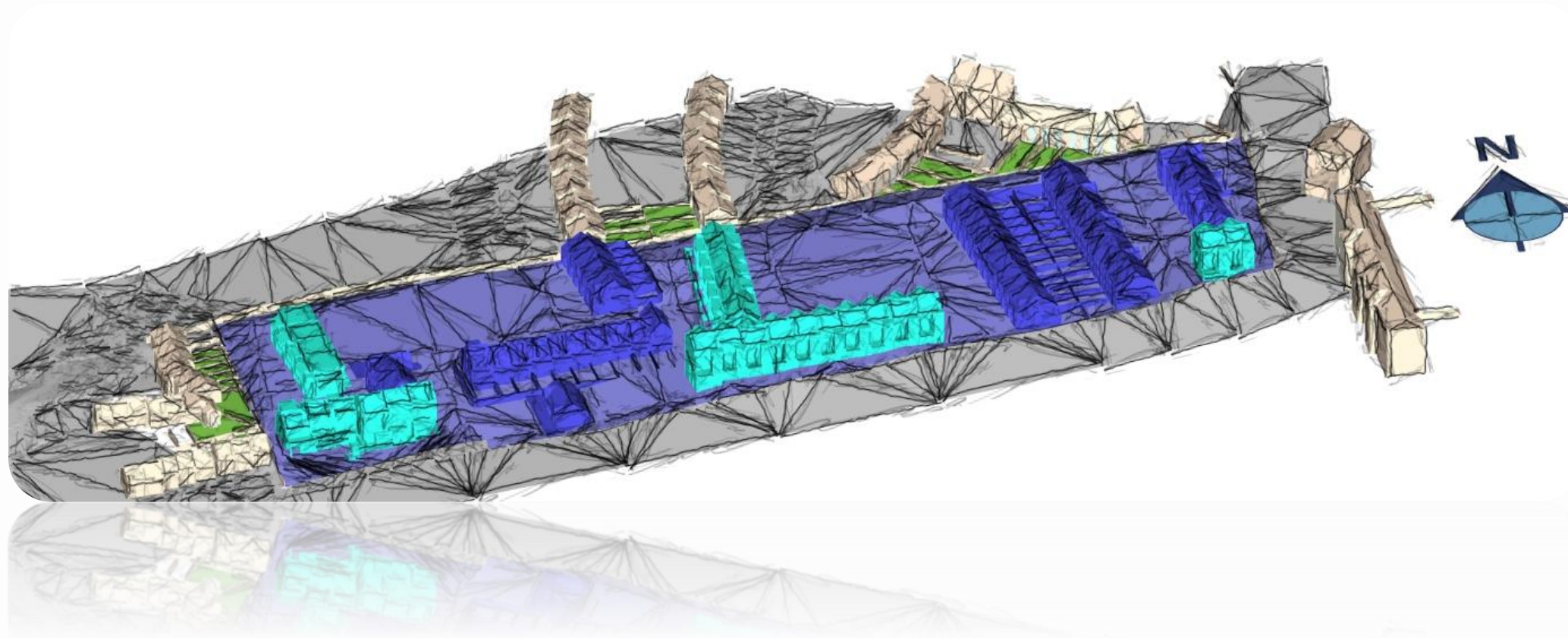


RESIDENTIAL DEVELOPMENT POPE'S HILL

Sunlight, Daylight & Shadow Assessment (Impact Neighbours and Development Performance)

V1



Executive Summary

This report examines the impact the proposed Development will have on neighbours in terms of daylight, sunlight & shadow. We will also examine how the proposed development performs in terms of light.

The report is, in accordance with Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice - Third Edition - 2022.

It should be noted at the outset that the BRE Guidelines set out in its introduction that:

"Summary Page . . . It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location."

" 1.6 . . . The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design. . . . "

Change/Impact to neighbouring buildings in the adjoining residential areas.

- **Skylight- VSC**
 - **98%** (100% including marginals) of the tested windows comply with the VSC requirements for habitable rooms.
 - The average change ratio for VSC is **0.93**
- **Sunlight APSH & WPSH**
 - **100%** of tested windows comply with the annual APSH and
 - **100%** with the winter WPSH requirements for sunlight or overall requirement.
 - The average change ratio for sunlight is APSH:**0.95** and WPSH: **0.81**
- **Sunlight on the Ground SOG (Shadow)**
 - **100%** of tested neighbouring amenity spaces pass the 2-hour test requirements for the 21st March.
 - The average change ratio for shadow/sunlight is **0.99**

Performance of the proposed design

- **Target Illuminance E_r**
 - **99%** (99% including marginals) of rooms comply with the BS/EN 17037 Annex NA room targets for 50% of the floor area tested.
 - The average compliant areas achieving the relevant target Lx for
 - all bedrooms is **99%** and
 - all Living/Kitchen spaces **93%**
 - both are well in excess of the required 50%
- **Sunlight to rooms:**
 - All windows to living rooms receive some sunlight and the number that face North are small.
 - **96%** comply with the 1.5hr BRE test on the 21st March.
 - This is consistent with the BRE defined "careful layout design" 80% target.

- **Sunlight on the Ground SOG (Shadow)**

- There are no specific shared/communal spaces allocated to the apartment/duplex units. Instead there is considerable overprovision of public amenity, and the communal spaces are incorporated within these areas.
- No testing is required.

The application generally complies with the recommendations and Guidelines of Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice (BR209 - 2022).

This development has been successfully designed to maximise the occupant's access to light and reduce the impact on existing buildings. As such the design has used the guidelines in the spirit they have been written and balanced the requirements of this report with other constraints to arrive at this design.

Introduction

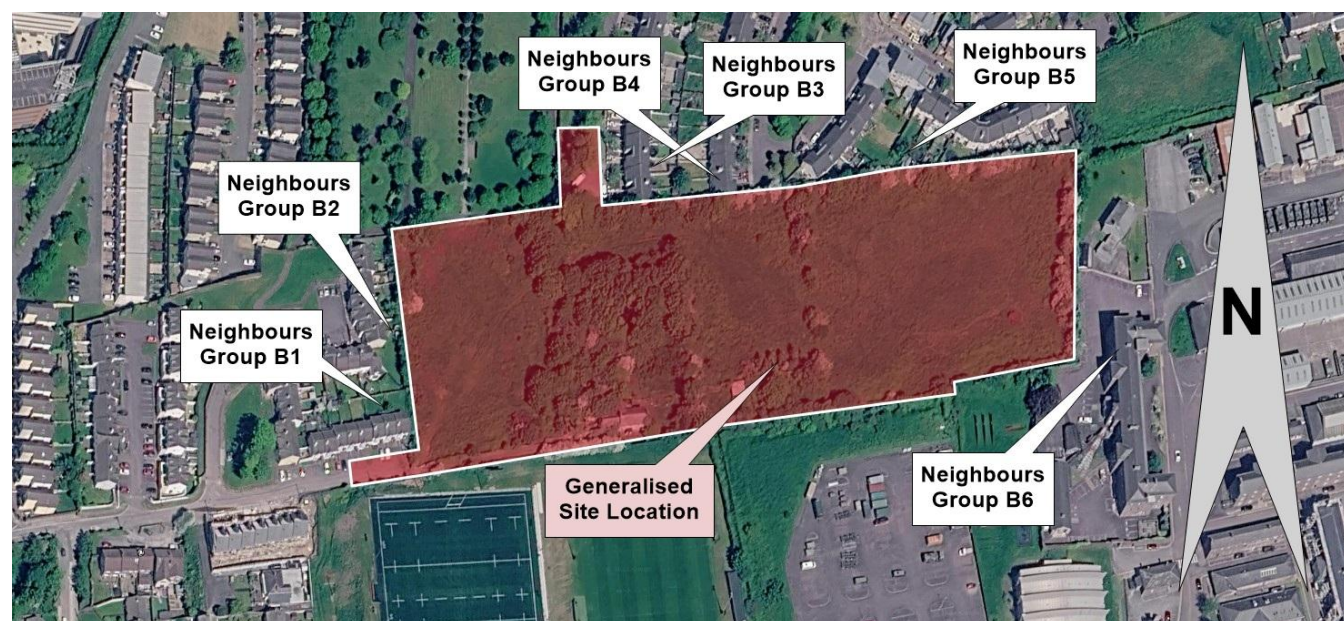
Chris Shackleton Consulting (CSC) have been asked to examine the impact that the proposed development will have on the existing neighbouring properties in terms of sunlight, daylight & shadow. The proposed development consists of a combination of Duplex and traditional generally low-rise housing. We have also been asked to examine how the proposed development performs in terms of light.

This analysis has been carried out in accordance with the recommendations of Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice - Third Edition (BRE Guidelines 2022).

All references quoted in this report are from BRE Guidelines "Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice – Third Edition – 2022 (BR 209) by Paul Littlefair et al." unless specifically noted otherwise.

Preliminary Overview

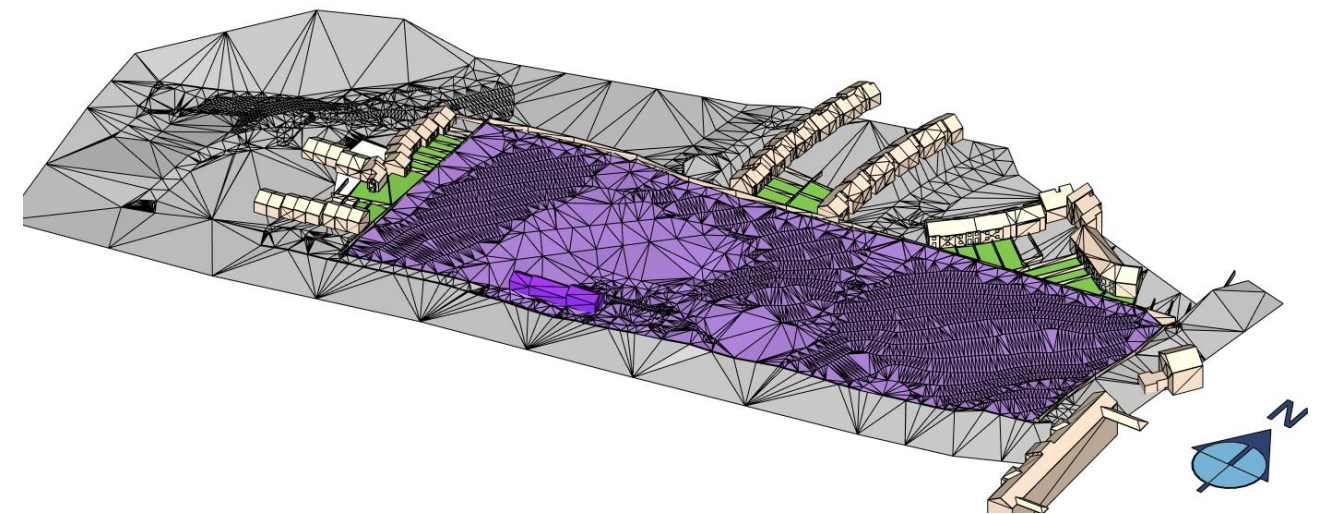
The aerial view shows the context for the site and the closest neighbour groups.



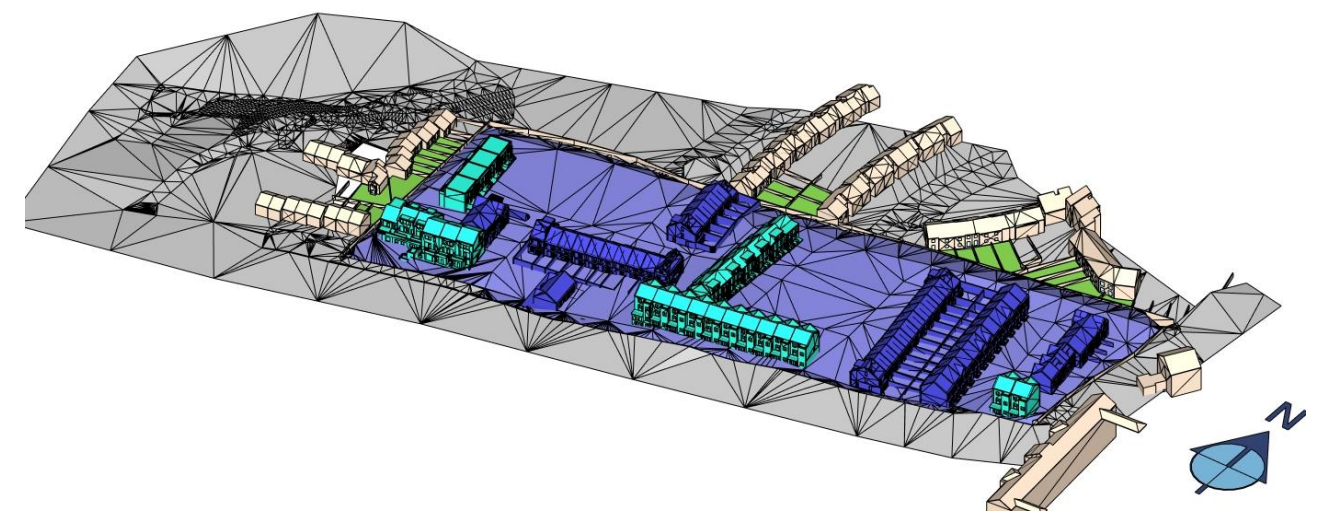
Google Earth extract © Google 2026

Design Model

A 3D model of the proposed development and the surrounding neighbouring properties was provided by the Architect. These had been modelled from survey information and drawings provided in plan, elevation and section formats. The model was geo-referenced to its correct location and an accurate solar daylight system was introduced. The analysis is based on the information provided.



Existing Model



Proposed Model

Key to colours

	Existing Surrounding Buildings		Existing site to be replaced / demolished		Proposed Housing		Proposed Apartment / Duplex
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Scope of this Report

We have been asked to address the following specific items in this report and our scope is limited to the same:

Impact on Existing Neighbours

In this document we will assess the potential impact of the proposed development on the neighbouring residential houses. We will test for the following in relation to impact:

- Existing facing windows for:
 - Impact/Change for Skylight – Vertical Sky Component - VSC
 - Impact/Change for Probable Sunlight Hours – Annual APSH and Winter WPSH
- Existing amenity spaces for impact/change on Sunlight/Shadow

Development Performance

For the proposed development we will examine the performance of the development under the following headings:

- Target Illuminance – E_T – All habitable rooms
- Sunlight to rooms – A room preferably a living space.
- Sunlight on the Ground SOG (Shadow) - Proposed Public & Shared amenity spaces

When examining the internal performance of the development we follow best practice and analyse all rooms on all floors on all blocks for apartments (which includes duplexes and maisonettes).

Sustainable Residential Development and Compact Settlement Guidelines, 2024

As noted above we will examine Impact on neighbours and the Performance of all apartments which includes Duplexes & Maisonettes as per the Department Guidelines. However, we don't believe that all low-rise traditional houses which comply with recommended separation distance need detailed technical assessment as per clause 5.3.7(a) of the **Compact Settlement Guidelines 2024**.

5.3.7 (a) ... Planning authorities do not need to undertake a detailed technical assessment in relation to daylight performance in all cases. It should be clear from the assessment of architectural drawings (including sections) in the case of low-rise housing with good separation from existing and proposed buildings that undue impact would not arise, and planning authorities may apply a level of discretion in this regard.

Adjacent Properties Details

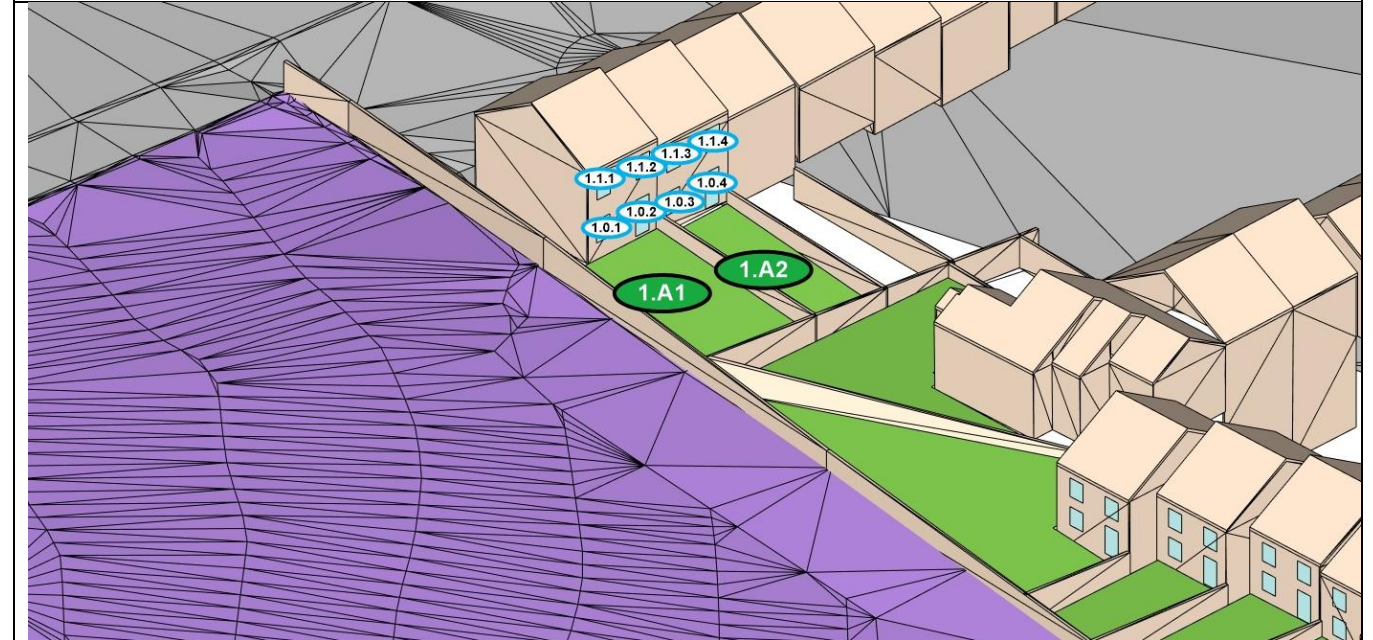
The referencing used later in this report is detailed below.

Neighbour Group B1

Oblique imagery © Google 2026



Windows facing the development



Key to colours

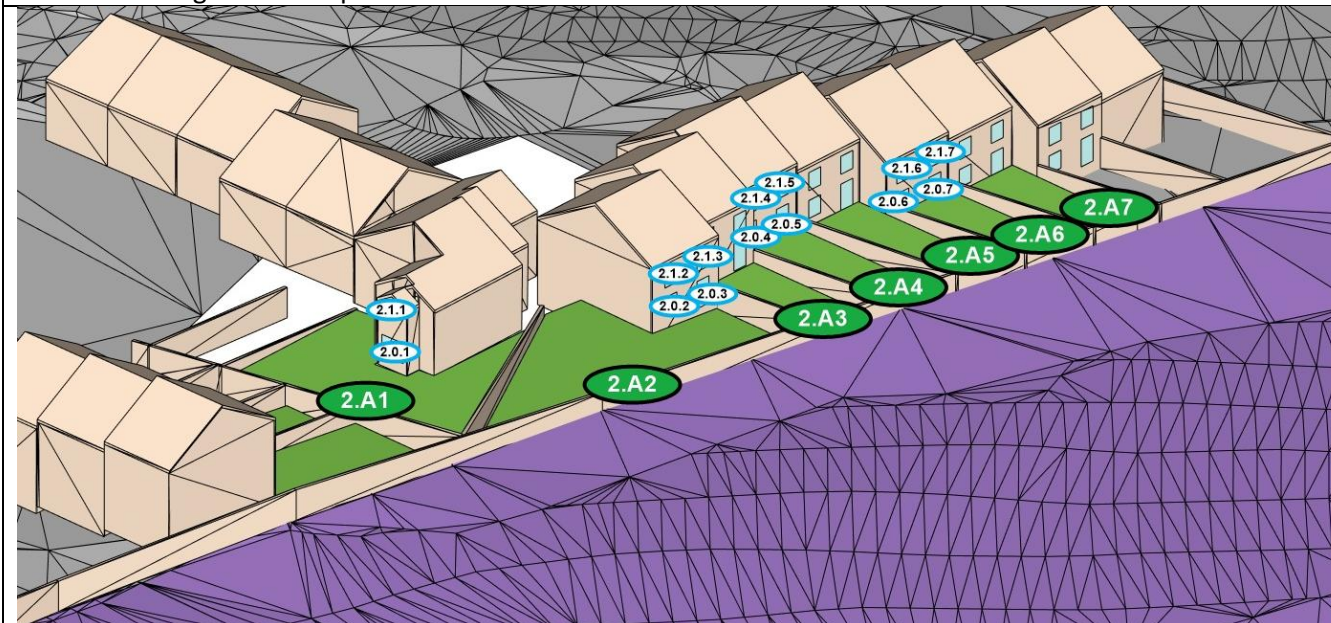


Neighbour Group B2

Oblique imagery © Google 2026



Windows facing the development



Key to colours

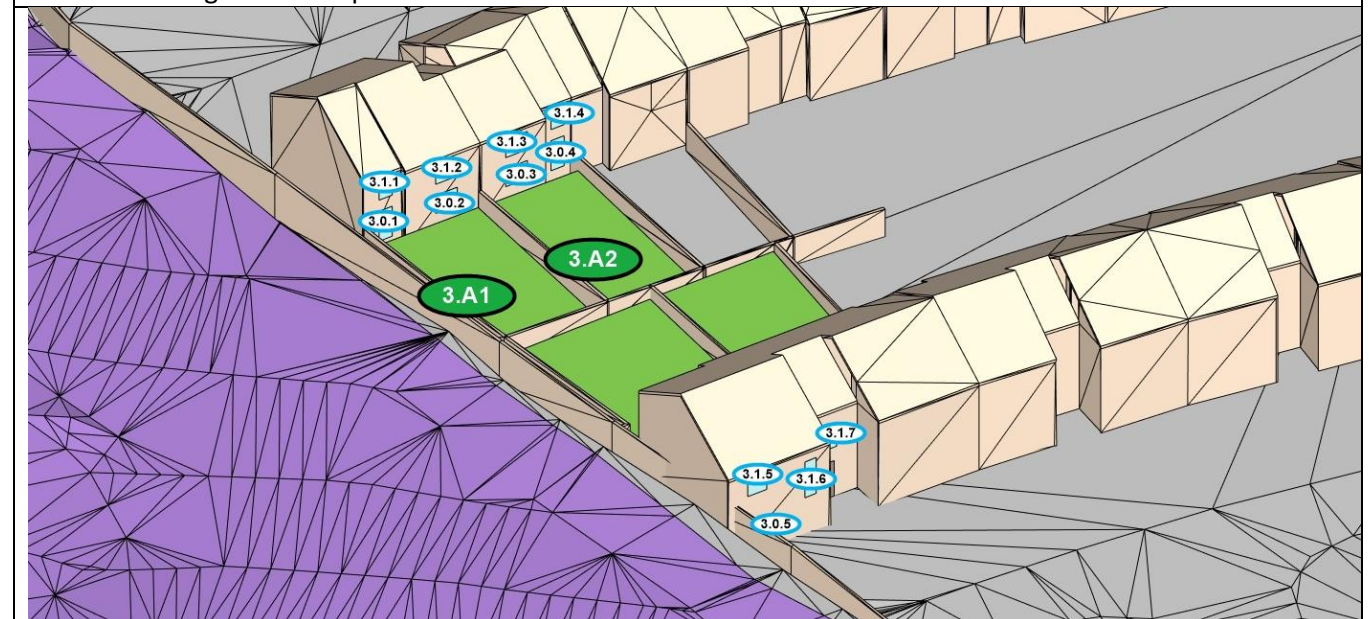


Neighbour Group B3

Oblique imagery © Google 2026



Windows facing the development



Key to colours

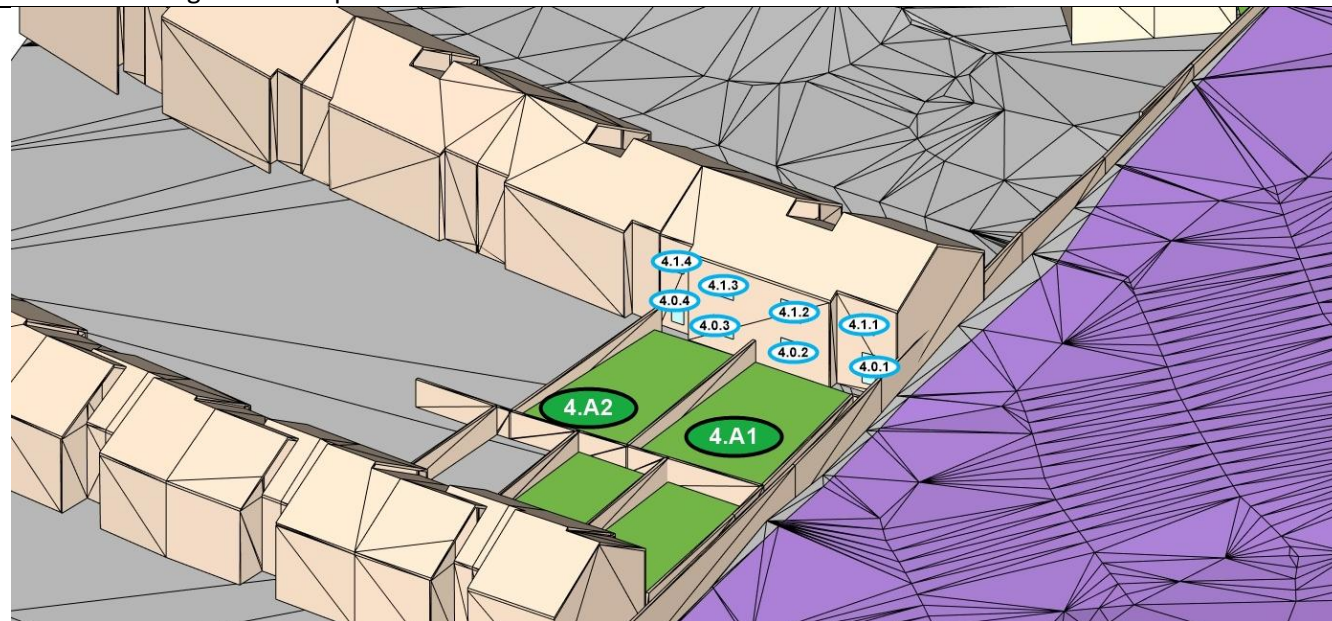


Neighbour Group B4

Oblique imagery © Google 2026



Windows facing the development



Key to colours

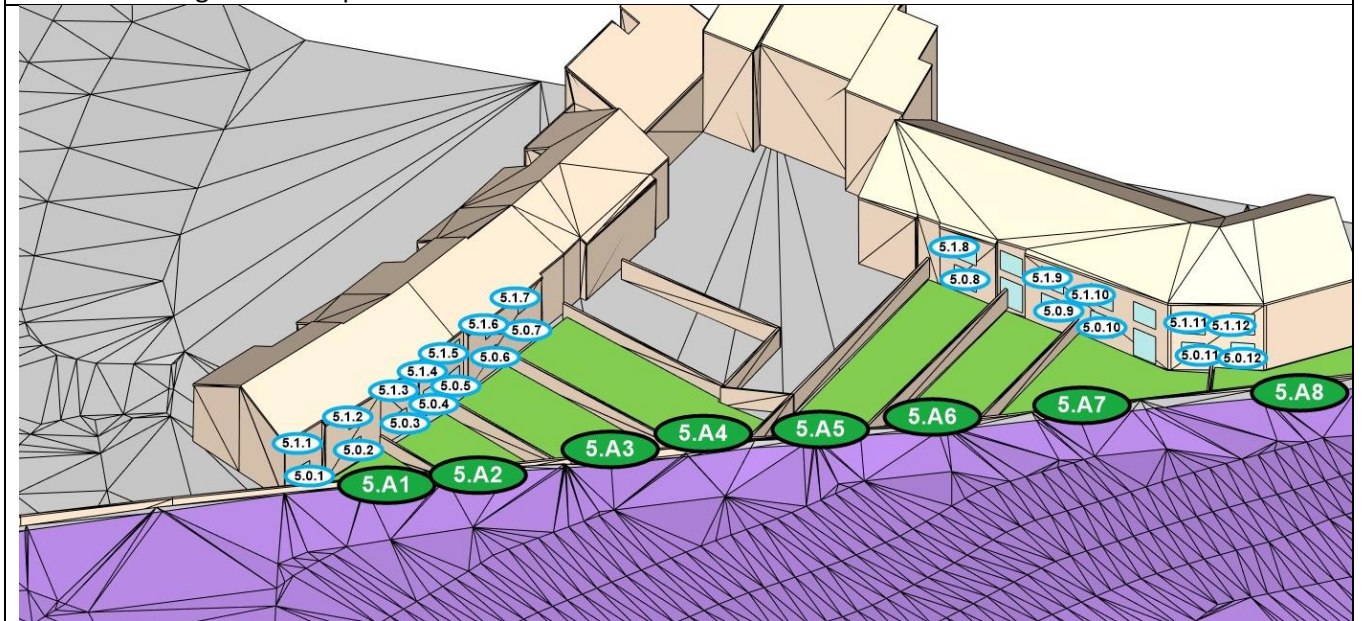


Neighbour Group B5

Oblique imagery © Google 2026



Windows facing the development



Key to colours

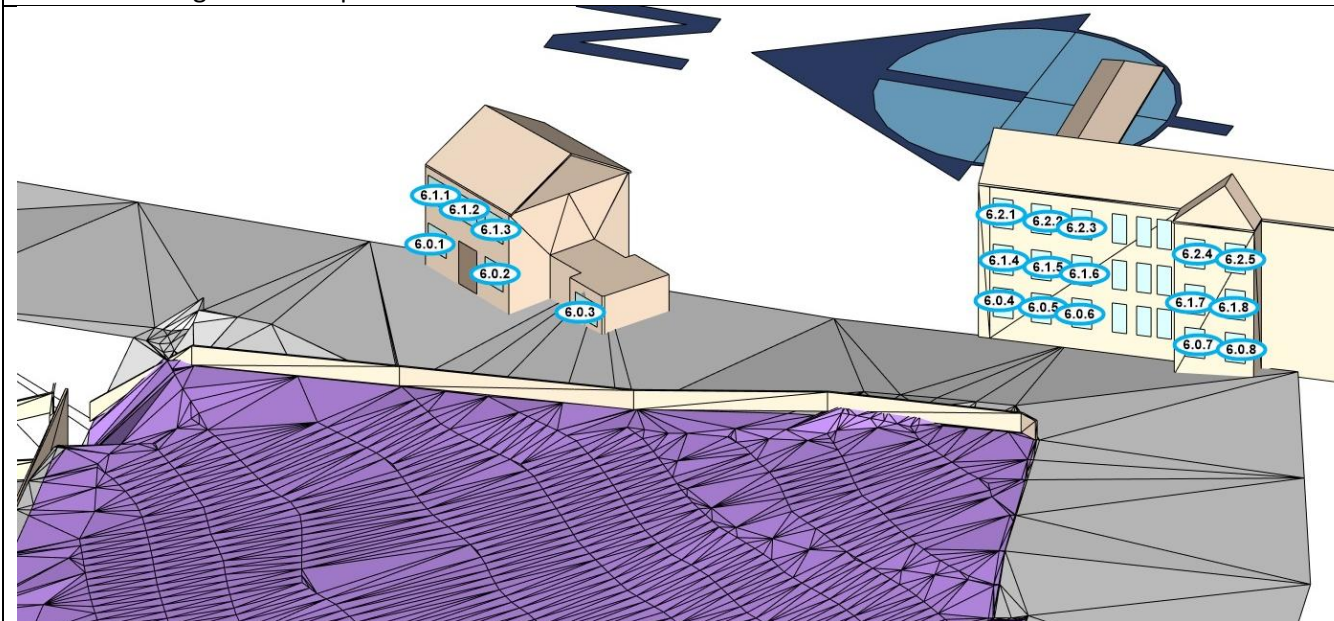


Neighbour Group B6

Oblique imagery © Google 2026



Windows facing the development



Key to colours



Impact on neighbours

Adjacent Properties - Light from the Sky impact on neighbouring properties

Tests were carried out to establish the quantity and quality of skylight (daylight) available to a room's windows. Locations tested are based on guideline recommendations for the closest facades which have windows with potential for impact.

We have investigated this impact under clause 2.2.7

2.2.7 If this VSC is greater than 27% then enough skylight should still be reaching the window of the existing building. This value of VSC typically supplies enough daylight to a standard room when combined with a window of normal dimensions, with glass area around 10% or more of the floor area. Any reduction below this level should be kept to a minimum. If the VSC, with the new development in place, is both less than 27% and less than 0.80 times its former value, occupants of the existing building will notice the reduction in the amount of skylight. The area lit by the window is likely to appear gloomier, and electric lighting will be needed more of the time. . . .

2.2.6 Any reduction in the total amount of skylight can be calculated by finding the VSC at the centre of each main window. In the case of a floor-to-ceiling window such as a patio door, a point 1.6 m above ground (or balcony level for an upper storey) on the centre line of the window may be used. For a bay window, the centre window facing directly outwards can be taken as the main window. If a room has two or more windows of equal size, the mean of their VSCs may be taken. The reference point is in the external plane of the window wall. Windows to bathrooms, toilets, storerooms, circulation areas, and garages need not be analysed. . . .

Tabulated results

	Skylight to habitable rooms						
	VSC						
Design	Check > 27% or ratio > 0.8						
Group	Floor	Win	Ref	Existing	Proposed	Ratio	Result
B1	F0	W1	1.0.1	38.4%	33.3%	0.87	Pass
B1	F0	W2	1.0.2	38.1%	34.6%	0.91	Pass
B1	F0	W3	1.0.3	38.0%	35.2%	0.93	Pass
B1	F0	W4	1.0.4	37.6%	35.4%	0.94	Pass
B1	F1	W1	1.1.1	39.3%	35.5%	0.90	Pass
B1	F1	W2	1.1.2	39.3%	36.9%	0.94	Pass
B1	F1	W3	1.1.3	39.2%	37.2%	0.95	Pass
B1	F1	W4	1.1.4	39.2%	37.7%	0.96	Pass
B2	F0	W1	2.0.1	32.6%	29.8%	0.91	Pass
B2	F0	W2	2.0.2	36.9%	26.9%	0.73	Marginal
B2	F0	W3	2.0.3	36.7%	26.8%	0.73	Marginal
B2	F0	W4	2.0.4	31.3%	25.0%	0.80	Pass
B2	F0	W5	2.0.5	35.8%	28.5%	0.80	Pass
B2	F0	W6	2.0.6	35.6%	30.1%	0.85	Pass
B2	F0	W7	2.0.7	35.2%	29.8%	0.85	Pass
B2	F1	W1	2.1.1	35.4%	33.1%	0.93	Pass
B2	F1	W2	2.1.2	37.5%	28.3%	0.75	Pass
B2	F1	W3	2.1.3	37.5%	28.6%	0.76	Pass
B2	F1	W4	2.1.4	32.6%	27.0%	0.83	Pass
B2	F1	W5	2.1.5	37.0%	30.9%	0.84	Pass
B2	F1	W6	2.1.6	37.3%	31.5%	0.85	Pass
B2	F1	W7	2.1.7	37.3%	32.2%	0.86	Pass
B3	F0	W1	3.0.1	30.3%	29.6%	0.98	Pass
B3	F0	W2	3.0.2	34.1%	32.3%	0.95	Pass
B3	F0	W3	3.0.3	34.1%	32.6%	0.96	Pass
B3	F0	W4	3.0.4	30.8%	30.0%	0.97	Pass
B3	F0	W5	3.0.5	25.5%	25.5%	1.00	Pass
B3	F1	W1	3.1.1	35.1%	32.8%	0.94	Pass
B3	F1	W2	3.1.2	35.6%	33.7%	0.95	Pass
B3	F1	W3	3.1.3	35.5%	34.1%	0.96	Pass
B3	F1	W4	3.1.4	33.6%	32.9%	0.98	Pass
B3	F1	W5	3.1.5	36.7%	35.5%	0.97	Pass
B3	F1	W6	3.1.6	36.4%	35.3%	0.97	Pass
B3	F1	W7	3.1.7	24.2%	23.8%	0.98	Pass
B4	F0	W1	4.0.1	32.2%	31.7%	0.98	Pass
B4	F0	W2	4.0.2	36.5%	34.8%	0.95	Pass
B4	F0	W3	4.0.3	36.6%	35.1%	0.96	Pass
B4	F0	W4	4.0.4	34.9%	33.8%	0.97	Pass
B4	F1	W1	4.1.1	38.6%	36.6%	0.95	Pass
B4	F1	W2	4.1.2	38.5%	37.0%	0.96	Pass
B4	F1	W3	4.1.3	38.4%	37.3%	0.97	Pass
B4	F1	W4	4.1.4	37.3%	36.5%	0.98	Pass

	Skylight to habitable rooms						
	VSC						
Design	Check > 27% or ratio > 0.8						
Group	Floor	Win	Ref	Existing	Proposed	Ratio	Result
B5	F0	W1	5.0.1	25.8%	25.7%	1.00	Pass
B5	F0	W2	5.0.2	32.3%	29.9%	0.93	Pass
B5	F0	W3	5.0.3	33.8%	30.4%	0.90	Pass
B5	F0	W4	5.0.4	33.3%	30.1%	0.90	Pass
B5	F0	W5	5.0.5	33.5%	30.3%	0.91	Pass
B5	F0	W6	5.0.6	34.3%	31.1%	0.91	Pass
B5	F0	W7	5.0.7	34.2%	31.2%	0.91	Pass
B5	F0	W8	5.0.8	36.0%	32.8%	0.91	Pass
B5	F0	W9	5.0.9	36.2%	32.4%	0.90	Pass
B5	F0	W10	5.0.10	35.8%	31.9%	0.89	Pass
B5	F0	W11	5.0.11	30.8%	28.5%	0.92	Pass
B5	F0	W12	5.0.12	30.1%	28.2%	0.94	Pass
B5	F1	W1	5.1.1	36.3%	32.3%	0.89	Pass
B5	F1	W2	5.1.2	36.2%	32.3%	0.89	Pass
B5	F1	W3	5.1.3	36.2%	32.4%	0.90	Pass
B5	F1	W4	5.1.4	35.9%	32.5%	0.91	Pass
B5	F1	W5	5.1.5	35.6%	32.6%	0.92	Pass
B5	F1	W6	5.1.6	35.7%	32.8%	0.92	Pass
B5	F1	W7	5.1.7	35.5%	32.8%	0.93	Pass
B5	F1	W8	5.1.8	37.7%	34.5%	0.91	Pass
B5	F1	W9	5.1.9	37.9%	34.2%	0.90	Pass
B5	F1	W10	5.1.10	38.0%	33.9%	0.89	Pass
B5	F1	W11	5.1.11	36.6%	31.4%	0.86	Pass
B5	F1	W12	5.1.12	36.5%	31.3%	0.86	Pass
B6	F0	W1	6.0.1	39.6%	38.5%	0.97	Pass
B6	F0	W2	6.0.2	39.6%	37.8%	0.95	Pass
B6	F0	W3	6.0.3	38.2%	35.0%	0.92	Pass
B6	F0	W4	6.0.4	39.5%	37.8%	0.96	Pass
B6	F0	W5	6.0.5	39.4%	37.8%	0.96	Pass
B6	F0	W6	6.0.6	39.2%	37.7%	0.96	Pass
B6	F0	W7	6.0.7	39.6%	38.3%	0.97	Pass
B6	F0	W8	6.0.8	39.6%	38.5%	0.97	Pass
B6	F1	W1	6.1.1	39.6%	39.4%	0.99	Pass
B6	F1	W2	6.1.2	39.6%	39.3%	0.99	Pass
B6	F1	W3	6.1.3	39.6%	39.3%	0.99	Pass
B6	F1	W4	6.1.4	39.5%	39.3%	0.99	Pass
B6	F1	W5	6.1.5	39.5%	39.3%	0.99	Pass
B6	F1	W6	6.1.6	39.3%	39.1%	0.99	Pass
B6	F1	W7	6.1.7	39.6%	39.4%	0.99	Pass
B6	F1	W8	6.1.8	39.6%	39.4%	0.99	Pass
B6	F2	W1	6.2.1	39.6%	39.6%	1.00	Pass
B6	F2	W2	6.2.2	39.6%	39.6%	1.00	Pass
B6	F2	W3	6.2.3	39.5%	39.5%	1.00	Pass
B6	F2	W4	6.2.4	39.6%	39.6%	1.00	Pass
B6	F2	W5	6.2.5	39.6%	39.6%	1.00	Pass

Note: When the proposed value exceeds the minimum requirement the ratio check is not required, and the result is coloured grey.

Conclusion

When tested with the new development in place

98% (100% including marginals) of the tested windows comply with the 27% and/or 0.8 ratio requirements for habitable rooms.

The average change ratio for VSC is **0.95**

The proposed development complies with the BRE Guidelines in relation to neighbours skylight availability.

Adjacent Properties - Sunlight into living spaces

Tests for the amount of sunlight that windows to living room and/or conservatory can receive over both annual and winter periods.

3.2.3 To assess loss of sunlight to an existing building, it is suggested that all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun. Normally loss of sunlight need not be analysed to kitchens and bedrooms, except for bedrooms that also comprise a living space, for example a bed sitting room in an old people's home. . . .

3.2.4 To calculate the loss of sunlight over the year, a different metric, the annual probable sunlight hours (APSH), is used. Here 'probable sunlight hours' means the total number of hours in the year that the sun is expected to shine on unobstructed ground, allowing for average levels of cloudiness for the location in question (based on sunshine probability data). The sunlight reaching a window is quantified as a percentage of this unobstructed annual total. ... The APSH is a better way of quantifying loss of sunlight because it takes into account sunlight received over the whole year, not just on one particular date.

3.2.13 If a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely affected.

This will be the case if the centre of the window:

- *receives less than 25% of annual probable sunlight hours and less than 0.80 times its former annual value; or less than 5% of annual probable sunlight hours between 21 September and 21 March and less than 0.80 times its former value during that period;*
- *and also has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.*

While not all windows relate to living rooms, we have for completeness tested all of them. Note only windows which face within 90° of due South require testing and those that do not, are notionally labelled as "North" in the table below.

The results are tabulated below:

Sunlight on windows to living room spaces check												
Annual - 25% and Winter - 5%												
Design	Group	Floor	Win	Ref	Check > 25% or ratio > 0.8				Check > 5% or ratio > 0.8			
					Existing	Proposed	Ratio	Result	Existing	Proposed	Ratio	Result
	B1	F0	W1	1.0.1	8.7%	4.2%			North	0.0%	0.0%	North
	B1	F0	W2	1.0.2	8.5%	4.2%			North	0.0%	0.0%	North
	B1	F0	W3	1.0.3	8.8%	4.2%			North	0.0%	0.0%	North
	B1	F0	W4	1.0.4	8.7%	4.2%			North	0.0%	0.0%	North
	B1	F1	W1	1.1.1	9.1%	4.2%			North	0.0%	0.0%	North
	B1	F1	W2	1.1.2	9.1%	4.2%			North	0.0%	0.0%	North
	B1	F1	W3	1.1.3	9.1%	4.2%			North	0.0%	0.0%	North
	B1	F1	W4	1.1.4	9.1%	4.2%			North	0.0%	0.0%	North
	B2	F0	W1	2.0.1	73.6%	64.4%	0.87	Pass		23.8%	19.0%	0.80 Pass
	B2	F0	W2	2.0.2	47.3%	29.6%			North	14.1%	6.8%	0.48 North
	B2	F0	W3	2.0.3	47.1%	28.9%			North	14.0%	6.5%	0.46 North
	B2	F0	W4	2.0.4	21.5%	10.0%			North	1.7%	0.1%	0.04 North
	B2	F0	W5	2.0.5	39.2%	23.3%			North	7.9%	1.9%	0.24 North
	B2	F0	W6	2.0.6	42.3%	30.0%			North	9.5%	6.2%	0.66 North
	B2	F0	W7	2.0.7	44.9%	32.2%			North	12.3%	6.6%	0.54 North
	B2	F1	W1	2.1.1	79.8%	72.6%	0.91	Pass		30.1%	25.2%	0.84 Pass
	B2	F1	W2	2.1.2	48.6%	31.4%			North	14.9%	7.7%	North
	B2	F1	W3	2.1.3	48.7%	31.6%			North	14.8%	7.6%	North
	B2	F1	W4	2.1.4	26.4%	15.3%			North	1.8%	0.1%	North
	B2	F1	W5	2.1.5	44.2%	29.5%			North	10.5%	4.8%	North
	B2	F1	W6	2.1.6	47.9%	33.9%			North	14.5%	7.9%	North
	B2	F1	W7	2.1.7	47.7%	35.9%			North	14.5%	8.0%	North
	B3	F0	W1	3.0.1	33.7%	31.4%			North	3.8%	1.6%	North
	B3	F0	W2	3.0.2	44.3%	38.4%			North	15.2%	9.3%	North
	B3	F0	W3	3.0.3	45.7%	39.9%			North	16.5%	10.7%	North
	B3	F0	W4	3.0.4	27.4%	24.7%			North	5.9%	3.2%	North
	B3	F0	W5	3.0.5	15.7%	15.7%			North	0.0%	0.0%	North
	B3	F1	W1	3.1.1	48.6%	42.4%			North	16.7%	10.5%	North
	B3	F1	W2	3.1.2	47.8%	42.5%			North	16.7%	11.4%	North
	B3	F1	W3	3.1.3	48.1%	43.2%			North	16.8%	11.9%	North
	B3	F1	W4	3.1.4	36.3%	33.8%			North	6.4%	3.9%	North
	B3	F1	W5	3.1.5	48.7%	46.8%			North	16.4%	14.6%	North
	B3	F1	W6	3.1.6	47.4%	44.8%			North	15.1%	12.5%	North
	B3	F1	W7	3.1.7	17.6%	16.9%			North	0.7%	0.1%	North
	B4	F0	W1	4.0.1	28.7%	28.3%	0.99	Pass		4.2%	3.8%	0.91 Pass
	B4	F0	W2	4.0.2	37.4%	34.6%	0.92	Pass		12.9%	10.1%	0.78 Pass
	B4	F0	W3	4.0.3	37.4%	35.7%	0.96	Pass		12.9%	11.2%	0.87 Pass
	B4	F0	W4	4.0.4	28.3%	27.6%	0.98	Pass		8.8%	8.1%	0.93 Pass
	B4	F1	W1	4.1.1	37.4%	34.8%	0.93	Pass		12.9%	10.3%	0.80 Pass
	B4	F1	W2	4.1.2	37.4%	35.8%	0.96	Pass		12.9%	11.3%	0.88 Pass
	B4	F1	W3	4.1.3	37.4%	37.3%	1.00	Pass		12.9%	12.8%	0.99 Pass
	B4	F1	W4	4.1.4	31.2%	31.2%	1.00	Pass		8.8%	8.7%	1.00 Pass

Sunlight on windows to living room spaces check												
Annual - 25% and Winter - 5%												
Design	Group	Floor	Win	Ref	Check > 25% or ratio > 0.8				Check > 5% or ratio > 0.8			
					Existing	Proposed	Ratio	Result	Existing	Proposed	Ratio	Result
	B5	F0	W1	5.0.1	47.6%	47.6%	1.00	Pass		5.9%	5.9%	1.00 Pass
	B5	F0	W2	5.0.2	62.6%	57.5%	0.92	Pass		20.3%	15.5%	0.76 Pass
	B5	F0	W3	5.0.3	66.0%	58.4%	0.89	Pass		24.0%	16.5%	0.69 Pass
	B5	F0	W4	5.0.4	60.9%	53.8%	0.88	Pass		22.0%	14.9%	0.68 Pass
	B5	F0	W5	5.0.5	64.7%	57.5%	0.89	Pass		23.5%	16.4%	0.70 Pass
	B5	F0	W6	5.0.6	64.6%	58.0%	0.90	Pass		23.9%	17.3%	0.72 Pass
	B5	F0	W7	5.0.7	63.3%	57.0%	0.90	Pass		23.9%	17.6%	0.74 Pass
	B5	F0	W8	5.0.8	64.0%	58.6%	0.92	Pass		25.4%	20.0%	0.79 Pass
	B5	F0	W9	5.0.9	64.1%	57.1%	0.89	Pass		25.3%	18.3%	0.72 Pass
	B5	F0	W10	5.0.10	63.9%	54.7%	0.86	Pass		25.1%	16.0%	0.64 Pass
	B5	F0	W11	5.0.11	64.2%	60.1%	0.94	Pass		17.2%	13.1%	0.76 Pass
	B5	F0	W12	5.0.12	62.7%	59.9%	0.96	Pass		15.7%	12.9%	0.82 Pass
	B5	F1	W1	5.1.1	70.0%	64.2%	0.92	Pass		26.8%	21.1%	0.79 Pass
	B5	F1	W2	5.1.2	69.6%	63.2%	0.91	Pass		26.6%	20.3%	0.76 Pass
	B5	F1	W3	5.1.3	69.3%	62.6%	0.90	Pass		26.4%	19.7%	0.75 Pass
	B5	F1	W4	5.1.4	66.5%	60.7%	0.91	Pass		24.0%	18.2%	0.76 Pass
	B5	F1	W5	5.1.5	67.3%	62.3%	0.93	Pass		24.9%	19.9%	0.80 Pass
	B5	F1	W6	5.1.6	67.0%	61.6%	0.92	Pass		24.8%	19.4%	0.78 Pass
	B5	F1	W7	5.1.7	66.5%	61.9%	0.93	Pass		24.7%	20.0%	0.81 Pass
	B5	F1	W8	5.1.8	64.7%	61.9%	0.96	Pass		25.9%	23.1%	0.89 Pass
	B5	F1	W9	5.1.9	64.5%	60.9%	0.94	Pass		25.7%	22.1%	0.86 Pass
	B5	F1	W10	5.1.10	64.5%	59.5%	0.92	Pass		25.7%	20.7%	0.80 Pass
	B5	F1	W11	5.1.11	74.0%	67.5%	0.91	Pass		26.9%	20.4%	0.76 Pass
	B5	F1	W12	5.1.12	73.8%	67.9%	0.92	Pass		26.7%	20.8%	0.78 Pass
	B6	F0	W1	6.0.1	22.1%	22.0%			North	4.8%	4.7%	North
	B6	F0	W2	6.0.2	22.1%	21.5%			North	4.8%	4.3%	North
	B6	F0	W3	6.0.3	22.2%	20.9%			North	4.9%	3.7%	North
	B6	F0	W4	6.0.4	36.6%	36.5%	1.00	Pass		12.1%	12.1%	1.00 Pass
	B6	F0	W5	6.0.5	35.5%	35.5%	1.00	Pass		11.0%	11.0%	1.00 Pass
	B6	F0	W6	6.0.6	34.0%	33.8%	0.99	Pass		10.3%	10.3%	1.00 Pass
	B6	F0	W7	6.0.7	37.7%	37.7%	1.00	Pass		13.2%	13.2%	1.00 Pass
	B6	F0	W8	6.0.8	37.7%	37.7%	1.00	Pass		13.2%	13.2%	1.00 Pass
	B6	F1	W1	6.1.1	22.1%	22.1%			North	4.8%	4.8%	North
	B6	F1	W2	6.1.2	22.1%	22.1%			North	4.8%	4.8%	North
	B6	F1	W3	6.1.3	22.1%	22.1%			North	4.8%	4.8%	North
	B6	F1	W4	6.1.4	36.9%	36.9%	1.00	Pass		12.4%	12.4%	1.00 Pass
	B6	F1	W5	6.1.5	36.0%	36.0%	1.00	Pass		11.5%	11.5%	1.00 Pass
	B6	F1	W6	6.1.6	34.8%	34.8%	1.00	Pass		10.3%	10.3%	1.00 Pass
	B6	F1	W7	6.1.7	37.7%	37.7%	1.00	Pass		13.2%	13.2%	1.00 Pass
	B6	F1	W8	6.1.8	37.7%	37.7%	1.00	Pass		13.2%	13.2%	1.00 Pass
	B6	F2	W1	6.2.1	37.7%	37.7%	1.00	Pass		13.2%	13.2%	1.00 Pass
	B6	F2	W2	6.2.2	37.7%	37.7%	1.00	Pass		13.2%	13.2%	1.00 Pass
	B6	F2	W3	6.2.3	36.8%	36.8%	1.00	Pass		12.3%	12.3%	1.00 Pass
	B6	F2	W4	6.2.4	37.7%	37.7%	1.00	Pass		13.2%	13.2%	1.00 Pass
	B6	F2	W5	6.2.5	37.7%	37.7%	1.00	Pass		13.2%	13.2%	1.00 Pass

Note: When the proposed value exceeds the minimum requirement the ratio check is not required, and the result is coloured grey.
Where compliance is via the overall 4% compliance the word pass is capitalised.

Conclusion

When tested with the proposed development in place:

100% of tested windows comply with the annual APSH and

100% with the winter WPSH requirements for sunlight or overall requirement.

The average change ratio for sunlight is APSH:**0.91** and WPSH: **0.81**

The proposed development complies with the BRE Guidelines in relation to both annual and winter sunlight availability to neighbours as it applies to living rooms and conservatories.

Adjacent Properties – Sunlight on the Ground (Shadow)

Gardens and Open spaces

Tests for the availability of sunlight in amenity areas.

3.3.17 It is recommended that for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21 March. If as a result of new development an existing garden or amenity area does not meet the above, and the area that can receive two hours of sun on 21 March is less than 0.80 times its former value, then the loss of sunlight is likely to be noticeable. If a detailed calculation cannot be carried out, it is recommended that the centre of the area should receive at least two hours of sunlight on 21 March

3.3.3 The availability of sunlight should be checked for all open spaces where it will be required. This would normally include:

- *gardens, such as the main back garden of a house or communal gardens including courtyards and roof terraces*
- *parks and playing fields*
- *children's playgrounds*
- *outdoor swimming pools and paddling pools, and other areas of recreational water such as marinas and boating lakes*
- *sitting out areas such as those between non-domestic buildings and in public squares*
- *nature reserves (which may have special requirements for sunlight if rare plants are growing there).*

The amenities of the following properties were tested.

- Representative Rear Gardens

BRE Guidelines 2-hour Shadow Plots

The graphic below indicates the areas which receive 2 hours of sunlight on the 21st March in accordance with the BRE Guidelines.

BRE 2-hour Shadow plots - Key



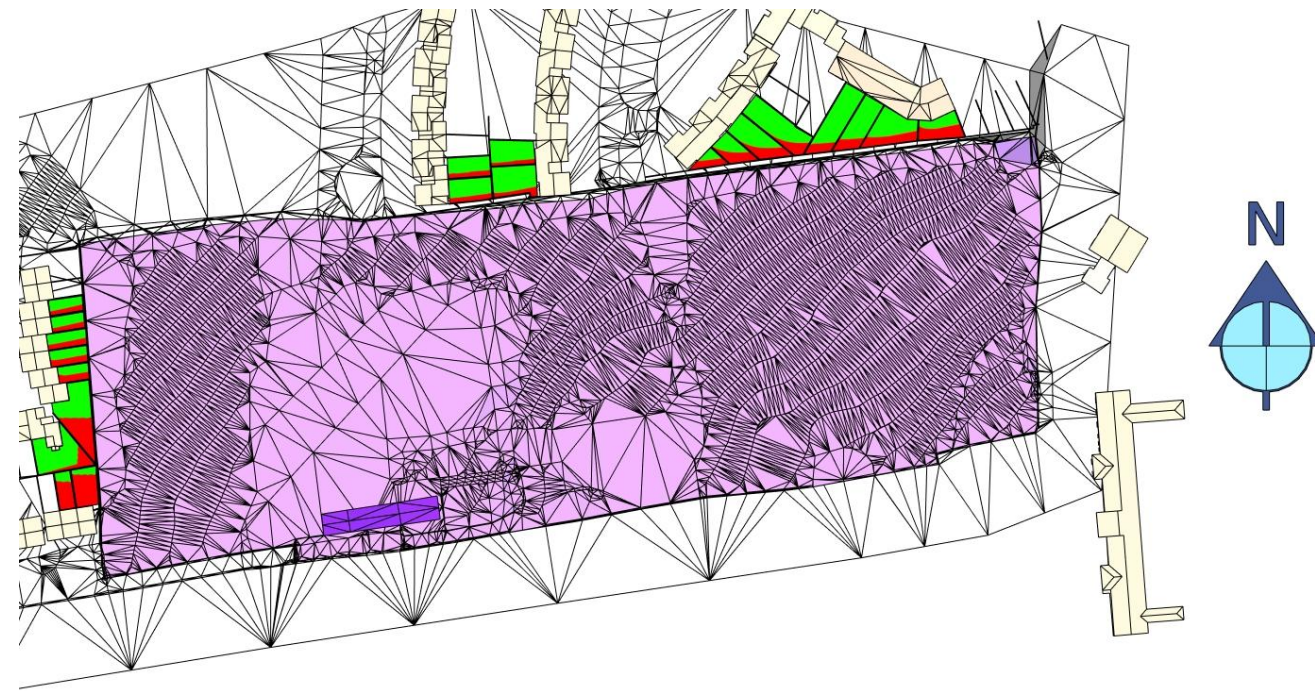
Areas which exceed the 2-hour requirement - PASS



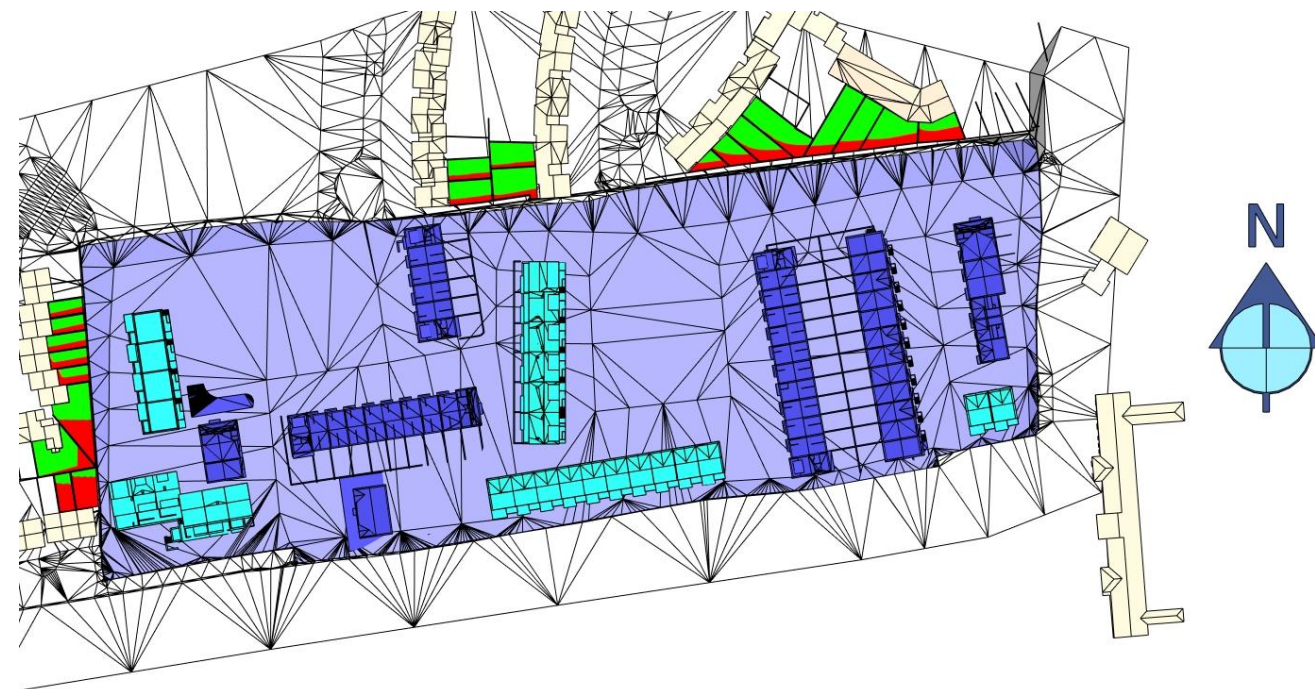
Areas which are just below the 2-hour requirement - Marginal



Areas are less than the 2-hour requirement - FAIL



Existing



Proposed

The results are tabulated below:

				Shadow to amenity spaces 2-hour Sunlight - 21st March			
Design				Check > 50% or ratio > 0.8			
Group	Area	Ref	Description	Existing	Proposed	Ratio	Result
B1	A1	1.A1	Amenity	18%	18%	1.00	Pass
B1	A2	1.A2	Amenity	27%	27%	1.00	Pass
B2	A1	2.A1	Amenity	81%	81%	1.00	Pass
B2	A2	2.A2	Amenity	58%	58%	1.00	Pass
B2	A3	2.A3	Amenity	55%	50%	0.91	Pass
B2	A4	2.A4	Amenity	59%	56%	0.95	Pass
B2	A5	2.A5	Amenity	63%	63%	1.00	Pass
B2	A6	2.A6	Amenity	67%	67%	1.00	Pass
B2	A7	2.A7	Amenity	66%	66%	1.00	Pass
B3	A1	3.A1	Amenity	77%	74%	0.96	Pass
B3	A2	3.A2	Amenity	75%	75%	1.00	Pass
B4	A1	4.A1	Amenity	83%	83%	1.00	Pass
B4	A2	4.A2	Amenity	84%	84%	1.00	Pass
B5	A1	5.A1	Amenity	37%	37%	1.00	Pass
B5	A2	5.A2	Amenity	52%	52%	1.00	Pass
B5	A3	5.A3	Amenity	68%	66%	0.97	Pass
B5	A4	5.A4	Amenity	82%	81%	0.99	Pass
B5	A5	5.A5	Amenity	85%	85%	1.00	Pass
B5	A6	5.A6	Amenity	77%	77%	1.00	Pass
B5	A7	5.A7	Amenity	64%	64%	1.00	Pass
B5	A8	5.A8	Amenity	42%	42%	1.00	Pass

Note: When the proposed value exceeds the minimum requirement the ratio check is not required, and the result is coloured grey.

Please note that passing the BRE Guidelines does not imply that shadows will not be cast over an amenity space at all. Shadows which are transient by nature may not impact on the percentage of the space which receives 2 hours of sunlight on the 21st of March.

Conclusion

100% of tested neighbouring amenity spaces pass the BRE 2-hours of sunlight on the 21st of March or 0.8 ratio requirement.

The average change ratio for the tested amenity spaces **0.99**

The proposed development complies with the requirements of the BRE Guidelines for impact on amenity Sunlight/Shadow.

Summary - Adjacent Properties

Neighbouring properties will generally not be affected by the proposed development and the impacts on Skylight, Sunlight and Shadow have been tested in accordance with the best practice guidelines.

Change/Impact to neighbouring buildings in the adjoining residential areas.

- **Skylight- VSC**
 - **98%** (100% including marginals) of the tested windows comply with the VSC requirements for habitable rooms.
 - The average change ratio for VSC is **0.93**
- **Sunlight APSH & WPSH**
 - **100%** of tested windows comply with the annual APSH and
 - **100%** with the winter WPSH requirements for sunlight or overall requirement.
 - The average change ratio for sunlight is APSH:**0.95** and WPSH: **0.81**
- **Sunlight on the Ground SOG (Shadow)**
 - **100%** of tested neighbouring amenity spaces pass the 2-hour test requirements for the 21st March.
 - The average change ratio for shadow/sunlight is **0.99**

The potential impact of the proposed development on neighbours complies with the requirements of "Site layout planning for daylight and sunlight a guide to good practice " (BR209 – 2022)

Development Performance

Development Performance - Target Illuminance E_T Metric

National Standards Authority of Ireland have adopted EN 17037 to directly become IS/EN 17037. There are no amendments made to this document and no national Annex localising the same was developed as can be found in BS/EN 17037. The standard document provides only a single target for rooms of new buildings and does not include specific usage targets for spaces for commercial, office and residential (living, bedroom, Kitchen).

The UK variant referenced is more suitable to use in temperate climates where the median external diffuse illuminance is low. We would concur with the UK committee that the recommendations for daylight provision in a space may not be achievable for some buildings, particularly dwellings, which are the subject of this report.

We note the reasoning put forward by the UK committee and concur with their conclusions that different room usage should be assigned different light requirements/targets. Design in Ireland quite often follows the practice and precedent set in the UK. With similar climates, light and receiving environments it is reasonable to adopt BS/EN 17037 / Annex NA which itself was derived from the now withdrawn BS 8206-2:2008 Lighting for buildings – Part 2: Code of practice for daylighting, Subclause 5.6. This provides alignment between the new and old standards and with the levels of light we are used to and deemed acceptable in new developments.

*Target illuminance (E_T) :
Illuminance from daylight that should be achieved for at least half of annual daylight hours across a specified fraction of the reference plane in a daylit space*

Reference in Irish Government Publications:

Clause 5.3.7 (b) of “Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities” also directly reference this annex the BRE guidelines (Emphasis Added):

In cases where a technical assessment of daylight performance is considered by the planning authority to be necessary regard should be had to quantitative performance approaches to daylight provision outlined in guides like A New European Standard for Daylighting in Buildings IS EN17037:2018, UK National Annex BS EN17037:2019 and the associated BRE Guide 209 2022 Edition (June 2022), or any relevant future standards or guidance specific to the Irish context.

The above Section is also directly referenced in Planning Design Standards for Apartments Guidelines for Planning Authorities, 2025.

NA.2 - Minimum daylight provision in UK dwellings

Even if a predominantly daylit appearance is not achievable for a room in a UK dwelling, the UK committee recommends that the target illuminance values given in Table NA.1 are exceeded over at least 50 % of the points on a reference plane 0.85 m above the floor, for at least half of the daylight hours.

Table NA.1 — Values of target illuminance for room types in UK dwellings

Room type	Target illuminance E_T (lx)
Bedroom	100
Living room	150
Kitchen	200

Derived from BS 8206-2:2008 Lighting for buildings – Part 2: Code of practice for daylighting

Where one room in a UK dwelling serves more than a single purpose, the UK committee recommends that the target illuminance is that for the room type with the highest value – for example, in a space that combines a living room and a kitchen the target illuminance is recommended to be 200 lx.

It is the opinion of the UK committee that the recommendation in Clause A.2 – that a target illuminance level should be achieved across the entire (i.e. 95 %) fraction of the reference plane within a space – need not be applied to rooms in dwellings.

This is echoed in The BRE Guidelines

C16 The UK National Annex gives illuminance recommendations of 100 lux in bedrooms, 150 lux in living rooms and 200 lux in kitchens. These are the median illuminances, to be exceeded over at least 50% of the assessment points in the room for at least half of the daylight hours. The recommended levels over 95% of a reference plane need not apply to dwellings in the UK.

C17 Where a room has a shared use, the highest target should apply. For example in a bed sitting room in student accommodation, the value for a living room should be used if students would often spend time in their rooms during the day. Local authorities could use discretion here. For example, the target for a living room could be used for a combined living/dining/kitchen area if the kitchens are not treated as habitable spaces, as it may avoid small separate kitchens in a design. The kitchen space would still need to be included in the assessment area ... in rooms with a particular requirement for daylight, such as bed sitting rooms in homes for the elderly, higher values ... may be taken.

Analysis Parameters

Analysis parameters are as per Annex B (and/or as revised by Annex NA). The following Parameters were used which are within the recommended ranges and reflect the materials/finishes specified in this application. The Median External Diffuse Illuminance used is relevant to the location of the proposal and from the relevant climate file. Method 2 SDA – climate-based Analysis was performed with the parameters below:

Surface	Description	Reflectance
External Plane	Earth	0.2
External Walls	Grey Render / Concrete	0.3
Floor	Light wood/Carpet - Defined	0.4
Internal Wall	Cream – Defined	0.7
Ceiling	White – Defined	0.8
Frames	Medium Grey	0.5
Transmittance		
Glazing clear	0.63	
Glazing Translucent	0.4	
Light loss - Maintenance	Rural/Suburban 4	Urban 8

Light distribution was computed by modelling the internal configuration of rooms and windows placed within the existing topography and the adjacent buildings and then running an analysis on the same. This analysis was based on a standard working plane for in this case residential of 0.850m.

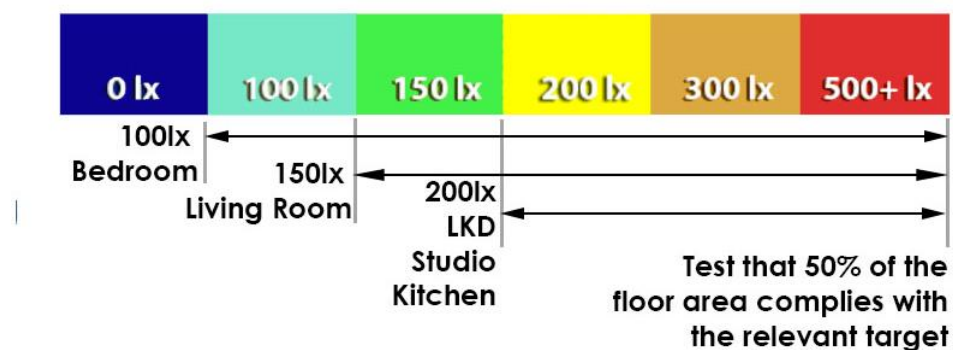
Reference plane or working plane

Horizontal, vertical, or inclined plane in which a visual task lies. Normally the working plane may be taken to be horizontal, 0.85 m above the floor in houses and factories, 0.7 m above the floor in offices.

Legend for Radiance Plots

In the radiances plots provided below we shall use the following demarcation of Lx results which is compatible with the target values from Annex NA

BS EN 17037 Lux levels



Assessment Areas

Where rooms have small annexed entrances or corridors they need not be included in the assessment grid area, (unless it is wide enough to be part of the usable space in a room, typically over 1.5m wide).

<i>Fig C2 - Fixed floor to ceiling units</i>	<i>Fig C3 - Corridors/entrances</i>
Figure C2: Where room layouts have small variations or alcoves along a wall's length, the inner or dominant section should be taken as a basis for the 0.3m gap to the assessment grid area. Fixed floor to ceiling cupboards can be excluded from the room area, but not kitchen units incorporating a worktop. Areas in bay windows may be included unless they are winter gardens separated from the room by a fixed partition.	Figure C3: In a room with a corridor, or annexed entrance, the corridor need not be included in the assessment grid area (unless it is wide enough to be part of the usable space in a room, typically over 1.5m wide). The room layout and surfaces, including the corridor would still need to be included in the calculation model.

Fig C2 also notes that: Fixed floor to ceiling cupboards can be excluded from the room area, but not kitchen units incorporating a worktop. And also the BRE Guidelines note the following in relation to the assessment grid.

The standard states that the assessment grid should exclude a band of 0.5m from the walls, unless otherwise specified. In dwellings it is recommended that a band of 0.3m should be excluded, to avoid excluding parts of the room that are used by the occupants. Professional judgement should be used in cases with irregular shaped spaces or rooms with corridor or annex areas.

Room referencing

- Rooms tested are referenced specifically for this report.
- This referencing is used to identify rooms rather than apartments.
- Numbering is generally sequential but may vary to keep similar room types on different floors consistent.
- Graphics are provided on a floor-by-floor basis to show the referencing for this project.
- Room numbers are coloured orange = Living/Kitchen/Dining room (also includes Studios) and Blue = Bedroom.
- Where Living and Kitchens are separated Green = Living room/Internal Amenity and yellow = Kitchens.

In the result tables the following referencing is used.

- A block reference separated by a “.”
- A Floor reference separated by a “.”
- A Room reference
- The room type is identified in the tables and used in selection of the relevant target Lux

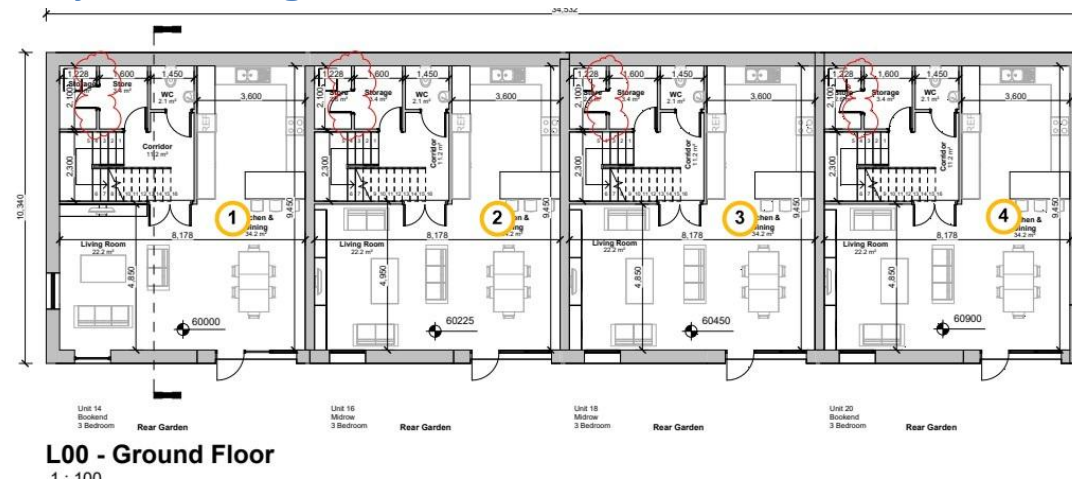
Typical Example of the naming, not specifically project related:

B1.03.02 – would reference Block B1 / floor 3 and room 2

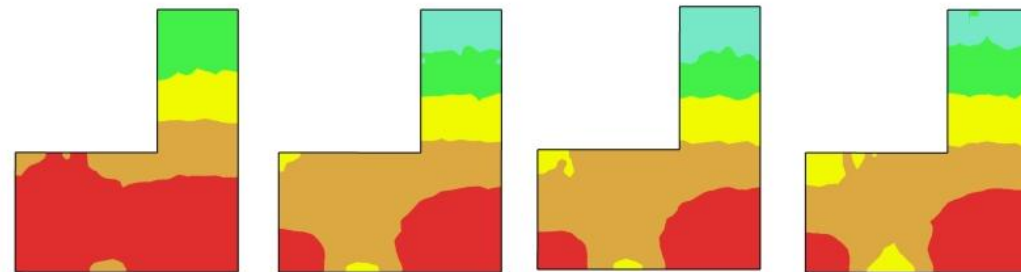
Floor 00 equates to GFL

Block Ba - Target Illuminance E_t

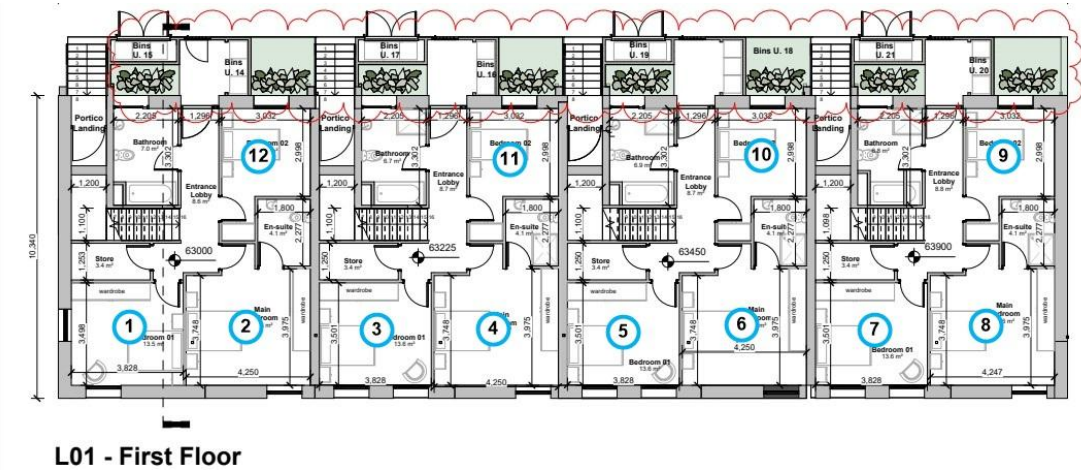
GFL Floor Layout - Naming Convention



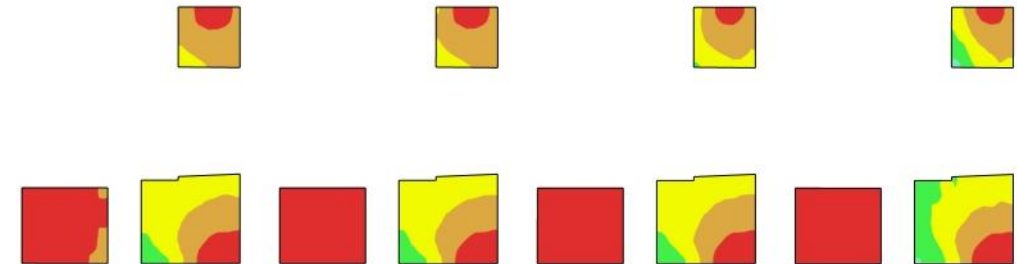
Radiance Plot



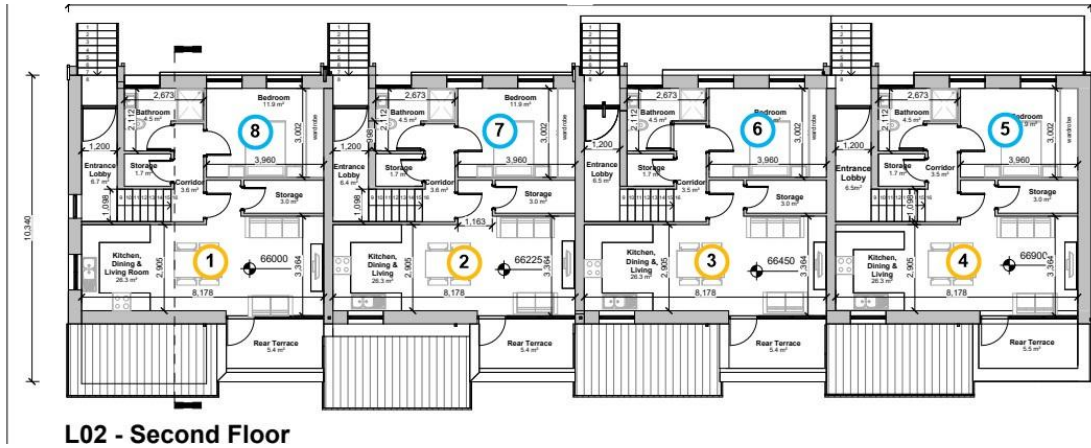
1st Floor Layout - Naming Convention



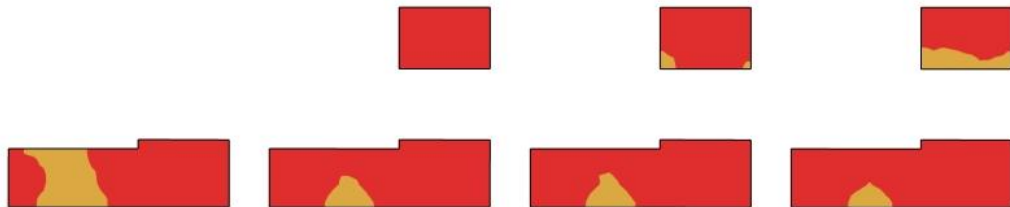
Radiance Plot



2nd Floor Layout – Naming Convention



Radiance Plot



NA.2 Minimum daylight provision

For all habitable rooms

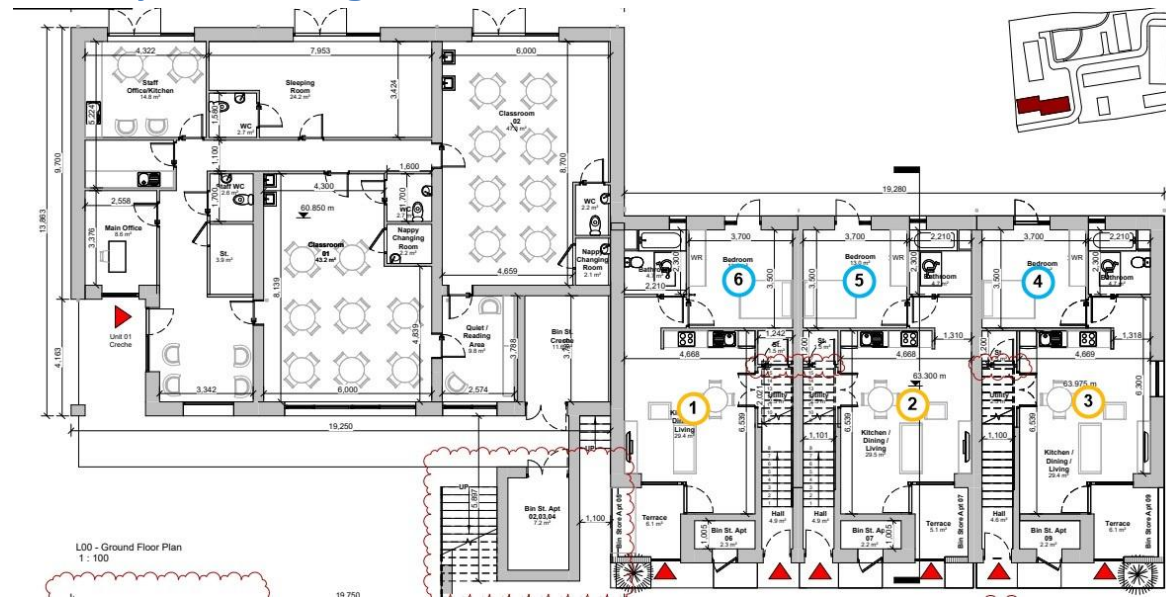
>50 % of the points on a reference plane to exceed

A				Type			
Bld	Floor	Room	Ref	Type	Percentage within Target Lux	BS/EN17037 Annex AN Target Lux	Check
Ba	F0	R1	Ba.00.01	LKD	84%	200	Pass
Ba	F0	R2	Ba.00.02	LKD	80%	200	Pass
Ba	F0	R3	Ba.00.03	LKD	79%	200	Pass
Ba	F0	R4	Ba.00.04	LKD	80%	200	Pass
Ba	F1	R1	Ba.01.01	Bedroom	100%	100	Pass
Ba	F1	R2	Ba.01.02	Bedroom	100%	100	Pass
Ba	F1	R3	Ba.01.03	Bedroom	100%	100	Pass
Ba	F1	R4	Ba.01.04	Bedroom	100%	100	Pass
Ba	F1	R5	Ba.01.05	Bedroom	100%	100	Pass
Ba	F1	R6	Ba.01.06	Bedroom	100%	100	Pass
Ba	F1	R7	Ba.01.07	Bedroom	100%	100	Pass
Ba	F1	R8	Ba.01.08	Bedroom	100%	100	Pass
Ba	F1	R9	Ba.01.09	Bedroom	100%	100	Pass
Ba	F1	R10	Ba.01.10	Bedroom	100%	100	Pass
Ba	F1	R11	Ba.01.11	Bedroom	100%	100	Pass
Ba	F1	R12	Ba.01.12	Bedroom	100%	100	Pass
Ba	F2	R1	Ba.02.01	LKD	100%	200	Pass
Ba	F2	R2	Ba.02.02	LKD	100%	200	Pass
Ba	F2	R3	Ba.02.03	LKD	100%	200	Pass
Ba	F2	R4	Ba.02.04	LKD	100%	200	Pass
Ba	F2	R5	Ba.02.05	Bedroom	100%	100	Pass
Ba	F2	R6	Ba.02.06	Bedroom	100%	100	Pass
Ba	F2	R7	Ba.02.07	Bedroom	100%	100	Pass

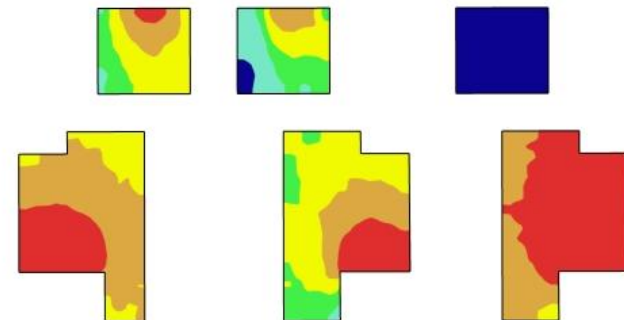
Block A – 100% compliant

Block Bb - Target Illuminance E_T

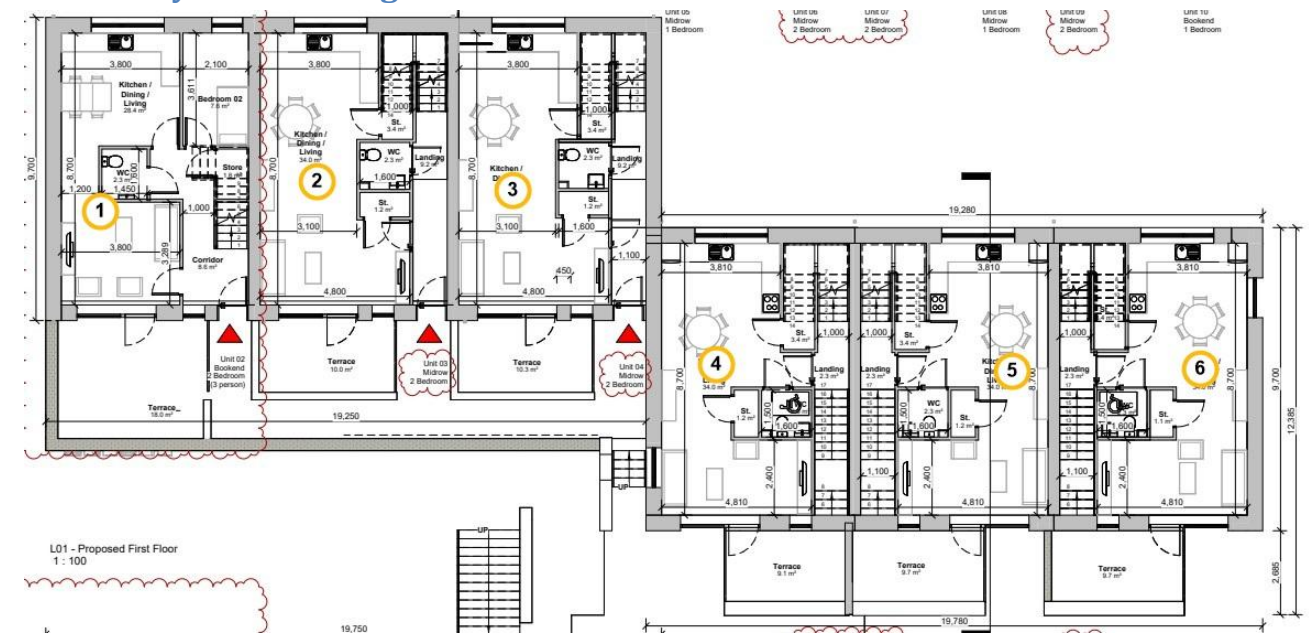
GFL Floor Layout - Naming Convention



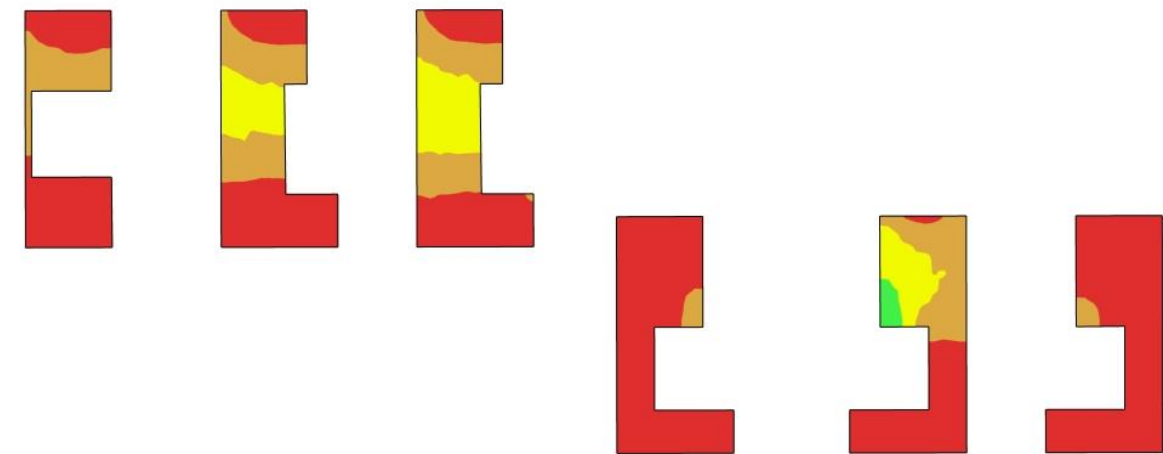
Radiance Plot



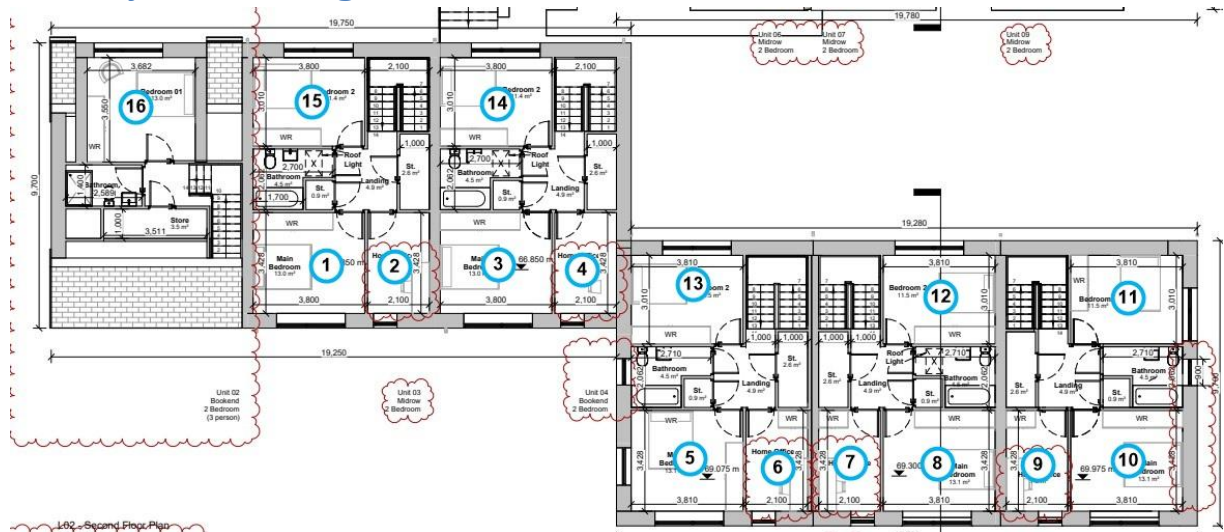
1st Floor Layout - Naming Convention



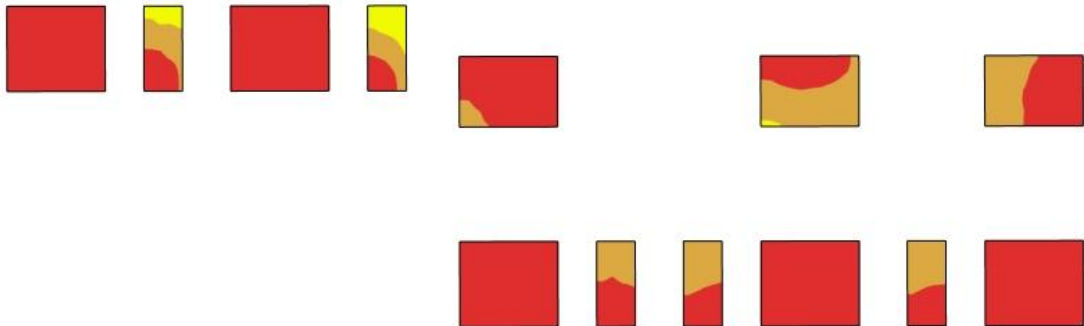
Radiance Plot



2nd Floor Layout – Naming Convention



Radiance Plot

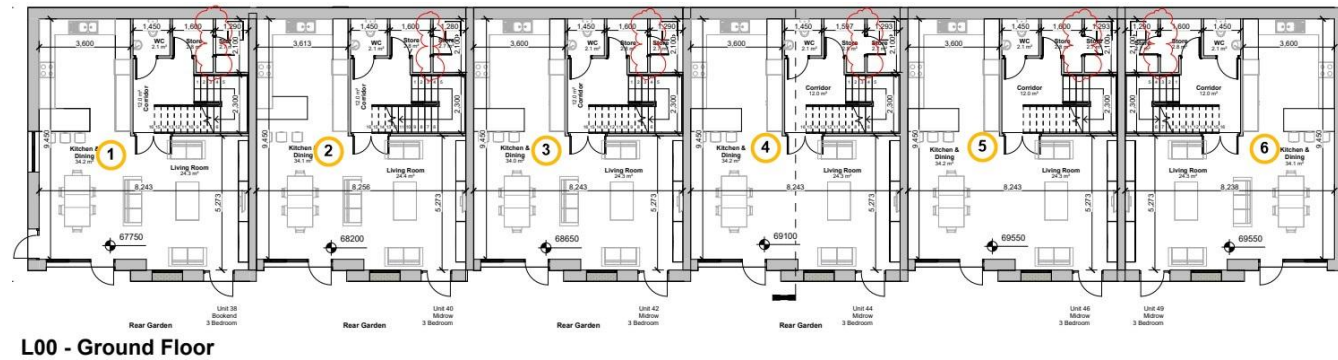


NA.2 Minimum daylight provision							
For all habitable rooms							
>50 % of the points on a reference plane to exceed							
B				Type			
Bld	Floor	Room	Ref	Type	Percentage within Target Lux	BS/EN17037 Annex AN Target Lux	Check
Bb	F0	R1	Bb.00.01	LKD	100%	200	Pass
Bb	F0	R2	Bb.00.02	LKD	79%	200	Pass
Bb	F0	R3	Bb.00.03	LKD	100%	200	Pass
Bb	F0	R4	Bb.00.04	Bedroom	3%	100	Fail
Bb	F0	R5	Bb.00.05	Bedroom	88%	100	Pass
Bb	F0	R6	Bb.00.06	Bedroom	100%	100	Pass
Bb	F1	R1	Bb.01.01	LKD	100%	200	Pass
Bb	F1	R2	Bb.01.02	LKD	100%	200	Pass
Bb	F1	R3	Bb.01.03	LKD	100%	200	Pass
Bb	F1	R4	Bb.01.04	LKD	100%	200	Pass
Bb	F1	R5	Bb.01.05	LKD	93%	200	Pass
Bb	F1	R6	Bb.01.06	LKD	100%	200	Pass
Bb	F2	R1	Bb.02.01	Bedroom	100%	100	Pass
Bb	F2	R2	Bb.02.02	Bedroom	100%	100	Pass
Bb	F2	R3	Bb.02.03	Bedroom	100%	100	Pass
Bb	F2	R4	Bb.02.04	Bedroom	100%	100	Pass
Bb	F2	R5	Bb.02.05	Bedroom	100%	100	Pass
Bb	F2	R6	Bb.02.06	Bedroom	100%	100	Pass
Bb	F2	R7	Bb.02.07	Bedroom	100%	100	Pass
Bb	F2	R8	Bb.02.08	Bedroom	100%	100	Pass
Bb	F2	R9	Bb.02.09	Bedroom	100%	100	Pass
Bb	F2	R10	Bb.02.10	Bedroom	100%	100	Pass
Bb	F2	R11	Bb.02.11	Bedroom	100%	100	Pass
Bb	F2	R12	Bb.02.12	Bedroom	100%	100	Pass
Bb	F2	R13	Bb.02.13	Bedroom	100%	100	Pass
Bb	F2	R14	Bb.02.14	Bedroom	100%	100	Pass
Bb	F2	R15	Bb.02.15	Bedroom	100%	100	Pass
Bb	F2	R16	Bb.02.16	Bedroom	100%	100	Pass

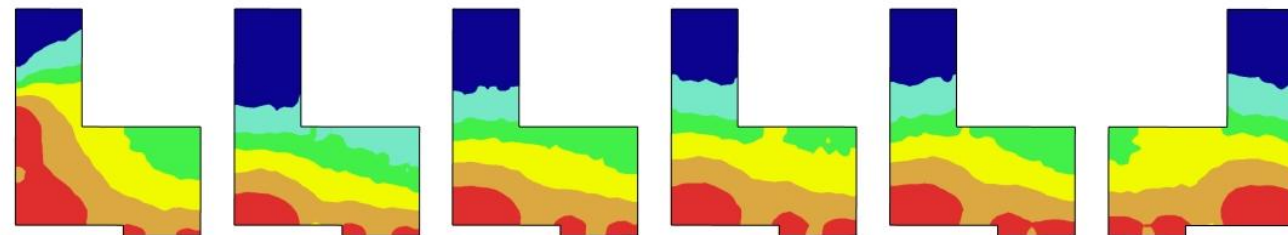
Block B – 96% compliant

Block Bf - Target Illuminance E_T

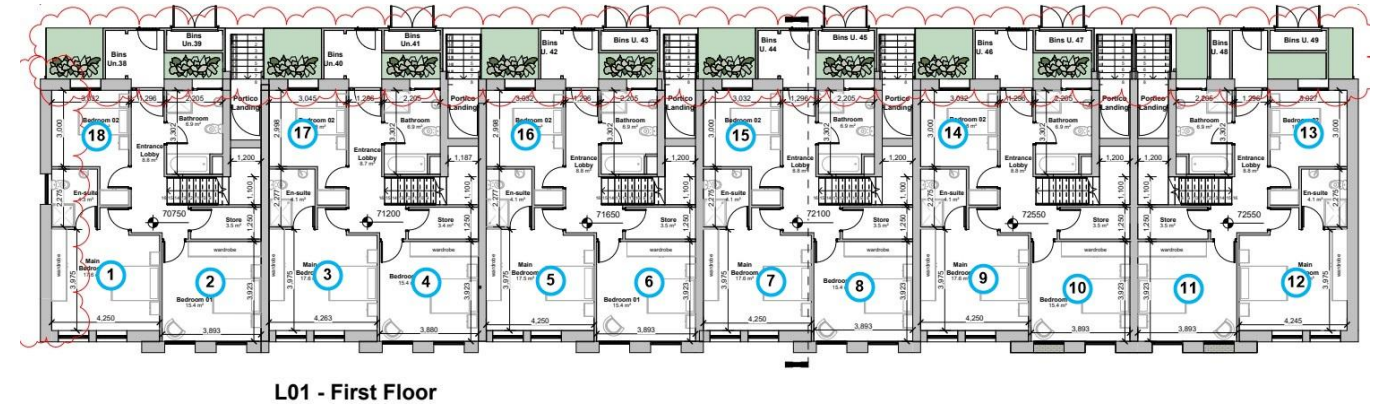
GFL Floor Layout - Naming Convention



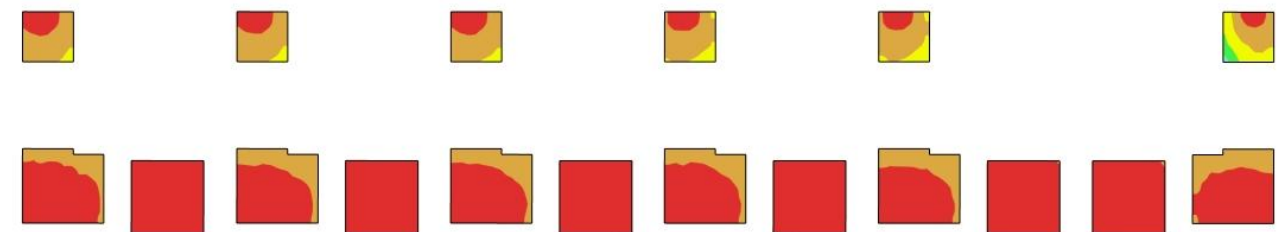
Radiance Plot



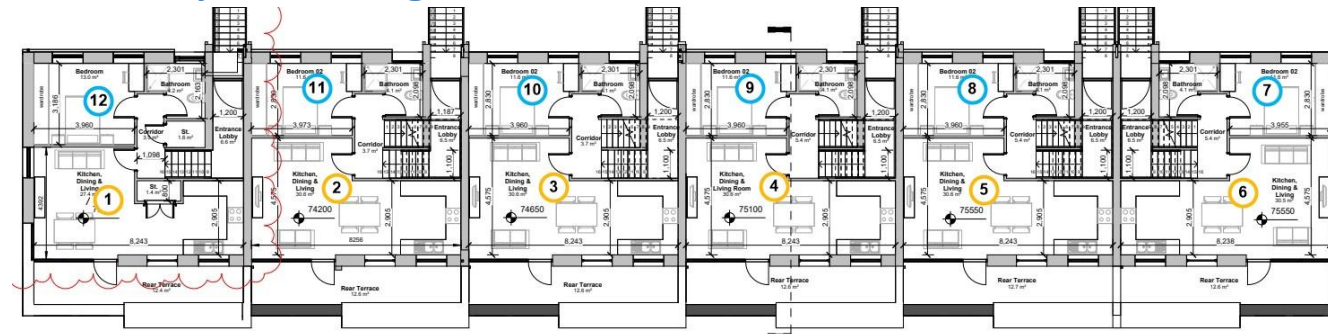
1st Floor Layout - Naming Convention



Radiance Plot

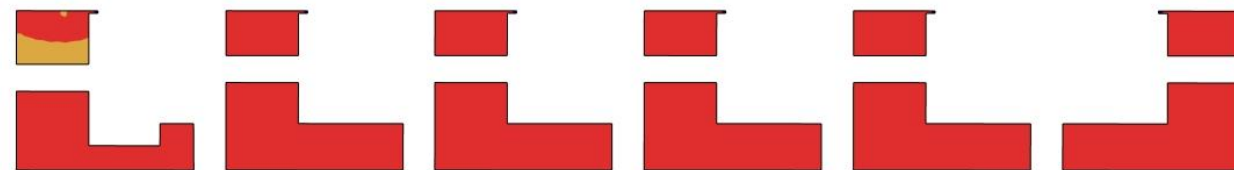


2nd Floor Layout – Naming Convention

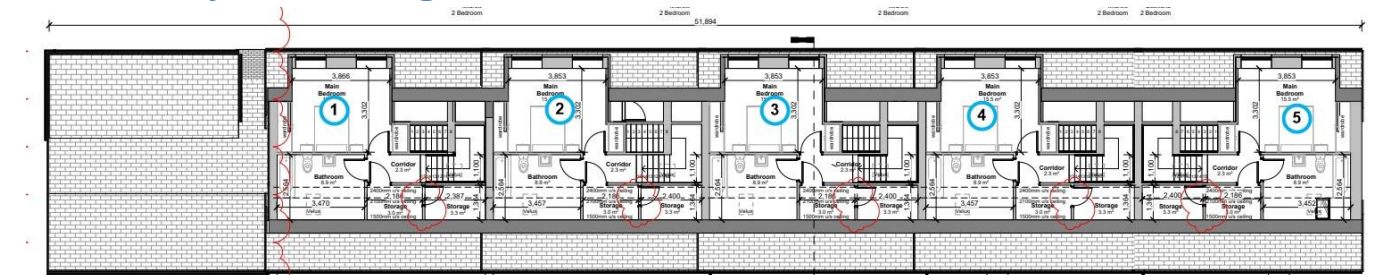


L02 - Second Floor

Radiance Plot



3rd Floor Layout – Naming Convention



L03 - Third Floor

Radiance Plot

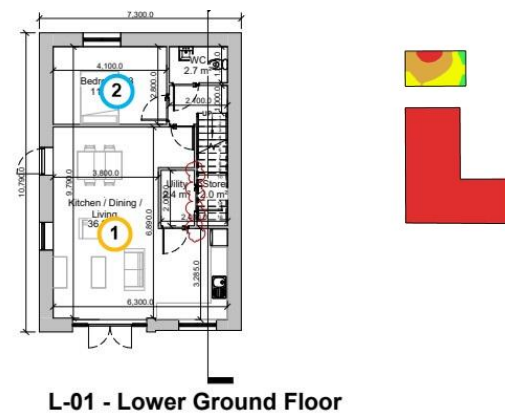


NA.2 Minimum daylight provision							
For all habitable rooms							
>50 % of the points on a reference plane to exceed							
F				Type			
Bld	Floor	Room	Ref	Type	Percentage within Target Lux	BS/EN17037 Annex AN Target Lux	Check
Bf	F0	R1	Bf.00.01	LKD	68%	200	Pass
Bf	F0	R2	Bf.00.02	LKD	42%	200	Marginal
Bf	F0	R3	Bf.00.03	LKD	52%	200	Pass
Bf	F0	R4	Bf.00.04	LKD	61%	200	Pass
Bf	F0	R5	Bf.00.05	LKD	56%	200	Pass
Bf	F0	R6	Bf.00.06	LKD	63%	200	Pass
Bf	F1	R1	Bf.01.01	Bedroom	100%	100	Pass
Bf	F1	R2	Bf.01.02	Bedroom	100%	100	Pass
Bf	F1	R3	Bf.01.03	Bedroom	100%	100	Pass
Bf	F1	R4	Bf.01.04	Bedroom	100%	100	Pass
Bf	F1	R5	Bf.01.05	Bedroom	100%	100	Pass
Bf	F1	R6	Bf.01.06	Bedroom	100%	100	Pass
Bf	F1	R7	Bf.01.07	Bedroom	100%	100	Pass
Bf	F1	R8	Bf.01.08	Bedroom	100%	100	Pass
Bf	F1	R9	Bf.01.09	Bedroom	100%	100	Pass
Bf	F1	R10	Bf.01.10	Bedroom	100%	100	Pass
Bf	F1	R11	Bf.01.11	Bedroom	100%	100	Pass
Bf	F1	R12	Bf.01.12	Bedroom	100%	100	Pass
Bf	F1	R13	Bf.01.13	Bedroom	100%	100	Pass
Bf	F1	R14	Bf.01.14	Bedroom	100%	100	Pass
Bf	F1	R15	Bf.01.15	Bedroom	100%	100	Pass
Bf	F1	R16	Bf.01.16	Bedroom	100%	100	Pass
Bf	F1	R17	Bf.01.17	Bedroom	100%	100	Pass
Bf	F1	R18	Bf.01.18	Bedroom	100%	100	Pass
Bf	F2	R1	Bf.02.01	LKD	100%	200	Pass
Bf	F2	R2	Bf.02.02	LKD	100%	200	Pass
Bf	F2	R3	Bf.02.03	LKD	100%	200	Pass
Bf	F2	R4	Bf.02.04	LKD	100%	200	Pass
Bf	F2	R5	Bf.02.05	LKD	100%	200	Pass
Bf	F2	R6	Bf.02.06	LKD	100%	200	Pass
Bf	F2	R7	Bf.02.07	Bedroom	100%	100	Pass
Bf	F2	R8	Bf.02.08	Bedroom	100%	100	Pass
Bf	F2	R9	Bf.02.09	Bedroom	100%	100	Pass

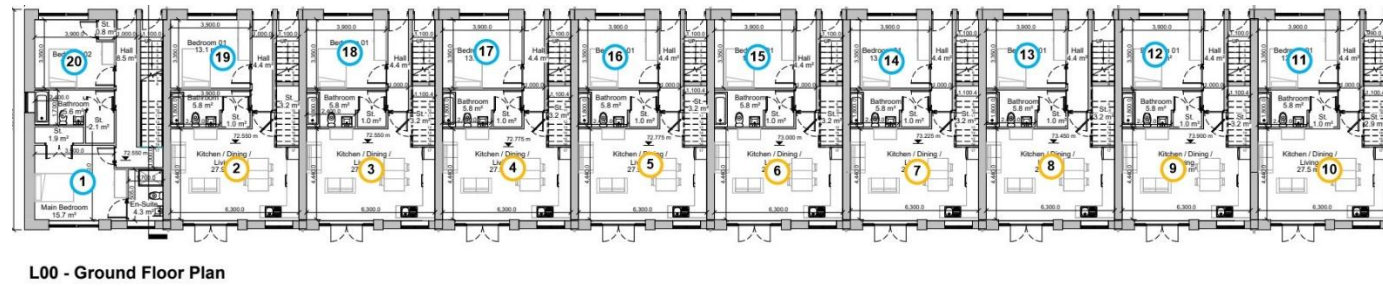
NA.2 Minimum daylight provision							
For all habitable rooms							
>50 % of the points on a reference plane to exceed							
F				Type			
Bld	Floor	Room	Ref	Type	Percentage within Target Lux	BS/EN17037 Annex AN Target Lux	Check
Bf	F2	R10	Bf.02.10	Bedroom	100%	100	Pass
Bf	F2	R11	Bf.02.11	Bedroom	100%	100	Pass
Bf	F2	R12	Bf.02.12	Bedroom	100%	100	Pass
Bf	F3	R1	Bf.03.01	Bedroom	100%	100	Pass
Bf	F3	R2	Bf.03.02	Bedroom	100%	100	Pass
Bf	F3	R3	Bf.03.03	Bedroom	100%	100	Pass
Bf	F3	R4	Bf.03.04	Bedroom	100%	100	Pass
Bf	F3	R5	Bf.03.05	Bedroom	100%	100	Pass

Block F – 98% compliant (including marginals 100%)

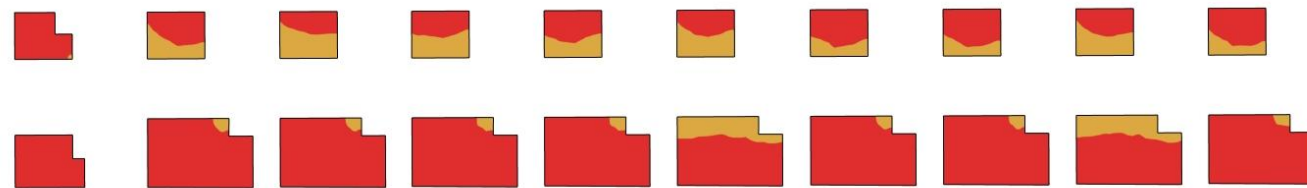
Block Bg - Target Illuminance E_T



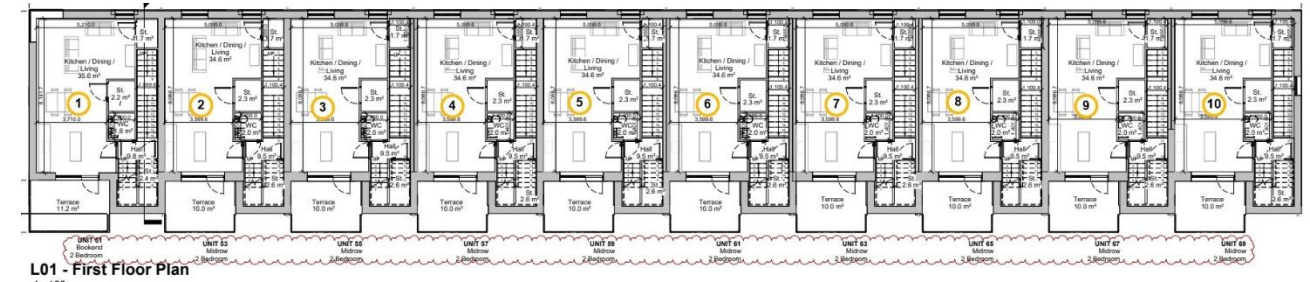
GFL Floor Layout - Naming Convention



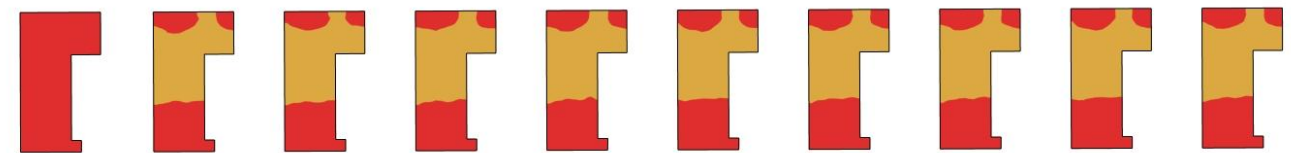
Radiance Plot



1st Floor Layout - Naming Convention



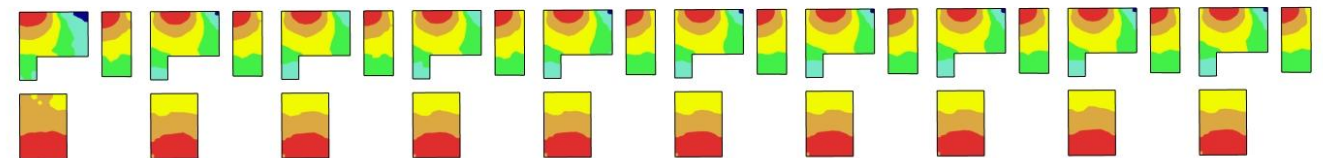
Radiance Plot



2nd Floor Layout - Naming Convention



Radiance Plot



NA.2 Minimum daylight provision

For all habitable rooms

>50 % of the points on a reference plane to exceed

G				Type			
Bld	Floor	Room	Ref	Type	Percentage within Target Lux	BS/EN17037 Annex AN Target Lux	Check
Bg	F-1	R1	Bg.-01.01	LKD	100%	200	Pass
Bg	F-1	R2	Bg.-01.02	Bedroom	100%	100	Pass
Bg	F0	R1	Bg.00.01	Bedroom	100%	100	Pass
Bg	F0	R2	Bg.00.02	LKD	100%	200	Pass
Bg	F0	R3	Bg.00.03	LKD	100%	200	Pass
Bg	F0	R4	Bg.00.04	LKD	100%	200	Pass
Bg	F0	R5	Bg.00.05	LKD	100%	200	Pass
Bg	F0	R6	Bg.00.06	LKD	100%	200	Pass
Bg	F0	R7	Bg.00.07	LKD	100%	200	Pass
Bg	F0	R8	Bg.00.08	LKD	100%	200	Pass
Bg	F0	R9	Bg.00.09	LKD	100%	200	Pass
Bg	F0	R10	Bg.00.10	LKD	100%	200	Pass
Bg	F0	R11	Bg.00.11	Bedroom	100%	100	Pass
Bg	F0	R12	Bg.00.12	Bedroom	100%	100	Pass
Bg	F0	R13	Bg.00.13	Bedroom	100%	100	Pass
Bg	F0	R14	Bg.00.14	Bedroom	100%	100	Pass
Bg	F0	R15	Bg.00.15	Bedroom	100%	100	Pass
Bg	F0	R16	Bg.00.16	Bedroom	100%	100	Pass
Bg	F0	R17	Bg.00.17	Bedroom	100%	100	Pass
Bg	F0	R18	Bg.00.18	Bedroom	100%	100	Pass
Bg	F0	R19	Bg.00.19	Bedroom	100%	100	Pass
Bg	F0	R20	Bg.00.20	Bedroom	100%	100	Pass
Bg	F1	R1	Bg.01.01	LKD	100%	200	Pass
Bg	F1	R2	Bg.01.02	LKD	100%	200	Pass
Bg	F1	R3	Bg.01.03	LKD	100%	200	Pass
Bg	F1	R4	Bg.01.04	LKD	100%	200	Pass
Bg	F1	R5	Bg.01.05	LKD	100%	200	Pass
Bg	F1	R6	Bg.01.06	LKD	100%	200	Pass
Bg	F1	R7	Bg.01.07	LKD	100%	200	Pass
Bg	F1	R8	Bg.01.08	LKD	100%	200	Pass
Bg	F1	R9	Bg.01.09	LKD	100%	200	Pass
Bg	F1	R10	Bg.01.10	LKD	100%	200	Pass
Bg	F2	R1	Bg.02.01	Bedroom	100%	100	Pass

NA.2 Minimum daylight provision

For all habitable rooms

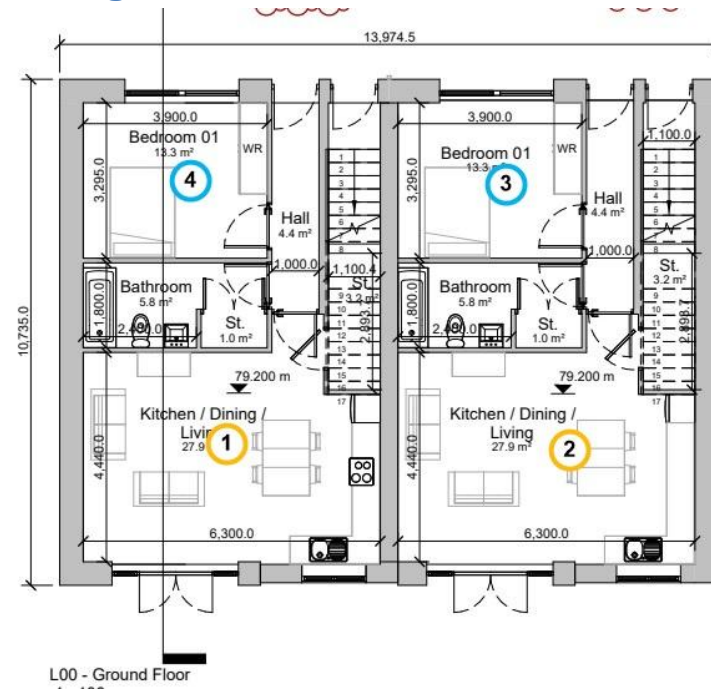
>50 % of the points on a reference plane to exceed

G				Type			
Bld	Floor	Room	Ref	Type	Percentage within Target Lux	BS/EN17037 Annex AN Target Lux	Check
Bg	F2	R2	Bg.02.02	Bedroom	100%	100	Pass
Bg	F2	R3	Bg.02.03	Bedroom	100%	100	Pass
Bg	F2	R4	Bg.02.04	Bedroom	100%	100	Pass
Bg	F2	R5	Bg.02.05	Bedroom	100%	100	Pass
Bg	F2	R6	Bg.02.06	Bedroom	100%	100	Pass
Bg	F2	R7	Bg.02.07	Bedroom	100%	100	Pass
Bg	F2	R8	Bg.02.08	Bedroom	100%	100	Pass
Bg	F2	R9	Bg.02.09	Bedroom	100%	100	Pass
Bg	F2	R10	Bg.02.10	Bedroom	100%	100	Pass
Bg	F2	R11	Bg.02.11	Bedroom	100%	100	Pass
Bg	F2	R12	Bg.02.12	Bedroom	99%	100	Pass
Bg	F2	R13	Bg.02.13	Bedroom	100%	100	Pass
Bg	F2	R14	Bg.02.14	Bedroom	99%	100	Pass
Bg	F2	R15	Bg.02.15	Bedroom	100%	100	Pass
Bg	F2	R16	Bg.02.16	Bedroom	99%	100	Pass
Bg	F2	R17	Bg.02.17	Bedroom	100%	100	Pass
Bg	F2	R18	Bg.02.18	Bedroom	99%	100	Pass
Bg	F2	R19	Bg.02.19	Bedroom	100%	100	Pass
Bg	F2	R20	Bg.02.20	Bedroom	99%	100	Pass
Bg	F2	R21	Bg.02.21	Bedroom	100%	100	Pass
Bg	F2	R22	Bg.02.22	Bedroom	99%	100	Pass
Bg	F2	R23	Bg.02.23	Bedroom	100%	100	Pass
Bg	F2	R24	Bg.02.24	Bedroom	100%	100	Pass
Bg	F2	R25	Bg.02.25	Bedroom	100%	100	Pass
Bg	F2	R26	Bg.02.26	Bedroom	100%	100	Pass
Bg	F2	R27	Bg.02.27	Bedroom	100%	100	Pass
Bg	F2	R28	Bg.02.28	Bedroom	99%	100	Pass
Bg	F2	R29	Bg.02.29	Bedroom	100%	100	Pass
Bg	F2	R30	Bg.02.30	Bedroom	97%	100	Pass

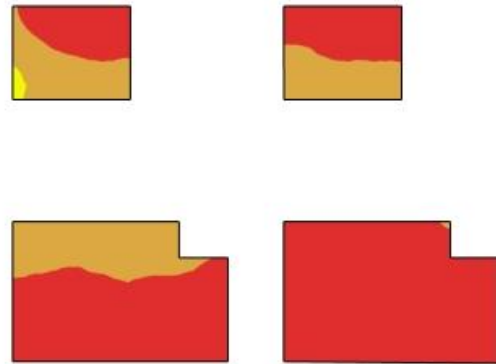
Block G – 100% compliant

Block Bk - Target Illuminance E_T

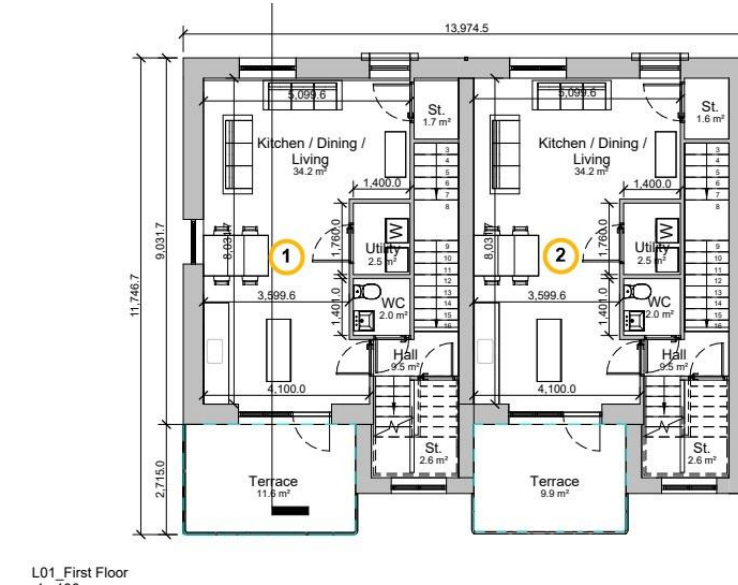
GFL Floor Layout – Naming Convention



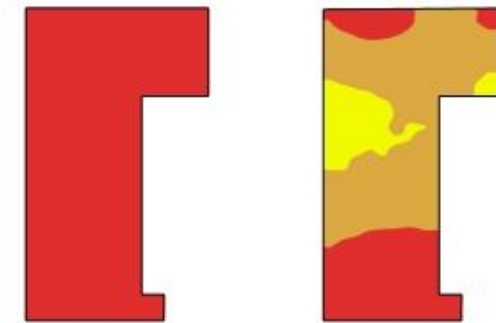
Radiance Plot



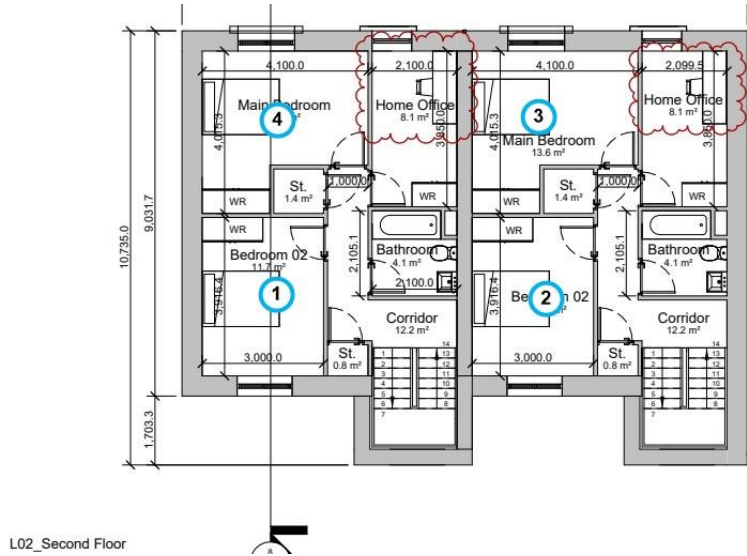
1st Floor Layout – Naming Convention



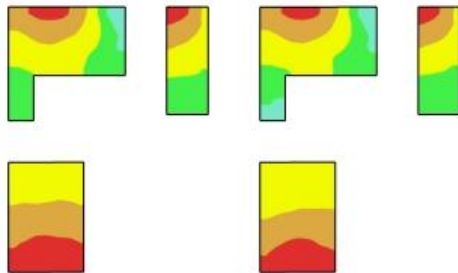
Radiance Plot



2nd Floor Layout – Naming Convention



Radiance Plot



NA.2 Minimum daylight provision							
For all habitable rooms							
>50 % of the points on a reference plane to exceed							
K				Type			
Bld	Floor	Room	Ref	Type	Percentage within Target Lux	BS/EN17037 Annex AN Target Lux	Check
Bk	F0	R1	Bk.00.01	LKD	100%	200	Pass
Bk	F0	R2	Bk.00.02	LKD	100%	200	Pass
Bk	F0	R3	Bk.00.03	Bedroom	100%	100	Pass
Bk	F0	R4	Bk.00.04	Bedroom	100%	100	Pass
Bk	F1	R1	Bk.01.01	LKD	100%	200	Pass
Bk	F1	R2	Bk.01.02	LKD	100%	200	Pass
Bk	F2	R1	Bk.02.01	Bedroom	100%	100	Pass
Bk	F2	R2	Bk.02.02	Bedroom	100%	100	Pass
Bk	F2	R3	Bk.02.03	Bedroom	100%	100	Pass
Bk	F2	R4	Bk.02.04	Bedroom	99%	100	Pass
Bk	F2	R5	Bk.02.05	Bedroom	100%	100	Pass
Bk	F2	R6	Bk.02.06	Bedroom	99%	100	Pass

Block k – 100% compliant

Summary

The majority of rooms comply with requirements.

	Annex NA	
	E _T % Pass	
	BRE v3	Incl Marginal
	Pass %	Pass %
A	100%	100%
B	96%	96%
F	98%	100%
G	100%	100%
K	100%	100%
Total	99%	99%

99% of rooms comply with the BS/EN 17037 Annex NA room targets for 50% of the floor area tested.
(99% if we include marginal results)

The average compliant areas achieving the relevant target Lx for all bedrooms is 99% and all Living/Kitchen spaces 93% both are well in excess of the required 50%

Development Performance - Sunlight to rooms (living spaces)

Clause 3.1.2 of the guidance document BRE Guidelines indicates that special checks should be applied to living rooms to ensure that these core rooms receive the necessary sunlight.

In Housing, the main requirement for sunlight is in living rooms. where it is valued at any time of day but especially in the afternoon.

3.1.15 In general a dwelling, or non-domestic building that has a particular requirement for sunlight, will appear reasonably sunlit provided:

- *at least one main window wall faces within 90° of due south and*
- *a habitable room, preferably a main living room, can receive a total of at least 1.5 hours of sunlight on 21 March. This is assessed at the inside centre of the window(s); sunlight received by different windows can be added provided they occur at different times and sunlight hours are not double counted.*

3.1.16 Where groups of dwellings are planned, site layout design should aim to maximise the number of dwellings with a main living room that meets the above recommendations

The Guidelines accept the difficulty imposed by this requirement and that it will not always be possible to achieve this requirement for ALL living spaces. While it is preferred to have sunlight the Guidelines are pragmatic in this regard. The BRE Guidelines note that:

3.1.8..... For larger developments of flats, especially those with site constraints, it may not be possible to have every living room facing within 90° of south.....

A view or similar may be considered a compensating factor to North facing windows

3.1.7 compensating factor such as an appealing view to the north.

It then follows with an example of a careful layout for a relatively small block where 4/5 flats have south facing living rooms, and one North which would receive no sunlight at all. From this layout and results we can conclude or infer that an 80% pass rate is considered careful layout design.

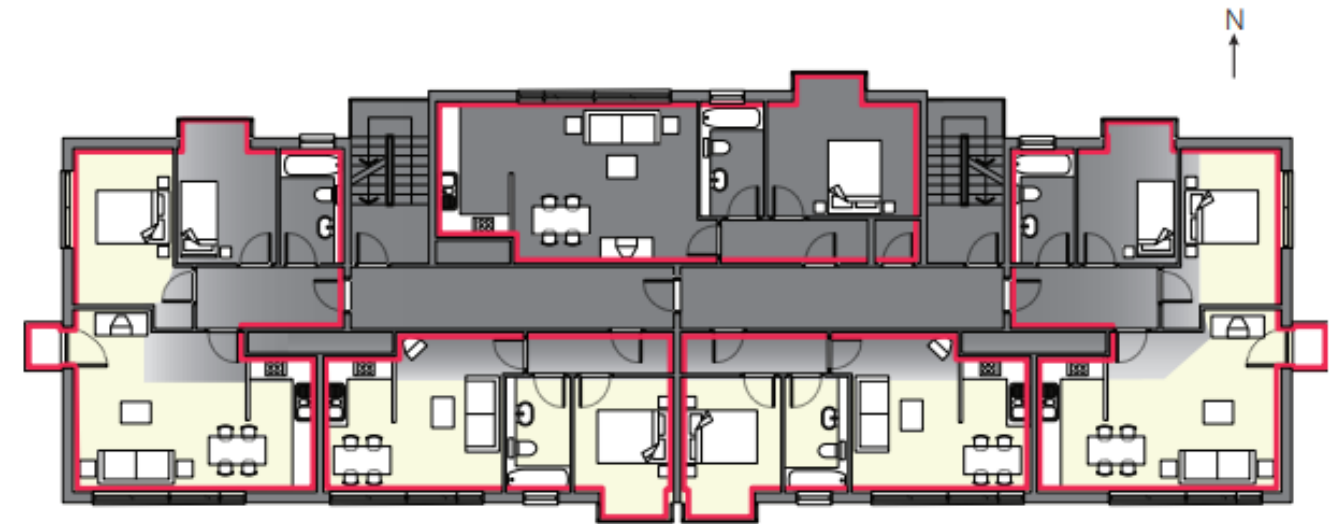


Figure 26: Careful layout design means that four out of the five flats shown have a south-facing living room

Quality of light minimum/medium/high is defined in clause 3.1.10

3.1.10 ... For interiors, access to sunlight can be quantified. BS EN 17037 recommends that a space should receive a minimum of 1.5 hours of direct sunlight on a selected date between 1 February and 21 March with cloudless conditions. It is suggested that 21 March (equinox) be used. The medium level of recommendation is three hours and the high level of recommendation four hours. For dwellings, at least one habitable room, preferably a main living room, should meet at least the minimum criterion.

When assessing the performance of the proposal we will concentrate on the Living spaces. Where multiple windows light a room the results for the one which contributes most is provided. In certain circumstances where sunlight can be received at different times of the day from windows the times which do not overlap are included.

Sunlight to living rooms								
Receives 1.5 hours of sunlight on 21st March								
Block A								
Block	Floor	Room	Ref	Hrs of Sun	Pass	Quality		
Ba	F0	R1	Ba.00.01	3.9	Pass		Medium	
Ba	F0	R2	Ba.00.02	3.9	Pass		Medium	
Ba	F0	R3	Ba.00.03	3.9	Pass		Medium	
Ba	F0	R4	Ba.00.04	3.9	Pass		Medium	
Ba	F2	R1	Ba.02.01	6.9	Pass			High
Ba	F2	R2	Ba.02.02	6.9	Pass			High
Ba	F2	R3	Ba.02.03	6.9	Pass			High
Ba	F2	R4	Ba.02.04	7.0	Pass			High

Block A – 100% compliant

Sunlight to living rooms								
Receives 1.5 hours of sunlight on 21st March								
Block B								
Block	Floor	Room	Ref	Hrs of Sun	Pass	Quality		
Bb	F0	R1	Bb.00.01	5.5	Pass			High
Bb	F0	R2	Bb.00.02	1.9	Pass	Min		
Bb	F0	R3	Bb.00.03	4.9	Pass			High
Bb	F1	R1	Bb.01.01	8.2	Pass			High
Bb	F1	R2	Bb.01.02	7.6	Pass			High
Bb	F1	R3	Bb.01.03	5.9	Pass			High
Bb	F1	R4	Bb.01.04	9.4	Pass			High
Bb	F1	R5	Bb.01.05	8.6	Pass			High
Bb	F1	R6	Bb.01.06	8.6	Pass			High

Block B – 100% compliant

Sunlight to living rooms								
Receives 1.5 hours of sunlight on 21st March								
Block F								
Block	Floor	Room	Ref	Hrs of Sun	Pass	Quality		
Bf	F0	R1	Bf.00.01	1.1	Fail			
Bf	F0	R2	Bf.00.02	1.6	Pass	Min		
Bf	F0	R3	Bf.00.03	1.7	Pass	Min		
Bf	F0	R4	Bf.00.04	1.6	Pass	Min		
Bf	F0	R5	Bf.00.05	1.1	Fail			
Bf	F0	R6	Bf.00.06	1.7	Pass	Min		
Bf	F2	R1	Bf.02.01	1.7	Pass	Min		
Bf	F2	R2	Bf.02.02	2.1	Pass	Min		
Bf	F2	R3	Bf.02.03	2.1	Pass	Min		
Bf	F2	R4	Bf.02.04	2.2	Pass	Min		
Bf	F2	R5	Bf.02.05	2.1	Pass	Min		
Bf	F2	R6	Bf.02.06	2.1	Pass	Min		

Block F – 83% compliant and all receive some sunlight

Sunlight to living rooms								
Receives 1.5 hours of sunlight on 21st March								
Block G								
Block	Floor	Room	Ref	Hrs of Sun	Pass	Quality		
Bg	F-1	R1	Bg.-01.01	9.0	Pass			High
Bg	F0	R2	Bg.00.02	8.1	Pass			High
Bg	F0	R3	Bg.00.03	8.1	Pass			High
Bg	F0	R4	Bg.00.04	8.1	Pass			High
Bg	F0	R5	Bg.00.05	8.1	Pass			High
Bg	F0	R6	Bg.00.06	8.2	Pass			High
Bg	F0	R7	Bg.00.07	8.1	Pass			High
Bg	F0	R8	Bg.00.08	8.1	Pass			High
Bg	F0	R9	Bg.00.09	8.2	Pass			High
Bg	F0	R10	Bg.00.10	8.1	Pass			High
Bg	F1	R1	Bg.01.01	8.2	Pass			High
Bg	F1	R2	Bg.01.02	8.3	Pass			High
Bg	F1	R3	Bg.01.03	6.0	Pass			High
Bg	F1	R4	Bg.01.04	6.0	Pass			High
Bg	F1	R5	Bg.01.05	6.0	Pass			High
Bg	F1	R6	Bg.01.06	6.0	Pass			High
Bg	F1	R7	Bg.01.07	6.0	Pass			High
Bg	F1	R8	Bg.01.08	6.0	Pass			High
Bg	F1	R9	Bg.01.09	6.0	Pass			High
Bg	F1	R10	Bg.01.10	7.1	Pass			High

Block G – 100% compliant

Sunlight to living rooms								
Receives 1.5 hours of sunlight on 21st March								
Block K								
Block	Floor	Room	Ref	Hrs of Sun	Pass	Quality		
Bk	F0	R1	Bk.00.01	7.2	Pass			High
Bk	F0	R2	Bk.00.02	7.0	Pass			High
Bk	F1	R1	Bk.01.01	8.3	Pass			High
Bk	F1	R2	Bk.01.02	8.2	Pass			High

Block K – 100% compliant

This is consistent with the Guidelines example of “careful layout” design 80%.

Sunlight to Living Rooms								
	Sunlight	Incl Marginal		Sunlight Quality				
	Pass %	Pass %		Low	Medium	High		
A	100%	100%		0%	50%	50%		
B	100%	100%		13%	0%	100%		
F	83%	83%		125%	0%	0%		
G	100%	100%		0%	0%	250%		
K	100%	100%		0%	0%	50%		
Total	96%	96%		21%	8%	68%		

Summary

Sunlight to living rooms:

96% of all Living rooms receive 1.5hrs of sunlight on the test day of the 21st March

This is consistent with the BRE Guidelines defined “careful layout design” 80% target.

Development Performance - Sunlight on the Ground SOG (Shadow) Gardens and Open spaces

Tests for the availability of sunlight in amenity areas.

43.3.17 It is recommended that for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21 March. If as a result of new development an existing garden or amenity area does not meet the above, and the area that can receive two hours of sun on 21 March is less than 0.80 times its former value, then the loss of sunlight is likely to be noticeable. If a detailed calculation cannot be carried out, it is recommended that the centre of the area should receive at least two hours of sunlight on 21 March

3.3.3 The availability of sunlight should be checked for all open spaces where it will be required. This would normally include:

- *gardens, such as the main back garden of a house or communal gardens including courtyards and roof terraces*
- *parks and playing fields*
- *children's playgrounds*
- *outdoor swimming pools and paddling pools, and other areas of recreational water such as marinas and boating lakes*
- *sitting out areas such as those between non-domestic buildings and in public squares*
- *nature reserves (which may have special requirements for sunlight if rare plants are growing there).*

3.3.9 ... Normally trees and shrubs need not be included, partly because their shapes are almost impossible to predict, and partly because the dappled shade of a tree is more pleasant than the deep shadow of a building (this applies especially to deciduous trees). ...

The are no specific shared/communal spaces allocated to the apartment/duplex units. Instead there is considerable overprovision of public amenity, and the communal spaces are incorporated within these areas.

No testing is required.

Summary – Development Performance

This report is in compliance with: "Site layout planning for daylight and sunlight a guide to good practice" - BR209". It also references EN 17037 and Annex NA (BS/EN 17037) as and where called for in the above BRE Guidelines document.

Performance of the proposed design

- **Target Illuminance E_T**
 - **99%** (99% including marginals) of rooms comply with the BS/EN 17037 Annex NA room targets for 50% of the floor area tested.
 - The average compliant areas achieving the relevant target Lx for
 - all bedrooms is **99%** and
 - all Living/Kitchen spaces **93%**
 - both are well in excess of the required 50%
- **Sunlight to rooms:**
 - All windows to living rooms receive some sunlight and the number that face North are small.
 - **96%** comply with the 1.5hr BRE test on the 21st March.
 - This is consistent with the BRE defined "careful layout design" 80% target.
- **Sunlight on the Ground SOG (Shadow)**
 - There are no specific shared/communal spaces allocated to the apartment/duplex units. Instead there is considerable overprovision of public amenity, and the communal spaces are incorporated within these areas.
 - No testing is required.

The application complies with the recommendations and Guidelines of Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice – BR209.

Summary – Overall

This report is in compliance with "Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice" BRE Guidelines version 3, 2022 and EN 17037:2018 Daylight in buildings.

Change/Impact to neighbouring buildings in the adjoining residential areas.

- **Skylight- VSC**
 - **98%** (100% including marginals) of the tested windows comply with the VSC requirements for habitable rooms.
 - The average change ratio for VSC is **0.93**
- **Sunlight APSH & WPSH**
 - **100%** of tested windows comply with the annual APSH and
 - **100%** with the winter WPSH requirements for sunlight or overall requirement.
 - The average change ratio for sunlight is APSH:**0.95** and WPSH: **0.81**
- **Sunlight on the Ground SOG (Shadow)**
 - **100%** of tested neighbouring amenity spaces pass the 2-hour test requirements for the 21st March.
 - The average change ratio for shadow/sunlight is **0.99**

Performance of the proposed design

- **Target Illuminance E_T**
 - **99%** (99% including marginals) of rooms comply with the BS/EN 17037 Annex NA room targets for 50% of the floor area tested.
 - The average compliant areas achieving the relevant target Lx for
 - all bedrooms is **99%** and
 - all Living/Kitchen spaces **93%**
 - both are well in excess of the required 50%
- **Sunlight to rooms:**
 - All windows to living rooms receive some sunlight and the number that face North are small.
 - **96%** comply with the 1.5hr BRE test on the 21st March.
 - This is consistent with the BRE defined "careful layout design" 80% target.
- **Sunlight on the Ground SOG (Shadow)**
 - There are no specific shared/communal spaces allocated to the apartment/duplex units. Instead there is considerable overprovision of public amenity, and the communal spaces are incorporated within these areas.
 - No testing is required.

The application generally complies with the recommendations and Guidelines of Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice BR209 (Version 3, 2022) when considered in terms of an infill and regeneration project in an un-developed lot

Appendix 1

Light Distribution

Alternative Target Illuminance ET Metric

Non-Annex Analysis

Comparison between the Annex and non-Annex results

And reasoning behind adoption and applicability of the BS/EN Annex

This is a supplementary analysis which does not reflect the performance of the proposed design in temperate climates such as Ireland / UK. There should be no expectation that the design would comply with these requirements.

The NA-annex results in the main body of this report reflect design in such conditions. This is as defined by the UK committee and directly referenced in Irish Department publications such “Sustainable and Compact Settlements: Guidelines for Planning Authorities 2024” and many Development Plans.

Design Standards / Guidelines Light Distribution.

BRE v2 – 2011 / BS 8206-2

The original BRE Guidelines “Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice – Second Edition - 2011” was cross-referenced to and from the now withdrawn BS 8206-2 : 2008.

It looked at light distribution within a room based on Average Daylight Factor ADF (an average over the entire room surface) and was based off the CIE overcast sky and results of rooms were based on obstructions, room geometry, ope sizes, radiance and transmittance but was constant from location to location on the globe.

The Guidelines and BS standard took into account room usage placing higher degrees of importance on living spaces than to bedrooms, which is a reasonable consideration, given that bedrooms are typically used more at night.

Given that these Standard and Guidelines are withdrawn tests such as ADF are no longer relevant.

BRE v3 – 2022 / EN 17037

The new BRE Guidelines “Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice – Third Edition - 2022” provides best guidelines for analysing development while referencing relevant elements of EN 17037 similar to how the withdrawn BRE v2 – 2011 provided best guidelines for analysing development referencing relevant elements of withdrawn BS 8206- 2.

This best practice guideline has been considered the de-facto standard since 1991 and details how to apply EN 17037.

Impact on neighbours and shadow elements are handled only within the BRE Guidelines but the EN standard covers some elements of development performance.

EN 17037 also looks at internal light distribution/daylight but in terms of target illuminance over a specific percentage of a room. Target illuminance is driven by the available external light which varies by location on the globe. However, the internal room lux targets Lx we strive to achieve remain unchanged.

There are various tables of requirements (minimum, medium and high), and these are defined for all rooms and do not consider the rooms usage. The minimum targets are:

Rooms	300lx over 50% of room area
AND	100lx over 95% of room area

Localisation

The EN 17037 is designed to be localised and a blank National Annex is provided in for that purpose.

This is an acknowledgement that design will vary in different countries and that adjustment will be needed to take into account available external light which itself drives the internal lux results and other design constraints / objectives. The Irish version of this standard IS EN17037 currently has no specific National Annex

The UK committee, in their examination of this provided recommendations which are pulled through to the National Annex in the UK variant of this document BS EN 17037

Given the similarity of weather, light and design patterns between Ireland and the UK in many areas and the absence of specific localisation Annex information in the IS version it is not unreasonable to apply the BS recommendations at this time. There is considerable precedence in the adoption of such technical recommendations in the engineering and indeed legal professions.

The UK committee acknowledged the difficulty of achieving the primary lux targets outlined in the main body of the report particularly in dwellings in our climates. The Annex recommendations are focused on dwellings which is the subject of the vast majority of our reports. The committee again re-affirmed their commitment that room usage should be considered and set lower target illuminance values accordingly for dwellings based on the same.

Bedroom	100lx over 50% of room area
Living Rooms	150lx over 50% of room area
Kitchens	200lx over 50% of room area

Dual usage rooms use the higher value.

These targets were derived from BS 8206-2:2008 Lighting for buildings – Part 2: Code of practice for daylighting, targets have served us well in the past and which have been the staple for design for years. We have dual run multiple projects BRE v2 (ADF) vs BRE v3 Annex (Et) and as expected they show very similar compliance rates.

Furthermore, the UK committee decided that the target illuminance across the entire (i.e. 95 %) **need not** be applied to rooms in dwellings.

Analysis

We concur with the UK committees’ recommendations for daylight provision in a space may not be achievable for some buildings, particularly dwellings and that a target illuminance level should be achieved across the entire (i.e. 95 %) fraction of the reference plane within a space – need **not** be applied to rooms in dwellings.

The targets defined in the National Annex are linked to the targets have served us well in the past and have been the staple for design for years. The primary results have thus been compiled based on the UK Annex NA targets, tabulated in the report main body.

We have for the avoidance of doubt also provided results based on the non-annex Standard, here in this Appendix. The results for which show that the conclusions of the UK committee were justified and that the standard (non-Annex) targets are unlikely to be achieved in a more densely developed residential sites.

This is in accordance with the Departments “Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities” 2024 and clause 5.3.7 which directly references the UK National Annex BS EN17037:2019.

Block A – ET results

Minimum daylight provision - (Non-Annex)								
Bld	Floor	Room	Ref	Type	Percentage within 300lx	EN17037 Check @ 50%	Percentage within 100lx	EN17037 Check @ 95%
Ba	F0	R1	Ba.00.01	LKD	76%	Pass	100%	Pass
Ba	F0	R2	Ba.00.02	LKD	70%	Pass	100%	Pass
Ba	F0	R3	Ba.00.03	LKD	69%	Pass	100%	Pass
Ba	F0	R4	Ba.00.04	LKD	66%	Pass	100%	Pass
Ba	F1	R1	Ba.01.01	Bedroom	100%	Pass	100%	Pass
Ba	F1	R2	Ba.01.02	Bedroom	42%	Marginal	100%	Pass
Ba	F1	R3	Ba.01.03	Bedroom	100%	Pass	100%	Pass
Ba	F1	R4	Ba.01.04	Bedroom	43%	Marginal	100%	Pass
Ba	F1	R5	Ba.01.05	Bedroom	100%	Pass	100%	Pass
Ba	F1	R6	Ba.01.06	Bedroom	43%	Marginal	100%	Pass
Ba	F1	R7	Ba.01.07	Bedroom	100%	Pass	100%	Pass
Ba	F1	R8	Ba.01.08	Bedroom	36%	Fail	100%	Pass
Ba	F1	R9	Ba.01.09	Bedroom	49%	Marginal	100%	Pass
Ba	F1	R10	Ba.01.10	Bedroom	63%	Pass	100%	Pass
Ba	F1	R11	Ba.01.11	Bedroom	82%	Pass	100%	Pass
Ba	F1	R12	Ba.01.12	Bedroom	88%	Pass	100%	Pass
Ba	F2	R1	Ba.02.01	LKD	100%	Pass	100%	Pass
Ba	F2	R2	Ba.02.02	LKD	100%	Pass	100%	Pass
Ba	F2	R3	Ba.02.03	LKD	100%	Pass	100%	Pass
Ba	F2	R4	Ba.02.04	LKD	100%	Pass	100%	Pass
Ba	F2	R5	Ba.02.05	Bedroom	100%	Pass	100%	Pass
Ba	F2	R6	Ba.02.06	Bedroom	100%	Pass	100%	Pass
Ba	F2	R7	Ba.02.07	Bedroom	100%	Pass	100%	Pass
					Count Pass	23 18	Count Pass	23 23
					Pass Rate 300lx/50%	78%	Pass Rate 100lx/95%	100%
					Marginal Pass Margin	4 96%	Marginal Pass Margin	0 100%

Block B – ET results

Minimum daylight provision - (Non-Annex)								
Bld	Floor	Room	Ref	Type	Percentage within 300lx	EN17037 Check @ 50%	Percentage within 100lx	EN17037 Check @ 95%
Bb	F0	R1	Bb.00.01	LKD	79%	Pass	100%	Pass
Bb	F0	R2	Bb.00.02	LKD	38%	Fail	100%	Pass
Bb	F0	R3	Bb.00.03	LKD	99%	Pass	100%	Pass
Bb	F0	R4	Bb.00.04	Bedroom	0%	Fail	0%	Fail
Bb	F0	R5	Bb.00.05	Bedroom	11%	Fail	93%	Marginal
Bb	F0	R6	Bb.00.06	Bedroom	28%	Fail	100%	Pass
Bb	F1	R1	Bb.01.01	LKD	100%	Pass	100%	Pass
Bb	F1	R2	Bb.01.02	LKD	82%	Pass	100%	Pass
Bb	F1	R3	Bb.01.03	LKD	73%	Pass	100%	Pass
Bb	F1	R4	Bb.01.04	LKD	100%	Pass	100%	Pass
Bb	F1	R5	Bb.01.05	LKD	78%	Pass	100%	Pass
Bb	F1	R6	Bb.01.06	LKD	100%	Pass	100%	Pass
Bb	F2	R1	Bb.02.01	Bedroom	100%	Pass	100%	Pass
Bb	F2	R2	Bb.02.02	Bedroom	78%	Pass	100%	Pass
Bb	F2	R3	Bb.02.03	Bedroom	100%	Pass	100%	Pass
Bb	F2	R4	Bb.02.04	Bedroom	59%	Pass	100%	Pass
Bb	F2	R5	Bb.02.05	Bedroom	100%	Pass	100%	Pass
Bb	F2	R6	Bb.02.06	Bedroom	100%	Pass	100%	Pass
Bb	F2	R7	Bb.02.07	Bedroom	100%	Pass	100%	Pass
Bb	F2	R8	Bb.02.08	Bedroom	100%	Pass	100%	Pass
Bb	F2	R9	Bb.02.09	Bedroom	100%	Pass	100%	Pass
Bb	F2	R10	Bb.02.10	Bedroom	100%	Pass	100%	Pass
Bb	F2	R11	Bb.02.11	Bedroom	100%	Pass	100%	Pass
Bb	F2	R12	Bb.02.12	Bedroom	97%	Pass	100%	Pass
Bb	F2	R13	Bb.02.13	Bedroom	100%	Pass	100%	Pass
Bb	F2	R14	Bb.02.14	Bedroom	100%	Pass	100%	Pass
Bb	F2	R15	Bb.02.15	Bedroom	100%	Pass	100%	Pass
Bb	F2	R16	Bb.02.16	Bedroom	100%	Pass	100%	Pass
					Count Pass	28 24	Count Pass	28 26
					Pass Rate 300lx/50%	86%	Pass Rate 100lx/95%	93%
					Marginal Pass Margin	0 86%	Marginal Pass Margin	1 96%

Block F – ET results

Minimum daylight provision - (Non-Annex)								
Bld	Floor	Room	Ref	Type	Percentage within 300lx	EN17037 Check @ 50%	Percentage within 100lx	EN17037 Check @ 95%
Bf	F0	R1	Bf.00.01	LKD	46%	Marginal	90%	Marginal
Bf	F0	R2	Bf.00.02	LKD	27%	Fail	75%	Fail
Bf	F0	R3	Bf.00.03	LKD	34%	Fail	80%	Marginal
Bf	F0	R4	Bf.00.04	LKD	37%	Fail	81%	Marginal
Bf	F0	R5	Bf.00.05	LKD	38%	Fail	81%	Marginal
Bf	F0	R6	Bf.00.06	LKD	37%	Fail	82%	Marginal
Bf	F1	R1	Bf.01.01	Bedroom	100%	Pass	100%	Pass
Bf	F1	R2	Bf.01.02	Bedroom	100%	Pass	100%	Pass
Bf	F1	R3	Bf.01.03	Bedroom	100%	Pass	100%	Pass
Bf	F1	R4	Bf.01.04	Bedroom	100%	Pass	100%	Pass
Bf	F1	R5	Bf.01.05	Bedroom	100%	Pass	100%	Pass
Bf	F1	R6	Bf.01.06	Bedroom	100%	Pass	100%	Pass
Bf	F1	R7	Bf.01.07	Bedroom	100%	Pass	100%	Pass
Bf	F1	R8	Bf.01.08	Bedroom	100%	Pass	100%	Pass
Bf	F1	R9	Bf.01.09	Bedroom	100%	Pass	100%	Pass
Bf	F1	R10	Bf.01.10	Bedroom	100%	Pass	100%	Pass
Bf	F1	R11	Bf.01.11	Bedroom	100%	Pass	100%	Pass
Bf	F1	R12	Bf.01.12	Bedroom	100%	Pass	100%	Pass
Bf	F1	R13	Bf.01.13	Bedroom	49%	Marginal	100%	Pass
Bf	F1	R14	Bf.01.14	Bedroom	80%	Pass	100%	Pass
Bf	F1	R15	Bf.01.15	Bedroom	82%	Pass	100%	Pass
Bf	F1	R16	Bf.01.16	Bedroom	92%	Pass	100%	Pass
Bf	F1	R17	Bf.01.17	Bedroom	94%	Pass	100%	Pass
Bf	F1	R18	Bf.01.18	Bedroom	94%	Pass	100%	Pass
Bf	F2	R1	Bf.02.01	LKD	100%	Pass	100%	Pass
Bf	F2	R2	Bf.02.02	LKD	100%	Pass	100%	Pass
Bf	F2	R3	Bf.02.03	LKD	100%	Pass	100%	Pass
Bf	F2	R4	Bf.02.04	LKD	100%	Pass	100%	Pass
Bf	F2	R5	Bf.02.05	LKD	100%	Pass	100%	Pass
Bf	F2	R6	Bf.02.06	LKD	100%	Pass	100%	Pass
Bf	F2	R7	Bf.02.07	Bedroom	100%	Pass	100%	Pass
Bf	F2	R8	Bf.02.08	Bedroom	100%	Pass	100%	Pass
Bf	F2	R9	Bf.02.09	Bedroom	100%	Pass	100%	Pass
Bf	F2	R10	Bf.02.10	Bedroom	100%	Pass	100%	Pass
Bf	F2	R11	Bf.02.11	Bedroom	100%	Pass	100%	Pass
Bf	F2	R12	Bf.02.12	Bedroom	100%	Pass	100%	Pass
Bf	F3	R1	Bf.03.01	Bedroom	65%	Pass	100%	Pass
Bf	F3	R2	Bf.03.02	Bedroom	65%	Pass	100%	Pass
Bf	F3	R3	Bf.03.03	Bedroom	65%	Pass	100%	Pass
Bf	F3	R4	Bf.03.04	Bedroom	65%	Pass	100%	Pass
Bf	F3	R5	Bf.03.05	Bedroom	64%	Pass	100%	Pass
					Count Pass	41 34	Count Pass	41 35
					Pass Rate 300lx/50%	83%	Pass Rate 100lx/95%	85%
					Marginal Pass Margin	2 88%	Marginal Pass Margin	5 98%

Block G – ET results

Minimum daylight provision - (Non-Annex)								
					Percentage	EN17037	Percentage	EN17037
					within	Check	within	Check
Bld	Floor	Room	Ref	Type	300lx	@ 50%	100lx	@ 95%
Bg	F-1	R1	Bg.-01.01	LKD	100%	Pass	100%	Pass
Bg	F-1	R2	Bg.-01.02	Bedroom	60%	Pass	100%	Pass
Bg	F0	R1	Bg.00.01	Bedroom	100%	Pass	100%	Pass
Bg	F0	R2	Bg.00.02	LKD	100%	Pass	100%	Pass
Bg	F0	R3	Bg.00.03	LKD	100%	Pass	100%	Pass
Bg	F0	R4	Bg.00.04	LKD	100%	Pass	100%	Pass
Bg	F0	R5	Bg.00.05	LKD	100%	Pass	100%	Pass
Bg	F0	R6	Bg.00.06	LKD	100%	Pass	100%	Pass
Bg	F0	R7	Bg.00.07	LKD	100%	Pass	100%	Pass
Bg	F0	R8	Bg.00.08	LKD	100%	Pass	100%	Pass
Bg	F0	R9	Bg.00.09	LKD	100%	Pass	100%	Pass
Bg	F0	R10	Bg.00.10	LKD	100%	Pass	100%	Pass
Bg	F0	R11	Bg.00.11	Bedroom	100%	Pass	100%	Pass
Bg	F0	R12	Bg.00.12	Bedroom	100%	Pass	100%	Pass
Bg	F0	R13	Bg.00.13	Bedroom	100%	Pass	100%	Pass
Bg	F0	R14	Bg.00.14	Bedroom	100%	Pass	100%	Pass
Bg	F0	R15	Bg.00.15	Bedroom	100%	Pass	100%	Pass
Bg	F0	R16	Bg.00.16	Bedroom	100%	Pass	100%	Pass
Bg	F0	R17	Bg.00.17	Bedroom	100%	Pass	100%	Pass
Bg	F0	R18	Bg.00.18	Bedroom	100%	Pass	100%	Pass
Bg	F0	R19	Bg.00.19	Bedroom	100%	Pass	100%	Pass
Bg	F0	R20	Bg.00.20	Bedroom	100%	Pass	100%	Pass
Bg	F1	R1	Bg.01.01	LKD	100%	Pass	100%	Pass
Bg	F1	R2	Bg.01.02	LKD	100%	Pass	100%	Pass
Bg	F1	R3	Bg.01.03	LKD	100%	Pass	100%	Pass
Bg	F1	R4	Bg.01.04	LKD	100%	Pass	100%	Pass
Bg	F1	R5	Bg.01.05	LKD	100%	Pass	100%	Pass
Bg	F1	R6	Bg.01.06	LKD	100%	Pass	100%	Pass
Bg	F1	R7	Bg.01.07	LKD	100%	Pass	100%	Pass
Bg	F1	R8	Bg.01.08	LKD	100%	Pass	100%	Pass
Bg	F1	R9	Bg.01.09	LKD	100%	Pass	100%	Pass
Bg	F1	R10	Bg.01.10	LKD	100%	Pass	100%	Pass
Bg	F2	R1	Bg.02.01	Bedroom	90%	Pass	100%	Pass
Bg	F2	R2	Bg.02.02	Bedroom	70%	Pass	100%	Pass
Bg	F2	R3	Bg.02.03	Bedroom	70%	Pass	100%	Pass
Bg	F2	R4	Bg.02.04	Bedroom	70%	Pass	100%	Pass
Bg	F2	R5	Bg.02.05	Bedroom	70%	Pass	100%	Pass
Bg	F2	R6	Bg.02.06	Bedroom	70%	Pass	100%	Pass
Bg	F2	R7	Bg.02.07	Bedroom	70%	Pass	100%	Pass
Bg	F2	R8	Bg.02.08	Bedroom	70%	Pass	100%	Pass
Bg	F2	R9	Bg.02.09	Bedroom	70%	Pass	100%	Pass
Bg	F2	R10	Bg.02.10	Bedroom	70%	Pass	100%	Pass
Bg	F2	R11	Bg.02.11	Bedroom	38%	Fail	100%	Pass
Bg	F2	R12	Bg.02.12	Bedroom	33%	Fail	100%	Pass
Bg	F2	R13	Bg.02.13	Bedroom	38%	Fail	100%	Pass
Bg	F2	R14	Bg.02.14	Bedroom	33%	Fail	100%	Pass
Bg	F2	R15	Bg.02.15	Bedroom	38%	Fail	100%	Pass
Bg	F2	R16	Bg.02.16	Bedroom	33%	Fail	100%	Pass
Bg	F2	R17	Bg.02.17	Bedroom	35%	Fail	100%	Pass
Bg	F2	R18	Bg.02.18	Bedroom	33%	Fail	100%	Pass
Bg	F2	R19	Bg.02.19	Bedroom	35%	Fail	100%	Pass
Bg	F2	R20	Bg.02.20	Bedroom	33%	Fail	100%	Pass
Bg	F2	R21	Bg.02.21	Bedroom	33%	Fail	100%	Pass
Bg	F2	R22	Bg.02.22	Bedroom	33%	Fail	100%	Pass
Bg	F2	R23	Bg.02.23	Bedroom	35%	Fail	100%	Pass
Bg	F2	R24	Bg.02.24	Bedroom	33%	Fail	100%	Pass
Bg	F2	R25	Bg.02.25	Bedroom	38%	Fail	100%	Pass
Bg	F2	R26	Bg.02.26	Bedroom	34%	Fail	100%	Pass
Bg	F2	R27	Bg.02.27	Bedroom	38%	Fail	200%	Pass
Bg	F2	R28	Bg.02.28	Bedroom	34%	Fail	100%	Pass
Bg	F2	R29	Bg.02.29	Bedroom	38%	Fail	100%	Pass
Bg	F2	R30	Bg.02.30	Bedroom	23%	Fail	98%	Pass
					Count	62	Count	62
					Pass	42	Pass	62
					Pass Rate		Pass Rate	
					300lx/50%	68%	100lx/95%	100%
					Marginal	0	Marginal	0
					Pass Margin	68%	Pass Margin	100%

Block K – E_T results

Minimum daylight provision - (Non-Annex)								
Bld	Floor	Room	Ref	Type	Percentage within 300lx	EN17037 Check @ 50%	Percentage within 100lx	EN17037 Check @ 95%
Bk	F0	R1	Bk.00.01	LKD	100%	Pass	100%	Pass
Bk	F0	R2	Bk.00.02	LKD	100%	Pass	100%	Pass
Bk	F0	R3	Bk.00.03	Bedroom	100%	Pass	100%	Pass
Bk	F0	R4	Bk.00.04	Bedroom	96%	Pass	100%	Pass
Bk	F1	R1	Bk.01.01	LKD	100%	Pass	100%	Pass
Bk	F1	R2	Bk.01.02	LKD	85%	Pass	100%	Pass
Bk	F2	R1	Bk.02.01	Bedroom	60%	Pass	100%	Pass
Bk	F2	R2	Bk.02.02	Bedroom	56%	Pass	100%	Pass
Bk	F2	R3	Bk.02.03	Bedroom	27%	Fail	100%	Pass
Bk	F2	R4	Bk.02.04	Bedroom	25%	Fail	100%	Pass
Bk	F2	R5	Bk.02.05	Bedroom	27%	Fail	100%	Pass
Bk	F2	R6	Bk.02.06	Bedroom	26%	Fail	100%	Pass
Count					12		Count	12
Pass					8		Pass	12
Pass Rate 300lx/50%					67%		Pass Rate 100lx/95%	100%
Marginal					0		Marginal	0
Pass Margin					67%		Pass Margin	100%

Summary – Light Distribution all habitable rooms for all blocks.

A summary for pass results for all blocks is detailed below.
And compared with the analysis from Light Distribution – Target Illuminance (Annex NA)

Annex NA E _T % Pass			Non-Annex 300lx @ 50%			Non-Annex 100lx @ 95%		
BRE v3	Incl Marginal			Incl Marginal			Incl Marginal	
Pass %	Pass %			Pass %	Pass %		Pass %	Pass %
A	100%	100%	A	78%	96%	A	100%	100%
B	96%	96%	B	86%	86%	B	93%	96%
F	98%	100%	F	83%	88%	F	85%	98%
G	100%	100%	G	68%	68%	G	100%	100%
K	100%	100%	K	67%	67%	K	100%	100%
Total	99%	99%	Total	76%	80%	Total	95%	99%

It is our opinion that this concurs with the UK committees’ position that the non-annex targets are too stringent for use for residential buildings and that (in the absence of an Irish National Annex) that the targets provided in the UK Annex NA are reasonable to apply to residential housing in this case.

The above is further endorsed in the Departments “Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities” 2024 and clause 5.3.7 which directly references the UK National Annex BS EN17037:2019.

This is a supplementary analysis which does not reflect the performance of the proposed design in temperate climates such as Ireland / UK. There should be no expectation that the design would comply with these requirements.

The NA-annex results in the main body of this report reflect design in such conditions. This is as defined by the UK committee and directly referenced in Irish Department publication “Sustainable and Compact Settlements: Guidelines for Planning Authorities 2024” and many Development Plans.