROBABLE SUNLIGHT HOURS DURING WINTER MONTHS (%)					
00% to 01%	01% to 02%	02% to 03%	03% to 04%	04% to 05%	> 5%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS FOR WINTER MONTHS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	13	●
Instance conforms with relaxed interpretation of guidelines only	0	○
Instance falls short of both strict and relaxed interpretation of guidelines	2	●

Figure 36 Annual Probable Sunlight Hours (registering during winter months 21st September to 21st March) predicted for windows located at Level 09

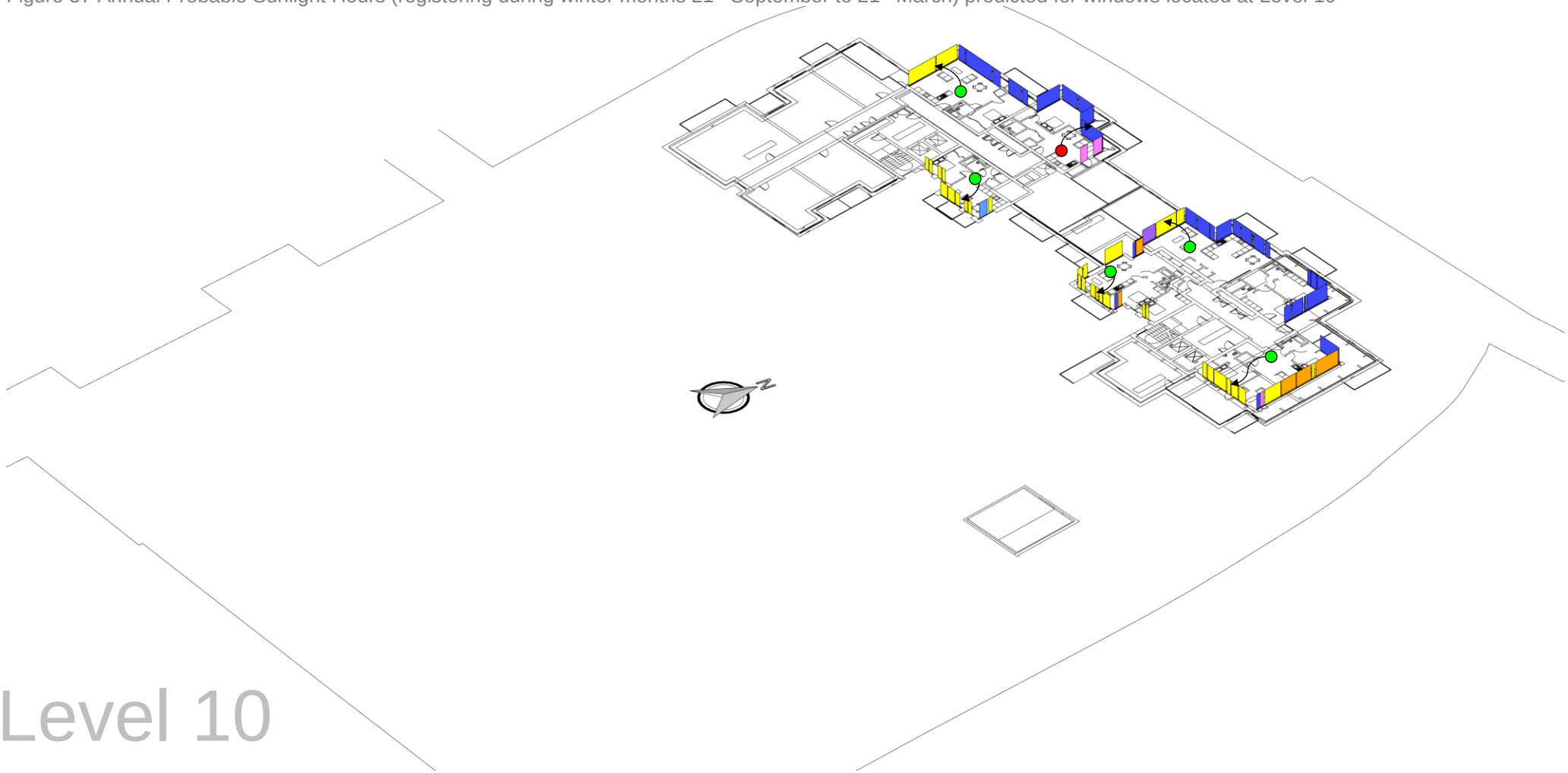


Level 09

ANNUAL PROBABLE SUNLIGHT HOURS DURING WINTER MONTHS (%)					
00% to 01%	01% to 02%	02% to 03%	03% to 04%	04% to 05%	> 5%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS FOR WINTER MONTHS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	13	●
Instance conforms with relaxed interpretation of guidelines only	0	○
Instance falls short of both strict and relaxed interpretation of guidelines	2	●

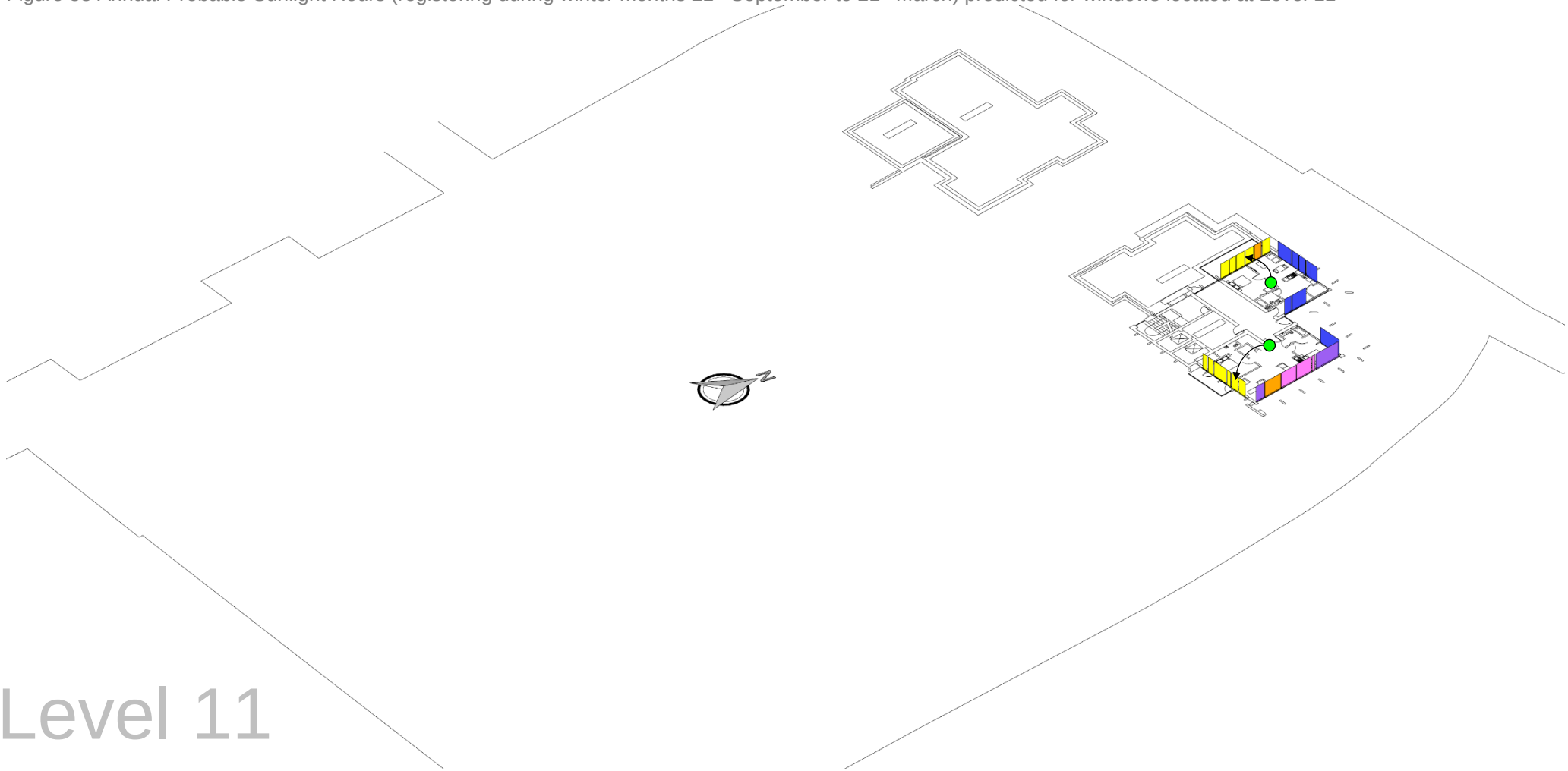
Figure 37 Annual Probable Sunlight Hours (registering during winter months 21st September to 21st March) predicted for windows located at Level 10



ANNUAL PROBABLE SUNLIGHT HOURS DURING WINTER MONTHS (%)					
00% to 01%	01% to 02%	02% to 03%	03% to 04%	04% to 05%	> 5%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS FOR WINTER MONTHS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	5	●
Instance conforms with relaxed interpretation of guidelines only	0	○
Instance falls short of both strict and relaxed interpretation of guidelines	1	●

Figure 38 Annual Probable Sunlight Hours (registering during winter months 21st September to 21st March) predicted for windows located at Level 11



Level 11

ANNUAL PROBABLE SUNLIGHT HOURS DURING WINTER MONTHS (%)					
00% to 01%	01% to 02%	02% to 03%	03% to 04%	04% to 05%	> 5%

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS FOR WINTER MONTHS	NO. INSTANCES	
Instance conforms with strict interpretation of guidelines	2	●
Instance conforms with relaxed interpretation of guidelines only	0	○
Instance falls short of both strict and relaxed interpretation of guidelines	0	●

Appendix H: Outdoor Solar Access in Summer Months

Figure 39 Sunlight access levels predicted for outdoor recreation space on the 21st of April

TOTAL NO. SUNLIGHT HOURS ON THE 21ST OF APRIL (HRS)

0 to 2	> 2

Figure 40 Sunlight access levels predicted for outdoor recreation space on the 21st of May

TOTAL NO. SUNLIGHT HOURS ON THE 21ST OF MAY (HRS)

0 to 2	> 2

Figure 41 Sunlight access levels predicted for outdoor recreation space on the 21st of June

TOTAL NO. SUNLIGHT HOURS ON THE 21ST OF JUNE (HRS)

0 to 2	> 2

Appendix I: About the Author

This appendix replicates material which has already been provided in Report 1 of 3.

Rory Walsh BEng MEngSc MScSP PhD MIPI is a building performance engineer with key competencies in energy, comfort, and daylight modelling. Specialising in the assessment of daylight adequacy in a planning and development context Rory has had cause to write and review many daylight reports over the past ten years. Rory acts as principal consultant with BPG3.

Education & Experience:

- Bachelor's degree in mechanical engineering, awarded by NUIG
- Master's in Engineering Science awarded for research on the subject of thermal mass in non-domestic buildings with the Energy Research Group, UCD
- Doctorate awarded for research on the subject of natural ventilation in non-domestic buildings with TrinityHaus, Trinity College Dublin.
- Master's in Spatial Planning, awarded by TU Dublin.
- 10 years practice as a daylight consultant working with Aurea Consult and BPG3.

ASSESSMENT OF DAYLIGHT ADEQUACY WITHIN A PROPOSED DEVELOPMENT ON BELGARD SQUARE EAST, DUBLIN 24. (EN17037 TESTING)

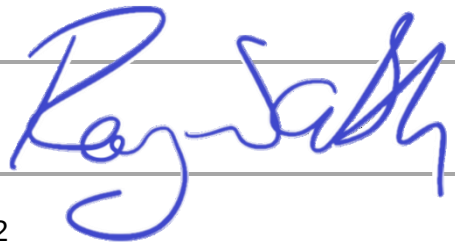
Daylight Report 3 of 3

Prepared for Ravensbrook Limited
Date: 7th June 2022
REV 03

BPG3.

Rev.	Description	Issued by	Date	Checked
Rev 01	Assessment of daylight levels within a proposed residential development	RW	17/05/22	KR
Rev 02	Minor edits	RW	25/05/22	KR
Rev 03	Minor changes to formatting	RW	07/06/2022	KR

This report has been prepared for the sole benefit, use and information of Ravensbrook Limited for the purposes set out in the report or instructions in commissioning it. The liability of BPG3 in respect of the information contained in the report will not extend to any third party.

author	Rory Walsh
signature	
date	7th June 2022
approved	Karen Rock
signature	
date	7th June 2022

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CONTENTS

Glossary

Daylight	Visible part of global solar radiation, including both diffuse light from the sky and direct light from the sun.
Daylight Factor	ratio of the illuminance at a point on a given plane due to the light received directly or indirectly from a sky of assumed or known luminance distribution, to the illuminance on a horizontal plane due to an unobstructed hemisphere of this sky, excluding the contribution of direct sunlight to both illuminances
Skylight	part of solar radiation that reaches the earth's surface as a result of scattering in the atmosphere.
Sunlight	part of solar radiation that reaches the earth's surface as parallel rays after selective attenuation by the atmosphere.
Sunlight Exposure	sum of the time (hours) (e.g. on a given day) within a given period during which the sun is above the actual horizon with a cloudless sky, which may be limited by permanent obstructions like mountains, buildings, etc.
Reference Plane	plane in a space on which illuminances and/or daylight factors are calculated, specified or measured. Assumed to be 0.85m above finished floor level as standard within EN 17037 testing.

Introduction

BPG3 have been engaged by Ravensbrook Limited to assess the daylight levels associated with a proposed residential development at Belgard Square East, Dublin 24.

The proposal relates to the construction of a mixed-use development including 318 no. “Build-to-Rent” residential apartments and commercial use (c. 2,206 sqm) on a c. 1.25 ha site at Belgard Square East, Belgard Road and Blessington Road, Tallaght, Dublin 24.

Daylight adequacy within this development has been assessed with respect to the methods and performance criteria detailed in the BRE (Building Research Establishment) guide *‘Site layout planning for daylight and sunlight - A guide to good practice’* 2nd Edition and I.S EN 17037:2018 Daylight in Buildings. This assessment represents an alternate assessment to the principal daylight adequacy assessment which has been submitted with this application; see Daylight Report 2 of 3 titled ‘*Assessment of Daylight Adequacy Within a Proposed Development on Belgard Square East, Dublin 24. (Traditional Testing)’.*

This assessment investigates the levels of daylight amenity which would be provided within the accommodation which is being proposed as part of this development. Sunlight available to outdoor recreation spaces has also been considered. The assessment of impact to neighbouring properties is presented in a separate report; see Daylight Report 1 of 3.

A total of three separate daylight studies are presented within this report:

Study D: Assessment of daylight amenity available within proposed accommodation: An assessment of the daylight amenity which would be provided within the accommodation which is being proposed as part of this development.

Study E: Assessment of sunlight amenity available to proposed accommodation: An assessment of the sunlight amenity which would be available to the accommodation which is being proposed as part of this development.

Study F: Assessment of sunlight amenity available within proposed outdoor recreation areas: An assessment of the degree to which the potential for adequate sunlighting exists within the main outdoor recreation space which is being proposed as part of this development.

As recommended in the BRE guide, a quantitative approach to the assessment of daylight levels has been adopted in this study. Numeric calculations have been carried out to predict the daylight levels which would be available at a number of test points and areas. The results of these calculations are presented in tables.

Information relating to the proposed development and the surrounding areas has been supplied to BPG3 by Henry J Lyons in electronic format. The study assumes that the information provided is accurate and that no omissions have been made. The information sources which have been used to develop the models used in this study are outlined in Appendix D: Source Material.

It is important to note that whilst the methods presented in the BRE guide provide designers and planners with a clear and objective way of assessing daylight levels, the associated performance targets are not mandatory standards. This is clarified within the introductory section of the BRE guide:

> *"The advice given here is not mandatory and this document 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 because natural lighting is only one of many factors in site layout design."*

While it is accepted that advisory targets should always be aspired to, the associated imperatives which exist to create sustainable levels of urban density, to encourage the development of compact urban form and to make best use of scarce urban land will often place restrictions on the degree to which it is appropriate to pursue full compliance with advisory minimums.

In instances where it can be shown that reasonable levels of daylight would be provided it is BPG3's view that a clear basis for accepting light levels which fall below advisory minimums will have been established. It is on this basis that both primary assessments (as ascertained with reference to conventional testing) and secondary assessments (based on a professional opinion/interpretation which is informed by wider considerations) have been

provided within this report. BPG3 recommends that the merits of the secondary assessments should only be considered having first considered the findings of the primary assessments. A deeper consideration of primary and secondary assessments is provided in Appendix C: Primary / Secondary Assessments.

In instances where significant departures are identified it is BPG3's view that shortfalls of this nature can still be deemed acceptable in instances where wider planning objectives countervail. Guidance regarding the discretion which is available to consent authorities on this matter is provided in Appendix B: Discretion available to consent authorities.

Study D: Assessment of daylight amenity available within proposed accommodation

Daylight amenity relates to the general impression of brightness which is provided within a room as function of the combined contribution of diffuse light from the sky and direct light from the sun.

Study D: Assessment Approach

Daylight levels within the proposed accommodation have been assessed with reference to the climate-based approach (Method 2 approach) detailed in I.S. EN 17037:2018 Daylight in Buildings[1].

Climate based testing requires the use of a detailed daylight calculation method where hourly internal daylight illuminance values for a typical year are computed using hourly sky and sun conditions derived from climate data appropriate to the site. This calculation method determines daylight provision directly from simulated illuminance values on the reference plane.

Within I.S. EN 17037 three categories of daylight performance are defined. In each case daylight performance is defined with respect to a specific target illuminance which is expected to register, during half of all daylight hours, across half of the floor area within a given room; a separate minimum illuminance is also expected to register across 95% of the room, during half of all daylight hours. The specific targets recommended for a room served by conventional windows are presented in Table 1.

Table 1 Daylight performance targets detailed in I.S EN 17037

Performance Category	Level of Illuminance which is expected to register across 50% of space, during half of all daylight hours. [lux]	Level of Illuminance which is expected to register across 95% of space, during half of all daylight hours. [lux]
Minimum	300	100
Medium	500	300
High	700	500

As the purpose of this assessment is to investigate the adequacy of natural light levels within the proposed accommodation it is the minimum performance targets which apply.

In order to be able to say that the light levels within a room are in conformity with the minimum levels recommended in I.S. EN 17037 it is necessary to demonstrate that an illuminance level greater than 300lux, is provided over at least 50% of the room, for at least 50% of daylight hours. Additionally, it is

[1] See section B.3.3 of I.S. EN 17037:2018

necessary to demonstrate that an illuminance level greater than 100lux, is provided over at least 95% of the room, for at least 50% of daylight hours. This testing has been carried out using computational means using a software programme called Radiance[2]. Radiance is a backward raytracing programme which has benefited from over thirty years of development and comprehensive validation[3].

To ensure that this computational approach renders reliable results care has been taken to adopt sensible inputs:

- An appropriate weather file for this location has been sourced from the EnergyPlus website[4]; for this project the historical weather recorded at Dublin Airport (WMO 039690) was deemed to be the most appropriate data to use. The IWEC weather file used represents a typical year (determined with reference to at least 12 years of historical data).
- The geometric makeup of all test rooms, and their surrounding context, has been defined at an appropriate level of detail; see Appendix E: Geometric Detail.
- By convention illuminance levels within a room are tested across a horizontal array of points which are located 0.85m above finished floor level; care has been taken to ensure these analysis grids are defined at an appropriate level of resolution; Appendix F: Analysis Grids.
- As this testing method takes account of light which has been transmitted through glass, and light which has been reflected from surfaces, care has been taken to attribute reasonable material properties. The reflectance and transmittance values which have been adopted in this study are detailed in Appendix G: Material Properties.
- The transmittance of light through external windows has been adjusted for dirt build up; Appendix G: Material Properties.
- Recognising that the prediction of ambient light levels within a complex environment is an involved exercise which incurs significant computational overheads, daylight specialists are obliged to identify a set of simulation parameters which strike a reasonable balance between resource consumption and predictive accuracy. The simulation parameters adopted in this specific assessment are detailed in Appendix H: Simulation Parameters.
- Blinds and curtains have been modelled in their open state[5].

[2] https://www.radiance-online.org/
[3] Mardaljevic, John (2000): Daylight simulation: validation, sky models and daylight coefficients. Loughborough University. Thesis. https://hdl.handle.net/2134/23356
[4] *https://energyplusweather.s3.amazonaws.com/europe_wmo_region_6/IRL/IRL_Dublin.039690_IWEC/IRL_Dublin.039690_IWEC.zip*
[5] *Unlike office buildings, where a fixed seating position necessitates blinds be dynamically adjusted throughout the day (to manage glare), blinds are not typically operated in this manner in a residential setting - Nazmy, H. and Kim, S.K., 2021. The Effect Of Spatial And Temporal Factors On Occupants' blind Use Behaviours In Multifamily Residential Buildings. Journal of Green Building, 16(3), pp.13-35.*

- In accordance with guidance provided in Appendix H of the BRE guide large existing trees (which are to be retained) have been represented in their winter state. This is the most instructive state to represent trees as daylight provision is more important in winter[6]. Where advisory minimums are satisfied with these trees present in their winter state it is reasonable to assume that daylight provision will be adequate throughout the year.

Study D: Assessment Points

The level of skylight amenity which would be provided within all the habitable rooms which are being proposed as part of this development have been assessed; internal communal facilities located at ground and first floor have also been assessed. A total of 847 rooms have been tested.

Study D: Results

The predictions for each of the rooms assessed in this study are presented in Table 2; the associated daylight distribution diagrams are presented in Figure 1 to Figure 12.

The results of this study demonstrate that conformity with daylight guidelines would be achieved in many cases. Of the 847 rooms assessed in this study, 568 (equivalent to 67% of total) have been found to either meet or exceed the advisory minimums recommended in I.S. EN17037. In these cases, where full conformity has been demonstrated, it can be concluded with confidence that reasonable levels of internal daylight would be provided.

In instances where it has not been possible to demonstrate full conformity with I.S. EN 17037 recommendations it is BPG3's view that internal daylight can still be considered reasonable in certain circumstances. More specifically it is BPG3's view that internal daylight can still be considered reasonable in instances where the residential minimums published in the UK's implementation of EN 17037 (BS EN 17037) are satisfied; see Appendix I: Residential performance targets published in National Annex to BS EN 17037. The results of this assessment indicate that 788 of the 847 rooms proposed within this development (equivalent to 93%) would achieve illuminance levels which either meet or exceed the minimums detailed in the UK's National Annex.

Further to this it is BPG3's view that, notwithstanding the fact that BS EN 17037 recommends a minimum target illuminance of 200lux for open plan rooms which contain a kitchen, internal daylight can still be considered reasonable in instances where the levels predicted for open plan kitchen-living-dining rooms remain above the minimum level proposed within BS EN 17037 for living rooms (150lux). It is reasonable to make this assumption as illuminance levels, commensurate with the rooms predominant use (living

[6] *Outdoor illuminances are lower in winter so less light will be available.*

room), would be available. It is BPG3's view that if a given performance target indicates that adequate levels of daylight would be provided within a living room that it should also indicate that adequate levels of daylight would be provided within an open plan living room which includes a kitchen. It is important to recognise that the origin of the elevated minimums for kitchens relates to an assumption that a higher level of light is needed to assist with the functional activities which are often conducted in kitchens (food preparation, cleaning, etc)[7]. To the extent that the purpose of the higher minimum relates principally to the support of functional activities it is BPG3's view that a carefully designed artificial task lighting strategy can be legitimately substituted.

The results of this assessment indicate that illuminance levels within 59 of the rooms proposed would fall short of the minimum levels recommended in the National Annex to BS EN 17037; of these 59 rooms 41 relate to open plan kitchen/living/dining rooms. When the results for these 41 open plan kitchen/living/dining rooms are examined 16 are found to achieve target illuminance levels which exceed the relaxed 150lux minimum. When the results for these 16 rooms are considered, in combination with the 788 rooms where full conformity with the residential minimums detailed in the National Annex to BS EN 17037 has been demonstrated, it is BPG3's view that reasonable levels of internal skylight amenity can be safely assumed for 804 of the 847 rooms proposed (equivalent to 95%).

While artificial light is expected to play a significant role in the lighting of the small number of remaining spaces it is important to note that significant portions of many of these rooms (31 rooms identified; equivalent to 4% of total) would benefit from reasonable levels of internal daylight in local areas; see daylight distribution diagrams presented in Figure 1 to Figure 12. In instances where occupants are orientated towards these areas a significant portion of the room is likely to appear adequately daylit. To the extent that artificial lighting can be relied upon to balance the light levels within these spaces it is reasonable to assume that a bright and attractive appearance could be maintained.

When assessing the significance of the departures identified in this study it is important to recognise a number of compensating factors:

- A carefully designed artificial lighting strategy is envisaged to balance the light levels which would be present to the rear of the rooms with the light levels which would be provided to the front.
- Supplementary task lighting is envisaged above the sink, the cooker, and the counter areas.

[7] *b. While no rationale for the higher minimum target for kitchens is provided within either I.S EN 17037 or BS EN 17037 the origins of the elevated target can be traced back through a number of preceding standards to guidance which is provided in Chapter 1: Part 1 of the British Standard Code of Practice CP3 (1964). Advice provided in this standard indicates that the overriding reason why a higher minimum target is recommended for kitchens is because the tasks carried out around the cooker, sink and preparation table are thought to be visually demanding.*

- The residents of this development will be provided with access to a number of ancillary amenities including, a number of residents lounges, a gym and a co-working space.
- A significant proportion (37%) of the apartments proposed within this development exceed minimum space requirements by more than 10%.
- Private open space (balconies) will be provided to all apartments. HJL advise that the aggregate provision of private open space exceeds minimum requirements by 19%.
- Relative to the minimum proportion of dual aspect apartments required (33%) HJL advise that 45% of the apartments provided within the scheme achieve a dual aspect.
- The wider scheme has been designed to a high standard with high quality internal finishes and external landscaping envisaged.
- Additional features which would contribute to the attractiveness of these apartments include the proximity to essential services as well as the favourable location relative to retail and recreational destinations.

Table 2 Internal daylight predictions. (Standard I.S. EN 17037 testing highlighted in blue; professional interpretation of test results highlighted in orange)

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
0	1	C	10%	17%	21%	35%	No	*A reliance on artificial light is anticipated; see Note E*
0	2	C	13%	21%	26%	41%	No	*Reasonable levels of daylight provided locally; see Note D*
0	3	C	5%	6%	8%	9%	No	*A reliance on artificial light is anticipated; see Note E*
0	4	C	17%	23%	31%	60%	No	*Reasonable levels of daylight provided locally; see Note D*
0	5	C	77%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
0	6	C	60%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	1	B	22%	50%	61%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
1	2	KLD	92%	97%	97%	97%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	3	B	70%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	4	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	5	KLD	94%	96%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	6	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	7	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	8	KLD	61%	79%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	9	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	10	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	11	KLD	59%	77%	93%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	12	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	13	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	14	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	15	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	16	KLD	74%	91%	94%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	17	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	18	KLD	64%	84%	84%	95%	No	*Reasonable levels of daylight would be provided; see Note B*
1	19	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
1	20	KLD	64%	84%	86%	95%	No	*Reasonable levels of daylight would be provided; see Note B*
1	21	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	22	KLD	97%	98%	99%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	23	B	87%	95%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	24	B	58%	97%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	25	KLD	83%	94%	96%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	26	B	24%	40%	56%	88%	No	*Reasonable levels of daylight would be provided; see Note B*
1	27	B	25%	39%	54%	68%	No	*Reasonable levels of daylight would be provided; see Note B*
1	28	KLD	5%	11%	19%	35%	No	*A reliance on artificial light is anticipated; see Note E*
1	29	B	56%	84%	84%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
1	30	B	19%	35%	48%	77%	No	*Reasonable levels of daylight would be provided; see Note B*
1	31	B	35%	46%	54%	73%	No	*Reasonable levels of daylight would be provided; see Note B*
1	32	B	31%	46%	54%	73%	No	*Reasonable levels of daylight would be provided; see Note B*
1	33	B	13%	33%	50%	77%	No	*Reasonable levels of daylight would be provided; see Note B*
1	34	B	46%	81%	85%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
1	35	KLD	5%	11%	19%	34%	No	*A reliance on artificial light is anticipated; see Note E*
1	36	B	25%	36%	39%	61%	No	*Reasonable levels of daylight would be provided; see Note B*
1	37	B	14%	32%	50%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
1	38	KLD	96%	97%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	39	B	92%	96%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	40	B	89%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	41	KLD	43%	66%	76%	99%	No	*Reasonable levels of daylight would be provided; see Note B*
1	42	B	81%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	43	B	93%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	44	KLD	47%	68%	79%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
1	45	B	88%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	46	C	50%	92%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
1	47	C	10%	14%	21%	44%	No	*A reliance on artificial light is anticipated; see Note E*
1	48	B	30%	43%	57%	87%	No	*Reasonable levels of daylight would be provided; see Note B*
1	49	KLD	22%	28%	33%	52%	No	*Reasonable levels of daylight provided locally; see Note D*
1	50	B	3%	5%	16%	37%	No	*Reasonable levels of daylight provided locally; see Note D*
1	51	B	0%	7%	14%	29%	No	*Reasonable levels of daylight provided locally; see Note D*
1	52	KLD	29%	40%	52%	64%	No	*Reasonable levels of daylight would be provided; see Note C*
1	53	B	22%	34%	47%	63%	No	*Reasonable levels of daylight would be provided; see Note B*
1	54	KLD	17%	28%	34%	53%	No	*Reasonable levels of daylight provided locally; see Note D*
1	55	B	50%	64%	75%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	56	B	46%	69%	85%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
1	57	KLD	35%	80%	95%	97%	No	*Reasonable levels of daylight would be provided; see Note B*
1	58	B	9%	23%	41%	77%	No	*Reasonable levels of daylight would be provided; see Note B*
1	59	C	39%	64%	80%	99%	No	*Reasonable levels of daylight would be provided; see Note B*
1	60	B	88%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	61	KLD	29%	41%	49%	63%	No	*Reasonable levels of daylight provided locally; see Note D*
1	62	B	13%	33%	50%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
1	63	KLD	52%	71%	80%	88%	No	*Reasonable levels of daylight would be provided; see Note B*
1	64	B	91%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	65	KLD	32%	46%	62%	81%	No	*Reasonable levels of daylight would be provided; see Note C*
1	66	B	70%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	67	B	55%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	68	KLD	83%	97%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	69	B	18%	30%	52%	85%	No	*Reasonable levels of daylight would be provided; see Note B*
1	70	KLD	98%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	71	B	48%	81%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
1	72	KLD	61%	90%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	73	B	22%	38%	53%	84%	No	*Reasonable levels of daylight would be provided; see Note B*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
1	74	B	46%	71%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
1	75	KLD	32%	47%	61%	75%	No	*Reasonable levels of daylight would be provided; see Note C*
1	76	B	34%	56%	84%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
1	77	B	53%	91%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	78	KLD	38%	59%	75%	95%	No	*Reasonable levels of daylight would be provided; see Note B*
1	79	B	82%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	80	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	81	KLD	54%	74%	89%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	82	B	86%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	83	B	92%	96%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	84	KLD	96%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	85	B	32%	50%	82%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
1	86	B	23%	27%	50%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
1	87	KLD	50%	88%	96%	97%	Yes	*Reasonable levels of daylight would be provided; see Note A*
1	88	B	8%	23%	42%	81%	No	*Reasonable levels of daylight would be provided; see Note B*
1	89	B	38%	54%	65%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
1	90	KLD	16%	28%	34%	51%	No	*Reasonable levels of daylight provided locally; see Note D*
1	91	B	7%	10%	20%	47%	No	*Reasonable levels of daylight provided locally; see Note D*
1	92	KLD	21%	32%	34%	55%	No	*Reasonable levels of daylight provided locally; see Note D*
1	93	B	0%	0%	7%	29%	No	*Reasonable levels of daylight provided locally; see Note D*
1	94	B	0%	5%	5%	29%	No	*Reasonable levels of daylight provided locally; see Note D*
1	95	KLD	18%	24%	30%	46%	No	*A reliance on artificial light is anticipated; see Note E*
1	96	B	30%	40%	47%	77%	No	*Reasonable levels of daylight would be provided; see Note B*
1	97	KLD	28%	38%	50%	66%	No	*Reasonable levels of daylight provided locally; see Note D*
1	98	B	0%	0%	4%	18%	No	*A reliance on artificial light is anticipated; see Note E*
1	99	B	0%	0%	7%	29%	No	*Reasonable levels of daylight provided locally; see Note D*
1	100	KLD	28%	38%	48%	64%	No	*Reasonable levels of daylight provided locally; see Note D*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
2	1	B	28%	56%	83%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
2	2	KLD	96%	97%	97%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	3	B	85%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	4	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	5	KLD	95%	96%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	6	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	7	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	8	KLD	66%	83%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	9	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	10	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	11	KLD	60%	77%	96%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	12	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	13	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	14	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	15	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	16	KLD	85%	91%	94%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	17	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	18	KLD	64%	84%	86%	97%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	19	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	20	KLD	67%	84%	86%	97%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	21	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	22	KLD	97%	98%	99%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	23	B	90%	97%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	24	B	64%	97%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	25	KLD	86%	95%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	26	B	24%	40%	56%	88%	No	*Reasonable levels of daylight would be provided; see Note B*
2	27	B	7%	25%	39%	57%	No	*Reasonable levels of daylight would be provided; see Note B*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
2	28	KLD	10%	19%	26%	40%	No	*A reliance on artificial light is anticipated; see Note E*
2	29	B	68%	84%	88%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	30	B	26%	39%	55%	81%	No	*Reasonable levels of daylight would be provided; see Note B*
2	31	B	35%	50%	65%	77%	No	*Reasonable levels of daylight would be provided; see Note B*
2	32	B	38%	54%	69%	77%	No	*Reasonable levels of daylight would be provided; see Note B*
2	33	B	23%	40%	63%	83%	No	*Reasonable levels of daylight would be provided; see Note B*
2	34	B	77%	85%	88%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	35	KLD	6%	18%	25%	38%	No	*A reliance on artificial light is anticipated; see Note E*
2	36	B	14%	25%	39%	57%	No	*Reasonable levels of daylight would be provided; see Note B*
2	37	B	18%	36%	59%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
2	38	KLD	96%	96%	96%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	39	B	88%	92%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	40	B	96%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	41	KLD	50%	67%	79%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	42	B	69%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	43	B	96%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	44	KLD	51%	71%	83%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	45	B	72%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	46	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	47	KLD	51%	72%	84%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	48	B	82%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	49	B	44%	100%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
2	50	KLD	92%	92%	92%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
2	51	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	52	KLD	97%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	53	B	91%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	54	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
2	55	KLD	51%	68%	79%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	56	B	56%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	57	B	71%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	58	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	59	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	60	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	61	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	62	KLD	33%	48%	65%	97%	No	*Reasonable levels of daylight would be provided; see Note C*
2	63	B	88%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	64	B	38%	93%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
2	65	KLD	94%	97%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	66	B	32%	62%	88%	97%	No	*Reasonable levels of daylight would be provided; see Note B*
2	67	KLD	86%	93%	98%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	68	B	38%	81%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
2	69	KLD	69%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	70	B	0%	6%	19%	72%	No	*Reasonable levels of daylight would be provided; see Note B*
2	71	B	39%	57%	89%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
2	72	KLD	32%	49%	58%	75%	No	*Reasonable levels of daylight would be provided; see Note C*
2	73	B	56%	84%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	74	B	41%	75%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
2	75	KLD	41%	62%	76%	96%	No	*Reasonable levels of daylight would be provided; see Note B*
2	76	B	96%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	77	B	78%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	78	KLD	51%	74%	93%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	79	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	80	B	92%	92%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	81	KLD	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
2	82	B	36%	68%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
2	83	B	27%	45%	64%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
2	84	KLD	36%	82%	95%	97%	No	*Reasonable levels of daylight would be provided; see Note B*
2	85	B	46%	69%	85%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
2	86	B	12%	31%	42%	77%	No	*Reasonable levels of daylight would be provided; see Note B*
2	87	KLD	11%	20%	30%	49%	No	*A reliance on artificial light is anticipated; see Note E*
2	88	B	33%	47%	60%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
2	89	KLD	23%	34%	45%	57%	No	*Reasonable levels of daylight provided locally; see Note D*
2	90	B	0%	14%	18%	43%	No	*Reasonable levels of daylight provided locally; see Note D*
2	91	B	5%	8%	16%	45%	No	*Reasonable levels of daylight provided locally; see Note D*
2	92	KLD	23%	30%	35%	53%	No	*Reasonable levels of daylight provided locally; see Note D*
2	93	B	33%	47%	60%	93%	No	*Reasonable levels of daylight would be provided; see Note B*
2	94	KLD	36%	46%	58%	70%	No	*Reasonable levels of daylight would be provided; see Note C*
2	95	B	0%	7%	7%	29%	No	*Reasonable levels of daylight provided locally; see Note D*
2	96	B	0%	7%	14%	39%	No	*Reasonable levels of daylight provided locally; see Note D*
2	97	KLD	36%	46%	54%	70%	No	*Reasonable levels of daylight would be provided; see Note C*
2	98	B	50%	89%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	99	KLD	74%	89%	93%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	100	B	42%	88%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
2	101	KLD	37%	59%	68%	83%	No	*Reasonable levels of daylight would be provided; see Note B*
2	102	KLD	73%	98%	99%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
2	103	B	21%	31%	52%	97%	No	*Reasonable levels of daylight would be provided; see Note B*
2	104	KLD	49%	77%	95%	96%	No	*Reasonable levels of daylight would be provided; see Note B*
2	105	B	26%	53%	74%	89%	No	*Reasonable levels of daylight would be provided; see Note B*
2	106	KLD	36%	46%	56%	70%	No	*Reasonable levels of daylight would be provided; see Note C*
2	107	B	4%	14%	25%	50%	No	*Reasonable levels of daylight would be provided; see Note B*
2	108	B	0%	7%	14%	39%	No	*Reasonable levels of daylight provided locally; see Note D*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
2	109	KLD	38%	54%	60%	76%	No	*Reasonable levels of daylight would be provided; see Note B*
2	110	B	43%	57%	70%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
2	111	KLD	26%	35%	42%	60%	No	*Reasonable levels of daylight provided locally; see Note D*
2	112	B	5%	16%	29%	50%	No	*Reasonable levels of daylight would be provided; see Note B*
2	113	B	4%	21%	29%	54%	No	*Reasonable levels of daylight would be provided; see Note B*
2	114	KLD	38%	52%	62%	71%	No	*Reasonable levels of daylight would be provided; see Note B*
2	115	B	47%	63%	75%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
2	116	KLD	17%	28%	36%	55%	No	*Reasonable levels of daylight provided locally; see Note D*
2	117	B	25%	43%	57%	89%	No	*Reasonable levels of daylight would be provided; see Note B*
2	118	B	58%	85%	92%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
2	119	KLD	43%	88%	96%	97%	No	*Reasonable levels of daylight would be provided; see Note B*
2	120	B	9%	27%	45%	91%	No	*Reasonable levels of daylight would be provided; see Note B*
3	1	B	33%	61%	89%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
3	2	KLD	97%	97%	97%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	3	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	4	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	5	KLD	95%	97%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	6	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	7	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	8	KLD	64%	82%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	9	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	10	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	11	KLD	60%	77%	96%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	12	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	13	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	14	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	15	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
3	16	KLD	85%	92%	94%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	17	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	18	KLD	69%	84%	86%	97%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	19	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	20	KLD	69%	84%	86%	97%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	21	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	22	KLD	97%	98%	99%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	23	B	92%	97%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	24	B	67%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	25	KLD	89%	96%	98%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	26	B	36%	56%	76%	88%	No	*Reasonable levels of daylight would be provided; see Note B*
3	27	B	45%	64%	95%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
3	28	KLD	82%	96%	97%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	29	B	23%	46%	65%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
3	30	B	54%	69%	85%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	31	KLD	28%	37%	47%	67%	No	*Reasonable levels of daylight provided locally; see Note D*
3	32	B	17%	33%	47%	73%	No	*Reasonable levels of daylight would be provided; see Note B*
3	33	KLD	30%	45%	53%	62%	No	*Reasonable levels of daylight would be provided; see Note C*
3	34	B	0%	21%	32%	57%	No	*Reasonable levels of daylight would be provided; see Note B*
3	35	B	5%	16%	29%	55%	No	*Reasonable levels of daylight would be provided; see Note B*
3	36	KLD	24%	33%	40%	61%	No	*Reasonable levels of daylight provided locally; see Note D*
3	37	B	43%	60%	73%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
3	38	KLD	38%	54%	62%	78%	No	*Reasonable levels of daylight would be provided; see Note B*
3	39	B	0%	7%	21%	43%	No	*Reasonable levels of daylight provided locally; see Note D*
3	40	B	4%	18%	29%	57%	No	*Reasonable levels of daylight would be provided; see Note B*
3	41	KLD	38%	48%	58%	70%	No	*Reasonable levels of daylight would be provided; see Note C*
3	42	B	35%	74%	91%	100%	No	*Reasonable levels of daylight would be provided; see Note B*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
3	43	KLD	94%	97%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	44	B	62%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	45	B	94%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	46	KLD	35%	50%	68%	99%	No	*Reasonable levels of daylight would be provided; see Note C*
3	47	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	48	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	49	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	50	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	51	B	71%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	52	B	75%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	53	KLD	45%	68%	80%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
3	54	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	55	B	91%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	56	KLD	97%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	57	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	58	KLD	92%	92%	92%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
3	59	B	72%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	60	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	61	KLD	53%	74%	87%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	62	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	63	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	64	KLD	53%	72%	86%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	65	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	66	B	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	67	KLD	51%	71%	84%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	68	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	69	B	92%	96%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
3	70	KLD	96%	96%	96%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	71	B	27%	50%	77%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
3	72	B	27%	41%	64%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
3	73	KLD	76%	95%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	74	B	65%	92%	92%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	75	B	68%	89%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	76	KLD	28%	43%	51%	68%	No	*Reasonable levels of daylight would be provided; see Note C*
3	77	B	34%	56%	72%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
3	78	KLD	40%	60%	71%	79%	No	*Reasonable levels of daylight would be provided; see Note B*
3	79	B	7%	29%	43%	71%	No	*Reasonable levels of daylight would be provided; see Note B*
3	80	B	13%	29%	50%	71%	No	*Reasonable levels of daylight would be provided; see Note B*
3	81	KLD	29%	40%	50%	68%	No	*Reasonable levels of daylight provided locally; see Note D*
3	82	B	47%	70%	87%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
3	83	KLD	44%	56%	66%	82%	No	*Reasonable levels of daylight would be provided; see Note B*
3	84	B	4%	14%	29%	54%	No	*Reasonable levels of daylight would be provided; see Note B*
3	85	B	11%	25%	43%	71%	No	*Reasonable levels of daylight would be provided; see Note B*
3	86	KLD	42%	54%	64%	76%	No	*Reasonable levels of daylight would be provided; see Note B*
3	87	B	32%	66%	79%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
3	88	KLD	56%	88%	96%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	89	B	31%	55%	79%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
3	90	KLD	75%	98%	99%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	91	KLD	52%	69%	79%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	92	B	25%	50%	88%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
3	93	KLD	82%	89%	95%	98%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	94	B	57%	93%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	95	KLD	86%	95%	98%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	96	B	76%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
3	97	KLD	71%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	98	B	29%	52%	71%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
3	99	B	71%	96%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	100	KLD	39%	55%	68%	83%	No	*Reasonable levels of daylight would be provided; see Note B*
3	101	B	44%	72%	97%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
3	102	B	69%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	103	KLD	43%	64%	79%	96%	No	*Reasonable levels of daylight would be provided; see Note B*
3	104	B	93%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	105	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	106	KLD	61%	78%	96%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	107	B	96%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	108	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	109	KLD	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	110	B	50%	82%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	111	B	39%	54%	71%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
3	112	KLD	11%	23%	33%	46%	No	*A reliance on artificial light is anticipated; see Note E*
3	113	B	76%	84%	88%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	114	B	32%	48%	68%	84%	No	*Reasonable levels of daylight would be provided; see Note B*
3	115	B	35%	54%	69%	85%	No	*Reasonable levels of daylight would be provided; see Note B*
3	116	B	38%	54%	69%	85%	No	*Reasonable levels of daylight would be provided; see Note B*
3	117	B	27%	50%	77%	87%	No	*Reasonable levels of daylight would be provided; see Note B*
3	118	B	73%	85%	88%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
3	119	KLD	11%	19%	31%	48%	No	*A reliance on artificial light is anticipated; see Note E*
3	120	B	25%	39%	54%	79%	No	*Reasonable levels of daylight would be provided; see Note B*
4	1	KLD	46%	60%	68%	82%	No	*Reasonable levels of daylight would be provided; see Note B*
4	2	B	14%	32%	57%	96%	No	*Reasonable levels of daylight would be provided; see Note B*
4	3	B	7%	29%	39%	82%	No	*Reasonable levels of daylight would be provided; see Note B*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
4	4	KLD	54%	62%	74%	90%	No	*Reasonable levels of daylight would be provided; see Note B*
4	5	B	57%	83%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	6	KLD	34%	47%	60%	76%	No	*Reasonable levels of daylight would be provided; see Note C*
4	7	B	18%	42%	68%	95%	No	*Reasonable levels of daylight would be provided; see Note B*
4	8	B	21%	43%	64%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
4	9	KLD	48%	64%	76%	90%	No	*Reasonable levels of daylight would be provided; see Note B*
4	10	B	63%	88%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	11	KLD	34%	51%	61%	74%	No	*Reasonable levels of daylight would be provided; see Note B*
4	12	B	50%	75%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	13	B	85%	92%	92%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	14	KLD	92%	96%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	15	B	36%	59%	91%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
4	16	B	32%	64%	95%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
4	17	KLD	96%	96%	96%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	18	B	92%	92%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	19	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	20	KLD	53%	74%	87%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	21	B	75%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	22	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	23	KLD	53%	74%	88%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	24	B	81%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	25	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	26	KLD	53%	74%	87%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	27	B	89%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	28	B	47%	100%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
4	29	KLD	92%	92%	92%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
4	30	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
4	31	KLD	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	32	B	95%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	33	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	34	KLD	53%	74%	88%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	35	B	66%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	36	B	86%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	37	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	38	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	39	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	40	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	41	KLD	35%	52%	70%	99%	No	*Reasonable levels of daylight would be provided; see Note B*
4	42	B	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	43	B	41%	100%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
4	44	KLD	95%	99%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	45	B	38%	82%	91%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
4	46	KLD	88%	97%	98%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	47	B	67%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	48	KLD	93%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	49	B	3%	29%	52%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
4	50	B	57%	86%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	51	KLD	41%	57%	68%	84%	No	*Reasonable levels of daylight would be provided; see Note B*
4	52	B	75%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	53	B	59%	94%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	54	KLD	49%	70%	80%	97%	No	*Reasonable levels of daylight would be provided; see Note B*
4	55	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	56	B	94%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	57	KLD	59%	78%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
4	58	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	59	B	92%	96%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	60	KLD	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	61	B	82%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	62	B	82%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	63	KLD	88%	96%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	64	B	69%	92%	92%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	65	B	35%	54%	69%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
4	66	KLD	25%	37%	45%	66%	No	*Reasonable levels of daylight provided locally; see Note D*
4	67	B	47%	73%	97%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
4	68	KLD	34%	51%	60%	68%	No	*Reasonable levels of daylight would be provided; see Note B*
4	69	B	14%	36%	50%	82%	No	*Reasonable levels of daylight would be provided; see Note B*
4	70	B	13%	29%	45%	74%	No	*Reasonable levels of daylight would be provided; see Note B*
4	71	KLD	29%	40%	51%	68%	No	*Reasonable levels of daylight would be provided; see Note C*
4	72	B	47%	70%	87%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
4	73	KLD	46%	60%	68%	84%	No	*Reasonable levels of daylight would be provided; see Note B*
4	74	B	7%	21%	36%	71%	No	*Reasonable levels of daylight would be provided; see Note B*
4	75	B	7%	29%	43%	75%	No	*Reasonable levels of daylight would be provided; see Note B*
4	76	KLD	44%	56%	68%	80%	No	*Reasonable levels of daylight would be provided; see Note B*
4	77	B	68%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	78	KLD	88%	93%	96%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	79	B	58%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	80	KLD	52%	71%	80%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	81	KLD	95%	98%	99%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	82	B	31%	45%	79%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
4	83	KLD	70%	96%	96%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	84	B	29%	66%	79%	92%	No	*Reasonable levels of daylight would be provided; see Note B*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
4	85	B	44%	83%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
4	86	KLD	97%	97%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	87	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	88	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	89	KLD	95%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	90	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	91	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	92	KLD	67%	82%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	93	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	94	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	95	KLD	61%	77%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	96	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	97	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	98	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	99	KLD	85%	92%	94%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	100	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	101	KLD	69%	84%	86%	98%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	102	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	103	KLD	69%	84%	86%	98%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	104	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	105	KLD	97%	98%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	106	B	92%	97%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	107	B	69%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	108	KLD	91%	96%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	109	B	48%	68%	88%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
4	110	B	43%	57%	71%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
4	111	KLD	28%	41%	50%	66%	No	*Reasonable levels of daylight provided locally; see Note D*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
4	112	B	84%	88%	92%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	113	B	32%	52%	81%	90%	No	*Reasonable levels of daylight would be provided; see Note B*
4	114	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	115	B	30%	57%	80%	90%	No	*Reasonable levels of daylight would be provided; see Note B*
4	116	B	38%	65%	77%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
4	117	B	46%	65%	73%	85%	No	*Reasonable levels of daylight would be provided; see Note B*
4	118	B	85%	92%	96%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
4	119	KLD	13%	26%	34%	50%	No	*Reasonable levels of daylight provided locally; see Note D*
4	120	B	29%	39%	54%	86%	No	*Reasonable levels of daylight would be provided; see Note B*
5	1	B	67%	89%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	2	KLD	97%	97%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	3	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	4	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	5	KLD	95%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	6	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	7	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	8	KLD	67%	79%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	9	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	10	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	11	KLD	67%	83%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	12	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	13	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	14	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	15	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	16	KLD	87%	92%	96%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	17	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	18	KLD	74%	84%	90%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
5	19	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	20	KLD	74%	84%	90%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	21	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	22	KLD	97%	98%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	23	B	92%	97%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	24	B	83%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	25	KLD	94%	98%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	26	B	64%	88%	88%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	27	B	50%	69%	77%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	28	B	48%	81%	90%	94%	No	*Reasonable levels of daylight would be provided; see Note B*
5	29	B	54%	69%	81%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	30	B	37%	77%	87%	90%	No	*Reasonable levels of daylight would be provided; see Note B*
5	31	B	88%	96%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	32	KLD	33%	43%	53%	69%	No	*Reasonable levels of daylight would be provided; see Note C*
5	33	B	39%	57%	82%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
5	34	B	55%	86%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	35	KLD	96%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	36	B	92%	92%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	37	B	86%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	38	KLD	43%	63%	72%	87%	No	*Reasonable levels of daylight would be provided; see Note B*
5	39	B	59%	88%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	40	KLD	52%	71%	86%	98%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	41	B	29%	57%	93%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
5	42	B	32%	58%	87%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
5	43	KLD	39%	57%	68%	89%	No	*Reasonable levels of daylight would be provided; see Note B*
5	44	B	67%	97%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	45	KLD	56%	68%	82%	92%	No	*Reasonable levels of daylight would be provided; see Note B*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
5	46	B	14%	36%	57%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
5	47	B	29%	46%	75%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
5	48	KLD	52%	64%	74%	88%	No	*Reasonable levels of daylight would be provided; see Note B*
5	49	B	45%	76%	89%	95%	No	*Reasonable levels of daylight would be provided; see Note B*
5	50	KLD	83%	96%	96%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	51	B	41%	76%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
5	52	KLD	96%	99%	99%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	53	KLD	64%	79%	95%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	54	B	33%	88%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
5	55	KLD	89%	95%	98%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	56	B	71%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	57	KLD	48%	64%	74%	88%	No	*Reasonable levels of daylight would be provided; see Note B*
5	58	B	21%	43%	61%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
5	59	B	7%	36%	54%	93%	No	*Reasonable levels of daylight would be provided; see Note B*
5	60	KLD	56%	66%	74%	90%	No	*Reasonable levels of daylight would be provided; see Note B*
5	61	B	57%	83%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	62	KLD	35%	48%	62%	76%	No	*Reasonable levels of daylight would be provided; see Note C*
5	63	B	21%	45%	66%	97%	No	*Reasonable levels of daylight would be provided; see Note B*
5	64	B	21%	46%	71%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
5	65	KLD	40%	55%	66%	81%	No	*Reasonable levels of daylight would be provided; see Note B*
5	66	B	33%	60%	87%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
5	67	KLD	37%	55%	67%	78%	No	*Reasonable levels of daylight would be provided; see Note B*
5	68	B	69%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	69	B	46%	85%	92%	96%	No	*Reasonable levels of daylight would be provided; see Note B*
5	70	KLD	96%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	71	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	72	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
5	73	KLD	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	74	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	75	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	76	KLD	62%	80%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	77	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	78	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	79	KLD	54%	72%	86%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	80	B	94%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	81	B	63%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	82	KLD	54%	68%	79%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	83	B	96%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	84	B	48%	84%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
5	85	KLD	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	86	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	87	KLD	88%	97%	98%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	88	B	41%	82%	97%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
5	89	KLD	96%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	90	B	66%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	91	B	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	92	KLD	35%	53%	71%	99%	No	*Reasonable levels of daylight would be provided; see Note B*
5	93	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	94	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	95	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	96	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	97	B	77%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	98	B	84%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	99	KLD	50%	71%	83%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
5	100	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	101	B	95%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	102	KLD	97%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	103	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	104	KLD	92%	92%	92%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
5	105	B	78%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	106	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	107	KLD	53%	74%	92%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	108	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	109	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	110	KLD	54%	74%	92%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	111	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	112	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	113	KLD	53%	74%	88%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	114	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	115	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	116	KLD	96%	96%	96%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
5	117	B	50%	82%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	1	KLD	58%	70%	84%	90%	No	*Reasonable levels of daylight would be provided; see Note B*
6	2	B	29%	61%	86%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
6	3	B	21%	46%	79%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
6	4	KLD	58%	74%	84%	94%	No	*Reasonable levels of daylight would be provided; see Note B*
6	5	B	67%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	6	KLD	42%	63%	72%	94%	No	*Reasonable levels of daylight would be provided; see Note B*
6	7	B	71%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	8	B	75%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	9	KLD	51%	62%	74%	89%	No	*Reasonable levels of daylight would be provided; see Note B*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
6	10	B	73%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	11	KLD	53%	72%	79%	97%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	12	B	81%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	13	B	92%	92%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	14	KLD	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	15	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	16	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	17	KLD	99%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	18	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	19	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	20	KLD	72%	88%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	21	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	22	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	23	KLD	68%	84%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	24	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	25	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	26	KLD	55%	74%	84%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	27	B	86%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	28	B	31%	97%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
6	29	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	30	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	31	KLD	91%	98%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	32	B	41%	85%	97%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
6	33	KLD	96%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	34	B	45%	100%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
6	35	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	36	KLD	36%	54%	73%	99%	No	*Reasonable levels of daylight would be provided; see Note B*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
6	37	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	38	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	39	KLD	65%	85%	96%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	40	B	79%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	41	KLD	93%	96%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	42	B	89%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	43	KLD	97%	99%	99%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	44	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	45	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	46	B	89%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	47	B	72%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	48	KLD	53%	74%	88%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	49	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	50	B	95%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	51	KLD	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	52	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	53	KLD	92%	92%	92%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
6	54	B	47%	100%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
6	55	B	96%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	56	KLD	55%	75%	93%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	57	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	58	B	94%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	59	KLD	54%	78%	93%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	60	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	61	B	84%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	62	KLD	55%	75%	95%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	63	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
6	64	B	92%	96%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	65	KLD	96%	96%	96%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	66	B	82%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	67	B	86%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	68	KLD	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	69	B	92%	96%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	70	B	71%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	71	KLD	51%	67%	79%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	72	B	88%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	73	KLD	62%	79%	93%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	74	B	39%	79%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
6	75	B	42%	79%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
6	76	KLD	45%	65%	74%	99%	No	*Reasonable levels of daylight would be provided; see Note B*
6	77	B	77%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	78	KLD	62%	74%	90%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	79	B	29%	54%	82%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
6	80	B	36%	68%	93%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
6	81	KLD	58%	70%	82%	90%	No	*Reasonable levels of daylight would be provided; see Note B*
6	82	B	45%	82%	92%	97%	No	*Reasonable levels of daylight would be provided; see Note B*
6	83	KLD	94%	96%	96%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	84	B	31%	66%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
6	85	B	94%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	86	KLD	97%	97%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	87	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	88	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	89	KLD	95%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	90	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
6	91	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	92	KLD	67%	80%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
6	93	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	1	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	2	KLD	99%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	3	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	4	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	5	KLD	68%	83%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	6	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	7	KLD	71%	86%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	8	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	9	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	10	KLD	54%	73%	90%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	11	B	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	12	KLD	68%	88%	92%	98%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	13	B	39%	75%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
7	14	B	46%	89%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
7	15	KLD	64%	78%	88%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
7	16	B	68%	89%	95%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	17	KLD	96%	96%	96%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	18	B	48%	100%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
7	19	KLD	97%	99%	99%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	20	KLD	73%	96%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	21	B	54%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	22	KLD	93%	98%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	23	B	89%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	24	KLD	64%	76%	88%	92%	No	*Reasonable levels of daylight would be provided; see Note B*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
7	25	B	43%	82%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
7	26	B	32%	64%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
7	27	KLD	93%	98%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	28	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	29	KLD	66%	83%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	30	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	31	B	81%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	32	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	33	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	34	KLD	91%	98%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	35	B	44%	88%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
7	36	KLD	96%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	37	B	69%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	38	B	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	39	KLD	36%	55%	73%	99%	No	*Reasonable levels of daylight would be provided; see Note B*
7	40	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	41	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	42	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	43	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	44	B	83%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	45	B	94%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	46	KLD	53%	72%	86%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	47	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	48	B	95%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	49	KLD	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	50	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	51	KLD	92%	92%	92%	92%	No	*Reasonable levels of daylight would be provided; see Note B*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
7	52	B	88%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	53	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	54	KLD	68%	84%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	55	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	56	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	57	KLD	68%	83%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	58	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	59	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	60	KLD	68%	83%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	61	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	62	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	63	KLD	96%	96%	96%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	64	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	65	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	66	KLD	97%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	67	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	68	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	69	KLD	96%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	70	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	71	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	72	KLD	70%	88%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
7	73	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	1	KLD	97%	99%	99%	99%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	2	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	3	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	4	B	94%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	5	B	75%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
8	6	KLD	53%	74%	89%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	7	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	8	B	95%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	9	KLD	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	10	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	11	KLD	92%	92%	92%	93%	No	*Reasonable levels of daylight would be provided; see Note B*
8	12	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	13	B	79%	92%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	14	KLD	96%	96%	96%	96%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	15	B	41%	97%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
8	16	KLD	70%	86%	90%	94%	No	*Reasonable levels of daylight would be provided; see Note B*
8	17	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	18	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	19	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	20	KLD	38%	58%	75%	99%	No	*Reasonable levels of daylight would be provided; see Note B*
8	21	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	22	B	52%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	23	KLD	96%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	24	B	44%	88%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
8	25	KLD	91%	98%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	26	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	27	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	28	B	50%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	29	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	30	KLD	64%	83%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	31	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	32	KLD	93%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
8	33	B	46%	93%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
8	34	B	54%	96%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	35	KLD	68%	86%	90%	92%	No	*Reasonable levels of daylight would be provided; see Note B*
8	36	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	37	KLD	95%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	38	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
8	39	KLD	72%	96%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	1	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	2	KLD	64%	79%	97%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	3	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	4	B	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	5	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	6	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	7	KLD	97%	99%	99%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	8	KLD	91%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	9	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	10	KLD	95%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	11	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	12	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	13	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	14	KLD	39%	60%	78%	99%	No	*Reasonable levels of daylight would be provided; see Note B*
9	15	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	16	B	79%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	17	KLD	97%	99%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	18	B	47%	88%	100%	100%	No	*Reasonable levels of daylight would be provided; see Note B*
9	19	KLD	91%	98%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	20	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
9	21	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	22	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	23	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	24	KLD	74%	96%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	25	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	26	KLD	95%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	27	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	28	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	29	KLD	76%	88%	92%	94%	No	*Reasonable levels of daylight would be provided; see Note B*
9	30	B	86%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	31	KLD	96%	96%	96%	98%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	32	B	89%	95%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	33	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	34	KLD	97%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	35	B	92%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	36	KLD	92%	92%	92%	94%	No	*Reasonable levels of daylight would be provided; see Note B*
9	37	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	38	KLD	80%	90%	92%	98%	Yes	*Reasonable levels of daylight would be provided; see Note A*
9	39	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	1	B	96%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	2	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	3	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	4	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	5	B	51%	74%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	6	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	7	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	8	KLD	98%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Level in Building	Room ID	Room Type (See Note F)	Percentage of assessed area capable of achieving a particular illuminance for at least 50% of daylight hours				Conformity with IS EN 17037 Demonstrated?	Professional Opinion
			300lux	200lux	150lux	100lux		
10	9	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	10	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	11	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	12	B	86%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	13	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	14	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
10	15	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
11	1	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
11	2	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
11	3	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
11	4	B	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*
11	5	KLD	100%	100%	100%	100%	Yes	*Reasonable levels of daylight would be provided; see Note A*

Note A *As the levels of light predicted for this room exceed the minimum levels recommended in I.S EN 17037 it is safe to assume that reasonable levels of daylight would be available.*

Note B *As the levels of light predicted for this room exceed the minimum levels recommended in the National Annex to BS EN 17037 for this room type it is appropriate to assume that reasonable levels of daylight would be available.*

Note C *As the levels of light predicted for this room exceed the minimum level recommended in the National Annex to BS EN 17037 for living rooms (assumed to be the predominant use within this space) it is appropriate to assume that reasonable levels of daylight would be available.*

Note D *While artificial light is expected to play a significant role in the lighting of this space the results obtained indicate that reasonable amounts of natural light would be provided to significant areas proximate to external windows. In circumstances where occupants are orientated towards these areas a significant portion of the room will appear adequately daylit. To the extent that artificial lighting can be relied upon to balance light levels within this space it is reasonable to assume that a bright and attractive appearance could be maintained.*

Note E *While artificial lighting is expected to play the predominant role in the lighting of this space the results obtained indicate that a meaningful amount of natural light would be provided to the areas immediately in front of external windows. The level of light predicted would be sufficient to provide occupants with a sense of connection with the outdoor environment.*

Note F *K=Kitchen; L=Living Room; D=Dining Room; B=Bedroom; KLD= Kitchen/Living/Dining Room; C=Communal Space*

Figure 1 Daylight distribution diagram representing the percentage of annual daylight hours when an illuminance of 300 lux is either met or exceed at Level 00.

Figure 2 Daylight distribution diagram representing the percentage of annual daylight hours when an illuminance of 300 lux is either met or exceed at Level 01.

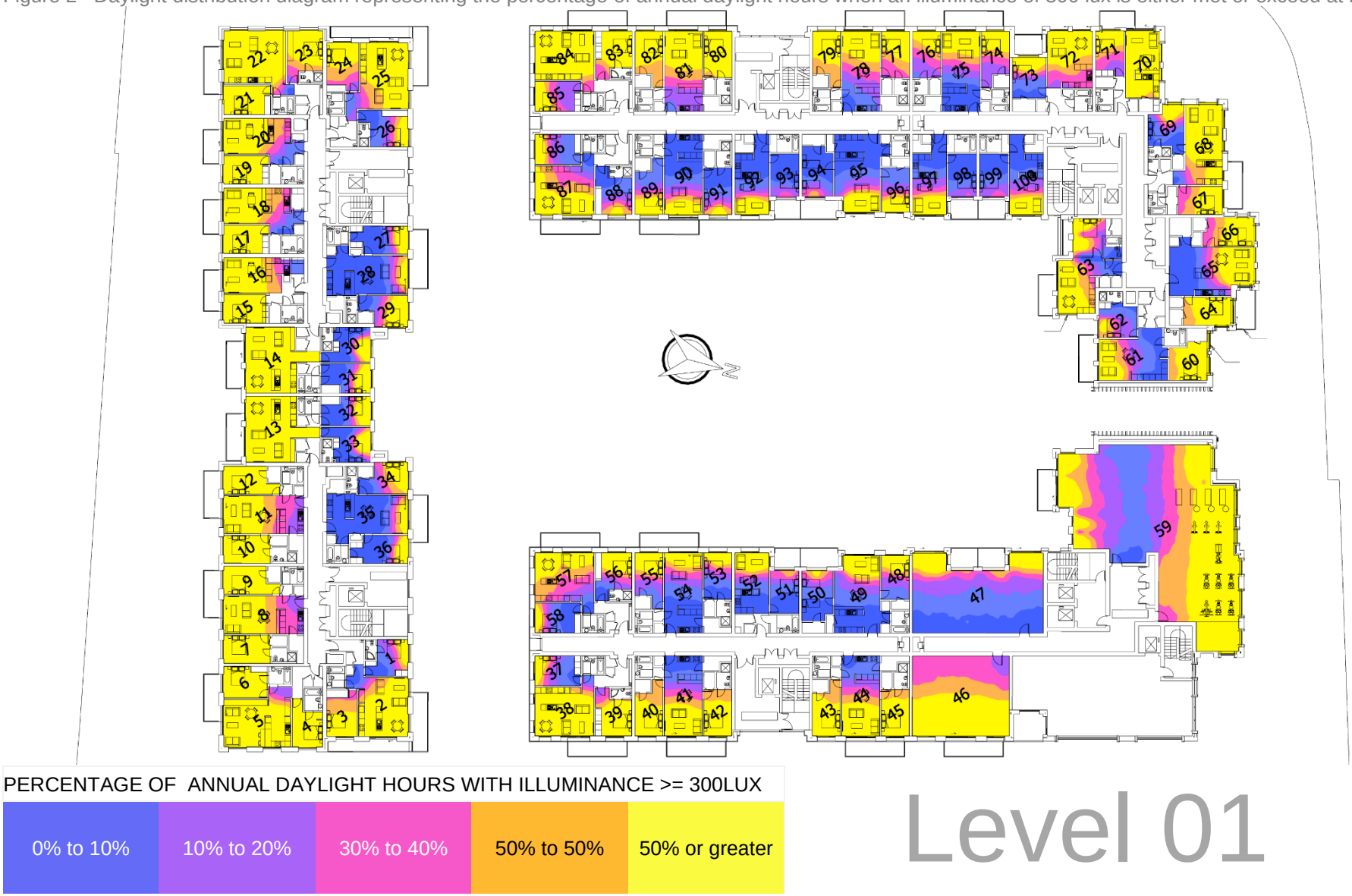


Figure 3 Daylight distribution diagram representing the percentage of annual daylight hours when an illuminance of 300 lux is either met or exceed at Level 02.

Figure 4 Daylight distribution diagram representing the percentage of annual daylight hours when an illuminance of 300 lux is either met or exceed at Level 03.

Figure 5 Daylight distribution diagram representing the percentage of annual daylight hours when an illuminance of 300 lux is either met or exceed at Level 04.

Figure 6 Daylight distribution diagram representing the percentage of annual daylight hours when an illuminance of 300 lux is either met or exceed at Level 05.

Figure 7 Daylight distribution diagram representing the percentage of annual daylight hours when an illuminance of 300 lux is either met or exceed at Level 06.

Figure 8 Daylight distribution diagram representing the percentage of annual daylight hours when an illuminance of 300 lux is either met or exceed at Level 07.

Figure 9 Daylight distribution diagram representing the percentage of annual daylight hours when an illuminance of 300 lux is either met or exceed at Level 08.

Figure 10 Daylight distribution diagram representing the percentage of annual daylight hours when an illuminance of 300 lux is either met or exceed at Level 09.

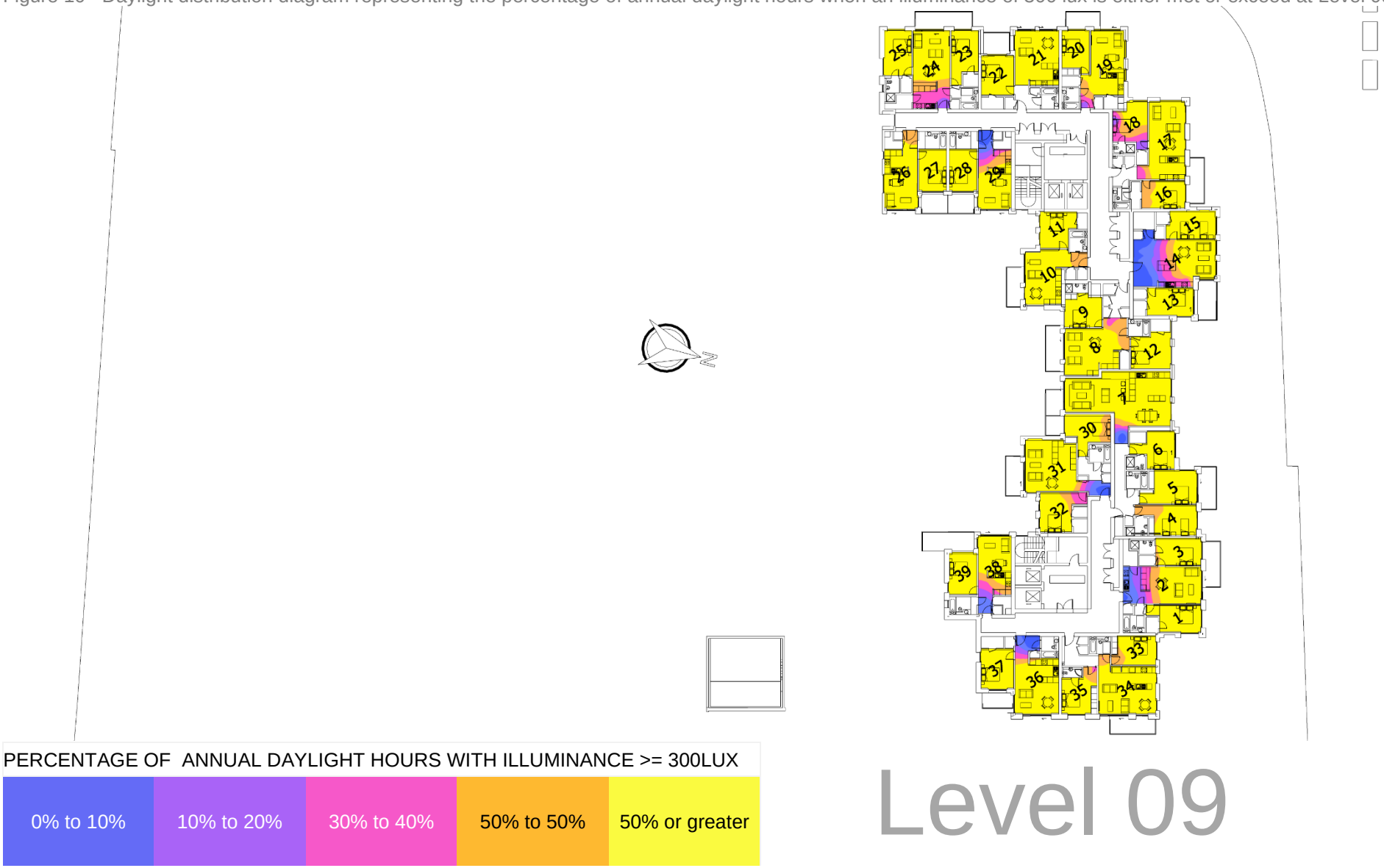


Figure 11 Daylight distribution diagram representing the percentage of annual daylight hours when an illuminance of 300 lux is either met or exceed at Level 10.

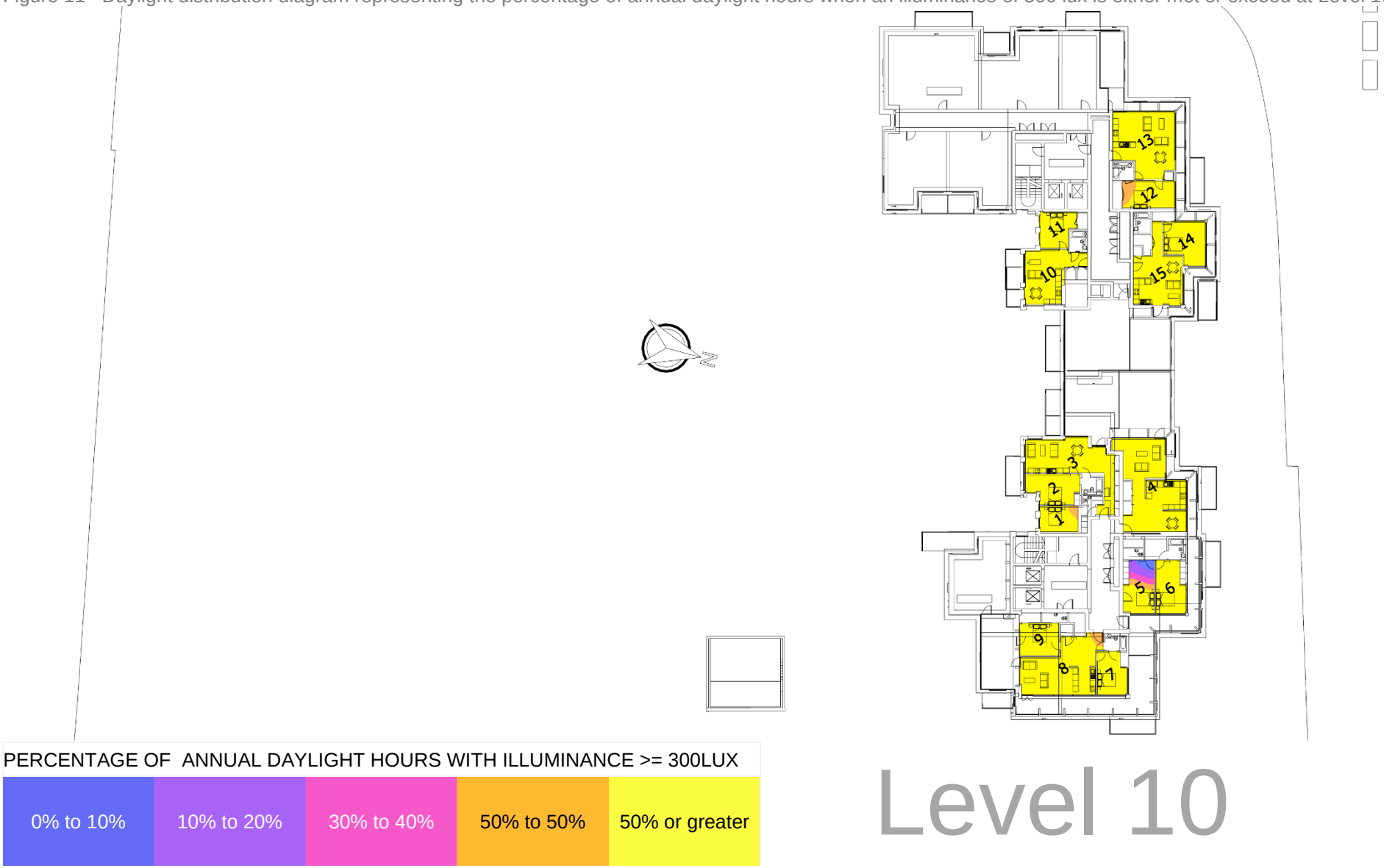
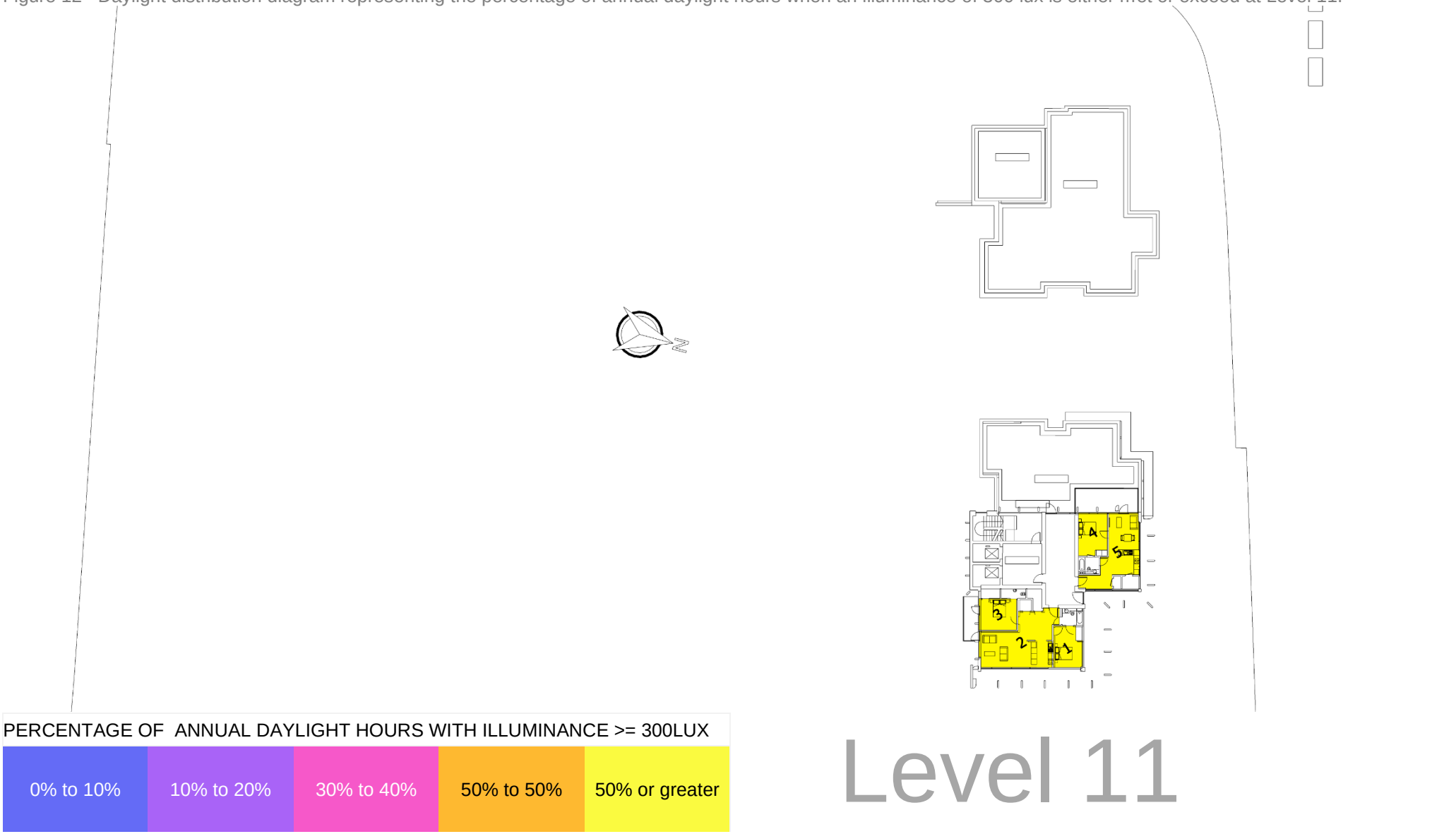


Figure 12 Daylight distribution diagram representing the percentage of annual daylight hours when an illuminance of 300 lux is either met or exceed at Level 11.



Study E: Assessment of direct sunlight access available to proposed accommodation.

Sunlight, within the meaning of BS 8206 and the BRE Guide, is understood to relate to the visible portion of direct beam radiation; it is the visible light which travels directly from the sun as parallel rays.

From an amenity point of view, direct sunlight is generally welcomed for its ability to enliven the appearance of an interior (direct sunlight creates dynamic patches of brilliant light on walls, floors and furniture) but also for its ability to provide warmth and heat to a space.

In Ireland, due to the prevalence of overcast conditions, the availability of direct sunlight is typically limited to a small number of hours in the day. Over the course of a typical year, the average daily duration when direct sunlight is available in Dublin is approximately four hours[8]. The number of hours in a day when sunlight can enter a given window will be much lower because of its particular orientation and the presence of occluding obstructions.

It is on this basis that sunlight cannot be relied upon to provide basic daylighting within interior spaces. Basic daylighting within interior spaces is provided by diffuse light from the sky[9], which while not as bright as direct sunlight, is always available during daytime hours.

Following from this, it is reasonable to propose that in Ireland the daylight amenity within a space is not as critically reliant on the presence of sunlight as it is on the presence of skylight.

In recognition of the secondary importance which sunlight plays in the provision of internal daylight amenity, it is reasonable to propose that a lenient and flexible approach should be adopted when interpreting the significance of sunlight results.

Study E: Assessment Approach

Sunlight access is assessed with respect to duration of time that main windows are exposed to direct light from the sun.

According to I.S EN 17037 a dwelling will be provided with adequate sunlight access in instances where the main windows serving at least one space are capable of receiving at least 1.5hrs of direct sunlight on a test day falling somewhere in the period between the 1st of February and the 21st of March. For the purpose of this testing the 21st of March has been adopted as the relevant test day.

As recommended in I.S EN 17037 tests points are located on the midline of the window under consideration at a height of 1.2m above finished floor level and 0.3m above sill level.

[8] https://www.met.ie/climate-ireland/1981-2010/dublin.html

[9] The degree to which the spaces in this development would be lit by diffuse light from the sky has been assessed in Study A.

Study E: Assessment Points

Sunlight access (APSH) has been assessed at all windows serving habitable accommodation within this development; a total of 2,850 windows have been considered.

Study E: Results

In line with the recommendations provided within the I.S EN 17037, sunlight access has been assessed on a dwelling-by-dwelling basis.

The results obtained for sunlight exposure are presented in Table 3; the results are illustrated in Appendix J: Sunlight Exposure Results.

The results of this study demonstrate that the majority of apartments (278 of 310) within this development would be capable of receiving advisory minimum levels of sunlight exposure.

Table 3 Proportion of units which conform achieve advisory minimum levels of sunlight exposure.

	Total No. Units	No. Units which have at least one habitable room which has the potential to admit at least 1.5 hrs of direct sunlight on the 21st of March	Conformity Rate
Level 00	0	0	-
Level 01	36	32	89%
Level 02	44	38	86%
Level 03	44	38	86%
Level 04	44	40	91%
Level 05	43	40	93%
Level 06	34	32	94%
Level 07	27	24	89%
Level 08	15	13	87%
Level 09	15	14	93%
Level 10	6	5	83%
Level 11	2	2	100%
	310	278	90%

When assessing the significance of the departures identified in this study it is important to recognise a number of compensating factors:

- A carefully designed artificial lighting strategy is envisaged to balance the light levels which would be present to the rear of the rooms with the light levels which would be provided to the front.

- Supplementary task lighting is envisaged above the sink, the cooker, and the counter areas.
- The residents of this development will be provided with access to a number of ancillary amenities including, a number of residents lounges, a gym and a co-working space.
- A significant proportion (37%) of the apartments proposed within this development exceed minimum space requirements by more than 10%.
- Private open space (balconies) will be provided to all apartments. HJL advise that the aggregate provision of private open space exceeds minimum requirements by 19%.
- Relative to the minimum proportion of dual aspect apartments required (33%) HJL advise that 45% of the apartments provided within the scheme achieve a dual aspect.
- The wider scheme has been designed to a high standard with high quality internal finishes and external landscaping envisaged.
- Additional features which would contribute to the attractiveness of these apartments include the proximity to essential services as well as the favourable location relative to retail and recreational destinations.

Study F: Assessment of sunlight amenity available to proposed recreation areas.

This study relates to the assessment of sunlight amenity within the outdoor recreations spaces which are being proposed as part of this development.

Study F: Assessment Approach

Of particular importance in the assessment of sunlight adequacy is the fact that the BRE guide accepts that different spaces will have different sunlighting requirements. Guidance to this effect is provided in Section 3.3.4 of the BRE guide:

> *"Each of these spaces will have different sunlighting requirements and* ***it is difficult to suggest a hard and fast rule****. However, it is clear that the worst-case situation is to have significant areas on which the sun only shines for a limited period over a large part of the year."* ***[emphasis added]***

Accepting that a degree of flexibility and discretion must be used in the assessment of sunlight adequacy the BRE does propose that a garden or amenity area will appear adequately sunlit throughout the year if at least half of it can receive at least two hours of sunlight on the 21st of March.

In order to assess a particular amenity space an analysis grid is specified across its area. At each point on this grid the cumulative number of sunlight hours are calculated for the course of a specified day (the 21st of March in this case). The percentage of the analysed area which is capable of receiving more than 2 hours of sunlight over the course of the test day is then obtained.

Study F: Assessment Points

The BRE recommends that the availability of sunlight should be checked for all open spaces where it would be required and that this would normally include:

- Gardens, usually the main back garden of a house
- Parks, playing fields
- Children's playground
- 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

A total of ten outdoor recreation spaces have been considered within this study, see Figure 13. The spaces selected for assessment relate to four areas of public open space located at ground level and six areas of communal open space located at ground and roof levels within the development.

Figure 13 Outdoor areas assessed

Study F: Results

This study has assessed the levels of sunlight amenity that would be available to a number of outdoor recreation spaces that are being proposed as part of this development. The results obtained in this study indicate that the recommendations of the BRE guide would be satisfied in the majority of cases, see Table 4.

When assessed in aggregate a total of 2,065m^2 (see Table 5) of outdoor communal amenity space is found to be well sunlit. When this figure (2,065m^2) is expressed as a percentage of the communal outdoor amenity space requirements for this scheme (calculated as 2,012m^2) a figure of 102% is obtained. Having regard to this finding it is reasonable to conclude that the residents of this scheme would have access to more than adequate levels of outdoor sunlight amenity.

In the singular instance (Area 7) where it has not been possible to demonstrate full compliance with BRE guidelines on the recommended test day (21st of March), it has been possible to show that increased levels of sunlight access would be available during summer months, see Appendix K: Outdoor Solar Access in Summer Months.

When assessing the significance of the departures identified in this study it is important to recognise a number of compensating factors:

- In instances where one particular outdoor amenity space may be overshadowed it is likely that there will always be at least one alternative outdoor amenity area receiving increased levels of sunlight. To the extent that residents will have access to all of the communal outdoor spaces proposed within this development it is reasonable to propose that the availability of good solar access within one outdoor amenity area can legitimately compensate for low solar access in another.
- HJL advise that the quantum of communal outdoor amenity space proposed within this development exceeds minimum requirements by 10%.
- The wider scheme has been designed to a high standard with high quality internal finishes and external landscaping envisaged.
- The residents of this development will be provided with access to a number of ancillary amenities including, a number of residents lounges, a gym and a co-working space.
- Additional features which would contribute to the attractiveness of these apartments include the proximity to essential services as well as the favourable location relative to retail and recreational destinations.

Figure 14 Sunlight access levels predicted for outdoor recreation space on the recommended test day (21st of March)

TOTAL NO. SUNLIGHT HOURS ON THE 21ST OF MARCH (HRS)

0 to 2	> 2

Table 4 Sunlight access predicted for outdoor recreation spaces proposed within the development. (Standard BRE testing highlighted in blue; Professional interpretation of test results highlighted in orange)

Space ID	Space Type (See Note C)	Approximate Area (m2)	% Area capable of receiving at least 2hrs of sunshine on the 21st of March [%]	Area capable of receiving at least 2hrs of sunshine on the 21st of March [m2]	More than 50% of garden area can receive at least 2hrs of sunlight on the 21st of March?	Conformity with BRE Guidelines Demonstrated?	Professional Opinion
1	P	203	100%	203	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
2	P	2329	75%	1750	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
3	P	421	100%	421	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
4	C	393	100%	393	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
5	P	1032	72%	744	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
6	C	59	100%	59	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
7	C	74	22%	17	No	No	*Sunlight availability restricted to summer months; see Note B*
8	C	350	92%	321	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
9	C	587	94%	550	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
10	C	760	95%	725	Yes	Yes	*Reasonable levels of year-round sunlight anticipated; see Note A*
		6208	83%	5182			

Note A *As the proportion of this area which can receive 2hrs of direct sunlight on the 21st of March exceeds the minimum level recommended by the BRE it can be concluded with confidence that reasonable levels of year-round sunlight amenity would be available.*

Note B *As the proportion of this area which can receive 2hrs of direct sunlight on the 21st of March falls short of the minimum level recommended by the BRE sunlight provision is likely to be limited to summer months; see Appendix K: Outdoor Solar Access in Summer Months for supporting analysis.*

Note C *C = Communal Open Space P = Public Open Space*

Table 5 Solar access results for aggregate areas

Space Type	Aggregate Area (m2)	Aggregate area capable of receiving at least 2hrs of sunshine on the 21st of March [m2]	% Area capable of receiving at least 2hrs of sunshine on the 21st of March [%]
Public Open Space	3,985	3,118	78%
Communal Open Space	2,224	2,065	93%

Conclusions

This report has been prepared to assess the levels of daylight which would be provided within a proposed development at Belgard Square East, Dublin 24. More specifically this report considers the level of light which would be provided within the proposed development; the impact the proposed development would have on light levels available to neighbouring properties has been reported separately (see Report 1 of 2).

In assessing the significance of the daylight predictions which have been obtained for this development it is important to bear a number of factors in mind.

In the first instance it is clear that this development conforms to and experiences many of the typical issues which arise when developments are proposed on urban sites. Having regard to the governments stated aims to support an increase in housing supply and to encourage sustainable development patterns, it is reasonable to propose that lands located close to urban centres and transport hubs must now be developed at higher densities. It is in this regard that it may not now always be appropriate to pursue full compliance with the guideline targets recommended in the BRE Guide or I.S EN 17037. While care should be taken to ensure that substantial levels of compliance with the recommendations in these guides are achieved, it is often the case that the particulars of a given site structurally impede the ability of a development to achieve full compliance at all points of assessment. In this regard it is important to weigh up the isolated cases where full compliance with guideline targets have not been satisfied against the compensatory design measures which have been provided and against the broader benefits which a development can provide to the compactness, vitality, and viability of an urban neighbourhood.

In conducting this assessment reasonable and appropriate regard has been paid to the recommendations provided in the BRE guide *'Site layout planning for daylight and sunlight - A guide to good practice'* 2nd Edition and I.S. EN 17037:2018 Daylight in Buildings. This assessment represents an alternative to the principal daylight adequacy assessment which has been carried out using the traditional approach detailed in BS 8206; see Report 2 of 3 titled '*Assessment of Daylight Adequacy Within a Proposed Development on Belgard Square East, Dublin 24. (Traditional Testing)'.*

Within these guides three specific tests have been identified which relate to the adequacy of daylight levels within a proposed development. The findings from these studies are reported in the following paragraphs.

Study D assessed the level of daylight amenity which would be available within the proposed accommodation. The results of this study indicate that the advisory minimums detailed in I.S. EN 17037 would be satisfied in many cases (a conformity rate of 67% is identified). With the benefit of closer examination, it is BPG3's view that 95% of the habitable rooms proposed within this development would be provided with reasonable levels of internal

daylight amenity (see pages 12 & 13). While artificial light is expected to play a significant role in the small number of remaining rooms the analysis identifies that a significant portion of many of these rooms would benefit from reasonable levels of daylight. To the extent that artificial lighting can be relied upon to balance the light levels within these spaces it is reasonable to assume that a bright and attractive appearance could be maintained.

Study E assessed the levels of sunlight amenity which would be available to the accommodation which is being proposed as part of this development. The results of this assessment indicate that the majority (90%) of the proposed units would receive advisory minimum levels of sunlight exposure.

Study F assessed the levels of sunlight amenity which would be available to the outdoor recreation spaces which are being proposed as part of this development. The results of this study demonstrate that the residents of this scheme would have access to good levels of outdoor sunlight amenity.

When all testing is considered, it is reasonable to conclude that the development proposed demonstrates substantial levels of conformity with daylight guidelines. In making best use of this site it is inevitable that some departures from advisory targets would be encountered; provision is made within current planning policy to accommodate departures of this nature in instances where wider planning objectives countervail, see Appendix B: Discretion available to consent authorities.

Appendix A: Policy Basis for Daylight Standards

This appendix replicates material which has already been provided in Report 1 of 3.

The particular provisions which have been made to promote good daylighting in planning guidance are identified as follows:

Sustainable Residential Development in Urban Areas, DoEHLG 2009

Published by the Department of Environment Housing and Local Government in 2009, this guide includes a number of provisions related to daylight. Section 7.9 of the guide is particularly relevant:

> "*7.9 - Overshadowing will generally only cause problems where buildings of significant height are involved or where new buildings are located very close to adjoining buildings. Planning authorities should require that daylight and shadow projection diagrams be submitted in all such proposals. The recommendations of "Site Layout Planning for Daylight and Sunlight: A Guide to good Practice" (BRE 1991) or BS 8206 "Lighting for Buildings, Part 2 1992: Code of Practice for Daylighting" should be followed in this regard."*

Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities

Published by the Department of Environment Housing and Local Government in March 2018 (Updated January 2021), provisions are made to safeguard daylight within Section 6.6 and 6.7:

> "6.6 - *Planning authorities should have regard to quantitative performance approaches to daylight provision outlined in guides like the BRE guide 'Site Layout Planning for Daylight and Sunlight' (2nd Edition) or BS 8206-2:2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting' when undertaken by development proposers which offer the capability to satisfy minimum standards of daylight provision.*
>
> *6.7 - Where an applicant cannot fully meet all of the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, which planning authorities should apply their discretion in accepting taking account of its assessment of specific. This may arise due to a design constraint associated with the site or location and the balancing of that assessment against the desirability of achieving*

wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."

Urban Development and Building Heights – Guidelines for Planning Authorities

Published by the Department of Environment Housing and Local Government in March 2018, provisions are made to safeguard daylight within Section 3.2. The specific guidance is provided within the part of Section 3.2 which deals with development management at the scale of the site/building:

"At the scale of the site/building

- *The form, massing and height of proposed developments should be carefully modulated so as to maximise access to natural daylight, ventilation and views and minimise overshadowing and loss of light.*
- *Appropriate and reasonable regard should be taken of quantitative performance approaches to daylight provision outlined in guides like the Building Research Establishment's 'Site Layout Planning for Daylight and Sunlight' (2nd edition) or BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting'.*
- *Where a proposal may not be able to fully meet all the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

Appendix B: Discretion available to consent authorities

This appendix replicates material which has already been provided in Report 1 of 3.

Irish planning policy advises that in instances where it is not possible to demonstrate full compliance with advisory minimums consent-authorities are entitled to accept departures where other planning objective are found to countervail.

Specific guidance on this matter is provided within Section 4.5 of the National Planning Framework[10] (Section 4.5). The guidance provided is as follows:

> *"**To enable brownfield development, planning policies and standards need to be flexible**, focusing on design led and performance-based outcomes, rather than specifying absolute requirements in all cases. Although sometimes necessary to safeguard against poor quality design, **planning standards should be flexibly applied in response to well-designed development proposals that can achieve urban infill and brownfield development objectives** in settlements of all sizes. This is in recognition of the fact that many current urban planning standards were devised for application to greenfield development sites and cannot account for the evolved layers of complexity in existing built-up areas." **[Emphasis added]***

The NPF goes further and introduces the need for tolerances and alternative solutions as a National Policy Objective. National Policy Objective 13 of the NPF is stated as follows:

> *"In urban areas, planning and related standards, including in particular building height and car parking will be based on performance criteria that seek to achieve well-designed high-quality outcomes in order to achieve targeted growth. **These standards will be subject to a range of tolerance that enables alternative solutions to be proposed to achieve stated outcomes,** provided public safety is not compromised and the environment is suitably protected." **[Emphasis added]***

On the basis that this guidance is applicable to daylight standards it is reasonable to propose that a clear basis exists for the consent authorities to accept shortfalls from advisory minimums in instances where a countervailing planning objective exists.

[10] *DoHPLG 2018 National Planning Framework*

Additional support for this facility is provided within the Urban Design Manual published by the Department of Energy Heritage and Local Government, 2009. On page 43 of this manual the following guidance is provided:

> *"Where design standards are to be used (such as the UK document Site Layout Planning for Daylight and Sunlight, published by the BRE), it should be acknowledged that for higher density proposals in urban areas* ***it may not be possible to achieve the specified criteria, and standards may need to be adjusted locally to recognise the need for appropriate heights or street widths."*** ***[Emphasis added]***

The need for tolerance and flexibility to be exercised when interpreting the significance of daylight results is reflected in the wording which has been adopted in recent building height guidelines[11]. Specific guidance is provided within Section 3.2 of the guidelines:

> *"At the scale of the site/building*
>
> - *The form, massing and height of proposed developments should be carefully modulated so as to maximise access to natural daylight, ventilation and views and minimise overshadowing and loss of light.*
> - ***Appropriate and reasonable regard*** *should be taken of quantitative performance approaches to daylight provision outlined in guides like the Building Research Establishment's 'Site Layout Planning for Daylight and Sunlight' (2nd edition) or BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting'.*
> - ***Where a proposal may not be able to fully meet all the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution." [Emphasis added]***

[11] *DoHPLG 2018 – Urban Development and Building Heights – Guidelines for Planning Authorities*

Appendix C: Primary / Secondary Assessments

This appendix replicates material which has already been provided in Report 1 of 3.

Both the Building Height Guidelines[12] and the Apartment Guidelines[13] ask that efforts must be made to clearly identify instances where it has not been possible to fully meet all the requirements/recommendations of relevant daylight standards.

It is BPG3's view that this requirement is satisfied within this report in the following way:

- All tests have been carried out on a quantitative basis against the most obvious interpretation of the guidelines.
- The numeric outputs of this quantitative testing are presented within tables.
- In instances where the light levels predicted do not satisfy the advisory minimums recommended in daylight guidelines this is clearly identified within the tables. All relevant tables include a dedicated column which expresses this status in binary terms.
- Where additional commentary is provided within the results section for each test, these sections generally begin with a consideration of the proportion of instances where conventional advisory minimums have been satisfied.

Having clearly communicated the degree to which the light levels predicted for a given design accord with the conventional advisory minimums detailed in daylight guidelines (primary assessment) BPG3 goes on in many instances to consider the significance/meaning of these primary test results (secondary assessment).

In this regard it is important for the reader to be aware that the professional opinions/interpretations which attend these primary test results go beyond the meaning of the BRE guide in some instance and that the opinions/interpretations expressed are informed by a wider understanding of daylight and its relationship to urban planning.

It is BPG3's view that this approach is necessary as the outputs from conventional daylight testing do not always provide a reliable indication of daylight acceptability. Some of the reasons why this can be true include:

[12] Urban Development and Building Height Guidelines for Planning Authorities, issued by the Department of Housing Planning and Local Government in December 2018

[13] Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities issued by the Department of Housing, Local Government and Heritage in December 2020.

- Many of the test methods detailed in daylight guidelines were originally developed in the late 80's at a time when it was assumed practitioners would conduct their assessments using pencil and paper. For a phenomenon as complex as natural light to be quantified using a pencil and paper approach a number of very significant simplifications had to be adopted.
- The simplifications involved in conventional daylight testing place limitations on the degree to which results accurately represent the reality of daylight acceptability, as observed by a human observer.
- Further to this BPG3 is aware of certain scenarios where the simplifications present in conventional test methods produce results which are not only rough approximations of reality but are gross misrepresentations of the reality which would be experienced by a human observer[14].
- It is also important to recognise that many of the performance targets recommended in daylight guidelines are presented as a one -size-fits-all indicator of daylight acceptability. It is BPG3's view that daylight requirements are, in practice, very varied and that factors such as the functional use of a space, occupant expectations, as well as wider contextual factors are all capable of acting as upward or downward modifiers to the conventional one-size-fits-all minimums detailed in daylight guidelines.
- Further to this it is important to recognise that the conventional daylight targets recommended in daylight guidelines were set independently, and with little regard for, current planning policy. It is important to note that many of the minimum standards recommended in daylight guidelines were set over thirty years ago at a time when sustainable development and urban consolidation would not have been as pressing a priority as they are today.

For reasons like the above BPG3 maintains that it is important in some instance to offer a professional opinion regarding the significance/meaning of primary test results. Where a basis exists to support the opinion BPG3 will in some instances conclude that light levels are likely to be acceptable even

[14] *By way of example the BRE's procedure for assessing the adequacy of skylight amenity within affected accommodation is determined with reference to a measure called the Vertical Sky Component (VSC). Before placing to much weight on the meaning of the results obtained in reliance on VSC testing it is important to recognise that this testing ignores many of the factors which contribute in a very direct way to the daylight performance of a room. The factors which this test procedure ignores include window size, room size, room and window orientation as well as the transmittance of window glazing. Further to this VSC only accounts for skylight which travels directly from the sky; the benefit of reflected light is ignored. When testing impact using VSC the BRE advise that occupants will notice a drop light levels in circumstances where VSC levels drop by more than 20% with the proposed development in place. A very serious shortcoming of impact testing can be observed in instance where the affected room secures most of it's light from secondary sources in the baseline scenario (i.e., very little access to light directly from the sky; most or the light available in baseline scenario is reflected from external surfaces). In this scenario, where direct skylight contributes very little to the daylighting of a space, a 20% drop in VSC is unlikely to be detectable by occupants. Extending this further, where a room is lit almost exclusively by secondary skylight in the baseline scenario a 100% loss of VSC (which the BRE would classify as a major adverse impact) would in practice have almost no effect on the lighting levels within the room under consideration.*

though the conventional minimums detailed in daylight guidelines have not been satisfied.

It is of fundamental importance for a reader to understand that the opinions/interpretations presented within this report are not intended to replace the results/findings of primary testing. In this regard it is advisable for a reader to take care to locate and consider the results of primary testing in the first instance. Having first established how well a given design performs against conventional daylight testing it is BPG3's view that it is appropriate to then go on to consider the significance/meaning of primary test results. It is on this basis that BPG3 has included opinions/interpretations within this report. BPG3 would encourage the reader to accept or to reject these opinions/interpretations on their merit.

Appendix D: Source Material

The 3D models used in our analysis were generated using information garnered from the following sources.

Model Elements	Source	Drawing No. / File Name /	Title / Description	Date Issued / Accessed
Proposed Development	HJL	BR-HJL--00-DR-A-1010	Ground Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1011	First Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1012	Second Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1013	Third Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1014	Fourth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1015	Fifth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1016	Sixth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1017	Seventh Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1018	Eight Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1019	Ninth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1020	Tenth Floor Plan	6th April 2022
		BR-HJL--00-DR-A-1021	Eleventh Floor Plan	6th April 2022
		BR-HJL--ZZ-DR-A-2001	Elevation West	6th April 2022
		BR-HJL--ZZ-DR-A-2002	Elevation North	6th April 2022
		Email communications	Design Amendments	April/May
Neighbouring Buildings - Site Levels	Land Surveys		Belgard Square East	25th May 2021
Macro Landscape and Wider Context	Google Earth	-	-	-

Appendix E: Geometric Detail

Appendix F: Analysis Grids

Recognising that the intention of this test is to assess the daylit appearance of internal spaces it follows that all portions of a room that are easily visible to the future occupants (including rear kitchen areas etc.) should be considered. It is BPG3's view that an assessment which captures all the light levels within a room (including the darker sections which register to the rear of rooms) is the most sensible way to interpret the intentions of I.S EN 17037. It is on this basis that the assessment grids defined for this testing extend across the full visible extent of each room[15].

The grids adopted in this testing are composed of an array of test points located at a standard height of 0.85m above finished floor level and at a uniform horizontal distance of 50cm from each other. This grid density comfortably exceeds the minimum requirements detailed in I.S EN 17037.

As recommended within I.S EN 17037 the analysis grid excludes a band of area which skirts the perimeter of each room. This band is defined by the walls /windows which bound the room and an internal offset of 0.5m.

[15] In some circumstances portions of narrow corridor which link from the main entrance door to the main open plan living space have been omitted but care has been taken to only omit the portions of these corridors which cannot readily fall with the occupant's field of view.

Appendix G: Material Properties

Surface Category	Element	Finish/Composition	Reflectance	Source
Surface of Surrounding Context	Building	Mid Grey	0.45	BS8206
Surface of Surrounding Context	Ground- Garden	Vegetation	0.1	BS 8206
Surface of Surrounding Context	Ground- General	Paving	0.2	BS8206
Surface of Surrounding Context	Roof	Mid Grey	0.45	BS8208
Surface of Surrounding Context	Wall	Mid Grey	0.45	BS8206
Surface of Surrounding Context	Window	Glazing	0.1	BS8207
Exterior Surface of Development	Balcony Deck	Mid Grey	0.45	BS 8206
Exterior Surface of Development	Balcony Soffit	Light Grey	0.68	BS 8206
Exterior Surface of Development	Landscaping - Vegetation	Vegetation	0.1	BS 8206
Exterior Surface of Development	Landscaping - Hard surface	Concrete	0.4	BS 8206
Exterior Surface of Development	Railing	Light Grey	0.68	BS 8207
Exterior Surface of Development	Reveal	Buff Brick	0.4	BS 8206
Exterior Surface of Development	Shading	Light Grey	0.68	BS 8207
Exterior Surface of Development	Wall	Buff Brick	0.4	BS 8206
Interior Surface of Development	Ceiling	White	0.85	BS 8206
Interior Surface of Development	Floor	Wood (Light Veneers)	0.4	BS 8206
Interior Surface of Development	Wall	Light Grey	0.68	BS 8206
Interior Surface of Development	Window Frame	Light Grey	0.68	BS 8206

Surface Category	Element	Finish/Composition	Diffuse Light Transmittance	Maintenance Factor	Effective Diffuse Light Transmittance	Source
Exterior Surface of Development	Balustrade	Clear Glass Single Pane	0.8	0.92**	0.74	BS 8206
Interior Surface of Development	Window Glazing Wintergarden	Clear Glass Single Pane	0.8	0.92**	0.74	BS 8206
Interior Surface of Development	Window Glazing	Double Glazing Low E	0.69	0.92**	0.63	LG 10

	Maintenance Factor - Loss Due to Dirt **	
(A)	Percentage loss of light	8
(B)	Exposure Multiplying Factor	1
(C)	Special Exposure Multiplying Factor	1
(D)	Total Percentage Loss (A x B x C)	8
	Maintenance Factor (100-D)/100	0.92

Appendix H: Simulation Parameters

Simulation Parameter	Description	Setting Adopted	Justification
Ambient Bounces	The number of ambient bounces is the maximum number of diffuse bounces computed by the indirect calculation. The number of ambient bounces that Radiance should apply varies depending on the type of building and daylighting system you are analysing. It can be set based on the number of reflections typically required by the light to reach the task plus one or two extra for inter reflection within the space.	10	This number of bounces was found to be sufficient to find important light sources and to distribute light evenly within the rooms under consideration.
Smin	Minimum spatial resolution determines resolution at which ambient sampling calculations are carried out.	5cm	A cube of this size would be capable of capturing the influence of all relevant geometry within the daylight model.
Ambient Super Samples	The number of extra rays that will be used to sample areas in the divided hemisphere that appear to have high variance.	32768	When used in combination with the ambient division setting this setting was determined to assist in finding the full extent of light sources and light blocking features, within a scene.

Appendix I: Residential performance targets published in National Annex to BS EN 17037

Recognising that BS EN 17037 (the UK's implementation of the European Daylight Standard) is the direct successor of BS 8206 (the standard which has traditionally been used to test daylight adequacy in Ireland) it is reasonable to propose that some weight should be placed on the specific recommendation made within it.

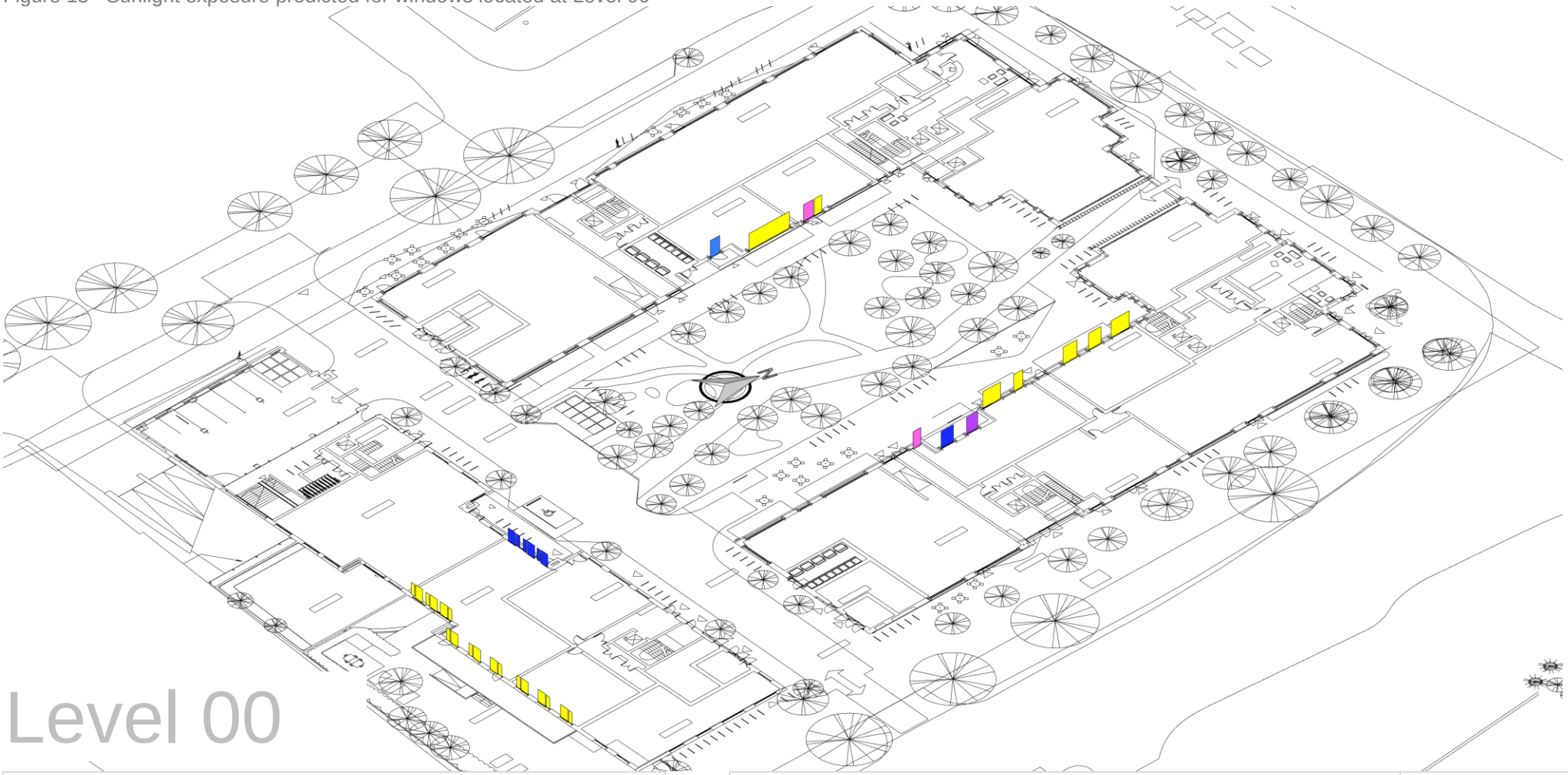
Unlike I.S EN17037 (the Irish implementation of the European Daylight Standard), which represents a direct adoption of the original European standard, BS EN 17037 represents a nationally adjusted standard. This national adjustment is brought about by way of a national annex which has been appended to the base standard.

Within this national annex the UK committee propose advisory minimum lux levels, for dwellings, which are easier to achieve than the minimums detailed in the original European standard. In contrast to the 300lux minimum illuminance level which had been recommended for half of the assessable area, for 50% of daylight hours, the equivalent minimum lux levels proposed in the UKs national annex are 100, 150 and 200 lux for bedrooms, living rooms and kitchens respectively. Where one room in a dwelling serves more than a single purpose, the UK committee recommends that the applicable minimum illuminance (across 50% of area) is that for the room type with the highest value.

The UK committee recommend that requirement for a minimum illuminance to be achieved across 95% of the assessable area need not be applied to rooms within dwellings.

Appendix J: Sunlight Exposure Results

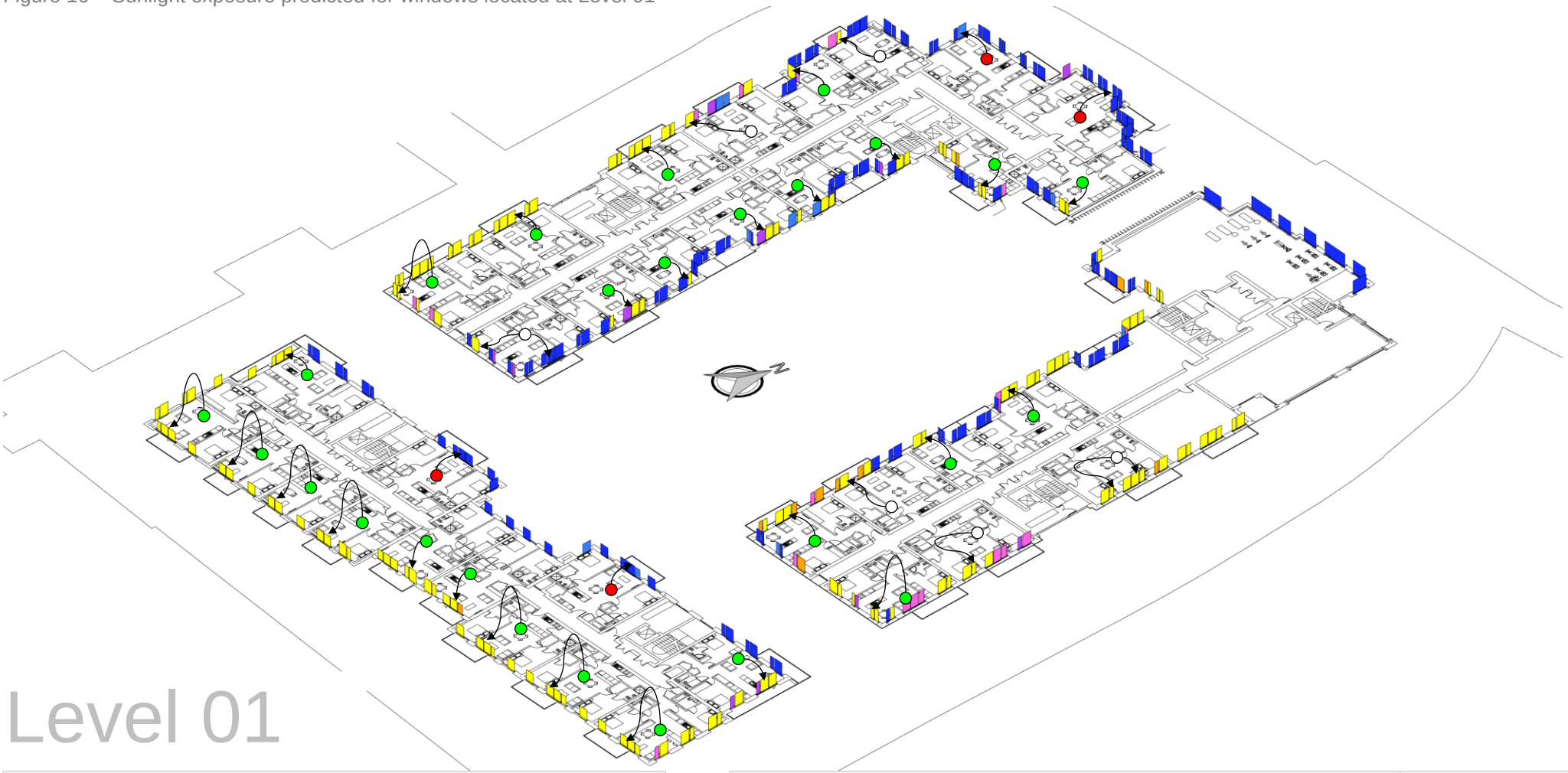
Figure 15 Sunlight exposure predicted for windows located at Level 00



SOLAR EXPOSURE (MINUTES)					
0 to 18	18 to 36	36 to 54	54 to 72	72 to 90	> 90

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Conformity established for main living room	0	
Conformity established for bedroom	0	
Instance falls short of of guidelines	0	

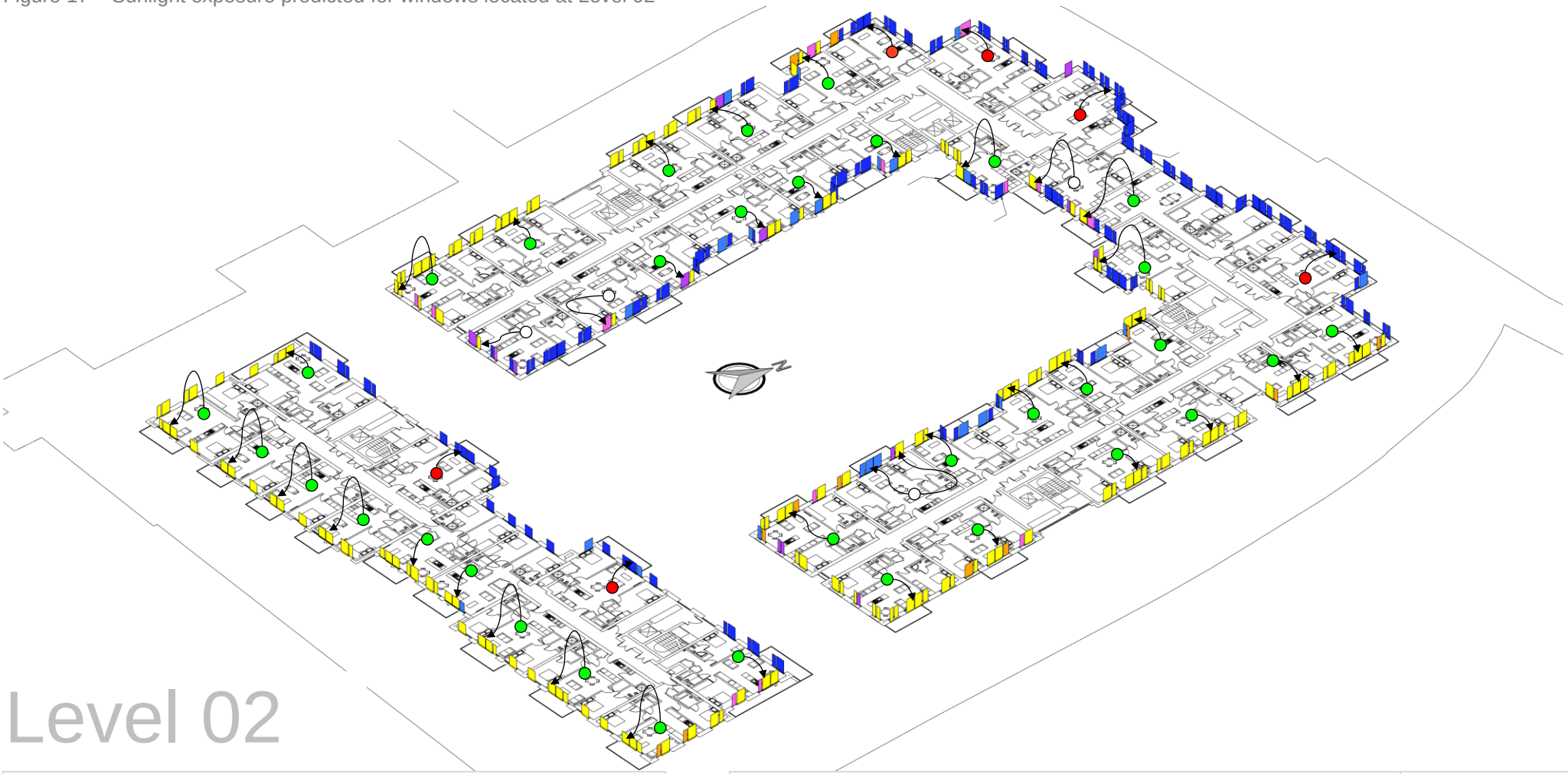
Figure 16 Sunlight exposure predicted for windows located at Level 01



SOLAR EXPOSURE (MINUTES)					
0 to 18	18 to 36	36 to 54	54 to 72	72 to 90	> 90

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Conformity established for main living room	26	
Conformity established for bedroom	6	
Instance falls short of of guidelines	4	

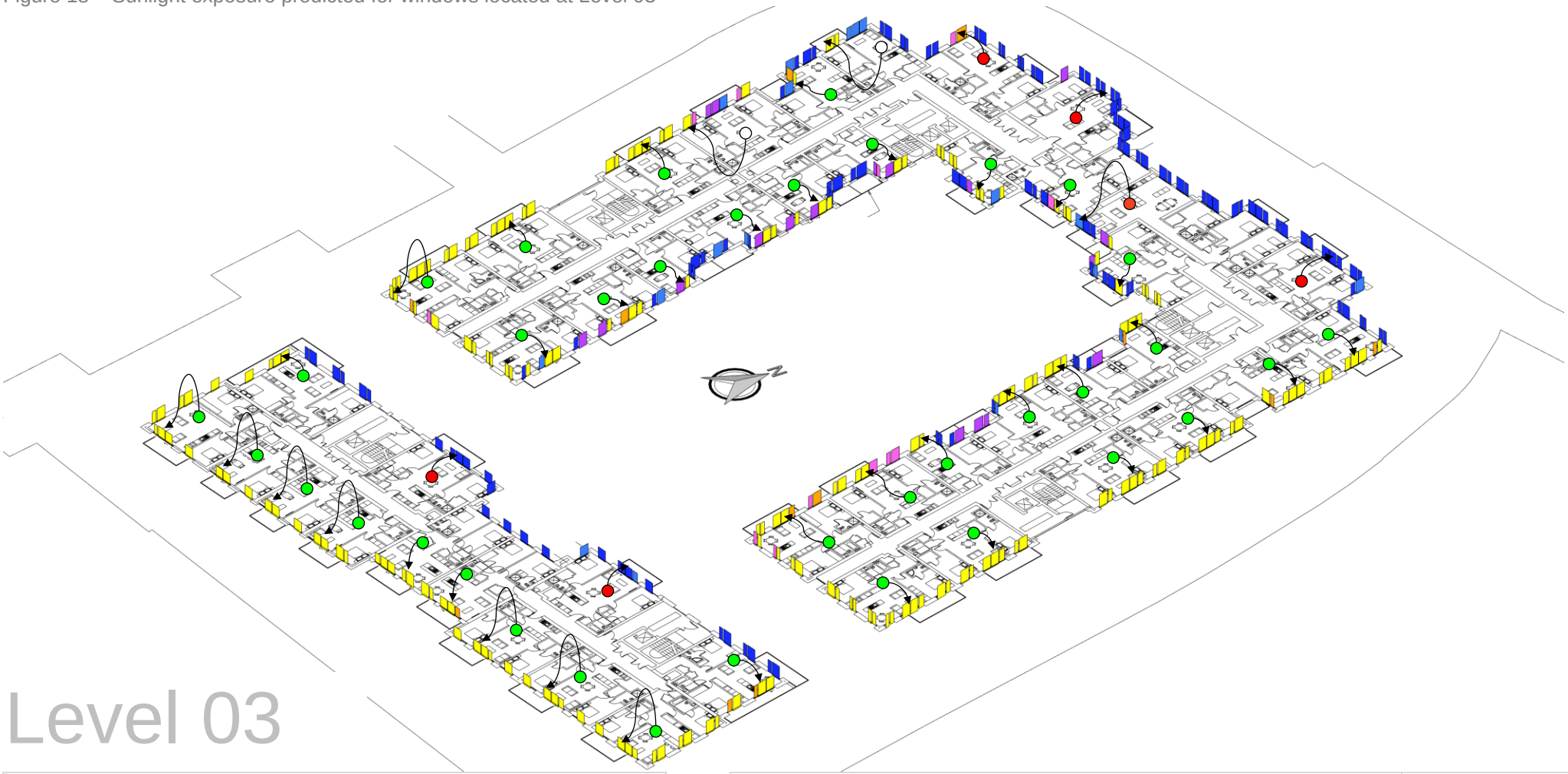
Figure 17 Sunlight exposure predicted for windows located at Level 02



SOLAR EXPOSURE (MINUTES)					
0 to 18	18 to 36	36 to 54	54 to 72	72 to 90	> 90

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Conformity established for main living room	34	●
Conformity established for bedroom	4	○
Instance falls short of of guidelines	6	●

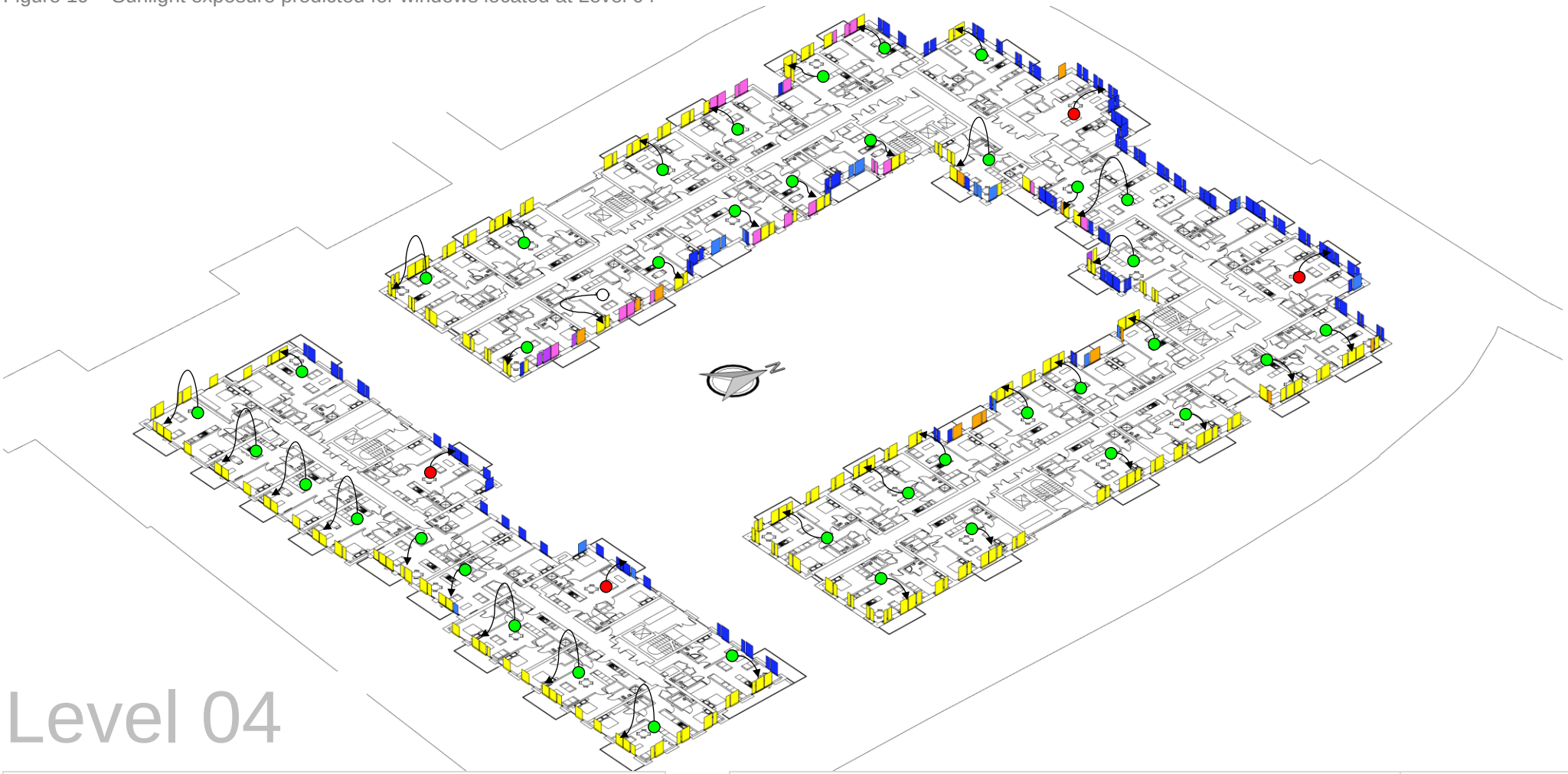
Figure 18 Sunlight exposure predicted for windows located at Level 03



SOLAR EXPOSURE (MINUTES)					
0 to 18	18 to 36	36 to 54	54 to 72	72 to 90	> 90

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Conformity established for main living room	36	
Conformity established for bedroom	2	
Instance falls short of of guidelines	6	

Figure 19 Sunlight exposure predicted for windows located at Level 04



SOLAR EXPOSURE (MINUTES)					
0 to 18	18 to 36	36 to 54	54 to 72	72 to 90	> 90

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Conformity established for main living room	39	
Conformity established for bedroom	1	
Instance falls short of of guidelines	4	

Figure 20 Sunlight exposure predicted for windows located at Level 05

SOLAR EXPOSURE (MINUTES)					
0 to 18	18 to 36	36 to 54	54 to 72	72 to 90	> 90

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Conformity established for main living room	39	
Conformity established for bedroom	1	
Instance falls short of of guidelines	3	

Figure 21 Sunlight exposure predicted for windows located at Level 06

SOLAR EXPOSURE (MINUTES)					
0 to 18	18 to 36	36 to 54	54 to 72	72 to 90	> 90

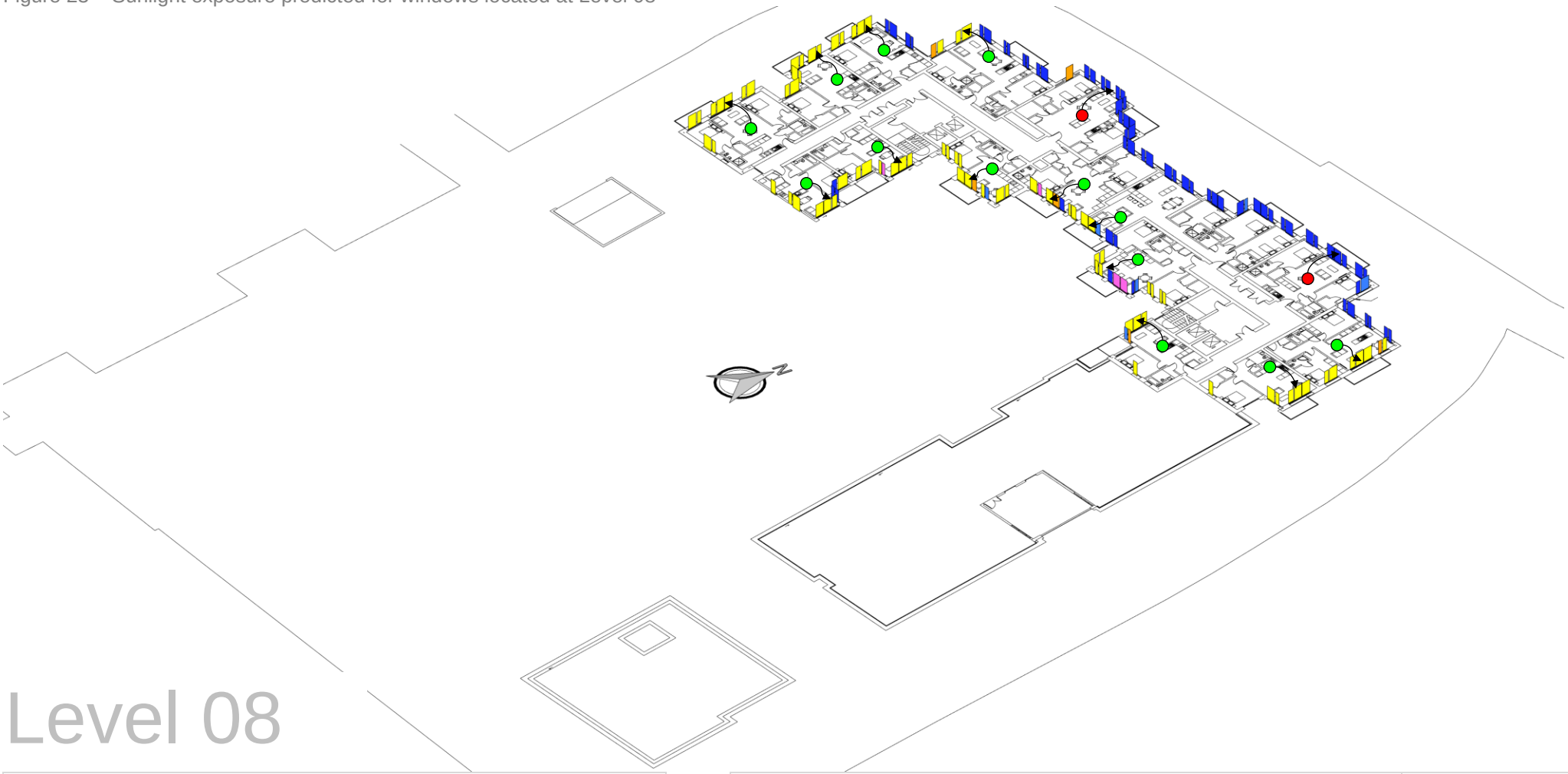
CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Conformity established for main living room	32	
Conformity established for bedroom	0	
Instance falls short of of guidelines	2	

Figure 22 Sunlight exposure predicted for windows located at Level 07

SOLAR EXPOSURE (MINUTES)					
0 to 18	18 to 36	36 to 54	54 to 72	72 to 90	> 90

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Conformity established for main living room	24	
Conformity established for bedroom	0	
Instance falls short of of guidelines	3	

Figure 23 Sunlight exposure predicted for windows located at Level 08

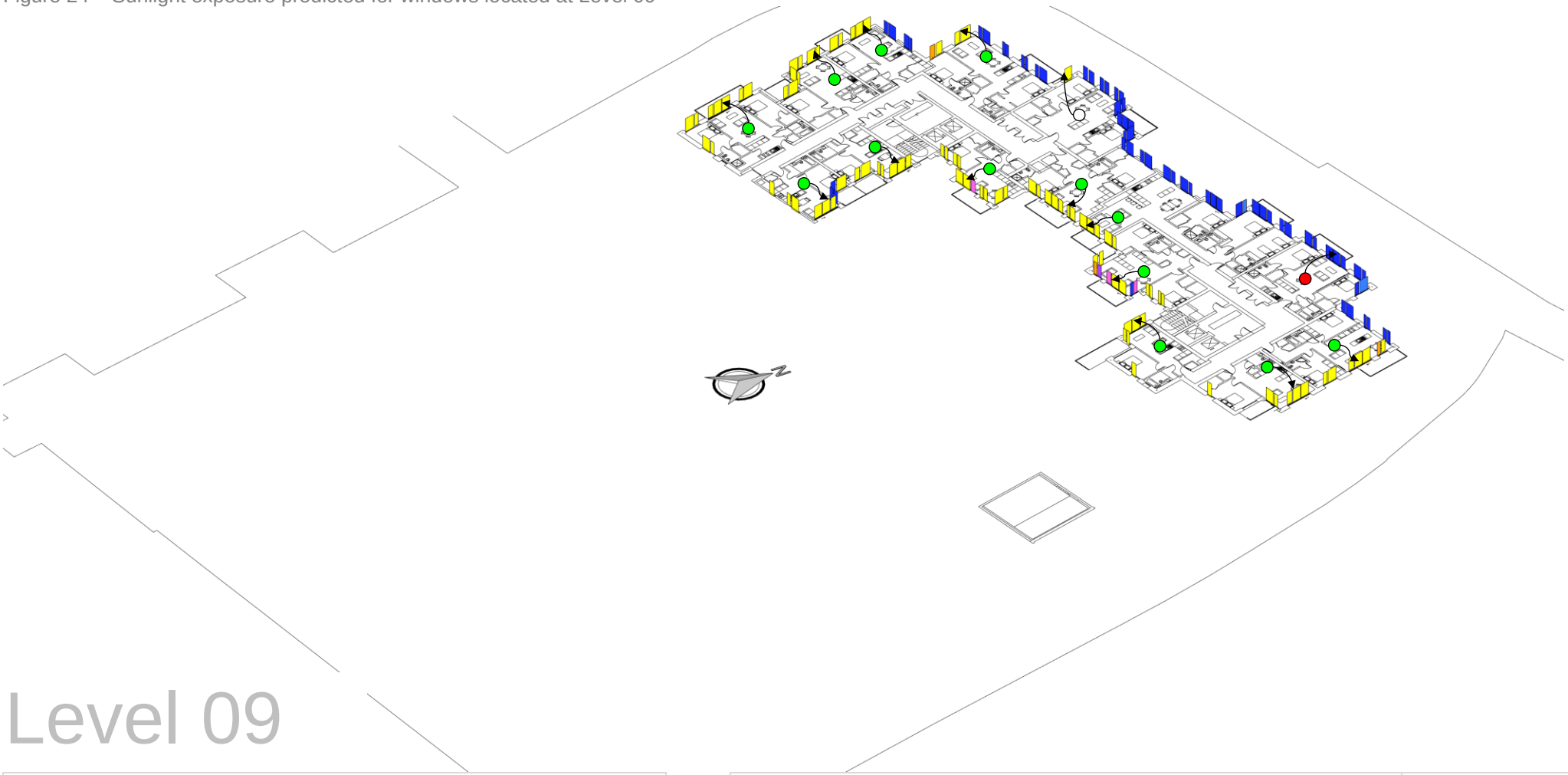


Level 08

SOLAR EXPOSURE (MINUTES)					
0 to 18	18 to 36	36 to 54	54 to 72	72 to 90	> 90

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Conformity established for main living room	13	
Conformity established for bedroom	0	
Instance falls short of of guidelines	2	

Figure 24 Sunlight exposure predicted for windows located at Level 09



Level 09

SOLAR EXPOSURE (MINUTES)					
0 to 18	18 to 36	36 to 54	54 to 72	72 to 90	> 90

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Conformity established for main living room	13	
Conformity established for bedroom	1	
Instance falls short of of guidelines	1	

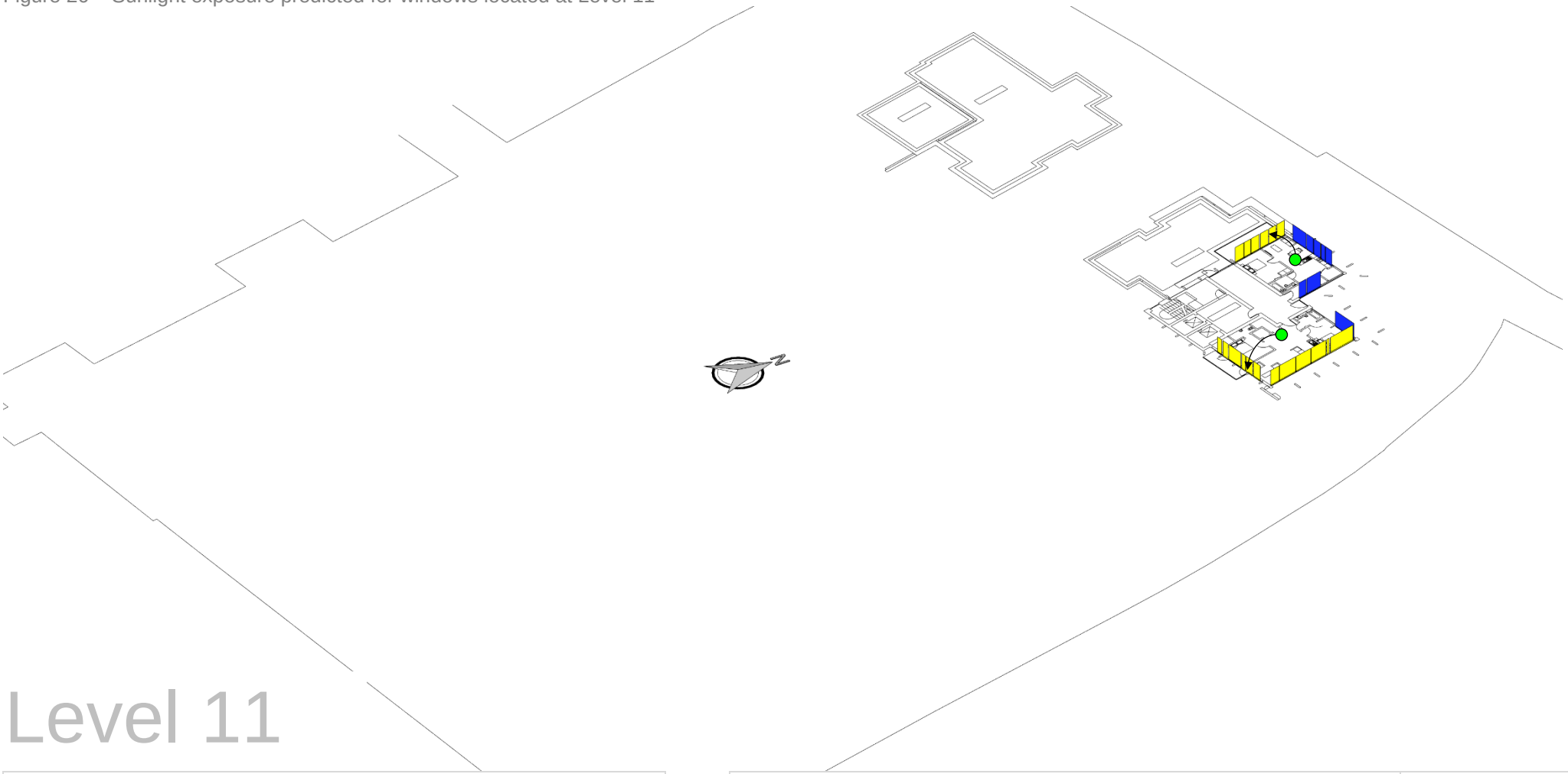
Figure 25 Sunlight exposure predicted for windows located at Level 10

Level 10

SOLAR EXPOSURE (MINUTES)					
0 to 18	18 to 36	36 to 54	54 to 72	72 to 90	> 90

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Conformity established for main living room	5	
Conformity established for bedroom	0	
Instance falls short of of guidelines	1	

Figure 26 Sunlight exposure predicted for windows located at Level 11



Level 11

SOLAR EXPOSURE (MINUTES)					
0 to 18	18 to 36	36 to 54	54 to 72	72 to 90	> 90

CONFORMITY WITH ADVISORY MINIMUM APSH LEVELS	NO. INSTANCES	
Conformity established for main living room	2	
Conformity established for bedroom	0	
Instance falls short of of guidelines	0	

Appendix K: Outdoor Solar Access in Summer Months

Figure 27 Sunlight access levels predicted for outdoor recreation space on the 21st of April

TOTAL NO. SUNLIGHT HOURS ON THE 21ST OF APRIL (HRS)

0 to 2	> 2

Figure 28 Sunlight access levels predicted for outdoor recreation space on the 21st of May

TOTAL NO. SUNLIGHT HOURS ON THE 21ST OF MAY (HRS)

0 to 2	> 2

Figure 29 Sunlight access levels predicted for outdoor recreation space on the 21st of June

TOTAL NO. SUNLIGHT HOURS ON THE 21ST OF JUNE (HRS)

0 to 2	> 2

Appendix L: About the Author

This appendix replicates material which has already been provided in Report 1 of 3.

Rory Walsh BEng MEngSc MScSP PhD MIPI is a building performance engineer with key competencies in energy, comfort, and daylight modelling. Specialising in the assessment of daylight adequacy in a planning and development context Rory has had cause to write and review many daylight reports over the past ten years. Rory acts as principal consultant with BPG3.

Education & Experience:

- Bachelor's degree in mechanical engineering, awarded by NUIG
- Master's in Engineering Science awarded for research on the subject of thermal mass in non-domestic buildings with the Energy Research Group, UCD
- Doctorate awarded for research on the subject of natural ventilation in non-domestic buildings with TrinityHaus, Trinity College Dublin.
- Master's in Spatial Planning, awarded by TU Dublin.
- 10 years practice as a daylight consultant working with Aurea Consult and BPG3.