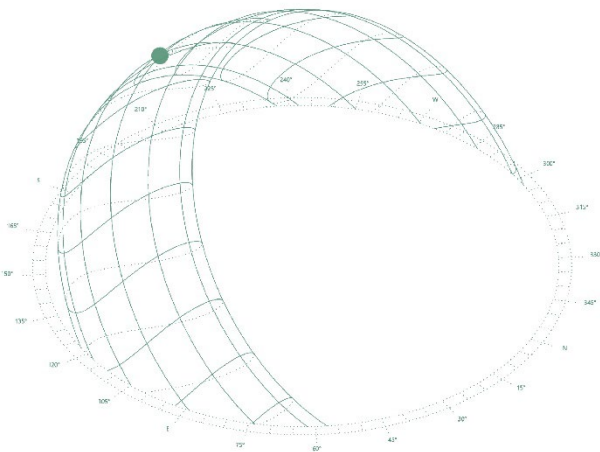

Internal Daylight and Sunlight Report

November
2025



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1. Executive Summary

This report has been prepared to support the planning application at **59-61 Southampton Street, Reading, RG1 2QP**.

The report assesses the internal daylight within the proposed accommodation. The assessment is undertaken in accordance with **"BRE 209 Digest: Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice"**.

The following can be concluded based on the studies undertaken:

All habitable rooms exceed the BRE daylighting target and all dwellings exceed the BRE sunlight target.

It can be considered the scheme perform well in terms of daylight and sunlight in accordance with (BRE) Guide 'Site Layout Planning for Sunlight and Daylight: A Guide to Good Practice' by P J Littlefair (2022).

2. Introduction

This report has been prepared to support the planning application at **59-61 Southampton Street, Reading, RG1 2QP** and to examine the levels of daylight received in all habitable rooms within the proposed development.

The report assesses the internal daylight and sunlight effect on the proposed rooms. The assessment is undertaken in accordance with ***"BRE 209 Digest: Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice"***.

The proposed drawings of the project were validated as accurate by **Imran Hussain** in **November 2025** and have been used in preparing this report.

3. Assessment Methodology

This study is based on guidelines set out in the *BRE Site Layout Planning for Daylight and Sunlight, A Guide to Good Practice, 2022*. The assessment has been conducted using Velux Daylight Visualiser software. A 3D model has been built based on the latest architectural drawings.

The simulations assess the Annual Illuminance Target (ET), DA and sDA. Key points of the simulation include:

- Tested on a horizontal plane at 0.85 m above the floor
- Grid size of 0.5m
- Margin of 0.50m from the internal walls
- Glass Visible Light Transmission of 0.8
- Glass Surface Maintenance Factor of 0.95
- Hourly weather file for a whole year from Beaufort Bracknell TRY2002
- Windows frames based on site inspection.

Internal Daylight Assessment

British Standard “Daylight in buildings” (BS EN 17037)

The British Standard “Daylight in buildings” (BS EN 17037) contains advice and guidance on interior daylighting. The guidance contained in the BRE publication (BR 209, 2022) is intended to be used with BS EN 17037 and its UK National Annex.

BS EN 17037 supersedes BS 8206 Part 2 “Code of practice for daylighting” [C2], which contained a method of assessment based on Average Daylight Factor, which is now no longer recommended. For daylight provision in buildings, BS EN 17037 provides a methodology based on target illuminances from daylight to be achieved over specified fractions of the reference plane for at least half of the daylight hours in a typical year.

BS EN 17037 gives three levels of recommendation for daylight provision in interior spaces: minimum, medium and high. For compliance with the standard, a daylight space should achieve the minimum level of recommendation.

The National Annex A of BS EN 17037 also gives minimum values for housing, in living rooms, kitchens, and bedrooms. Achieving higher illuminance values will give improved daylight provision. This would be particularly appropriate in housing for the elderly because they require more light and are more likely to be at home during the day.

However, interiors with very high daylight levels (for example where a daylight illuminance of 500 lux is exceeded over half the room for more than half of the daylight hours) sometimes have problems with summertime overheating or excessive heat loss in winter.

Annual Daylight Metrics

The annual daylight method involves using climatic data for the location of the site (via the use of an appropriate, typical or average year, weather file) to calculate the illuminance from daylight at each point on an assessment grid on the reference plane at an at least hourly interval for a typical year.

A target illuminance (ET) is the 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 daylight space.

Daylight Autonomy (DA) is the percentage of occupied hours that each sensor receives more than the illuminance threshold, and Spatial Daylight Autonomy (sDA) is an annual daylighting metric that quantifies the fraction of the area within a space for which the daylight autonomy exceeds a specified value.

Specific recommendations for daylight provision in UK dwellings

The **UK National Annex to BS EN 17037** provides specific minimum daylight recommendations for habitable rooms in dwellings across the United Kingdom.

These values are intended particularly for “hard-to-light” dwellings — such as basement flats, buildings with deep floor plates, or dwellings with significant obstructions (e.g. tall trees or adjacent buildings). They are also applicable to existing buildings being refurbished or converted into residential use.

The recommended median illuminance levels are:

- **100 lux in bedrooms**
- **150 lux in living rooms**
- **200 lux in kitchens**

These are median illuminance values, and the recommendation is that they should be met across at least 50% of the room's working plane for at least 50% of the daylight hours in a typical year.

This approach aligns with the principle of climate-based daylight modelling and replaces older static metrics such as Average Daylight Factor (ADF).

Annual Sunlight Metrics

In terms of Sunlight the BRE states that it is generally more important for residential properties.

Within section 3.1 of it states *“in housing, the main requirement for sunlight is in living rooms, where it is valued at any time of the day, but especially in the afternoon. Sunlight is also required in conservatories. It is viewed as less important in bedrooms and in kitchens where people prefer it in the morning rather than the afternoon.”*

The guide suggests that designers minimise the number of units/dwellings with living areas windows facing solely north. This is unless there are other factors steering the design such as views and privacy.

The BRE of the proposed.

This is tested by taking the centre point of the inner surface of the window and assesses the amount of sunlight hours it would receive on the 21st of March.

Below is a summary of section 3.1 of the guidance:

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

- *At least one main window faces within 90 degrees of due south, and*

- *A habitable room, preferably a main living room, can receive a total of at least 1.5 hours of sunlight on 21 March. 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..."*

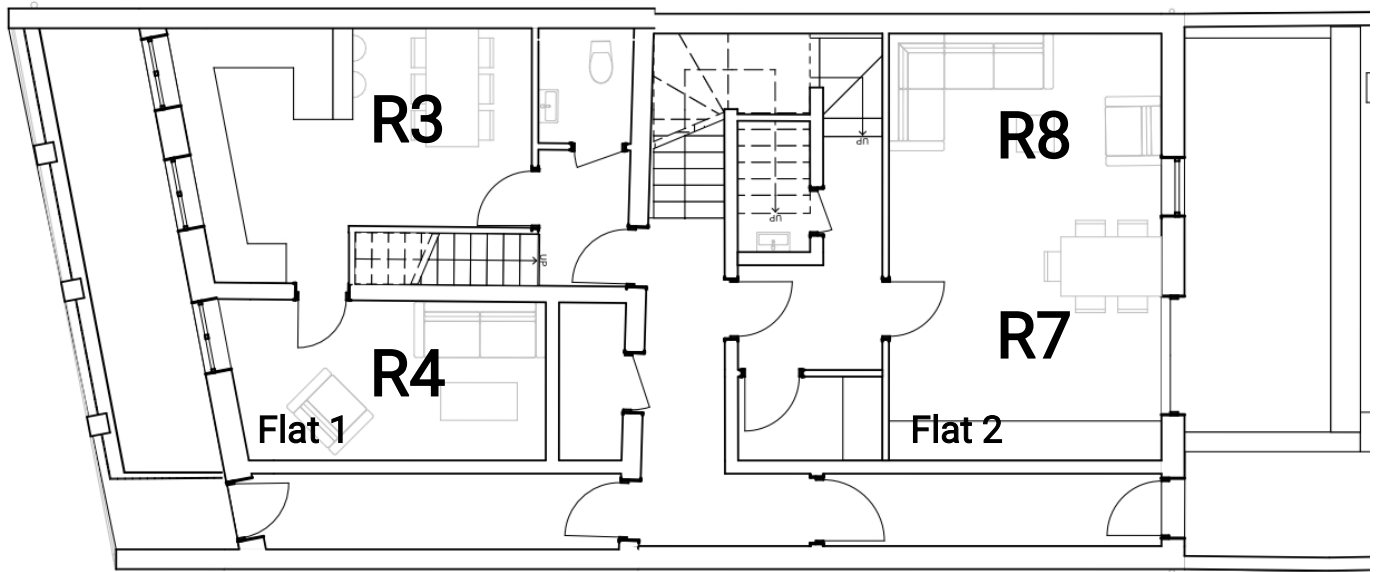


Image 2 – Architectural Ground Floor Plan

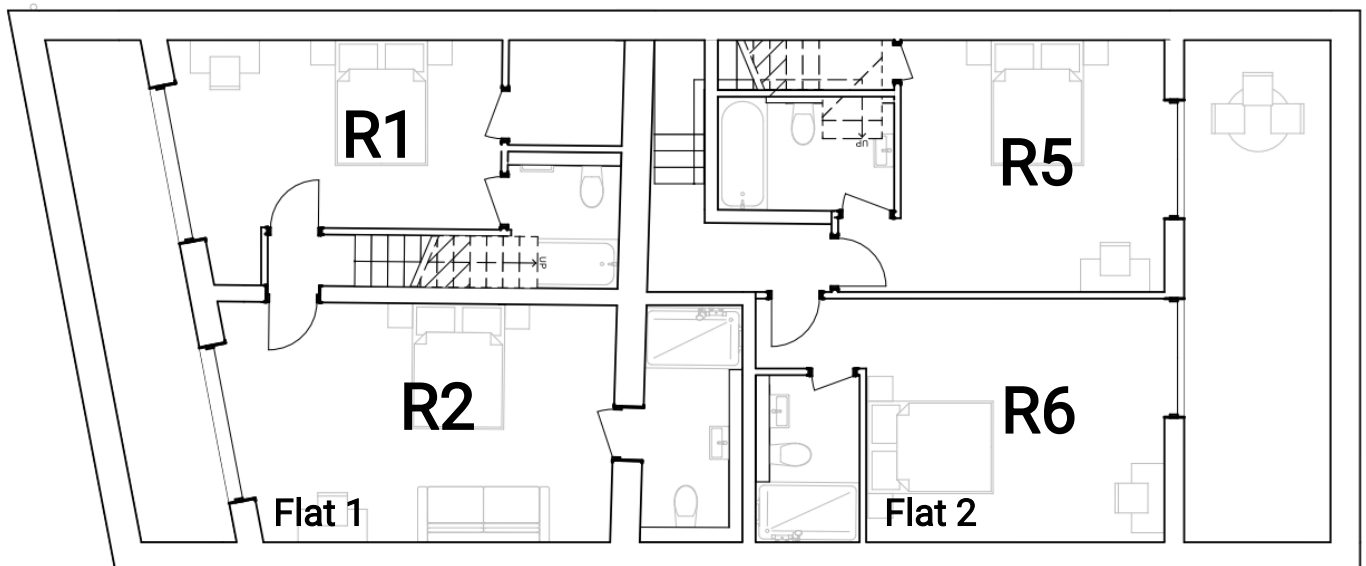


Image 1 – Architectural Lower Ground Floor Plan

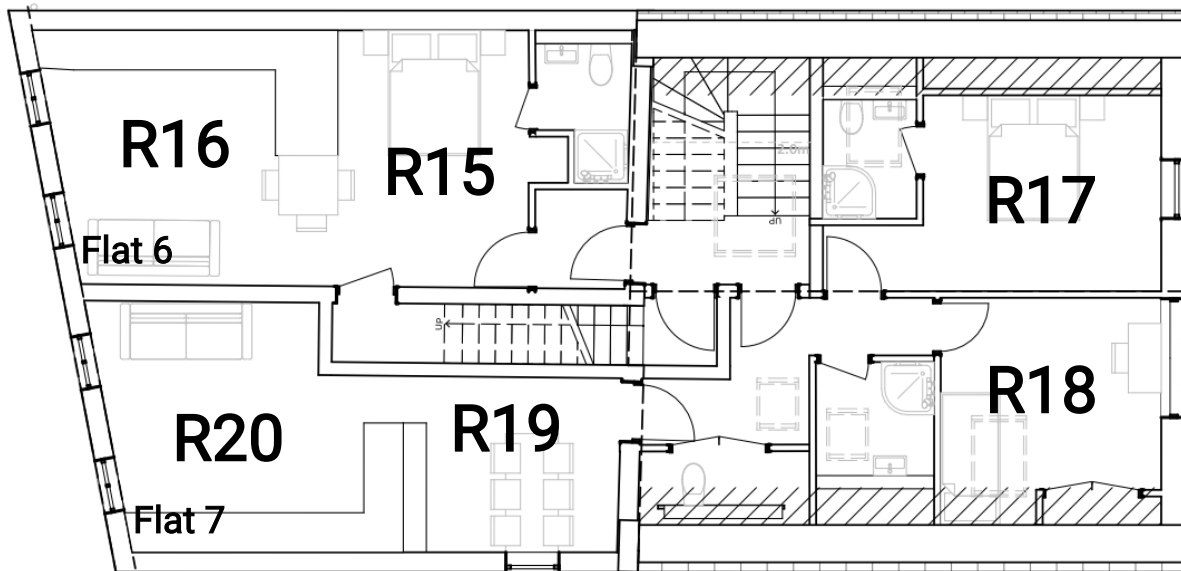


Image 4 – Architectural Second Floor Plan

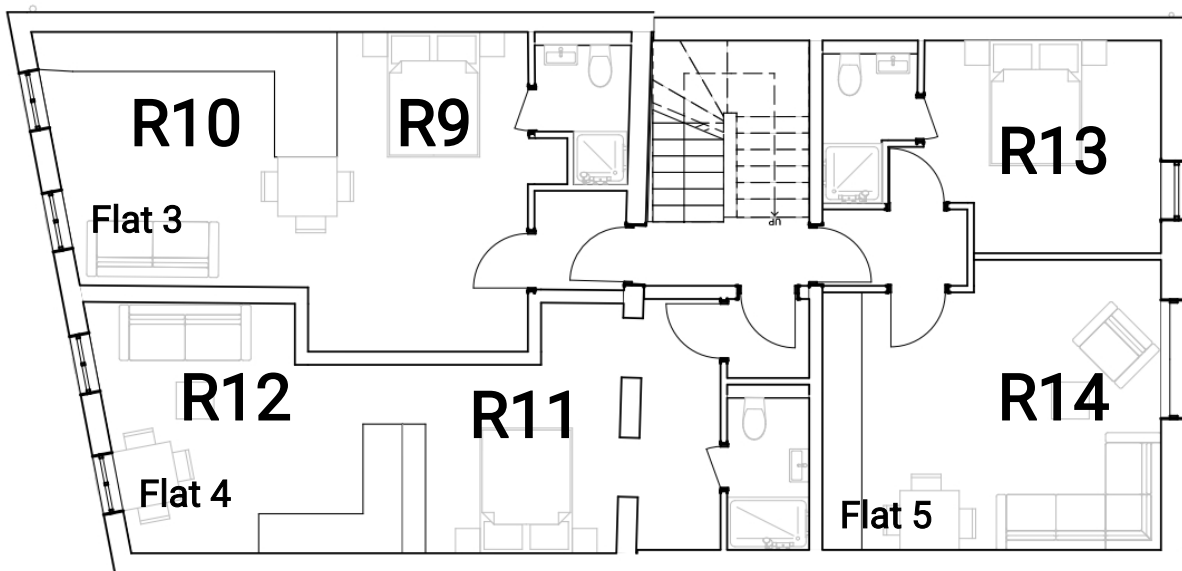


Image 3 – Architectural First Floor Plan

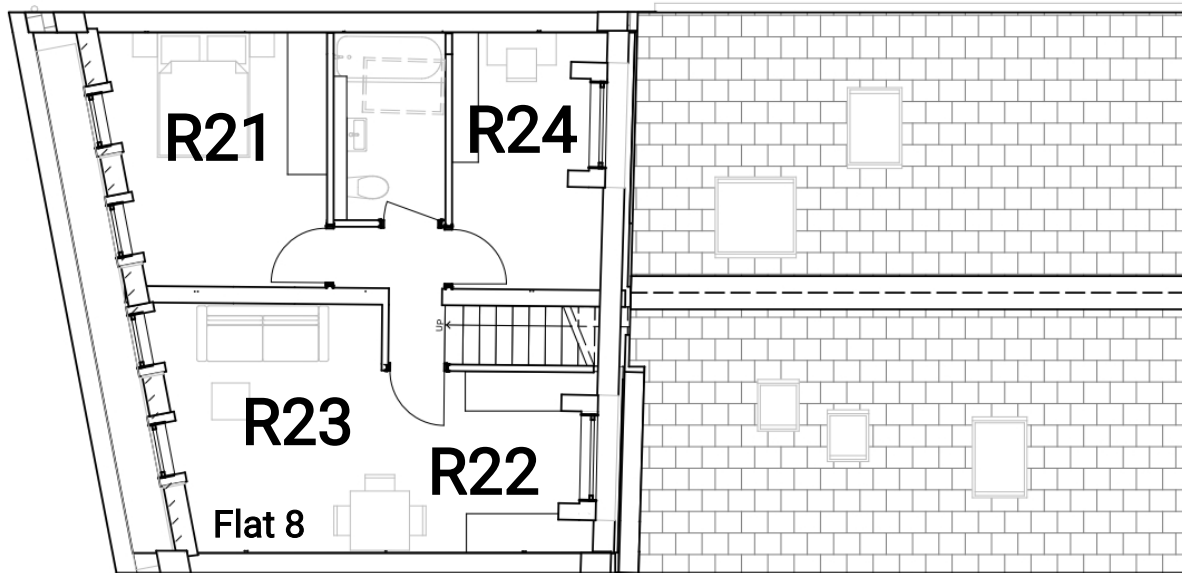


Image 5 – Architectural Third Floor Plan

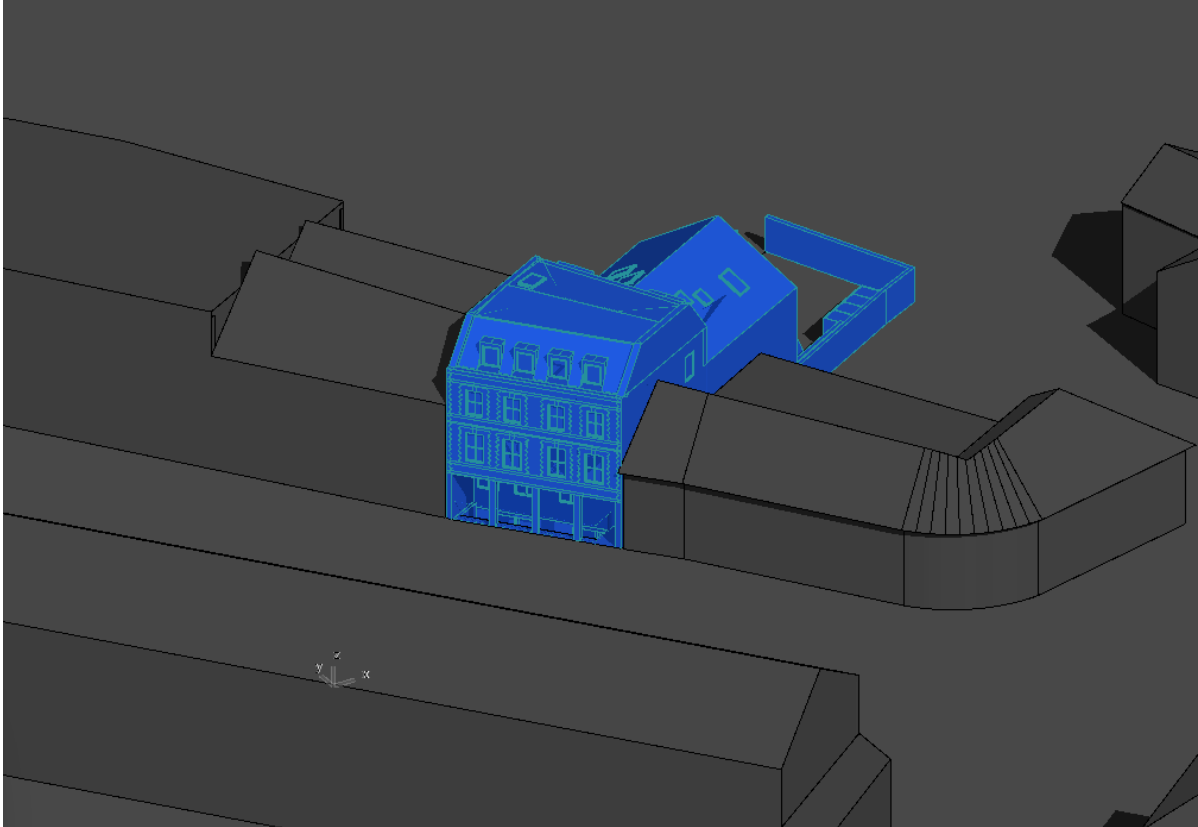


Image 6 – 3D Representation of the Proposal

4. Results

Annual Daylight Results

A habitable room should achieve the recommended illuminance (lux) level for at least 50% of the occupied hours per year over at least 50% of the working plane area.

The annual daylight method involves using climate data for the location of the site (via the use of an appropriate, typical, or average year, weather file) to calculate the illuminance from daylight at each point on an assessment grid on the reference plane at an at least hourly interval for a typical year.

A target illuminance (ET) is the illuminance from daylight that should be achieved for at least half of daylight hours across a specified fraction of the reference plane in a daylit space. Daylight Autonomy (DA) is the percentage of occupied hours that a sensor receives more than the ET, and Spatial Daylight Autonomy (sDA) is an annual daylighting metric that quantifies the fraction of the area within a space for which the DA exceeds a specified value.

As shown in the table on the following page, all habitable rooms exceed the daylighting target by a significant margin – the lowest being 81% against the 50% target. Therefore, the scheme can be considered to perform well in terms of daylighting.

Internal Daylight Assessment					
Room No.	Story	Room Use	Static Median Lux (at noon on the equinox)	sDA (% area exceeding 50% DA between 9am and 3pm)	Target sDA
R1	LG	Bedroom	120	98	50
R2	LG	Bedroom	86	98	50
R3	GF	Kitchen	132	96	50
R4	GF	Living	97	99	50
R5	LG	Bedroom	143	95	50
R6	LG	Bedroom	124	81	50
R7	GF	Kitchen	488	100	50
R8	GF	Living	430	99	50
R9	First	Bedroom	151	100	50
R10	First	Kitchen	434	100	50
R11	First	Bedroom	140	100	50
R12	First	Kitchen	382	97	50
R13	First	Bedroom	397	99	50
R14	First	Kitchen	468	98	50
R15	Second	Bedroom	138	98	50
R16	Second	Kitchen	362	100	50
R17	Second	Bedroom	440	99	50
R18	Second	Bedroom	1177	100	50
R19	Second	Dining	471	100	50
R20	Second	Kitchen	453	100	50
R21	Third	Bedroom	477	99	50
R22	Third	Kitchen	816	100	50
R23	Third	Living	620	97	50
R24	Third	Study	822	99	50

Table 1 – Internal daylight assessment results

Sunlight Results

The BRE refers to the BS EN 17037 criterion to establish sunlight targets for dwellings. It states that each dwelling should have at least one habitable room receiving 1.5 hours of exposure on the 21st of March. There are also medium and high sunlight targets (3 and 4 hours respectively). That being said it must be taken flexibly when considering the site's existing environment, as it may have constraints that determine the orientation of the proposal. In addition, the proposal is a retained building so the design has been constrained.

Internal Sunlight Assessment					
Flat No.	Story	Orientation of Windows	Room Use	Sunlight Exposure (hours)	Result meets target
1	LG & GF	South-West	K/L/D	2	Yes
2	LG & GF	North-East	K/L/D	2	Yes
3	First	South-West	K/L/D	5	Yes
4	First	South-West	K/L/D	5	Yes
5	First	North-East	K/L/D	5	Yes
6	Second	South-West	K/L/D	5	Yes
7	Second	South-West & North-East	K/L/D	9	Yes
8	Third	South-West & North-East	K/L/D	10	Yes

Table 2 – Internal sunlight assessment results

As shown in the above table, all dwellings exceed the 1.5 hours of recommended sunlight.

5. Conclusion

This report has been prepared to support the planning application at **59-61 Southampton, Reading, RG1 2QP**.

The report assesses the internal daylight and sunlight within the proposed accommodation. The assessment is undertaken in accordance with ***"BRE 209 Digest: Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice"***.

The following can be concluded based on the studies undertaken:

All living spaces exceed the BRE daylighting target and all dwellings exceed the sunlight target, therefore the scheme can be considered to perform well in terms of daylight and sunlight.

It can be concluded that the scheme performs well in terms of daylight and sunlight in accordance with the guidance set out in *Site Layout Planning for Sunlight and Daylight: A Guide to Good Practice* by P.J. Littlefair (2022).