Housing Development Maglin Road, Ballincollig, Cork

Daylight & Sunlight Assessment

Project Ref: 20779

Client: O'Flynn Construction Co Unlimited Company

Date: 30/09/2025

BPC ENGINEERS

BUILDING PERFORMANCE CONSULTING

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P4-01	Final Report	30/09/2025	JG	J.Gleeson (CEng MIEI, CMVP (AEE))

Contents

Glossary

Illuminance
A measure of the amount of light falling on a surface, usually measured in lux.

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.

Minimum target illuminance (E_{TM})
Illuminance from daylight that should be achieved for at least half of annual daylight hours across 95% of the reference plane in spaces with vertical and/or inclined daylight apertures.

Daylight factor (D)
Ratio of total daylight illuminance at a reference point on the working plane within a space to outdoor illuminance on a horizontal plane due to an unobstructed CIE standard overcast sky. Thus a 1% DF would mean that the indoor illuminance at that point in the space would be one hundredth the outdoor unobstructed horizontal illuminance.

Daylight, natural light
Part of global solar radiation capable of causing a visual sensation. (CIE, 2020) (Combined skylight and sunlight.)

No sky line
The outline on the working plane of the area from which no sky can be seen.

Obstruction Angle
The angular altitude of the top of an obstruction above the horizontal, measured from a reference point in a vertical plane in a section perpendicular to the vertical plane.

Skylight
Part of *diffuse* sky radiation capable of causing a visual sensation. (CIE, 2020)

Sunlight
Part of direct solar radiation capable of causing a visual sensation. (CIE, 2020)

Winter Probable Sunlight Hours (WPSH)
The long-term average of the total number of hours between the 21st of September and the 21st of March in which direct sunlight reaches the unobstructed ground (when clouds are considered).

Vertical Sky Component (VSC)
Ratio of that part of illuminance, at a point on a given vertical plane, that is received directly from a sky of assumed or known luminance distribution (usually CIE standard overcast sky), to illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. Usually the 'given vertical plane' is the outside of a window wall. The VSC does not include reflected light, either from the ground or from other buildings.

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.

Spatial Daylight Autonomy (sDA)
Spatial Daylight Autonomy (sDA) is a metric describing annual sufficiency of ambient daylight levels in interior environments. It is defined as the percent of an analysis area that meets a minimum daylight illuminance level for a specified fraction of the operating/daylight hours per year. The sDA value is expressed as a percentage of area.

1 Executive Summary

This report provides information on the daylight and sunlight analysis undertaken for the proposed development at Maglin Lands, Ballincollig, Cork. This report focuses on the effect of the proposed development on daylight and sunlight to existing neighbouring dwellings, including the impact on sunlight to neighbouring gardens/amenity areas along with the internal daylight performance of the proposed apartments and sunlight performance to the proposed amenity spaces.

The analysis and assessments in this report have been carried in line with the recommendations of BRE's "Site Layout Planning for daylight and sunlight, a Guide to good practice" (BRE Building Technology Group, 2022) and BS EN 17037.

The BRE Guide provides useful recommendations to ensure adequate levels of daylight and sunlight in the proposed development. However, it has relevance to the impact of the proposed development on existing neighbouring dwellings also. The Guidelines make it clear that levels of daylight and sunlight cannot be expected to be as high in dense urban locations as would be the case in suburban or rural ones. It should be noted that whilst widely used, these are guidelines, and they do not have a statutory or mandatory basis.

The results show that the proposed development will have a negligible impact on surrounding buildings with respect to:

- access to skylight,
- access to sunlight, and
- sunlight to gardens/open spaces.

All surrounding buildings tested in the proposed development meet the minimum recommendations for internal daylight provision as set out in the BRE Guide and BS EN 17037 (National Annex).

The proposed development achieved 98% pass rate using the more onerous target of 200 lux in the Living/Kitchen/Dining room. Therefore, we believe the proposed development performs at an exemplar level for a scheme of this scale and aligns to national policy to ensure high quality sustainable development.

In order to maximise available light, glazing to all habitable rooms is in excess of 20%. The design team have developed the proposed building using the principles of the BREs "Site Layout Planning for Daylight and Sunlight, A guide to good practice".

In terms of the amenity spaces provided the results show all the amenity spaces receive greater than 2 hours of sunlight on March 21st. Therefore, the proposed open spaces exceed the BRE's recommendation for sunlight and should appear adequately sunlit throughout the year

Overall, the development has been designed with due consideration for sunlight and daylight and meets the recommendations as set out in the BRE Guide – BR 209 "Site Layout Planning for Daylight and Sunlight, A guide to good practice (2022)."

2 Introduction

Site layout planning to achieve good daylighting and sun lighting, within buildings and in the open spaces around them is an important aspect in designing new buildings or developments. Daylight animates an interior and makes it attractive and interesting, as well as providing light to work or read by. Good daylight and sunlight can contribute to making a building energy-efficient; they can reduce the need for electric lighting, while winter solar gain can reduce heating requirements.

This report provides information on the daylight and sunlight analysis undertaken for the proposed development at Maglin Lands, Ballincollig, Cork.

The proposed development consists of the demolition of the existing farmhouse and associated outbuildings on site, the refurbishment of Maglin House and the existing gate lodge and the construction of 1,150 no. residential units, 1 no. creche, 3 no. commercial units and all other ancillary development at Maglin, Ballincollig, Carrigrohane and Ballynora (townlands), Ballincollig, Cork. A full description is included in Chapter 2 of the EIAR and in the statutory notices.

The analysis and assessments in this report have been carried in line with the recommendations of BRE's "Site Layout Planning for daylight and sunlight, a Guide to good practice" (BRE Building Technology Group, 2022) and BS EN 17037. The aforementioned BRE guide is also known as BRE Guide BR 209 and may be referenced as such or simply as the "BRE Guide" hereafter in this document.

This report assesses the proposed development's impact on daylight and sunlight to the existing buildings by the following means:

- Obstruction Angle Check (25-degree Line test)
- Vertical Sky Component (VSC)
- Sunlight to Gardens/Open Spaces

The report also assesses access to sunlight for the proposed development by means of sunlight to gardens/open spaces

Additionally, Appendix A provides shadow images for the proposed development.

3 Site Description

3.1 Location & Context

The site located to the east of Maglin Road and to the the north of the Ballincollig bypass. The site is currently agricultural land but is part of Ballincollig.

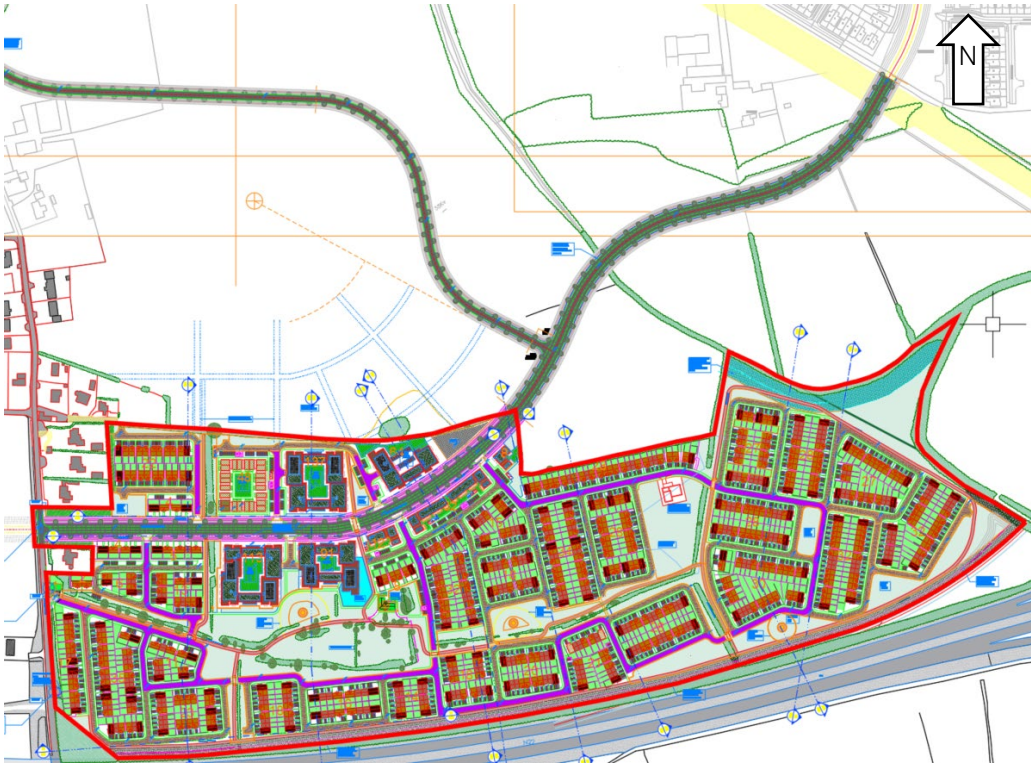


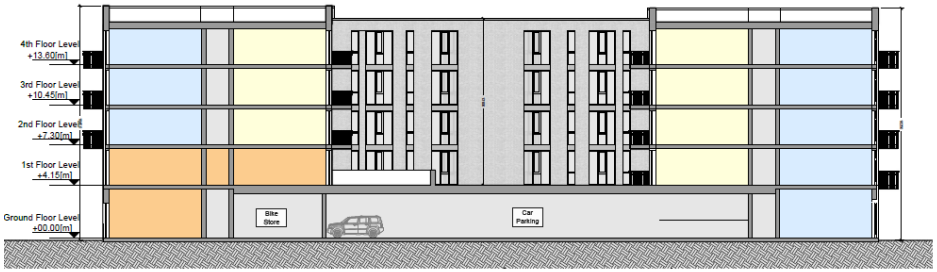
Figure 1: Site Plan of Maglin lands

Figure 2: Aerial View of Site (Courtesy Google Maps) [Site boundary is only indicative. Refer to architectural drawings for accurate site boundary details.]

3.2 Proposed Development

The proposed development consists of the demolition of the existing farmhouse and associated outbuildings on site, the refurbishment of Maglin House and the existing gate lodge and the construction of 1,150 no. residential units, 1 no. creche, 3 no. commercial units and all other ancillary development at Maglin, Ballincollig, Carrigrohane and Ballynora (townlands), Ballincollig, Cork.

The following images provide details of the proposed apartment and duplex blocks within the development.



Section D-D

Scale 1: 200 @A1

Section C-C

Scale 1: 200 @A1

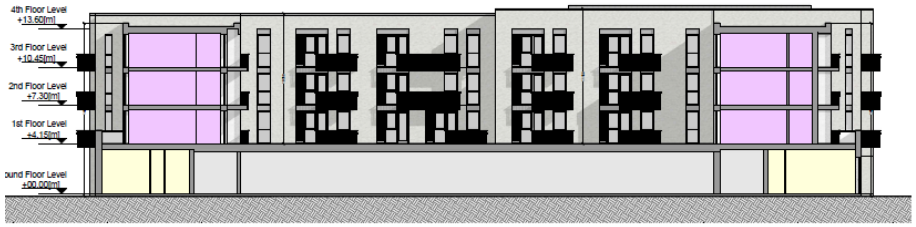
Figure 3: Block-A Section D_D & C_C Elevation

Section A-A
Scale 1: 200 @A1

Section B-B
Scale 1: 200 @A1

Figure 4: Block-A Section A_A & B_B Elevation

Courtyard - East Elevation
Scale 1: 200 @A1



Couryard - West Elevation
Scale 1: 200 @A1

Figure 5: Block-B East and West Section Elevation

North Elevation

Scale 1: 200 @A1

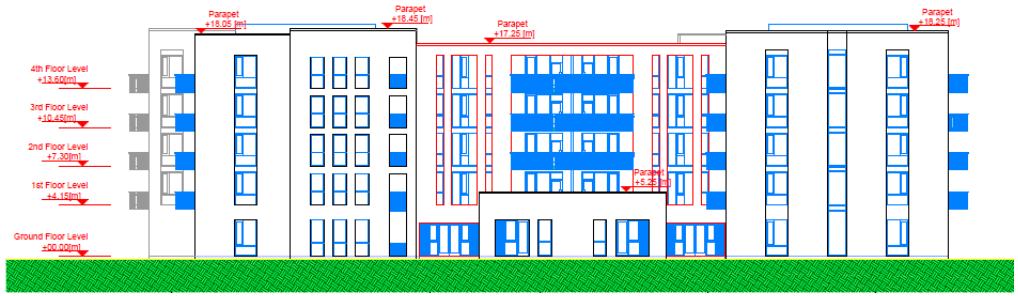
South Elevation

Scale 1: 200 @A1

Figure 6: Block-B North and South Elevation

North Elevation

Scale 1: 200 @A1



South Elevation

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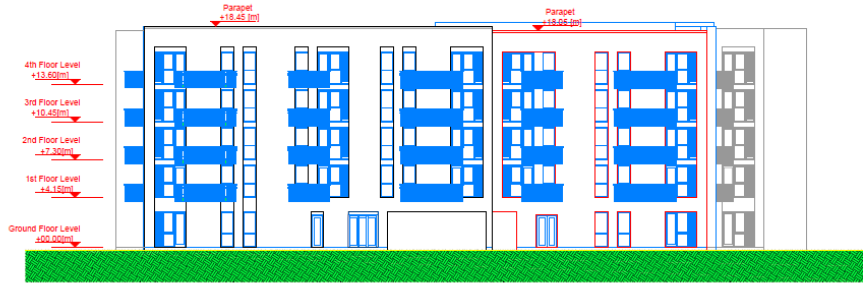
Figure 7: Block-C North and South Elevation

East Elevation

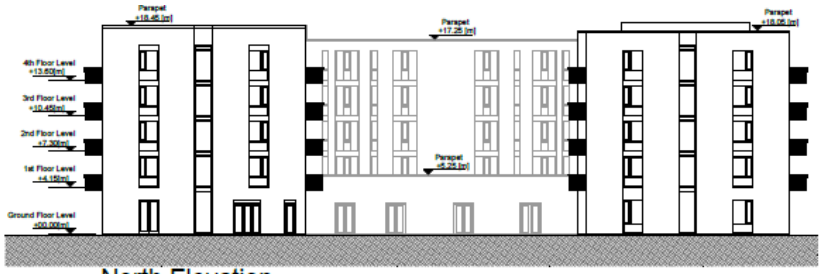
Scale 1: 200 @A1



West Elevation

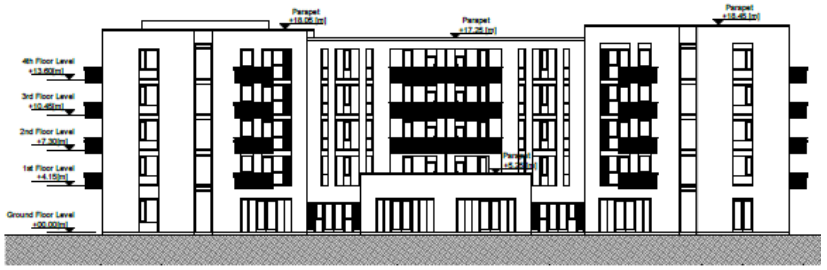
Scale 1: 200 @A1

Figure 8: Block-C East and West Elevation



North Elevation

Scale 1: 200 @A1



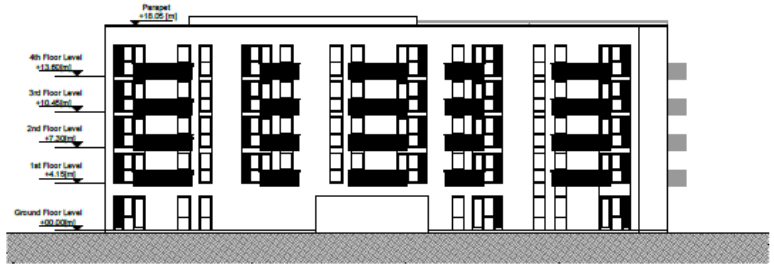
South Elevation

Scale 1: 200 @A1

Section AA

Scale 1: 200 @A1

Figure 9: Block-E North and South Section & Elevation



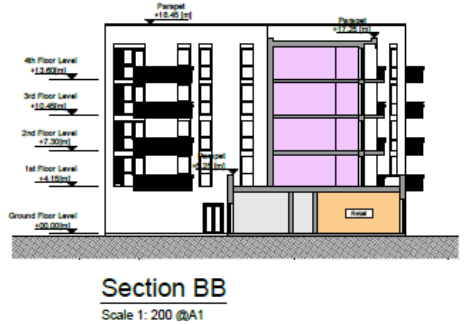


Figure 10: Block-E East and West Section & Elevation

3.3 Sensitive Receptors

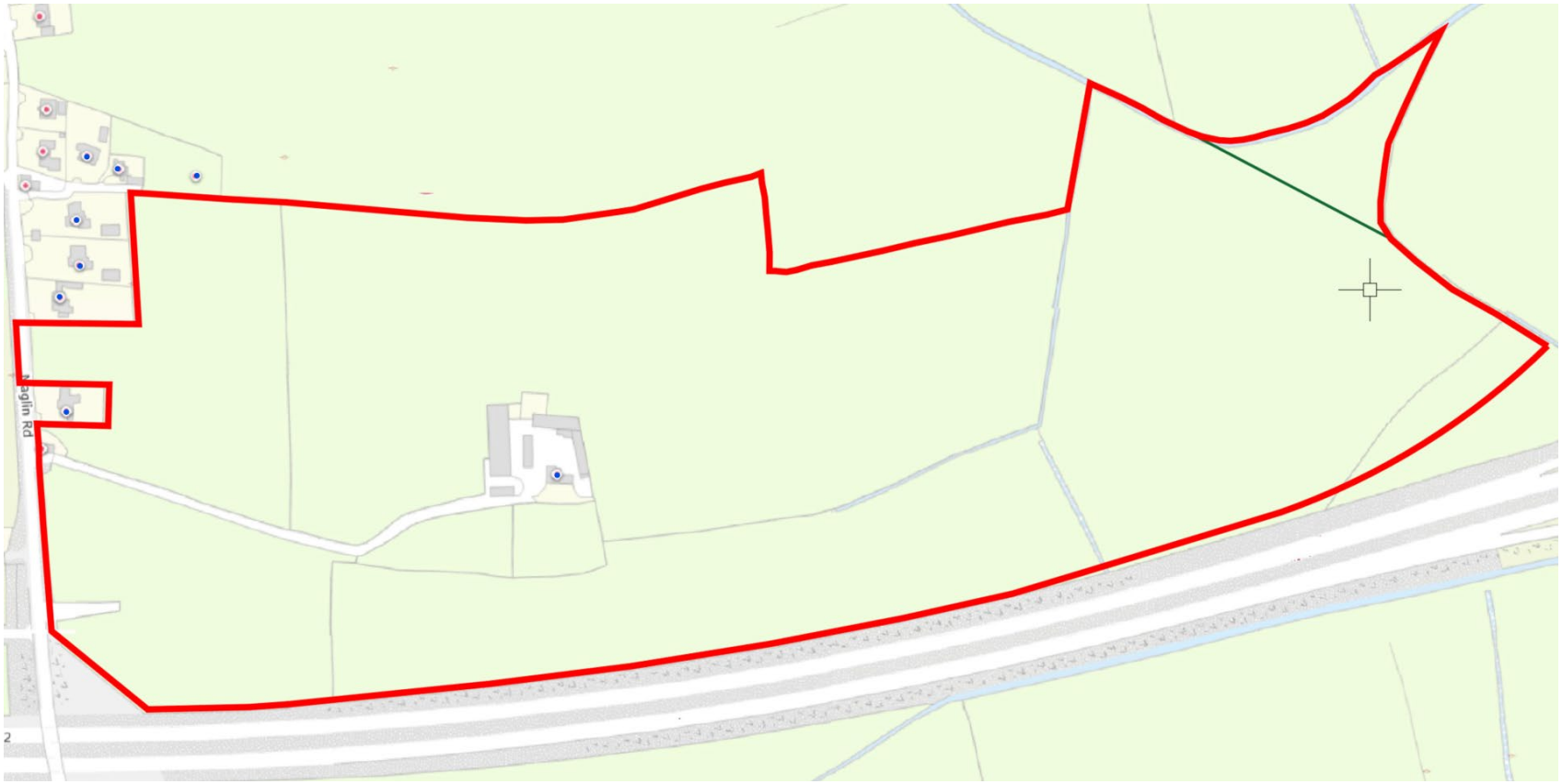
The BRE guide states that when assessing the potential effects of a proposed development on existing buildings, only those windows and rooms that have a 'reasonable expectation' of daylight and sunlight need to be considered. Windows and rooms which meet these criteria are considered to be 'sensitive receptors. Paragraph 2.2.2 of the BRE guide clarifies what are considered sensitive receptors with respect to sunlight and daylight as follows:

"The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels and hostels, small workshops and some offices."

Outdoor amenity spaces which have a reasonable expectation of sunlight, whether they are private gardens, communal open spaces or outdoor public amenity areas, are also considered sensitive receptors.

Sensitive receptors that may be affected by the proposed development are highlighted in Table 1 below.

Table 1: Sensitive Receptors

Sensitive Receptors Image/Map	Legend
 (Background Image/Map credit: https://www.eircode.ie/)	Site Boundary Potential Sensitive Receptors
	Notes: 1. Properties highlighted in blue will not definitely be impacted by the proposed development. This is just an initial indication of properties that will be assessed. 2. Several properties at Maglin Roads do not have house names.

4 Methodology & Assessment Criteria

The analyses and assessments are based on the guidelines set out in the BRE guide (BR 209) "Site Layout Planning for Daylight and Sunlight, A Guide to Good Practice" (BRE Building Technology Group, 2022). This guide is intended to be used in conjunction with interior lighting recommendations in BS EN 17037 Daylight in buildings, and in the CIBSE publication LG 10 Daylighting – a guide for designers.

It should also be noted that although the BRE guide gives numerical guidelines, "*these should be interpreted flexibly since natural lighting is only one of many factors in site layout design.*" (BRE Building Technology Group, 2022)

Advanced lighting simulation software is used to perform the analysis. The software combines 3D modelling capabilities with a suite of programs which employ advanced raytracing. The software fully meets all relevant guidelines set out in the BRE Guide BR209. The software has the ability to perform annual simulations based on hourly climatic data. This type of simulation is used for the assessment of internal daylight provision in new buildings (discussed in section 4.2.)

Throughout this report an effort will be made to differentiate between metrics used to assess skylight only, sunlight only or a combination of both - daylight. As defined in the glossary of the BRE Guide, "Daylight" is an umbrella term that includes both skylight and sunlight—the diffuse and direct components of light from the sky respectively. Unfortunately, the terms daylight and skylight are often used interchangeably but this report will aim to specify when daylight specifically refers to skylight or when it also encompasses sunlight.

The following sub-sections outline the methodology and assessment criteria used.

4.1 Existing Buildings

The impact of the proposed development on the existing buildings (sensitive receptors only) with respect to daylight is assessed using the following methodologies. The methodologies are grouped into sub-sections based on whether they are "Light from the sky" analysis or "Sun lighting" analysis.

4.1.1 Light from the Sky

4.1.1.1 Obstruction Angle Check

The BRE guide states that:

"Loss of light to existing windows need not be analysed if the distance of each part of the proposed development from the existing window is three or more times its height above the centre of the existing window. In these cases, the loss of light will be small." (BRE Building Technology Group, 2022)

Therefore, in Figure 7, if the distance s1 was at least 3 times greater than h1, loss of light to the existing windows would not need to be analysed.

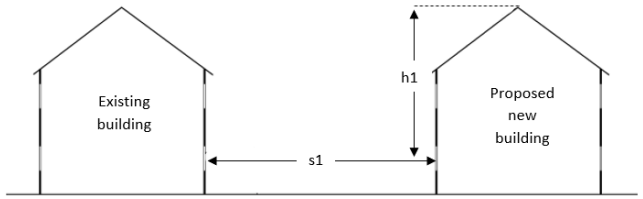


Figure 11: Spacing-to-Height Ratio

If the development is taller or closer than this, then the obstruction angle of the new development can be checked, where the obstruction angle is the angle subtended by the new development at the level of the centre of the lowest window in the existing building.

"If this angle is less than 25° for the whole of the development then it is unlikely to have a substantial effect on the diffuse skylight enjoyed by the existing building." (BRE Building Technology Group, 2022)

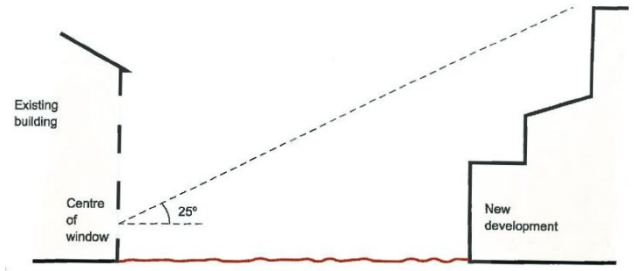


Figure 12: Obstruction Angle Check (25 Degree Line Test)

The obstruction angle is measured from the 3D CAD model. This check is suitable for existing windows where the proposed development is directly opposite an existing window, i.e. proposed development is cut by a vertical section drawn perpendicular to the window.

If, for any part of the new development, this angle is more than 25°, a more detailed check is needed to find the loss of skylight to the existing building. This may also be required in cases where the existing windows are not opposite the proposed development.

4.1.1.2 Vertical Sky Component (VSC)

Any reduction in the total amount of skylight for the existing properties can be calculated by finding the VSC at the centre of each main window. The Vertical Sky Component (VSC) is the ratio of the direct sky illuminance at the vertical reference point, to the simultaneous illuminance on an unobstructed horizontal plane. Reflected light is not included.

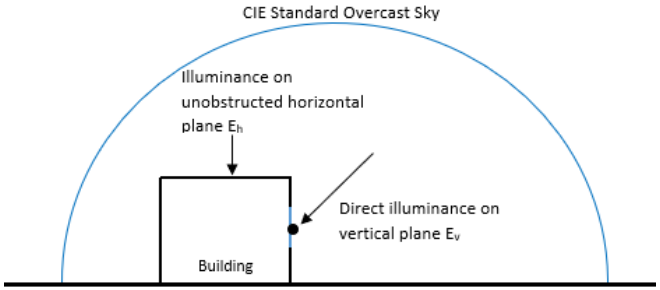


Figure 13: Vertical Sky Component

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 is used. The reference point is in the external plane of the window wall. Windows to bathrooms, toilets, storerooms, circulation areas and garages are not analysed.

Note that because the CIE standard overcast sky model is used, VSC is independent of orientation and location. (It is a *skylight* metric.)

The diffuse daylighting of any existing building may be adversely affected if:

"the VSC measured at the centre of an existing main window [or 1.6m above bottom of glazed door] is less than 27%, and less than 0.8 times its former value." (BRE Building Technology Group, 2022)

4.1.1.3 No Skyline

While VSC provides an indication of skylight availability, it does provide any information on the distribution of light within a space. In addition to external obstructions, the distribution of daylight within a space is dependent on window sizes and positioning, and room layouts. The no skyline divides points on the working plane which can and cannot see the sky.

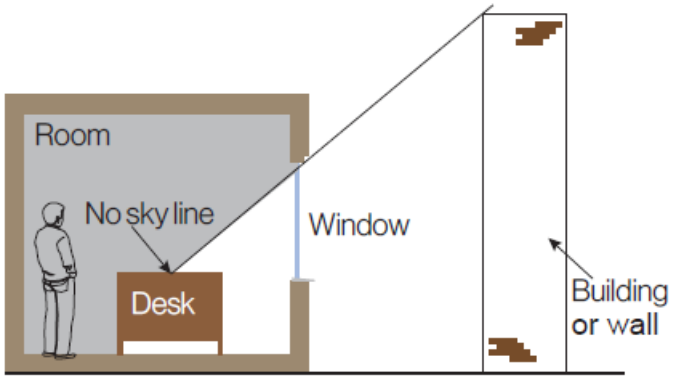


Figure 14: No Skyline [courtesy (BRE Building Technology Group, 2022)]

Areas beyond the no skyline, since they receive no direct daylight, usually look dark and gloomy compared with the rest of the room.

Where room layouts are known, the impact on the daylighting distribution in the existing building should be found by plotting the no sky line in each of the main rooms.

The diffuse daylighting of an existing building may be adversely affected if:

"the area of the working plane in a room which can receive direct skylight is reduced to less than 0.80 times its former value." (BRE Building Technology Group, 2022)

(Room layouts for neighbouring buildings are often not readily available, hence VSC is often the only analysis performed.)

4.1.2 Sun lighting

"In designing a new development or extension to a building, care should be taken to safeguard the access to sunlight both for existing dwellings, and for any nearby non-domestic buildings where there is a particular requirement for sunlight." (BRE Building Technology Group, 2022)

Obstruction to sunlight may become an issue if:

- Some part of a new development is situated within 90° of due south of a main window wall of an existing building.
- In the section drawn perpendicular to this existing window wall, the new development subtends an angle greater than 25° to the horizontal measured from the centre of the lowest window to a main living room.

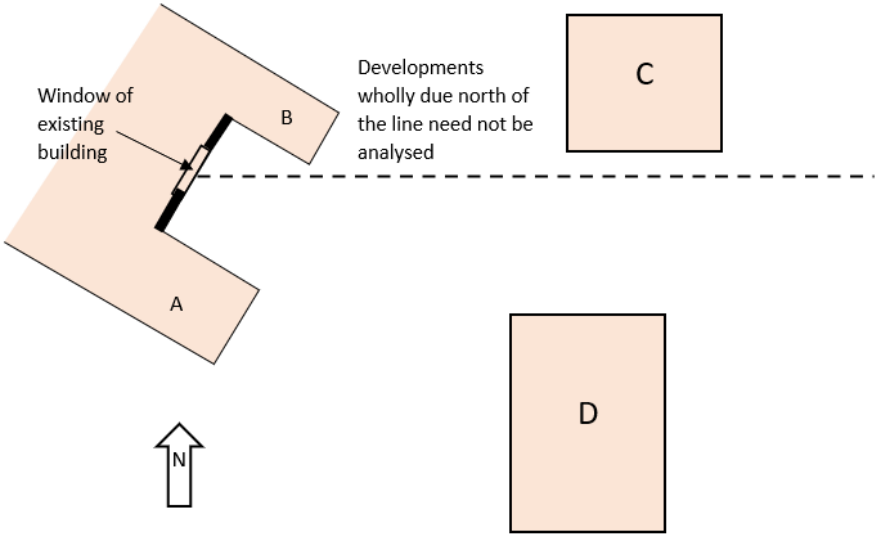


Figure 154: Sunlight Analysis Scenarios for Existing Buildings

No sunlight check is required on the existing window for proposed extension B and new building C, as they lie within 90° of due north of the window. The impact on sunlight to the existing window should be checked for proposed extension A, and new building D if it subtends more than 25° to the horizontal, measured in section from the centre of the window.

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.

4.1.2.1 Probable Sunlight Hours

To calculate the loss of sunlight to an existing building over the year, the annual probable sunlight hours (APSH) metric can be 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.*" (BRE Building Technology Group, 2022)

Sunlight to an existing dwelling may be adversely affected if the centre of a main living room window (which faces within 90° of due south):

- receives less than 25% of annual probable sunlight hours (APSH) 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 (often referred to as winter probable sunlight hours - WPSH) and less than 0.80 times its former value during that period.
- and has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

4.1.2.2 Basic Assessment

It is not always necessary to do a full calculation using Annual Probable Sunlight Hours APSH (section 4.1.2.1). The same "spacing-to-height ratio" and "obstruction angle" checks discussed in section 4.1.1.1 can be used to determine if a more detailed calculation is necessary or not. Additionally, depending on the VSC and orientation of the existing windows an APSH assessment may not be required. The recommendation for safeguarding sunlight to existing neighbouring buildings will be met if:

- *"the distance of each part of the new development from the existing window is three or more times its height above the centre of the existing window [see Figure 7] (note: obstructions within 90° of due north of the existing window need not count here).*
- *The window wall faces within 90° of due south and no obstruction, measured in the section perpendicular to the window wall, subtends an angle of more than 25° to the horizontal [Figure 8]. Again, obstructions within 90° of due north of the existing window need not be counted.*
- *The window wall faces within 20° of due south and the reference point has a VSC of 27% or more."* (BRE Building Technology Group, 2022)

4.1.3 Sunlight to Existing Gardens & Open Spaces

Good site layout planning for daylight and sunlight should not limit itself to providing natural lighting inside buildings. Sunlight in the spaces between buildings has an important impact on the overall appearance and ambience of a development.

"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 which can receive two hours of sun on 21 March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable." (BRE Building Technology Group, 2022)

4.1.3.1 Shadow Plots

The BRE guide states:

"Where a large building is proposed which may affect a number of gardens or open spaces it is often illustrative to plot a shadow plan showing the location of shadows at different times of day and year."

4.1.4 Impact Classification

Appendix H of the BRE Guide – "Environmental Impact Assessment" states that the impact of a new building on its surroundings can be classified as negligible, minor, moderate or major adverse. Where the loss of skylight or sunlight fully meets the guidelines in the BRE guide, the impact is assessed as negligible or minor adverse. Where the loss of skylight or sunlight does not meet the BRE guidelines, the impact is assessed as minor, moderate or major adverse.

Table 2 provides a more detailed description of the impact classification.

Table 2: Environmental Impact Assessment: Impact Classification

Negligible impact	• *Loss of light well within guidelines,* ***or*** • *only a small number of windows losing light (within the guidelines)* ***or*** • *limited area of open space losing light (within the guidelines)*

Minor adverse impact (a)	• *Loss of light only just within guidelines* ***and***
	  ○ *a larger number of windows are affected* ***or***
	  ○ *larger area of open space is affected (within the guidelines)*

Minor adverse impact (b)	• *only a small number of windows or limited open space areas are affected* • *the loss of light is only marginally outside the guidelines* • *an affected room has other sources of skylight or sunlight* • *the affected building or open space only has a low-level requirement for skylight or sunlight* • *there are particular reasons why an alternative, less stringent, guideline should be applied*
Major adverse impact	• *large number of windows or large open space areas are affected* • *the loss of light is substantially outside the guidelines* • *all the windows in a particular property are affected* • *the affected indoor or outdoor spaces have a particularly strong requirement for skylight or sunlight (living rooms / playground)*

A moderate adverse impact falls somewhere between the criteria for *"Minor Adverse Impact (b)"* and *"Major Adverse Impact"*.

4.2 New Buildings

The daylight provision was also checked for the proposed development.

4.2.1 Light from the Sky

Section 2.1.8 of the BRE Guide states that:

"Daylight provision in new rooms may be checked using either of the methods in BS EN 17037 Daylight in Buildings: direct prediction of illuminance levels using hourly climate data, or the use of the daylight factor (D)".

Both methods are measures of the overall amount of daylight in a space.

The daylight factor (D) method addresses daylight provision as a ratio of unobstructed external illuminance under overcast sky conditions. This method involves calculating the daylight factor (D) that would be exceeded over half of the room, i.e. the median daylight factor (this is not the same as the average daylight factor used in the previous standard, BS8206-2). The recommended daylight factor values are location specific. This method will not be discussed in any more detail in this report as the illuminance method is the preferred option.

4.2.1.1 Illuminance Method (Target Illuminance E_T)

The illuminance method "*involves using climatic data for the location of the site (via the use of an appropriate, typical or average year, weather file within the software) 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."* (BRE Building Technology Group, 2022)

"A target illuminance (E_T) should be achieved across at least half of the reference plane in a daylit space for at least half of the daylight hours. Another target illuminance (E_{TM}) should also be achieved across 95% of the reference plane for at least half of the daylight hours; this is the minimum target illuminance to be achieved towards the back of the room." (BRE Building Technology Group, 2022)

(Note that since hourly climatic data is used based on the location of the site, location and orientation are accounted for. The target illuminance can therefore be considered a *daylight* metric, i.e. incorporating both skylight and sunlight.)

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

Table 3 gives the target illuminances for side lit rooms. Different targets, given in Table A2 of BS EN 17037, apply in spaces with horizontal rooflights.

Table 3: EN 17037 Target Illuminances

Level of recommendation	Target illuminance E_T (lx) for half of assessment grid	Target illuminance E_{TM} (lx) for 95% of assessment grid
Minimum	300	100
Medium	500	300
High	750	500

The guidance contained in BR 209 is intended to be used with BS EN 17037 and its UK National Annex. The UK National Annex gives specific minimum recommendations for habitable rooms in dwellings in the UK. Although Ireland adopted EN17037 directly as IS EN EN17037, it is expected that all councils in Ireland will adopt the UK National Annex recommendations. The Dubin City Council Development Plan 2022-2028 states:

"is important to note that no amendments were made to [the IS EN 17037] document and unlike BS EN 17037, it does not contain a national annex. It offers only a single target for new buildings (there are no space-by-space targets – e.g. a kitchen would have the same target as a warehouse or office). […] These limitations make it unsuitable for use in planning policy or during planning applications. BR 209 must still be used for this purpose."

Even if a predominantly daylit appearance is not achievable for a room in a dwelling, the National Annex NA recommends that the target illuminance values given in Table 4 are exceeded over 50% of the points on a reference plane 0.85 m above the floor, for at least half of the daylight hours.

Table 4: BS EN 17037 NA Target Illuminances for dwellings

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

Where one room in a dwelling serves more than a single purpose, it is recommended 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.

However, it is recommended that local authorities 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.."* (BRE Building Technology Group, 2022). This may be appropriate in instances where small internal kitchens are unavoidable in apartment developments.

The minimum target illuminance level to be achieved across 95% of the reference plane within a space need not be applied to rooms in dwellings.

To avoid any confusion, the targets in Table 4 are those used for the purposes of this analysis.

The illuminance method is detailed and calculation intensive. It can take some time to process depending on the software, detail of the calculation model and the available computing power hence why the daylight factor (D) method may be preferred by some. However, it can provide additional information beyond the limits of the Daylight Factor method due to the use of hourly climate data.

There are a few ways the results of this type of analysis can be presented. One method is to report the % *area* of the reference plane exceeding the target illuminance E_T (for half of the daylight hours.) (This area should be greater than 50% to meet the BS EN 17037 recommendations.) This is equivalent to Spatial Daylight Autonomy (sDA)[1]. BR209 recommends reporting the median illuminance (exceeded over 50% of the reference plane) as this enables comparison with the different recommendations in BS EN 17037. It says that "*As an optional extra, the proportional area of the reference plane exceeding a particular target value may be presented".* It should be noted that the calculation methodology and results are the same in both instances. It is only the *presented* result that differs. For completeness, the results will be presented in both ways, i.e. both of the below metrics will be presented:

- The ***median illuminance*** (the illuminance exceeded over 50% of the reference plane).
- The ***% area*** of the reference plane exceeding a particular target illuminance (lux).

The presentation of the internal daylight provision results and how the various metrics are related are discussed in more detail in Appendix D.

The settings used in the computational model for the illuminance calculations are outlined below:

- The reference/working plane is taken to be 0.85m above the floor.

[1] Some additional information on sDA is provided in Appendix D.

The settings used in the computational model for the illuminance calculations are outlined below:

- The reference/working plane is taken to be 0.85m above the floor.
- The grid spacing is 0.1m.
- A band of 0.3m from the walls is excluded from the grid.
- Window frame factor is set to 20% (This is based on the size of the window openings and the area of the window which is framing.)
- The glazing transmittance (normal) was set to 0.70.
- The glazing maintenance factor is set to 96% (This accounts for the reduction in glazing transmittance due to dirt; 4% loss of daylight compared with clean glazing.)
- The illuminance calculations take account of light which has been reflected from both external and internal surfaces. In the absence of detailed information on surface reflectances the recommended default reflectances from BR209 2022 have been used. These are detailed in Table 5 below.

Table 5: Surface Reflectances

Surface Type	Reflectance
Interior walls	0.50
Floors	0.20
Ceilings	0.70
Exterior walls and obstructions	0.20
Exterior Ground	0.20

Table 6: Balcony Glazing Properties

Surface Type	Properties
Balcony Glazing	Transmittance: 0.80 Refractive Index: 1.52

4.2.2 Sun lighting

For interiors, access to sunlight can be quantified based on the methodology set out in BS EN 17037.

"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.*

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." (BRE Building Technology Group, 2022)

There are 3 levels of recommendation provided in EN 17037 relating to sunlight to a room:

- 1.5 hours is the minimum level,
- 3 hours is the medium level, and
- 4 hours is the high level

For dwellings, as outlined above, at least one habitable room, preferably a main living room, should meet at least the minimum criterion.

4.2.3 Sunlight to Proposed Open Spaces

The BRE Guide recommends:

"*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.*"

The communal open spaces and amenity space are analysed and assessed against the above criterion.

5 Analysis

5.1 Overview of Computational Models

3D models of the existing the proposed scenarios were created. The site plans and 2D drawings provided by the architect were used to correctly position the surrounding buildings relative to the existing and proposed buildings.

3D models of the existing the proposed schemes were created. The existing and analysed (surrounding) models are based on 2D drawings provided by the architect supplemented by Google Street Maps and OS maps. The proposed model is based on the 2D CAD drawings provided by the architect:

In the following figures the building colours correspond to the following:

- Beige/buff elements represent the existing surrounding buildings that are analysed
- The blue elements are the buildings in the proposed development.

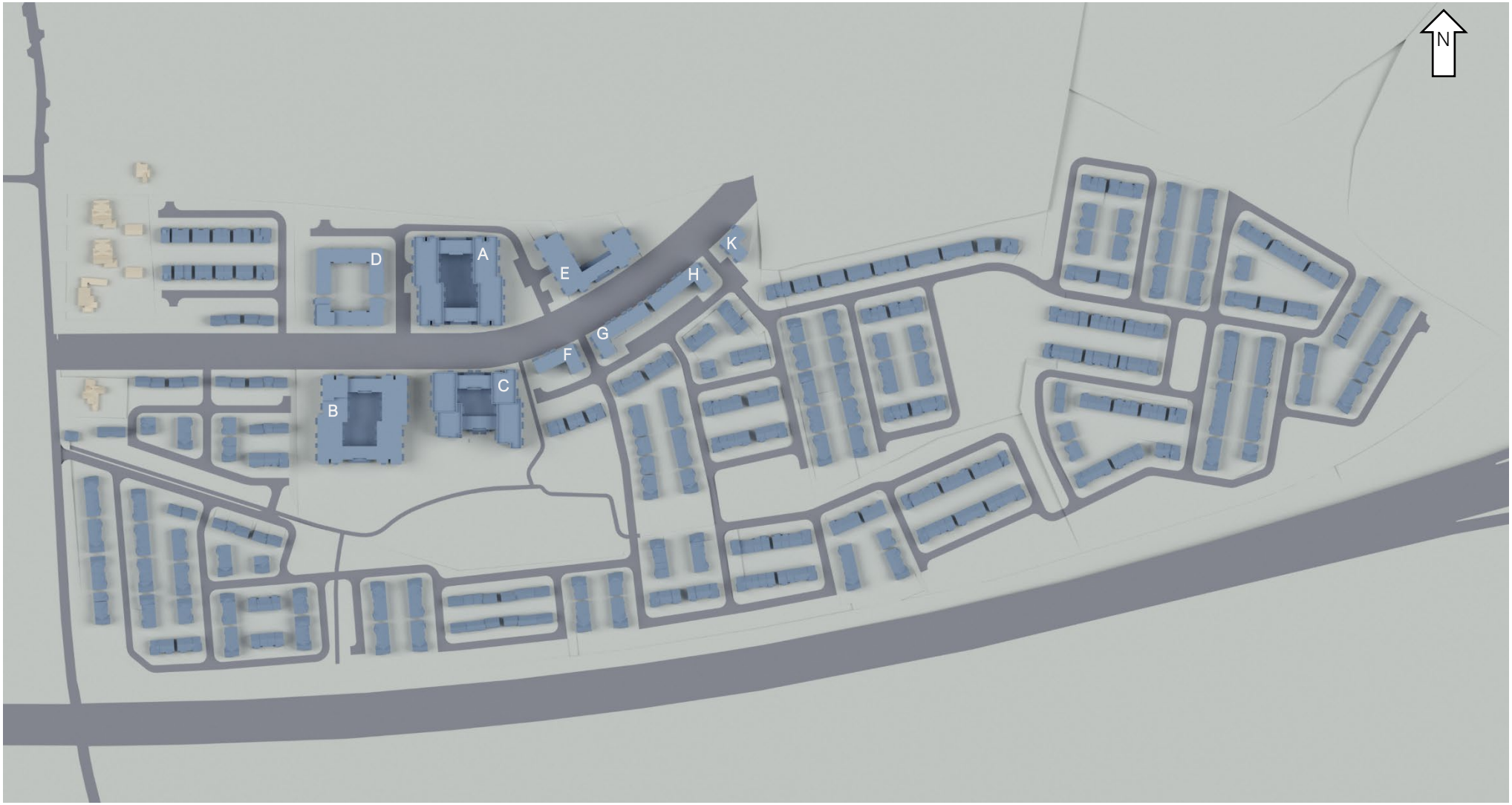


Figure 16: Proposed Model (Plan View)

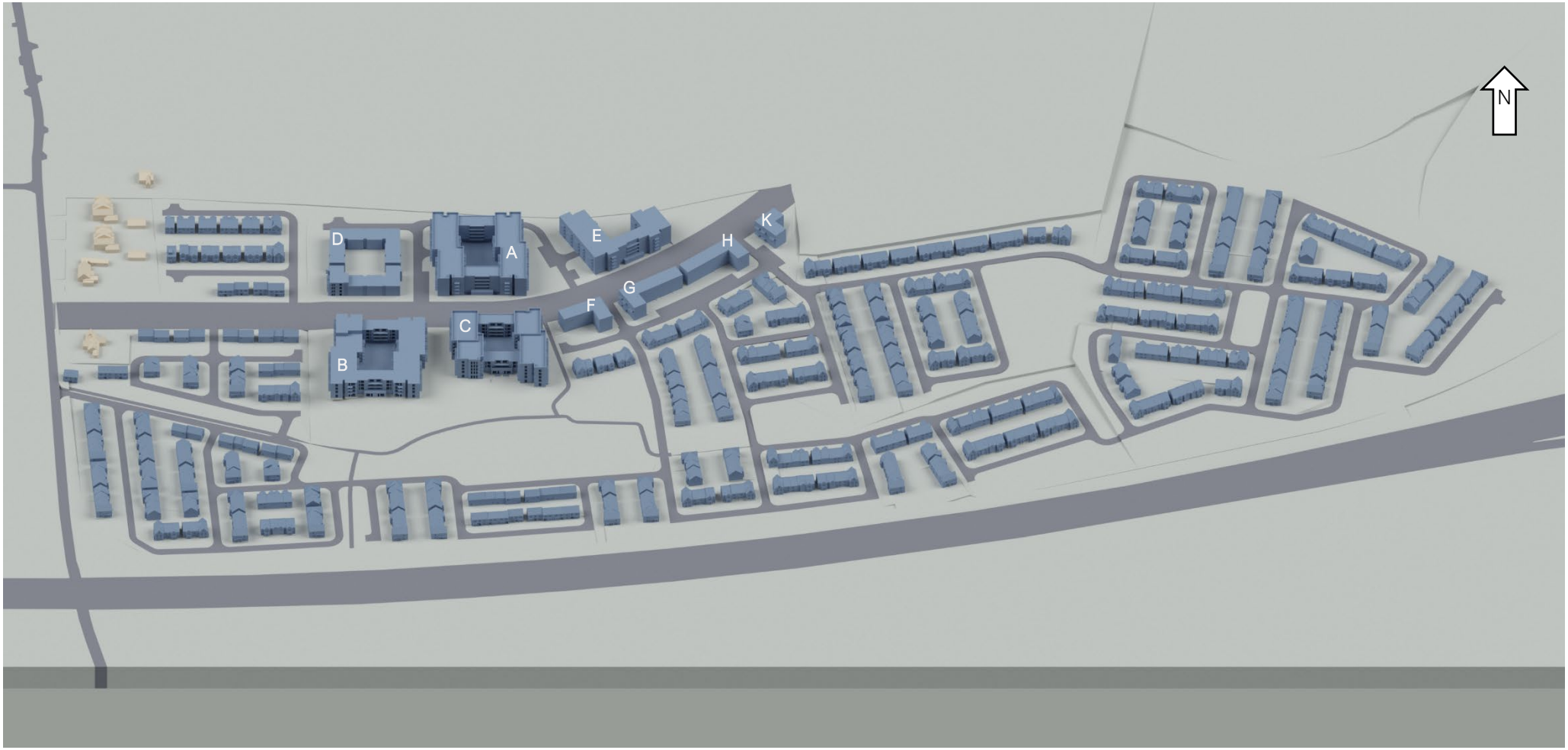


Figure 17: Proposed Model (Perspective view looking North)

5.2 Existing Buildings

5.2.1 25 Degree Line Test

The obstruction angle was checked for the closest properties to the site that have windows directly opposite the proposed development. These are all located Maglin Road.

25-degree planes were drawn from the centre of the closest windows of the neighbouring properties. As these windows are the closest to the proposed development, if they are not adversely impacted, then it follows that the other adjacent neighbouring properties will not be adversely impacted.

The results for the “25-degree line test” are shown in the following figures. The 25-degree planes are shown in red.

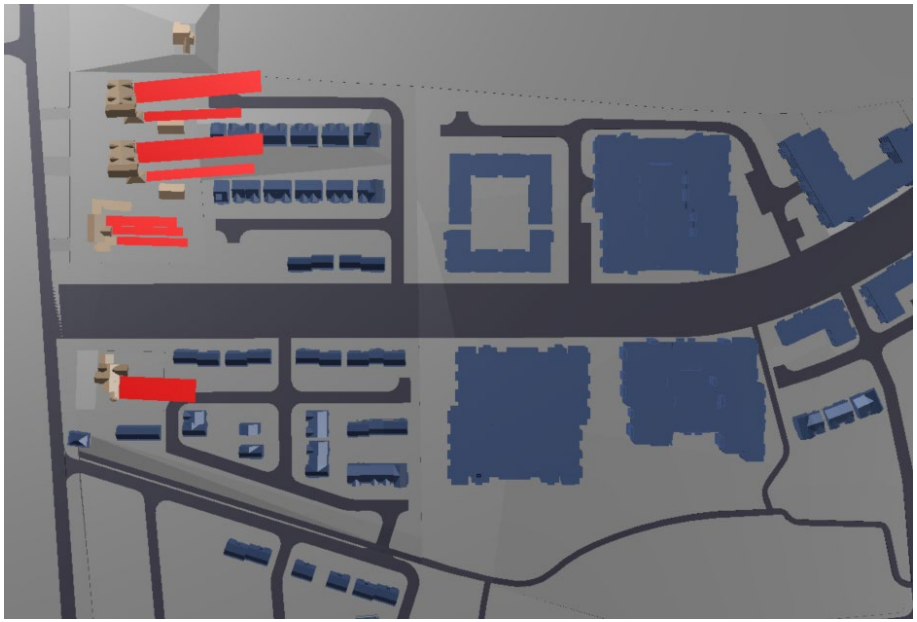


Figure 18: 25 Degree Planes Plan View

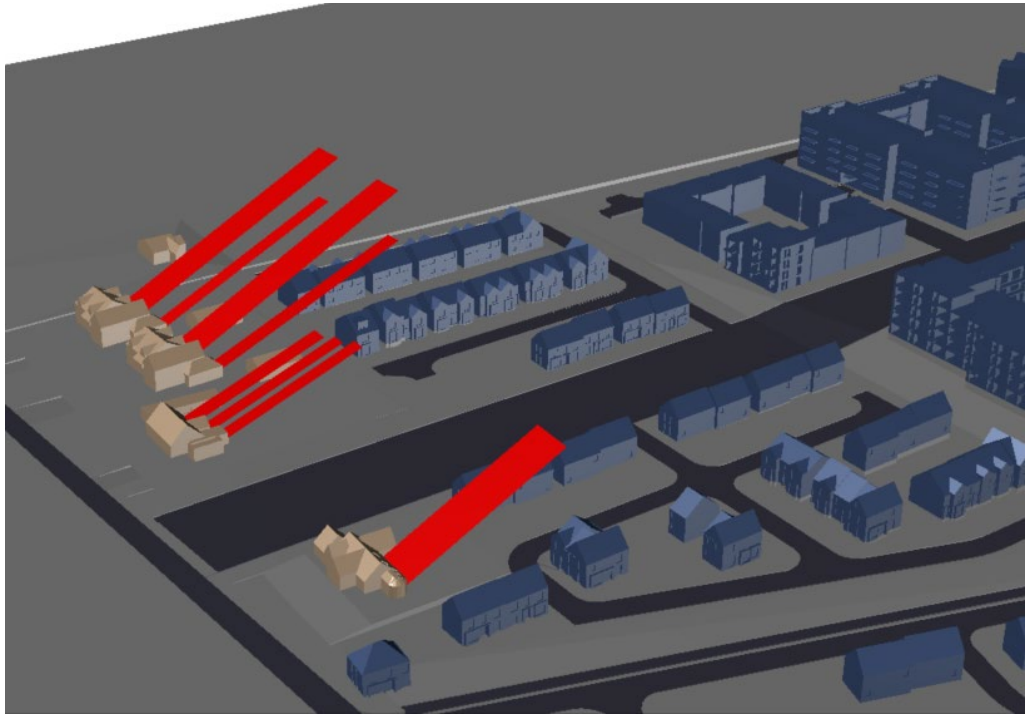


Figure 19: 25 Degree Planes Perspective View (looking east)

The analysis shows that none of the 25-degree planes cut the proposed development. That is to say, the obstruction angle is less than 25 degrees for all of the properties/windows tested. Therefore, the proposed development will have a negligible impact on the skylight enjoyed by the existing neighbouring dwellings (See Table 1: Sensitive Receptors for building labels).

5.2.2 VSC Analysis

The 25-degree plane test shows that the development will have a negligible impact on the houses on Maglin Road. However, not all neighbouring properties are directly opposite the proposed development, so VSC analysis has been performed for the remaining neighbouring properties. These are labelled in Table 1: Sensitive Receptors as:

- Maglin House
- Swallow Lodge 2
- Swallow Lodge 1
- Elmville
- Erdeven

Some assumptions had to be made for window positions at the rear of these properties where information could not be gleaned from Google Street View or otherwise. Where assumptions must be made, multiple VSC points are spaced evenly across each facade facing the proposed development. The VSC points for each property are shown in the following figures.

Figure 20: Maglin House

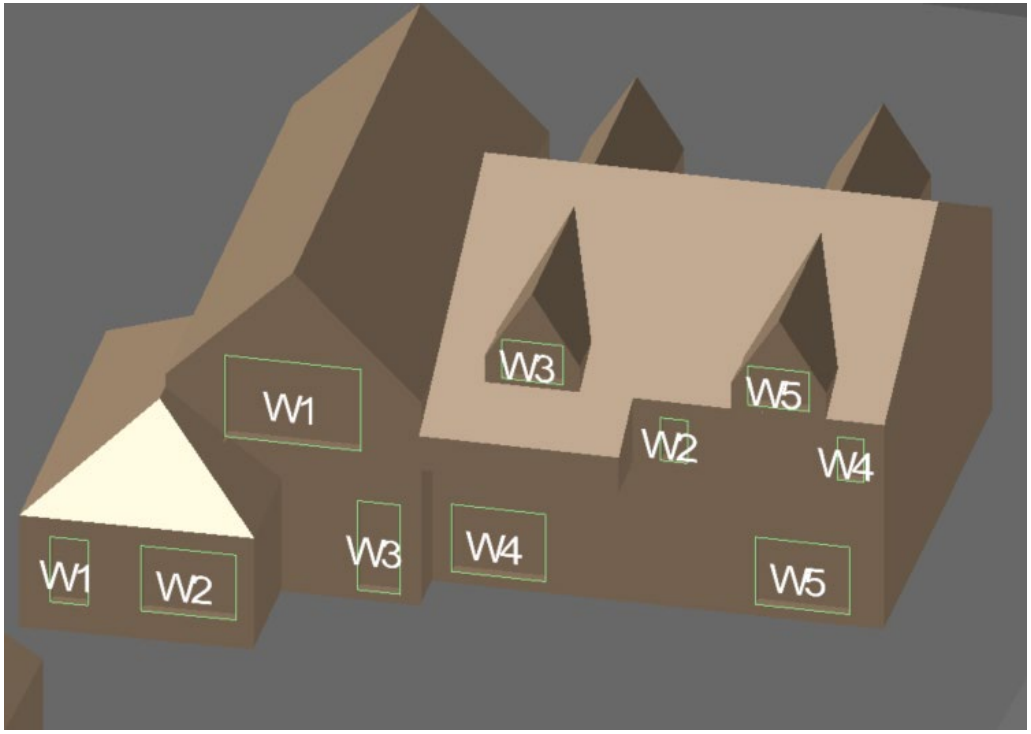


Figure 21: Swallow Lodge-2

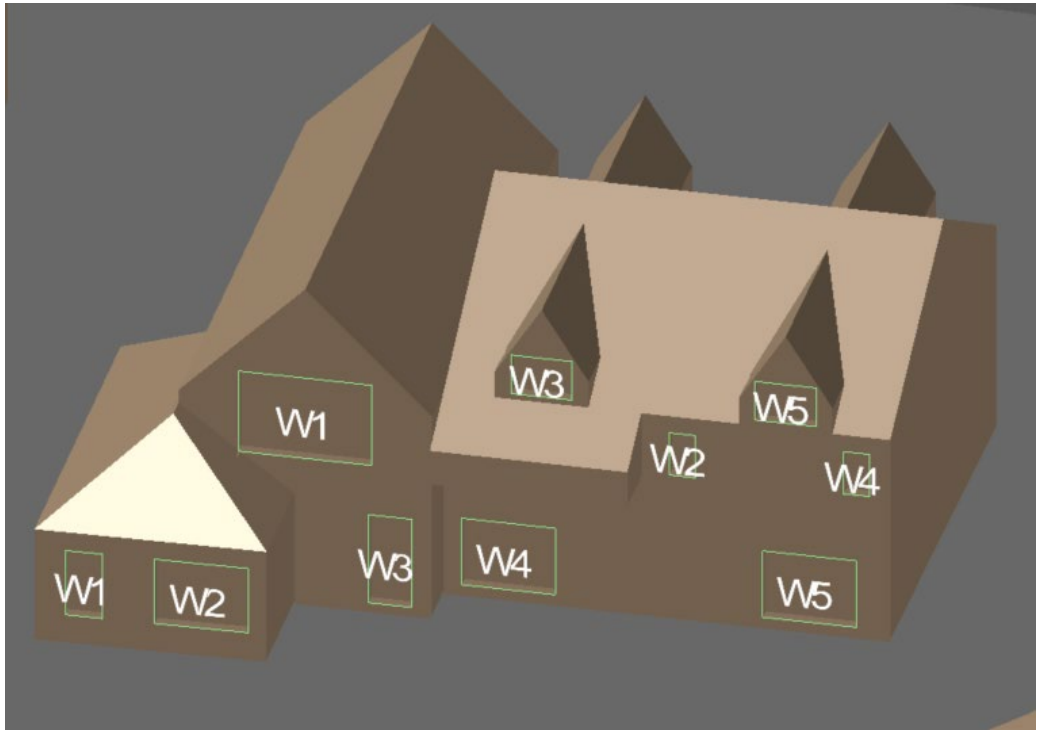


Figure 22: Swallow Lodge-1

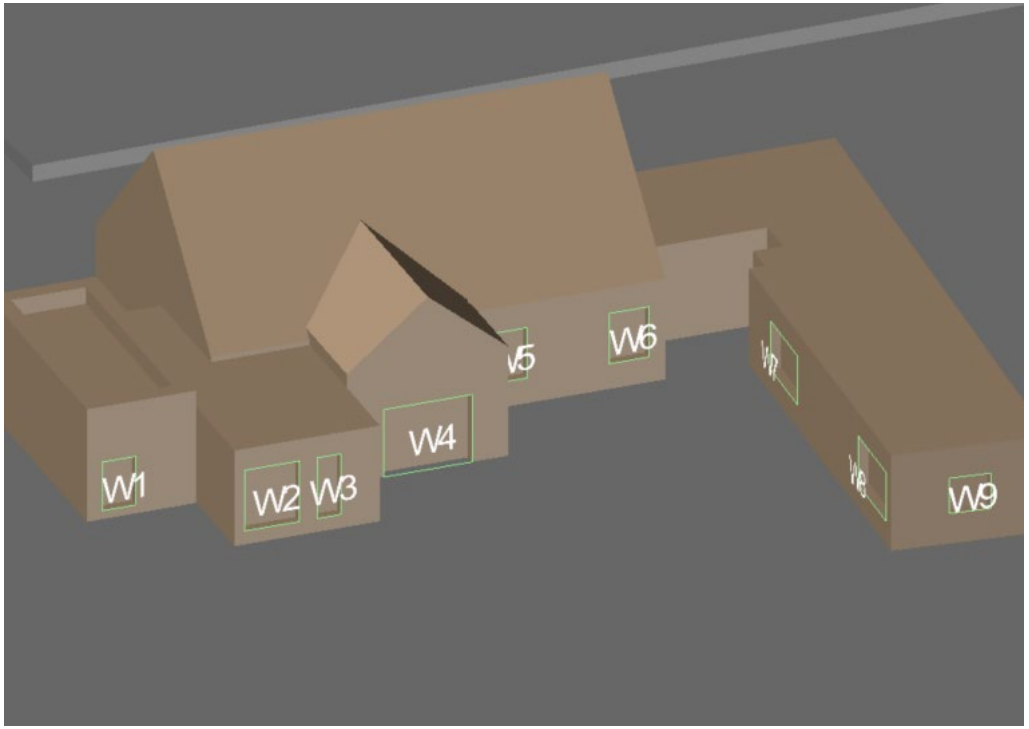


Figure 23: Elmville

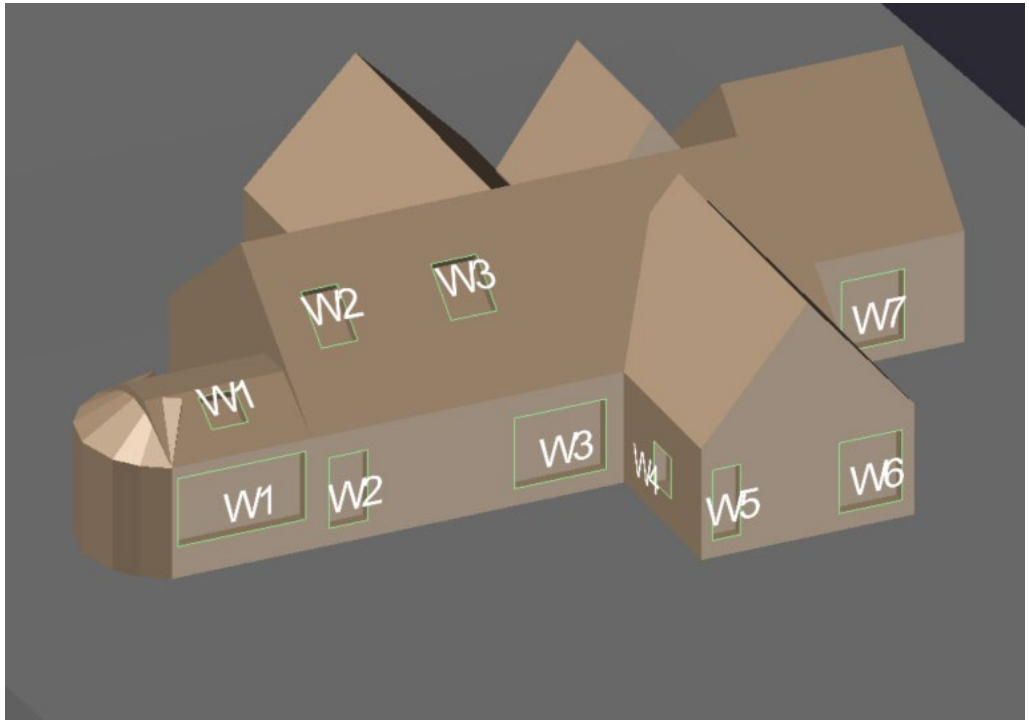


Figure 24: Erdeven

Table 7: VSC Results

Floor Ref.	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria
Maglin House					
Ground	W1	Existing	37.47	0.96	YES
		Proposed	36.05		
Ground	W2	Existing	39.62	0.97	YES
		Proposed	38.32		
Ground	W3	Existing	39.62	0.97	YES
		Proposed	38.42		
Ground	W4	Existing	34.44	0.98	YES
		Proposed	33.89		

Table 8: VSC Results

Floor Ref.	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria
Swallow Lodge 2					
Ground	W1	Existing	34.55	0.99	YES
		Proposed	34.35		
Ground	W2	Existing	36.44	0.99	YES
		Proposed	36.01		
Ground	W3	Existing	34.68	0.98	YES
		Proposed	34.03		
Ground	W4	Existing	28.15	0.97	YES
		Proposed	27.40		
Ground	W5	Existing	37.28	0.97	YES
		Proposed	36.30		
First	W1	Existing	39.47	0.98	YES
		Proposed	38.54		
First	W2	Existing	35.89	0.98	YES
		Proposed	35.29		
First	W3	Existing	39.17	0.98	YES
		Proposed	38.49		
First	W4	Existing	39.03	0.98	YES
		Proposed	38.20		
First	W5	Existing	39.45	0.98	YES
		Proposed	38.78		

Table 9: VSC Results

Floor Ref.	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria
Swallow Lodge 1					
Ground	W1	Existing	36.13	0.95	YES
		Proposed	34.28		
Ground	W2	Existing	37.06	0.94	YES
		Proposed	34.95		
Ground	W3	Existing	34.76	0.95	YES
		Proposed	32.86		
Ground	W4	Existing	28.05	0.93	YES
		Proposed	26.14		
Ground	W5	Existing	36.48	0.95	YES
		Proposed	34.56		
First	W1	Existing	39.59	0.96	YES
		Proposed	38.11		
First	W2	Existing	36.04	0.97	YES
		Proposed	34.91		
First	W3	Existing	39.24	0.97	YES
		Proposed	38.20		
First	W4	Existing	39.24	0.97	YES
		Proposed	37.98		
First	W5	Existing	39.56	0.98	YES
		Proposed	38.60		

Table 10: VSC Results

Floor Ref.	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria
Elmville					
Ground	W1	Existing	35.32	0.94	YES
		Proposed	33.25		
Ground	W2	Existing	39.02	0.95	YES
		Proposed	36.94		
Ground	W3	Existing	38.96	0.95	YES
		Proposed	36.92		
Ground	W4	Existing	35.02	0.96	YES
		Proposed	33.47		
Ground	W5	Existing	28.26	0.97	YES
		Proposed	27.37		
Ground	W6	Existing	35.31	0.96	YES
		Proposed	34.02		
Ground	W7	Existing	31.29	0.97	YES
		Proposed	30.48		
Ground	W8	Existing	36.46	0.97	YES
		Proposed	35.40		
Ground	W9	Existing	38.23	0.95	YES
		Proposed	36.33		

Table 11: VSC Results

Floor Ref.	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria
Erdeven					
Ground	W1	Existing	39.20	0.89	YES
		Proposed	34.86		
Ground	W2	Existing	38.63	0.89	YES
		Proposed	34.57		
Ground	W3	Existing	32.27	0.91	YES
		Proposed	29.50		
Ground	W4	Existing	33.38	0.90	YES
		Proposed	30.14		
Ground	W5	Existing	39.61	0.91	YES
		Proposed	36.03		
Ground	W6	Existing	39.61	0.92	YES
		Proposed	36.30		
Ground	W7	Existing	32.15	0.95	YES
		Proposed	30.68		
First	W1	Existing	87.91	0.98	YES
		Proposed	85.94		
First	W2	Existing	83.65	0.98	YES
		Proposed	82.36		
First	W3	Existing	82.96	0.99	YES
		Proposed	81.83		

Table 12: VSC Summary Results

Property	Number of Windows Tested	Windows that meet BRE Guidelines	
		No.	%
Maglin House	4	4	100%
Swallow Lodge 2	10	10	100%
Swallow Lodge 1	10	10	100%
Elmville	9	9	100%
Erdeven	10	10	100%
Total	**43**	**43**	**100%**

All windows tested have VSC values greater than 27% with the proposed development in place. Therefore, these windows will still receive adequate amounts of skylight after the proposed development is built and the impact to all windows will be negligible.

The results meet the recommendations of the BRE Guide and show that the proposed development will have a negligible impact on skylight to the neighbouring dwellings.

5.3 Proposed Development

5.3.1 Daylight Analysis for Proposed Development

The daylight provision in the apartments and duplex units in the proposed development was checked using the target illuminance (E_T) method. The results are presented in the following tables.

Table 13: Illuminance Results – Block-A Ground Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block A									
Ground	R1	LKD	835	100%	200	50%	50%	4380	YES
	R2	Bedroom	287	97%	100	50%	50%	4380	YES
	R3	Bedroom	269	100%	100	50%	50%	4380	YES
	R4	LKD	519	100%	200	50%	50%	4380	YES
	R5	Bedroom	197	93%	100	50%	50%	4380	YES
	R6	LKD	524	100%	200	50%	50%	4380	YES
	R7	LKD	548	100%	200	50%	50%	4380	YES
	R8	Bedroom	268	99%	100	50%	50%	4380	YES
	R9	Bedroom	269	99%	100	50%	50%	4380	YES
	R10	LKD	547	100%	200	50%	50%	4380	YES
	R11	LKD	528	100%	200	50%	50%	4380	YES
	R12	Bedroom	191	93%	100	50%	50%	4380	YES
	R13	LKD	816	100%	200	50%	50%	4380	YES
	R14	Bedroom	281	98%	100	50%	50%	4380	YES
	R15	Bedroom	262	100%	100	50%	50%	4380	YES
	R16	LKD	501	100%	200	50%	50%	4380	YES
	R17	Bedroom	261	99%	100	50%	50%	4380	YES
	R18	Bedroom	274	99%	100	50%	50%	4380	YES
	R19	Bedroom	258	97%	100	50%	50%	4380	YES
	R20	LKD	280	69%	200	50%	50%	4380	YES
	R21	LKD	383	78%	200	50%	50%	4380	YES
	R22	Bedroom	281	98%	100	50%	50%	4380	YES
	R23	Bedroom	262	100%	100	50%	50%	4380	YES
	R24	Bedroom	296	100%	100	50%	50%	4380	YES
	R25	LKD	824	100%	200	50%	50%	4380	YES
	R26	LKD	856	100%	200	50%	50%	4380	YES
	R27	Bedroom	409	100%	100	50%	50%	4380	YES
	R28	Bedroom	401	100%	100	50%	50%	4380	YES
	R29	LKD	848	100%	200	50%	50%	4380	YES
	R30	LKD	833	100%	200	50%	50%	4380	YES
	R31	Bedroom	303	100%	100	50%	50%	4380	YES
	R32	LKD	1166	100%	200	50%	50%	4380	YES
	R33	Bedroom	283	98%	100	50%	50%	4380	YES
	R34	Bedroom	283	100%	100	50%	50%	4380	YES
	R35	Bedroom	253	99%	100	50%	50%	4380	YES
	R36	LKD	526	100%	200	50%	50%	4380	YES
	R37	LKD	390	78%	200	50%	50%	4380	YES
	R38	Bedroom	267	95%	100	50%	50%	4380	YES
	R39	Bedroom	264	99%	100	50%	50%	4380	YES
	R40	Bedroom	252	99%	100	50%	50%	4380	YES

Table 14: Illuminance Results – Block A First Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block A									
First	R1	LKD	754	100%	200	50%	50%	4380	YES
	R2	Bedroom	215	97%	100	50%	50%	4380	YES
	R3	Bedroom	256	100%	100	50%	50%	4380	YES
	R4	LKD	446	99%	200	50%	50%	4380	YES
	R5	Bedroom	143	81%	100	50%	50%	4380	YES
	R6	LKD	473	95%	200	50%	50%	4380	YES
	R7	Bedroom	272	100%	100	50%	50%	4380	YES
	R8	Bedroom	245	100%	100	50%	50%	4380	YES
	R9	Bedroom	449	100%	100	50%	50%	4380	YES
	R10	LKD	194	48%	200	50%	50%	4380	NO
	R11	LKD	361	100%	200	50%	50%	4380	YES
	R12	Bedroom	174	88%	100	50%	50%	4380	YES
	R13	LKD	147	34%	200	50%	50%	4380	NO
	R14	LKD	366	100%	200	50%	50%	4380	YES
	R15	Bedroom	166	82%	100	50%	50%	4380	YES
	R16	LKD	395	76%	200	50%	50%	4380	YES
	R17	Bedroom	483	100%	100	50%	50%	4380	YES
	R18	Bedroom	248	100%	100	50%	50%	4380	YES
	R19	Bedroom	270	100%	100	50%	50%	4380	YES
	R20	Bedroom	163	94%	100	50%	50%	4380	YES
	R21	Bedroom	949	100%	100	50%	50%	4380	YES
	R22	Bedroom	272	100%	100	50%	50%	4380	YES
	R23	LKD	375	96%	200	50%	50%	4380	YES
	R24	LKD	387	97%	200	50%	50%	4380	YES
	R25	Bedroom	944	100%	100	50%	50%	4380	YES
	R26	Bedroom	291	100%	100	50%	50%	4380	YES
	R27	Bedroom	162	94%	100	50%	50%	4380	YES
	R28	LKD	753	100%	200	50%	50%	4380	YES
	R29	Bedroom	214	98%	100	50%	50%	4380	YES
	R30	Bedroom	72	32%	100	50%	50%	4380	NO

Table 15: Illuminance Results – Block-A First Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block A									
First	R31	LKD	208	52%	200	50%	50%	4380	YES
	R32	Bedroom	84	40%	100	50%	50%	4380	NO
	R33	LKD	1041	100%	200	50%	50%	4380	YES
	R34	Bedroom	210	97%	100	50%	50%	4380	YES
	R35	Bedroom	270	100%	100	50%	50%	4380	YES
	R36	Bedroom	187	99%	100	50%	50%	4380	YES
	R37	LKD	445	99%	200	50%	50%	4380	YES
	R38	LKD	341	72%	200	50%	50%	4380	YES
	R39	Bedroom	200	92%	100	50%	50%	4380	YES
	R40	Bedroom	251	99%	100	50%	50%	4380	YES
	R41	LKD	345	72%	200	50%	50%	4380	YES
	R42	Bedroom	207	97%	100	50%	50%	4380	YES
	R43	Bedroom	267	100%	100	50%	50%	4380	YES
	R44	Bedroom	186	99%	100	50%	50%	4380	YES
	R45	LKD	444	99%	200	50%	50%	4380	YES
	R46	Bedroom	187	99%	100	50%	50%	4380	YES

Table 16: Illuminance Results – Block-A Second Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block A									
Second	R1	LKD	761	100%	200	50%	50%	4380	YES
	R2	Bedroom	219	97%	100	50%	50%	4380	YES
	R3	Bedroom	261	100%	100	50%	50%	4380	YES
	R4	LKD	454	100%	200	50%	50%	4380	YES
	R5	Bedroom	145	84%	100	50%	50%	4380	YES
	R6	LKD	483	95%	200	50%	50%	4380	YES
	R7	Bedroom	277	100%	100	50%	50%	4380	YES
	R8	Bedroom	250	100%	100	50%	50%	4380	YES
	R9	LKD	279	65%	200	50%	50%	4380	YES
	R10	Bedroom	556	100%	100	50%	50%	4380	YES
	R11	Bedroom	103	60%	100	50%	50%	4380	YES
	R12	LKD	426	100%	200	50%	50%	4380	YES
	R13	LKD	213	53%	200	50%	50%	4380	YES
	R14	Bedroom	140	81%	100	50%	50%	4380	YES
	R15	LKD	432	100%	200	50%	50%	4380	YES
	R16	Bedroom	174	87%	100	50%	50%	4380	YES
	R17	LKD	516	83%	200	50%	50%	4380	YES
	R18	Bedroom	582	100%	100	50%	50%	4380	YES
	R19	Bedroom	253	100%	100	50%	50%	4380	YES
	R20	Bedroom	273	100%	100	50%	50%	4380	YES
	R21	LKD	489	96%	200	50%	50%	4380	YES
	R22	LKD	273	65%	200	50%	50%	4380	YES
	R23	Bedroom	142	84%	100	50%	50%	4380	YES
	R24	Bedroom	100	51%	100	50%	50%	4380	YES
	R25	LKD	748	100%	200	50%	50%	4380	YES
	R26	Bedroom	220	97%	100	50%	50%	4380	YES
	R27	Bedroom	253	100%	100	50%	50%	4380	YES
	R28	LKD	440	99%	200	50%	50%	4380	YES
	R29	Bedroom	198	99%	100	50%	50%	4380	YES
	R30	Bedroom	266	100%	100	50%	50%	4380	YES
	R31	Bedroom	199	95%	100	50%	50%	4380	YES
	R32	LKD	236	59%	200	50%	50%	4380	YES
	R33	LKD	501	81%	200	50%	50%	4380	YES
	R34	Bedroom	222	97%	100	50%	50%	4380	YES
	R35	LKD	215	53%	200	50%	50%	4380	YES
	R36	Bedroom	255	100%	100	50%	50%	4380	YES
	R37	Bedroom	139	84%	100	50%	50%	4380	YES
	R38	Bedroom	627	100%	100	50%	50%	4380	YES
	R39	LKD	444	99%	200	50%	50%	4380	YES

Table 17: Illuminance Results – Block-A Second Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block A									
Second	R40	LKD	262	63%	200	50%	50%	4380	YES
	R41	Bedroom	202	99%	100	50%	50%	4380	YES
	R42	Bedroom	110	56%	100	50%	50%	4380	YES
	R43	LKD	445	99%	200	50%	50%	4380	YES
	R44	LKD	264	65%	200	50%	50%	4380	YES
	R45	Bedroom	203	99%	100	50%	50%	4380	YES
	R46	Bedroom	100	50%	100	50%	50%	4380	YES
	R47	Bedroom	274	100%	100	50%	50%	4380	YES
	R48	Bedroom	210	97%	100	50%	50%	4380	YES
	R49	LKD	1033	100%	200	50%	50%	4380	YES
	R50	Bedroom	214	98%	100	50%	50%	4380	YES
	R51	LKD	752	100%	200	50%	50%	4380	YES
	R52	Bedroom	163	94%	100	50%	50%	4380	YES
	R53	Bedroom	963	100%	100	50%	50%	4380	YES
	R54	Bedroom	321	100%	100	50%	50%	4380	YES
	R55	LKD	426	100%	200	50%	50%	4380	YES
	R56	LKD	437	100%	200	50%	50%	4380	YES
	R57	Bedroom	961	100%	100	50%	50%	4380	YES
	R58	Bedroom	342	100%	100	50%	50%	4380	YES
	R59	Bedroom	163	94%	100	50%	50%	4380	YES
	R60	LKD	759	100%	200	50%	50%	4380	YES
	R61	Bedroom	215	99%	100	50%	50%	4380	YES
	R62	Bedroom	101	51%	100	50%	50%	4380	YES
	R63	LKD	269	64%	200	50%	50%	4380	YES
	R64	Bedroom	111	56%	100	50%	50%	4380	YES
	R65	LKD	1047	100%	200	50%	50%	4380	YES
	R66	Bedroom	212	98%	100	50%	50%	4380	YES
	R67	Bedroom	274	100%	100	50%	50%	4380	YES
	R68	Bedroom	190	99%	100	50%	50%	4380	YES
	R69	LKD	451	100%	200	50%	50%	4380	YES
	R70	LKD	349	72%	200	50%	50%	4380	YES
	R71	Bedroom	203	92%	100	50%	50%	4380	YES
	R72	Bedroom	255	99%	100	50%	50%	4380	YES
	R73	LKD	610	85%	200	50%	50%	4380	YES
	R74	Bedroom	210	97%	100	50%	50%	4380	YES
	R75	Bedroom	272	100%	100	50%	50%	4380	YES
	R76	Bedroom	190	99%	100	50%	50%	4380	YES
	R77	LKD	451	100%	200	50%	50%	4380	YES
	R78	Bedroom	190	99%	100	50%	50%	4380	YES

Table 18: Illuminance Results – Block-A Third Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block A									
Third	R1	LKD	767	100%	200	50%	50%	4380	YES
	R2	Bedroom	221	97%	100	50%	50%	4380	YES
	R3	Bedroom	264	100%	100	50%	50%	4380	YES
	R4	LKD	459	100%	200	50%	50%	4380	YES
	R5	Bedroom	146	86%	100	50%	50%	4380	YES
	R6	LKD	473	97%	200	50%	50%	4380	YES
	R7	Bedroom	280	100%	100	50%	50%	4380	YES
	R8	Bedroom	254	100%	100	50%	50%	4380	YES
	R9	LKD	348	78%	200	50%	50%	4380	YES
	R10	Bedroom	683	100%	100	50%	50%	4380	YES
	R11	Bedroom	141	83%	100	50%	50%	4380	YES
	R12	LKD	475	100%	200	50%	50%	4380	YES
	R13	LKD	266	64%	200	50%	50%	4380	YES
	R14	Bedroom	167	88%	100	50%	50%	4380	YES
	R15	LKD	479	100%	200	50%	50%	4380	YES
	R16	Bedroom	202	95%	100	50%	50%	4380	YES
	R17	LKD	639	90%	200	50%	50%	4380	YES
	R18	Bedroom	703	100%	100	50%	50%	4380	YES
	R19	Bedroom	256	100%	100	50%	50%	4380	YES
	R20	Bedroom	275	100%	100	50%	50%	4380	YES
	R21	LKD	496	96%	200	50%	50%	4380	YES
	R22	LKD	353	78%	200	50%	50%	4380	YES
	R23	Bedroom	144	84%	100	50%	50%	4380	YES
	R24	Bedroom	133	75%	100	50%	50%	4380	YES
	R25	LKD	755	100%	200	50%	50%	4380	YES
	R26	Bedroom	223	97%	100	50%	50%	4380	YES
	R27	Bedroom	258	100%	100	50%	50%	4380	YES
	R28	LKD	448	99%	200	50%	50%	4380	YES
	R29	Bedroom	201	99%	100	50%	50%	4380	YES
	R30	Bedroom	270	100%	100	50%	50%	4380	YES
	R31	Bedroom	202	95%	100	50%	50%	4380	YES
	R32	LKD	240	60%	200	50%	50%	4380	YES
	R33	LKD	510	82%	200	50%	50%	4380	YES
	R34	Bedroom	226	98%	100	50%	50%	4380	YES
	R35	LKD	274	63%	200	50%	50%	4380	YES
	R36	Bedroom	259	100%	100	50%	50%	4380	YES
	R37	Bedroom	177	95%	100	50%	50%	4380	YES
	R38	Bedroom	803	100%	100	50%	50%	4380	YES
	R39	LKD	450	100%	200	50%	50%	4380	YES

Table 19: Illuminance Results – Block-A Third Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block A									
Third	R40	LKD	325	75%	200	50%	50%	4380	YES
	R41	Bedroom	204	99%	100	50%	50%	4380	YES
	R42	Bedroom	147	85%	100	50%	50%	4380	YES
	R43	LKD	450	99%	200	50%	50%	4380	YES
	R44	LKD	332	77%	200	50%	50%	4380	YES
	R45	Bedroom	205	99%	100	50%	50%	4380	YES
	R46	Bedroom	133	78%	100	50%	50%	4380	YES
	R47	Bedroom	278	100%	100	50%	50%	4380	YES
	R48	Bedroom	211	97%	100	50%	50%	4380	YES
	R49	LKD	1037	100%	200	50%	50%	4380	YES
	R50	Bedroom	215	99%	100	50%	50%	4380	YES
	R51	LKD	761	100%	200	50%	50%	4380	YES
	R52	Bedroom	164	96%	100	50%	50%	4380	YES
	R53	Bedroom	966	100%	100	50%	50%	4380	YES
	R54	Bedroom	391	100%	100	50%	50%	4380	YES
	R55	LKD	457	100%	200	50%	50%	4380	YES
	R56	LKD	468	100%	200	50%	50%	4380	YES
	R57	Bedroom	965	100%	100	50%	50%	4380	YES
	R58	Bedroom	405	100%	100	50%	50%	4380	YES
	R59	Bedroom	165	94%	100	50%	50%	4380	YES
	R60	LKD	763	100%	200	50%	50%	4380	YES
	R61	Bedroom	216	99%	100	50%	50%	4380	YES
	R62	Bedroom	134	79%	100	50%	50%	4380	YES
	R63	LKD	327	77%	200	50%	50%	4380	YES
	R64	Bedroom	148	90%	100	50%	50%	4380	YES
	R65	LKD	1051	100%	200	50%	50%	4380	YES
	R66	Bedroom	214	98%	100	50%	50%	4380	YES
	R67	Bedroom	277	100%	100	50%	50%	4380	YES
	R68	Bedroom	192	99%	100	50%	50%	4380	YES
	R69	LKD	456	100%	200	50%	50%	4380	YES
	R70	LKD	354	73%	200	50%	50%	4380	YES
	R71	Bedroom	205	95%	100	50%	50%	4380	YES
	R72	Bedroom	259	99%	100	50%	50%	4380	YES
	R73	LKD	622	88%	200	50%	50%	4380	YES
	R74	Bedroom	212	97%	100	50%	50%	4380	YES
	R75	Bedroom	276	100%	100	50%	50%	4380	YES
	R76	Bedroom	192	99%	100	50%	50%	4380	YES
	R77	LKD	456	100%	200	50%	50%	4380	YES
	R78	Bedroom	192	99%	100	50%	50%	4380	YES

Table 20: Illuminance Results – Block-A Fourth Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block A									
Fourth	R1	LKD	840	100%	200	50%	50%	4380	YES
	R2	Bedroom	304	100%	100	50%	50%	4380	YES
	R3	Bedroom	278	100%	100	50%	50%	4380	YES
	R4	LKD	538	100%	200	50%	50%	4380	YES
	R5	Bedroom	215	96%	100	50%	50%	4380	YES
	R6	LKD	575	100%	200	50%	50%	4380	YES
	R7	Bedroom	285	100%	100	50%	50%	4380	YES
	R8	Bedroom	256	100%	100	50%	50%	4380	YES
	R9	LKD	506	99%	200	50%	50%	4380	YES
	R10	Bedroom	859	100%	100	50%	50%	4380	YES
	R11	Bedroom	284	100%	100	50%	50%	4380	YES
	R12	LKD	588	100%	200	50%	50%	4380	YES
	R13	LKD	358	72%	200	50%	50%	4380	YES
	R14	Bedroom	277	98%	100	50%	50%	4380	YES
	R15	LKD	591	100%	200	50%	50%	4380	YES
	R16	Bedroom	238	99%	100	50%	50%	4380	YES
	R17	LKD	834	100%	200	50%	50%	4380	YES
	R18	Bedroom	866	100%	100	50%	50%	4380	YES
	R19	Bedroom	259	100%	100	50%	50%	4380	YES
	R20	Bedroom	280	100%	100	50%	50%	4380	YES
	R21	LKD	571	100%	200	50%	50%	4380	YES
	R22	LKD	506	98%	200	50%	50%	4380	YES
	R23	Bedroom	212	96%	100	50%	50%	4380	YES
	R24	Bedroom	284	100%	100	50%	50%	4380	YES
	R25	LKD	822	100%	200	50%	50%	4380	YES
	R26	Bedroom	303	100%	100	50%	50%	4380	YES
	R27	Bedroom	274	100%	100	50%	50%	4380	YES
	R28	LKD	526	100%	200	50%	50%	4380	YES
	R29	Bedroom	301	100%	100	50%	50%	4380	YES
	R30	Bedroom	289	100%	100	50%	50%	4380	YES
	R31	Bedroom	283	100%	100	50%	50%	4380	YES
	R32	LKD	298	68%	200	50%	50%	4380	YES
	R33	LKD	577	86%	200	50%	50%	4380	YES
	R34	Bedroom	304	100%	100	50%	50%	4380	YES
	R35	LKD	373	72%	200	50%	50%	4380	YES
	R36	Bedroom	275	100%	100	50%	50%	4380	YES
	R37	Bedroom	284	100%	100	50%	50%	4380	YES
	R38	Bedroom	1080	100%	100	50%	50%	4380	YES
	R39	LKD	530	100%	200	50%	50%	4380	YES

Table 21: Illuminance Results – Block-A Fourth Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block A									
Fourth	R40	LKD	469	94%	200	50%	50%	4380	YES
	R41	Bedroom	303	100%	100	50%	50%	4380	YES
	R42	Bedroom	277	100%	100	50%	50%	4380	YES
	R43	LKD	530	100%	200	50%	50%	4380	YES
	R44	LKD	486	95%	200	50%	50%	4380	YES
	R45	Bedroom	303	100%	100	50%	50%	4380	YES
	R46	Bedroom	266	99%	100	50%	50%	4380	YES
	R47	Bedroom	296	100%	100	50%	50%	4380	YES
	R48	Bedroom	292	100%	100	50%	50%	4380	YES
	R49	LKD	1122	100%	200	50%	50%	4380	YES
	R50	Bedroom	316	100%	100	50%	50%	4380	YES
	R51	LKD	862	100%	200	50%	50%	4380	YES
	R52	Bedroom	166	96%	100	50%	50%	4380	YES
	R53	Bedroom	975	100%	100	50%	50%	4380	YES
	R54	Bedroom	490	100%	100	50%	50%	4380	YES
	R55	LKD	545	100%	200	50%	50%	4380	YES
	R56	LKD	543	100%	200	50%	50%	4380	YES
	R57	Bedroom	976	100%	100	50%	50%	4380	YES
	R58	Bedroom	496	100%	100	50%	50%	4380	YES
	R59	Bedroom	166	94%	100	50%	50%	4380	YES
	R60	LKD	875	100%	200	50%	50%	4380	YES
	R61	Bedroom	316	100%	100	50%	50%	4380	YES
	R62	Bedroom	268	99%	100	50%	50%	4380	YES
	R63	LKD	490	94%	200	50%	50%	4380	YES
	R64	Bedroom	284	100%	100	50%	50%	4380	YES
	R65	LKD	1142	100%	200	50%	50%	4380	YES
	R66	Bedroom	298	100%	100	50%	50%	4380	YES
	R67	Bedroom	297	100%	100	50%	50%	4380	YES
	R68	Bedroom	299	100%	100	50%	50%	4380	YES
	R69	LKD	518	100%	200	50%	50%	4380	YES
	R70	LKD	398	77%	200	50%	50%	4380	YES
	R71	Bedroom	293	100%	100	50%	50%	4380	YES
	R72	Bedroom	280	100%	100	50%	50%	4380	YES
	R73	LKD	686	96%	200	50%	50%	4380	YES
	R74	Bedroom	297	100%	100	50%	50%	4380	YES
	R75	Bedroom	296	100%	100	50%	50%	4380	YES
	R76	Bedroom	298	100%	100	50%	50%	4380	YES
	R77	LKD	536	100%	200	50%	50%	4380	YES
	R78	Bedroom	298	100%	100	50%	50%	4380	YES

Table 22: Illuminance Results – Block-B Ground Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block B									
Ground	R24	Bedroom	272	99%	100	50%	50%	4380	YES
	R25	Bedroom	227	99%	100	50%	50%	4380	YES
	R26	LKD	461	99%	200	50%	50%	4380	YES
	R27	Bedroom	226	99%	100	50%	50%	4380	YES
	R28	LKD	461	99%	200	50%	50%	4380	YES
	R29	Bedroom	262	100%	100	50%	50%	4380	YES
	R30	Bedroom	244	97%	100	50%	50%	4380	YES
	R31	LKD	394	79%	200	50%	50%	4380	YES
	R32	Bedroom	223	96%	100	50%	50%	4380	YES
	R33	Bedroom	214	89%	100	50%	50%	4380	YES
	R34	LKD	277	65%	200	50%	50%	4380	YES
	R35	LKD	436	98%	200	50%	50%	4380	YES
	R36	Bedroom	236	99%	100	50%	50%	4380	YES
	R37	Bedroom	259	99%	100	50%	50%	4380	YES
	R38	Bedroom	242	97%	100	50%	50%	4380	YES
	R39	LKD	641	100%	200	50%	50%	4380	YES
	R40	Bedroom	167	92%	100	50%	50%	4380	YES
	R41	LKD	423	89%	200	50%	50%	4380	YES
	R42	LKD	482	92%	200	50%	50%	4380	YES
	R43	Bedroom	225	99%	100	50%	50%	4380	YES
	R44	Bedroom	225	99%	100	50%	50%	4380	YES
	R45	LKD	479	93%	200	50%	50%	4380	YES
	R46	LKD	422	90%	200	50%	50%	4380	YES
	R47	Bedroom	171	91%	100	50%	50%	4380	YES

Table 23: Illuminance Results – Block-B First Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block B									
First	R1	LKD	549	98%	200	50%	50%	4380	YES
	R2	Bedroom	177	96%	100	50%	50%	4380	YES
	R3	Bedroom	234	99%	100	50%	50%	4380	YES
	R4	LKD	369	84%	200	50%	50%	4380	YES
	R5	Bedroom	159	96%	100	50%	50%	4380	YES
	R6	LKD	369	83%	200	50%	50%	4380	YES
	R7	Bedroom	159	96%	100	50%	50%	4380	YES
	R8	Bedroom	240	99%	100	50%	50%	4380	YES
	R9	Bedroom	166	96%	100	50%	50%	4380	YES
	R10	LKD	373	74%	200	50%	50%	4380	YES
	R11	Bedroom	226	99%	100	50%	50%	4380	YES
	R12	Bedroom	155	89%	100	50%	50%	4380	YES
	R13	LKD	238	58%	200	50%	50%	4380	YES
	R14	LKD	369	84%	200	50%	50%	4380	YES
	R15	Bedroom	161	96%	100	50%	50%	4380	YES
	R16	Bedroom	243	99%	100	50%	50%	4380	YES
	R17	Bedroom	168	96%	100	50%	50%	4380	YES
	R18	LKD	771	100%	200	50%	50%	4380	YES
	R19	Bedroom	171	96%	100	50%	50%	4380	YES
	R20	LKD	440	100%	200	50%	50%	4380	YES
	R21	Bedroom	139	89%	100	50%	50%	4380	YES
	R22	Bedroom	790	100%	100	50%	50%	4380	YES
	R23	LKD	387	96%	200	50%	50%	4380	YES
	R24	LKD	378	97%	200	50%	50%	4380	YES
	R25	Bedroom	790	100%	100	50%	50%	4380	YES
	R26	Bedroom	139	89%	100	50%	50%	4380	YES
	R27	LKD	437	100%	200	50%	50%	4380	YES
	R28	Bedroom	172	96%	100	50%	50%	4380	YES
	R29	LKD	788	100%	200	50%	50%	4380	YES
	R30	Bedroom	177	96%	100	50%	50%	4380	YES
	R31	Bedroom	243	99%	100	50%	50%	4380	YES
	R32	Bedroom	158	96%	100	50%	50%	4380	YES
	R33	LKD	374	84%	200	50%	50%	4380	YES
	R34	Bedroom	157	96%	100	50%	50%	4380	YES
	R35	LKD	374	84%	200	50%	50%	4380	YES
	R36	Bedroom	238	99%	100	50%	50%	4380	YES
	R37	Bedroom	180	96%	100	50%	50%	4380	YES
	R38	LKD	327	70%	200	50%	50%	4380	YES

Table 24: Illuminance Results – Block-B First Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block B									
First	R39	Bedroom	203	96%	100	50%	50%	4380	YES
	R40	Bedroom	152	86%	100	50%	50%	4380	YES
	R41	LKD	228	56%	200	50%	50%	4380	YES
	R42	LKD	365	82%	200	50%	50%	4380	YES
	R43	Bedroom	162	96%	100	50%	50%	4380	YES
	R44	Bedroom	234	99%	100	50%	50%	4380	YES
	R45	Bedroom	177	96%	100	50%	50%	4380	YES
	R46	LKD	550	98%	200	50%	50%	4380	YES
	R47	Bedroom	115	72%	100	50%	50%	4380	YES
	R48	LKD	351	80%	200	50%	50%	4380	YES
	R49	Bedroom	234	100%	100	50%	50%	4380	YES
	R50	Bedroom	210	99%	100	50%	50%	4380	YES
	R51	LKD	389	100%	200	50%	50%	4380	YES
	R52	LKD	385	100%	200	50%	50%	4380	YES
	R53	Bedroom	212	99%	100	50%	50%	4380	YES
	R54	Bedroom	231	100%	100	50%	50%	4380	YES
	R55	LKD	350	80%	200	50%	50%	4380	YES
	R56	Bedroom	119	69%	100	50%	50%	4380	YES
	R57	Bedroom	512	100%	100	50%	50%	4380	YES
	R58	Bedroom	507	100%	100	50%	50%	4380	YES
	R59	LKD	244	61%	200	50%	50%	4380	YES
	R60	Bedroom	100	53%	100	50%	50%	4380	YES
	R61	Bedroom	188	99%	100	50%	50%	4380	YES
	R62	Bedroom	115	63%	100	50%	50%	4380	YES
	R63	LKD	237	55%	200	50%	50%	4380	YES
	R64	LKD	225	56%	200	50%	50%	4380	YES
	R65	Bedroom	101	50%	100	50%	50%	4380	YES
	R66	LKD	230	59%	200	50%	50%	4380	YES
	R67	Bedroom	96	47%	100	50%	50%	4380	NO
	R68	Bedroom	279	100%	100	50%	50%	4380	YES
	R69	Bedroom	304	100%	100	50%	50%	4380	YES
	R70	Bedroom	90	40%	100	50%	50%	4380	NO
	R71	LKD	232	58%	200	50%	50%	4380	YES
	R72	Bedroom	97	47%	100	50%	50%	4380	NO
	R73	LKD	442	79%	200	50%	50%	4380	YES
	R74	Bedroom	150	79%	100	50%	50%	4380	YES
	R75	LKD	200	51%	200	50%	50%	4380	YES
	R76	Bedroom	97	47%	100	50%	50%	4380	NO
	R77	LKD	245	62%	200	50%	50%	4380	YES

Table 25: Illuminance Results – Block-B Second Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block B									
Second	R1	LKD	556	98%	200	50%	50%	4380	YES
	R2	Bedroom	180	96%	100	50%	50%	4380	YES
	R3	Bedroom	239	100%	100	50%	50%	4380	YES
	R4	LKD	376	86%	200	50%	50%	4380	YES
	R5	Bedroom	163	96%	100	50%	50%	4380	YES
	R6	LKD	375	86%	200	50%	50%	4380	YES
	R7	Bedroom	163	96%	100	50%	50%	4380	YES
	R8	Bedroom	245	99%	100	50%	50%	4380	YES
	R9	Bedroom	168	96%	100	50%	50%	4380	YES
	R10	LKD	385	76%	200	50%	50%	4380	YES
	R11	Bedroom	233	99%	100	50%	50%	4380	YES
	R12	Bedroom	157	90%	100	50%	50%	4380	YES
	R13	LKD	243	59%	200	50%	50%	4380	YES
	R14	LKD	375	85%	200	50%	50%	4380	YES
	R15	Bedroom	163	96%	100	50%	50%	4380	YES
	R16	Bedroom	247	99%	100	50%	50%	4380	YES
	R17	Bedroom	170	96%	100	50%	50%	4380	YES
	R18	LKD	775	100%	200	50%	50%	4380	YES
	R19	Bedroom	172	96%	100	50%	50%	4380	YES
	R20	LKD	445	100%	200	50%	50%	4380	YES
	R21	Bedroom	142	89%	100	50%	50%	4380	YES
	R22	Bedroom	791	100%	100	50%	50%	4380	YES
	R23	LKD	409	98%	200	50%	50%	4380	YES
	R24	LKD	401	99%	200	50%	50%	4380	YES
	R25	Bedroom	793	100%	100	50%	50%	4380	YES
	R26	Bedroom	140	89%	100	50%	50%	4380	YES
	R27	LKD	441	100%	200	50%	50%	4380	YES
	R28	Bedroom	172	96%	100	50%	50%	4380	YES
	R29	LKD	793	100%	200	50%	50%	4380	YES
	R30	Bedroom	179	96%	100	50%	50%	4380	YES
	R31	Bedroom	247	100%	100	50%	50%	4380	YES
	R32	Bedroom	161	96%	100	50%	50%	4380	YES
	R33	LKD	381	85%	200	50%	50%	4380	YES
	R34	Bedroom	160	96%	100	50%	50%	4380	YES
	R35	LKD	382	85%	200	50%	50%	4380	YES
	R36	Bedroom	242	100%	100	50%	50%	4380	YES
	R37	Bedroom	182	96%	100	50%	50%	4380	YES
	R38	LKD	336	71%	200	50%	50%	4380	YES
	R39	Bedroom	207	96%	100	50%	50%	4380	YES

Table 26: Illuminance Results – Block-B Second Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block B									
Second	R40	Bedroom	156	88%	100	50%	50%	4380	YES
	R41	LKD	233	57%	200	50%	50%	4380	YES
	R42	LKD	373	83%	200	50%	50%	4380	YES
	R43	Bedroom	165	97%	100	50%	50%	4380	YES
	R44	Bedroom	237	99%	100	50%	50%	4380	YES
	R45	Bedroom	180	96%	100	50%	50%	4380	YES
	R46	LKD	556	98%	200	50%	50%	4380	YES
	R47	Bedroom	116	73%	100	50%	50%	4380	YES
	R48	LKD	358	80%	200	50%	50%	4380	YES
	R49	Bedroom	238	100%	100	50%	50%	4380	YES
	R50	Bedroom	213	99%	100	50%	50%	4380	YES
	R51	LKD	428	100%	200	50%	50%	4380	YES
	R52	LKD	427	100%	200	50%	50%	4380	YES
	R53	Bedroom	215	99%	100	50%	50%	4380	YES
	R54	Bedroom	234	100%	100	50%	50%	4380	YES
	R55	LKD	359	80%	200	50%	50%	4380	YES
	R56	Bedroom	121	69%	100	50%	50%	4380	YES
	R57	Bedroom	628	100%	100	50%	50%	4380	YES
	R58	Bedroom	631	100%	100	50%	50%	4380	YES
	R59	LKD	302	74%	200	50%	50%	4380	YES
	R60	Bedroom	135	81%	100	50%	50%	4380	YES
	R61	Bedroom	219	99%	100	50%	50%	4380	YES
	R62	Bedroom	139	86%	100	50%	50%	4380	YES
	R63	LKD	315	64%	200	50%	50%	4380	YES
	R64	LKD	277	71%	200	50%	50%	4380	YES
	R65	Bedroom	126	76%	100	50%	50%	4380	YES
	R66	LKD	280	69%	200	50%	50%	4380	YES
	R67	Bedroom	124	67%	100	50%	50%	4380	YES
	R68	Bedroom	354	100%	100	50%	50%	4380	YES
	R69	Bedroom	370	100%	100	50%	50%	4380	YES
	R70	Bedroom	115	63%	100	50%	50%	4380	YES
	R71	LKD	284	69%	200	50%	50%	4380	YES
	R72	Bedroom	128	72%	100	50%	50%	4380	YES
	R73	LKD	543	87%	200	50%	50%	4380	YES
	R74	Bedroom	192	96%	100	50%	50%	4380	YES
	R75	Bedroom	135	82%	100	50%	50%	4380	YES
	R76	LKD	250	60%	200	50%	50%	4380	YES
	R77	Bedroom	126	72%	100	50%	50%	4380	YES
	R78	LKD	307	74%	200	50%	50%	4380	YES

Table 27: Illuminance Results – Block-B Third Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block B									
Third	R1	LKD	600	99%	200	50%	50%	4380	YES
	R2	Bedroom	250	99%	100	50%	50%	4380	YES
	R3	Bedroom	248	100%	100	50%	50%	4380	YES
	R4	LKD	444	92%	200	50%	50%	4380	YES
	R5	Bedroom	237	100%	100	50%	50%	4380	YES
	R6	LKD	444	92%	200	50%	50%	4380	YES
	R7	Bedroom	238	100%	100	50%	50%	4380	YES
	R8	Bedroom	261	100%	100	50%	50%	4380	YES
	R9	Bedroom	225	99%	100	50%	50%	4380	YES
	R10	LKD	437	84%	200	50%	50%	4380	YES
	R11	Bedroom	254	99%	100	50%	50%	4380	YES
	R12	Bedroom	223	99%	100	50%	50%	4380	YES
	R13	LKD	272	64%	200	50%	50%	4380	YES
	R14	LKD	444	92%	200	50%	50%	4380	YES
	R15	Bedroom	238	100%	100	50%	50%	4380	YES
	R16	Bedroom	262	100%	100	50%	50%	4380	YES
	R17	Bedroom	226	99%	100	50%	50%	4380	YES
	R18	LKD	840	100%	200	50%	50%	4380	YES
	R19	Bedroom	254	100%	100	50%	50%	4380	YES
	R20	LKD	515	100%	200	50%	50%	4380	YES
	R21	Bedroom	145	91%	100	50%	50%	4380	YES
	R22	Bedroom	806	100%	100	50%	50%	4380	YES
	R23	LKD	531	100%	200	50%	50%	4380	YES
	R24	LKD	530	100%	200	50%	50%	4380	YES
	R25	Bedroom	805	100%	100	50%	50%	4380	YES
	R26	Bedroom	144	89%	100	50%	50%	4380	YES
	R27	LKD	506	100%	200	50%	50%	4380	YES
	R28	Bedroom	249	100%	100	50%	50%	4380	YES
	R29	LKD	858	100%	200	50%	50%	4380	YES
	R30	Bedroom	241	99%	100	50%	50%	4380	YES
	R31	Bedroom	265	100%	100	50%	50%	4380	YES
	R32	Bedroom	240	100%	100	50%	50%	4380	YES
	R33	LKD	450	94%	200	50%	50%	4380	YES
	R34	Bedroom	240	100%	100	50%	50%	4380	YES
	R35	LKD	449	93%	200	50%	50%	4380	YES
	R36	Bedroom	249	100%	100	50%	50%	4380	YES
	R37	Bedroom	245	99%	100	50%	50%	4380	YES
	R38	LKD	375	76%	200	50%	50%	4380	YES
	R39	Bedroom	226	99%	100	50%	50%	4380	YES

Table 28: Illuminance Results – Block-B Third Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block B									
Third	R40	Bedroom	236	97%	100	50%	50%	4380	YES
	R41	LKD	265	63%	200	50%	50%	4380	YES
	R42	LKD	378	85%	200	50%	50%	4380	YES
	R43	Bedroom	167	99%	100	50%	50%	4380	YES
	R44	Bedroom	241	100%	100	50%	50%	4380	YES
	R45	Bedroom	182	96%	100	50%	50%	4380	YES
	R46	LKD	561	98%	200	50%	50%	4380	YES
	R47	Bedroom	118	74%	100	50%	50%	4380	YES
	R48	LKD	365	82%	200	50%	50%	4380	YES
	R49	Bedroom	241	100%	100	50%	50%	4380	YES
	R50	Bedroom	216	99%	100	50%	50%	4380	YES
	R51	LKD	582	100%	200	50%	50%	4380	YES
	R52	LKD	579	100%	200	50%	50%	4380	YES
	R53	Bedroom	219	99%	100	50%	50%	4380	YES
	R54	Bedroom	241	100%	100	50%	50%	4380	YES
	R55	LKD	418	86%	200	50%	50%	4380	YES
	R56	Bedroom	181	93%	100	50%	50%	4380	YES
	R57	Bedroom	818	100%	100	50%	50%	4380	YES
	R58	Bedroom	765	100%	100	50%	50%	4380	YES
	R59	LKD	432	87%	200	50%	50%	4380	YES
	R60	Bedroom	249	99%	100	50%	50%	4380	YES
	R61	Bedroom	257	100%	100	50%	50%	4380	YES
	R62	Bedroom	223	99%	100	50%	50%	4380	YES
	R63	LKD	422	79%	200	50%	50%	4380	YES
	R64	LKD	407	86%	200	50%	50%	4380	YES
	R65	Bedroom	226	99%	100	50%	50%	4380	YES
	R66	LKD	417	85%	200	50%	50%	4380	YES
	R67	Bedroom	235	99%	100	50%	50%	4380	YES
	R68	Bedroom	453	100%	100	50%	50%	4380	YES
	R69	Bedroom	458	100%	100	50%	50%	4380	YES
	R70	Bedroom	234	99%	100	50%	50%	4380	YES
	R71	LKD	421	86%	200	50%	50%	4380	YES
	R72	Bedroom	242	99%	100	50%	50%	4380	YES
	R73	LKD	684	100%	200	50%	50%	4380	YES
	R74	Bedroom	228	99%	100	50%	50%	4380	YES
	R75	Bedroom	231	97%	100	50%	50%	4380	YES
	R76	LKD	332	70%	200	50%	50%	4380	YES
	R77	Bedroom	243	99%	100	50%	50%	4380	YES
	R78	LKD	430	87%	200	50%	50%	4380	YES

Table 29: Illuminance Results – Block-B Fourth Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block B									
Fourth	R1	LKD	432	91%	200	50%	50%	4380	YES
	R2	Bedroom	256	100%	100	50%	50%	4380	YES
	R3	Bedroom	250	100%	100	50%	50%	4380	YES
	R4	Bedroom	246	99%	100	50%	50%	4380	YES
	R5	LKD	610	99%	200	50%	50%	4380	YES
	R6	Bedroom	166	93%	100	50%	50%	4380	YES
	R7	LKD	433	88%	200	50%	50%	4380	YES

Table 30: Illuminance Results – Block-C Ground Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block C									
Ground	R1	LKD	696	100%	200	50%	50%	4380	YES
	R2	Bedroom	185	93%	100	50%	50%	4380	YES
	R3	LKD	424	100%	200	50%	50%	4380	YES
	R4	LKD	401	100%	200	50%	50%	4380	YES
	R5	Bedroom	251	99%	100	50%	50%	4380	YES
	R6	Bedroom	248	99%	100	50%	50%	4380	YES
	R7	LKD	401	100%	200	50%	50%	4380	YES
	R8	LKD	422	100%	200	50%	50%	4380	YES
	R9	Bedroom	182	93%	100	50%	50%	4380	YES
	R10	LKD	705	100%	200	50%	50%	4380	YES
	R11	Bedroom	270	99%	100	50%	50%	4380	YES
	R12	Bedroom	259	100%	100	50%	50%	4380	YES
	R13	Bedroom	275	99%	100	50%	50%	4380	YES
	R14	Bedroom	240	97%	100	50%	50%	4380	YES
	R15	LKD	213	54%	200	50%	50%	4380	YES
	R16	Bedroom	678	100%	100	50%	50%	4380	YES
	R17	Bedroom	250	99%	100	50%	50%	4380	YES
	R18	LKD	439	100%	200	50%	50%	4380	YES
	R19	Bedroom	250	99%	100	50%	50%	4380	YES
	R20	LKD	303	70%	200	50%	50%	4380	YES
	R21	Bedroom	272	99%	100	50%	50%	4380	YES
	R22	Bedroom	264	100%	100	50%	50%	4380	YES
	R23	LKD	985	100%	200	50%	50%	4380	YES
	R24	Bedroom	253	99%	100	50%	50%	4380	YES
	R25	Bedroom	282	99%	100	50%	50%	4380	YES
	R26	LKD	871	100%	200	50%	50%	4380	YES
	R27	Bedroom	138	74%	100	50%	50%	4380	YES
	R28	Bedroom	191	92%	100	50%	50%	4380	YES
	R29	LKD	567	100%	200	50%	50%	4380	YES
	R30	Bedroom	381	100%	100	50%	50%	4380	YES
	R31	Bedroom	367	100%	100	50%	50%	4380	YES
	R32	LKD	590	100%	200	50%	50%	4380	YES
	R33	Bedroom	305	100%	100	50%	50%	4380	YES
	R34	LKD	1038	100%	200	50%	50%	4380	YES
	R35	LKD	998	100%	200	50%	50%	4380	YES
	R36	Bedroom	262	99%	100	50%	50%	4380	YES
	R37	Bedroom	281	99%	100	50%	50%	4380	YES
	R38	Bedroom	269	100%	100	50%	50%	4380	YES
	R39	Bedroom	273	97%	100	50%	50%	4380	YES

Table 31: Illuminance Results – Block-C First Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block C									
First	R1	LKD	627	100%	200	50%	50%	4380	YES
	R2	Bedroom	134	83%	100	50%	50%	4380	YES
	R3	LKD	372	95%	200	50%	50%	4380	YES
	R4	Bedroom	101	52%	100	50%	50%	4380	YES
	R5	Bedroom	533	100%	100	50%	50%	4380	YES
	R6	Bedroom	391	100%	100	50%	50%	4380	YES
	R7	LKD	321	95%	200	50%	50%	4380	YES
	R8	LKD	336	96%	200	50%	50%	4380	YES
	R9	Bedroom	529	100%	100	50%	50%	4380	YES
	R10	Bedroom	548	100%	100	50%	50%	4380	YES
	R11	Bedroom	100	50%	100	50%	50%	4380	YES
	R12	LKD	373	95%	200	50%	50%	4380	YES
	R13	Bedroom	132	79%	100	50%	50%	4380	YES
	R14	Bedroom	88	41%	100	50%	50%	4380	NO
	R15	LKD	335	69%	200	50%	50%	4380	YES
	R16	LKD	612	100%	200	50%	50%	4380	YES
	R17	Bedroom	203	97%	100	50%	50%	4380	YES
	R18	Bedroom	248	100%	100	50%	50%	4380	YES
	R19	Bedroom	263	100%	100	50%	50%	4380	YES
	R20	Bedroom	187	96%	100	50%	50%	4380	YES
	R21	LKD	237	62%	200	50%	50%	4380	YES
	R22	LKD	602	100%	200	50%	50%	4380	YES
	R23	Bedroom	185	99%	100	50%	50%	4380	YES
	R24	LKD	378	99%	200	50%	50%	4380	YES
	R25	Bedroom	184	99%	100	50%	50%	4380	YES
	R26	LKD	258	60%	200	50%	50%	4380	YES
	R27	Bedroom	208	97%	100	50%	50%	4380	YES
	R28	Bedroom	253	100%	100	50%	50%	4380	YES
	R29	LKD	885	100%	200	50%	50%	4380	YES
	R30	Bedroom	184	96%	100	50%	50%	4380	YES
	R31	Bedroom	270	100%	100	50%	50%	4380	YES
	R32	LKD	797	100%	200	50%	50%	4380	YES
	R33	Bedroom	116	64%	100	50%	50%	4380	YES
	R34	Bedroom	194	99%	100	50%	50%	4380	YES
	R35	Bedroom	132	81%	100	50%	50%	4380	YES

Table 32: Illuminance Results – Block-C First Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block C									
First	R36	Bedroom	667	100%	100	50%	50%	4380	YES
	R37	Bedroom	148	75%	100	50%	50%	4380	YES
	R38	LKD	112	26%	200	50%	50%	4380	NO
	R39	Bedroom	208	100%	100	50%	50%	4380	YES
	R40	LKD	320	92%	200	50%	50%	4380	YES
	R41	LKD	341	94%	200	50%	50%	4380	YES
	R42	Bedroom	702	100%	100	50%	50%	4380	YES
	R43	Bedroom	251	100%	100	50%	50%	4380	YES
	R44	Bedroom	132	85%	100	50%	50%	4380	YES
	R45	Bedroom	350	100%	100	50%	50%	4380	YES
	R46	LKD	861	100%	200	50%	50%	4380	YES
	R47	LKD	892	100%	200	50%	50%	4380	YES
	R48	Bedroom	207	97%	100	50%	50%	4380	YES
	R49	Bedroom	270	100%	100	50%	50%	4380	YES
	R50	Bedroom	182	96%	100	50%	50%	4380	YES
	R51	LKD	347	98%	200	50%	50%	4380	YES
	R52	Bedroom	895	100%	100	50%	50%	4380	YES
	R53	Bedroom	212	97%	100	50%	50%	4380	YES
	R54	LKD	256	60%	200	50%	50%	4380	YES
	R55	Bedroom	124	61%	100	50%	50%	4380	YES
	R56	Bedroom	69	34%	100	50%	50%	4380	NO
	R57	Bedroom	183	99%	100	50%	50%	4380	YES
	R58	LKD	222	53%	200	50%	50%	4380	YES
	R59	LKD	388	100%	200	50%	50%	4380	YES
	R60	LKD	194	48%	200	50%	50%	4380	NO
	R61	Bedroom	95	48%	100	50%	50%	4380	NO
	R62	Bedroom	256	100%	100	50%	50%	4380	YES
	R63	Bedroom	210	97%	100	50%	50%	4380	YES

Table 33: Illuminance Results – Block-C Second Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block C									
Second	R1	LKD	637	100%	200	50%	50%	4380	YES
	R2	Bedroom	136	87%	100	50%	50%	4380	YES
	R3	LKD	379	96%	200	50%	50%	4380	YES
	R4	Bedroom	103	52%	100	50%	50%	4380	YES
	R5	Bedroom	544	100%	100	50%	50%	4380	YES
	R6	Bedroom	493	100%	100	50%	50%	4380	YES
	R7	LKD	387	99%	200	50%	50%	4380	YES
	R8	LKD	401	99%	200	50%	50%	4380	YES
	R9	Bedroom	541	100%	100	50%	50%	4380	YES
	R10	Bedroom	645	100%	100	50%	50%	4380	YES
	R11	Bedroom	102	52%	100	50%	50%	4380	YES
	R12	LKD	379	96%	200	50%	50%	4380	YES
	R13	Bedroom	133	82%	100	50%	50%	4380	YES
	R14	Bedroom	135	75%	100	50%	50%	4380	YES
	R15	LKD	556	87%	200	50%	50%	4380	YES
	R16	LKD	619	100%	200	50%	50%	4380	YES
	R17	Bedroom	207	97%	100	50%	50%	4380	YES
	R18	Bedroom	252	100%	100	50%	50%	4380	YES
	R19	Bedroom	268	100%	100	50%	50%	4380	YES
	R20	Bedroom	190	96%	100	50%	50%	4380	YES
	R21	LKD	241	62%	200	50%	50%	4380	YES
	R22	LKD	614	100%	200	50%	50%	4380	YES
	R23	Bedroom	188	99%	100	50%	50%	4380	YES
	R24	LKD	387	99%	200	50%	50%	4380	YES
	R25	Bedroom	188	99%	100	50%	50%	4380	YES
	R26	LKD	263	61%	200	50%	50%	4380	YES
	R27	LKD	182	47%	200	50%	50%	4380	NO
	R28	Bedroom	211	99%	100	50%	50%	4380	YES
	R29	Bedroom	257	100%	100	50%	50%	4380	YES
	R30	LKD	890	100%	200	50%	50%	4380	YES
	R31	Bedroom	185	98%	100	50%	50%	4380	YES
	R32	Bedroom	274	100%	100	50%	50%	4380	YES
	R33	LKD	833	100%	200	50%	50%	4380	YES
	R34	Bedroom	164	96%	100	50%	50%	4380	YES

Table 34: Illuminance Results – Block-C Second Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block C									
Second	R35	Bedroom	232	99%	100	50%	50%	4380	YES
	R36	Bedroom	135	85%	100	50%	50%	4380	YES
	R37	Bedroom	704	100%	100	50%	50%	4380	YES
	R38	Bedroom	155	84%	100	50%	50%	4380	YES
	R39	Bedroom	138	73%	100	50%	50%	4380	YES
	R40	Bedroom	261	100%	100	50%	50%	4380	YES
	R41	LKD	481	99%	200	50%	50%	4380	YES
	R42	LKD	507	100%	200	50%	50%	4380	YES
	R43	Bedroom	726	100%	100	50%	50%	4380	YES
	R44	Bedroom	321	100%	100	50%	50%	4380	YES
	R45	Bedroom	135	87%	100	50%	50%	4380	YES
	R46	Bedroom	439	100%	100	50%	50%	4380	YES
	R47	LKD	884	100%	200	50%	50%	4380	YES
	R48	LKD	896	100%	200	50%	50%	4380	YES
	R49	Bedroom	210	99%	100	50%	50%	4380	YES
	R50	Bedroom	273	100%	100	50%	50%	4380	YES
	R51	Bedroom	184	96%	100	50%	50%	4380	YES
	R52	LKD	351	96%	200	50%	50%	4380	YES
	R53	Bedroom	923	100%	100	50%	50%	4380	YES
	R54	Bedroom	214	97%	100	50%	50%	4380	YES
	R55	LKD	259	60%	200	50%	50%	4380	YES
	R56	Bedroom	147	79%	100	50%	50%	4380	YES
	R57	Bedroom	139	79%	100	50%	50%	4380	YES
	R58	Bedroom	186	99%	100	50%	50%	4380	YES
	R59	LKD	305	66%	200	50%	50%	4380	YES
	R60	LKD	393	100%	200	50%	50%	4380	YES
	R61	LKD	251	62%	200	50%	50%	4380	YES
	R62	Bedroom	108	59%	100	50%	50%	4380	YES
	R63	Bedroom	261	100%	100	50%	50%	4380	YES
	R64	Bedroom	212	97%	100	50%	50%	4380	YES

Table 35: Illuminance Results – Block-C Third Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block C									
Third	R1	LKD	640	100%	200	50%	50%	4380	YES
	R2	Bedroom	137	88%	100	50%	50%	4380	YES
	R3	LKD	383	97%	200	50%	50%	4380	YES
	R4	Bedroom	104	54%	100	50%	50%	4380	YES
	R5	Bedroom	550	100%	100	50%	50%	4380	YES
	R6	Bedroom	643	100%	100	50%	50%	4380	YES
	R7	LKD	418	100%	200	50%	50%	4380	YES
	R8	LKD	432	100%	200	50%	50%	4380	YES
	R9	Bedroom	548	100%	100	50%	50%	4380	YES
	R10	Bedroom	756	100%	100	50%	50%	4380	YES
	R11	Bedroom	103	52%	100	50%	50%	4380	YES
	R12	LKD	384	97%	200	50%	50%	4380	YES
	R13	Bedroom	135	85%	100	50%	50%	4380	YES
	R14	Bedroom	142	91%	100	50%	50%	4380	YES
	R15	LKD	691	98%	200	50%	50%	4380	YES
	R16	LKD	625	100%	200	50%	50%	4380	YES
	R17	Bedroom	210	99%	100	50%	50%	4380	YES
	R18	Bedroom	257	100%	100	50%	50%	4380	YES
	R19	Bedroom	271	100%	100	50%	50%	4380	YES
	R20	Bedroom	192	96%	100	50%	50%	4380	YES
	R21	LKD	247	62%	200	50%	50%	4380	YES
	R22	LKD	626	100%	200	50%	50%	4380	YES
	R23	Bedroom	191	99%	100	50%	50%	4380	YES
	R24	LKD	391	100%	200	50%	50%	4380	YES
	R25	Bedroom	191	99%	100	50%	50%	4380	YES
	R26	LKD	267	62%	200	50%	50%	4380	YES
	R27	LKD	247	59%	200	50%	50%	4380	YES
	R28	Bedroom	214	99%	100	50%	50%	4380	YES

Table 36: Illuminance Results – Block-C Third Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block C									
Third	R29	Bedroom	261	100%	100	50%	50%	4380	YES
	R30	LKD	895	100%	200	50%	50%	4380	YES
	R31	Bedroom	187	98%	100	50%	50%	4380	YES
	R32	Bedroom	278	100%	100	50%	50%	4380	YES
	R33	LKD	866	100%	200	50%	50%	4380	YES
	R34	Bedroom	195	97%	100	50%	50%	4380	YES
	R35	Bedroom	269	100%	100	50%	50%	4380	YES
	R36	Bedroom	240	100%	100	50%	50%	4380	YES
	R37	Bedroom	205	95%	100	50%	50%	4380	YES
	R38	Bedroom	503	100%	100	50%	50%	4380	YES
	R39	LKD	911	100%	200	50%	50%	4380	YES
	R40	LKD	900	100%	200	50%	50%	4380	YES
	R41	Bedroom	212	99%	100	50%	50%	4380	YES
	R42	Bedroom	276	100%	100	50%	50%	4380	YES
	R43	Bedroom	186	99%	100	50%	50%	4380	YES
	R44	LKD	358	98%	200	50%	50%	4380	YES
	R45	Bedroom	1014	100%	100	50%	50%	4380	YES
	R46	Bedroom	215	99%	100	50%	50%	4380	YES
	R47	LKD	262	61%	200	50%	50%	4380	YES
	R48	Bedroom	237	100%	100	50%	50%	4380	YES
	R49	Bedroom	207	96%	100	50%	50%	4380	YES
	R50	Bedroom	188	99%	100	50%	50%	4380	YES
	R51	LKD	285	61%	200	50%	50%	4380	YES
	R52	LKD	397	100%	200	50%	50%	4380	YES
	R53	LKD	258	63%	200	50%	50%	4380	YES
	R54	Bedroom	136	88%	100	50%	50%	4380	YES
	R55	Bedroom	264	100%	100	50%	50%	4380	YES
	R56	Bedroom	214	97%	100	50%	50%	4380	YES

Table 37: luminance Results – Block-C Fourth Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block C									
Fourth	R1	LKD	692	100%	200	50%	50%	4380	YES
	R2	Bedroom	194	97%	100	50%	50%	4380	YES
	R3	LKD	445	100%	200	50%	50%	4380	YES
	R4	Bedroom	106	58%	100	50%	50%	4380	YES
	R5	Bedroom	557	100%	100	50%	50%	4380	YES
	R6	Bedroom	826	100%	100	50%	50%	4380	YES
	R7	LKD	593	100%	200	50%	50%	4380	YES
	R8	LKD	605	100%	200	50%	50%	4380	YES
	R9	Bedroom	554	100%	100	50%	50%	4380	YES
	R10	Bedroom	878	100%	100	50%	50%	4380	YES
	R11	Bedroom	106	52%	100	50%	50%	4380	YES
	R12	LKD	438	100%	200	50%	50%	4380	YES
	R13	Bedroom	192	96%	100	50%	50%	4380	YES
	R14	Bedroom	281	100%	100	50%	50%	4380	YES
	R15	LKD	845	100%	200	50%	50%	4380	YES
	R16	LKD	680	100%	200	50%	50%	4380	YES
	R17	Bedroom	294	100%	100	50%	50%	4380	YES
	R18	Bedroom	272	100%	100	50%	50%	4380	YES
	R19	Bedroom	290	100%	100	50%	50%	4380	YES
	R20	Bedroom	256	100%	100	50%	50%	4380	YES
	R21	LKD	223	55%	200	50%	50%	4380	YES
	R22	LKD	695	100%	200	50%	50%	4380	YES
	R23	Bedroom	281	100%	100	50%	50%	4380	YES
	R24	LKD	456	100%	200	50%	50%	4380	YES
	R25	Bedroom	281	100%	100	50%	50%	4380	YES
	R26	LKD	303	67%	200	50%	50%	4380	YES
	R27	LKD	249	59%	200	50%	50%	4380	YES
	R28	Bedroom	297	100%	100	50%	50%	4380	YES

Table 38: luminance Results – Block-C Fourth Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block C									
Fourth	R29	Bedroom	276	100%	100	50%	50%	4380	YES
	R30	LKD	962	100%	200	50%	50%	4380	YES
	R31	Bedroom	254	100%	100	50%	50%	4380	YES
	R32	Bedroom	296	100%	100	50%	50%	4380	YES
	R33	LKD	960	100%	200	50%	50%	4380	YES
	R34	Bedroom	289	100%	100	50%	50%	4380	YES
	R35	Bedroom	305	100%	100	50%	50%	4380	YES
	R36	Bedroom	286	100%	100	50%	50%	4380	YES
	R37	Bedroom	285	100%	100	50%	50%	4380	YES
	R38	Bedroom	541	100%	100	50%	50%	4380	YES
	R39	LKD	1090	100%	200	50%	50%	4380	YES
	R40	LKD	979	100%	200	50%	50%	4380	YES
	R41	Bedroom	283	100%	100	50%	50%	4380	YES
	R42	Bedroom	297	100%	100	50%	50%	4380	YES
	R43	Bedroom	278	100%	100	50%	50%	4380	YES
	R44	LKD	436	100%	200	50%	50%	4380	YES
	R45	Bedroom	1120	100%	100	50%	50%	4380	YES
	R46	Bedroom	290	100%	100	50%	50%	4380	YES
	R47	LKD	297	66%	200	50%	50%	4380	YES
	R48	Bedroom	278	100%	100	50%	50%	4380	YES
	R49	Bedroom	297	100%	100	50%	50%	4380	YES
	R50	Bedroom	281	100%	100	50%	50%	4380	YES
	R51	LKD	388	76%	200	50%	50%	4380	YES
	R52	LKD	466	100%	200	50%	50%	4380	YES
	R53	LKD	372	91%	200	50%	50%	4380	YES
	R54	Bedroom	265	99%	100	50%	50%	4380	YES
	R55	Bedroom	278	100%	100	50%	50%	4380	YES
	R56	Bedroom	288	100%	100	50%	50%	4380	YES

A summary of the results is provided below for the duplex units.

Table 39: luminance Results – Block-D Duplex Units

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block D									
Ground	R1	Bedroom	408	100%	100	50%	50%	4380	YES
	R2	Bedroom	962	100%	100	50%	50%	4380	YES
	R3	Bedroom	241	100%	100	50%	50%	4380	YES
	R4	KD	325	77%	200	50%	50%	4380	YES
	R5	Living Room	329	99%	150	50%	50%	4380	YES
	R6	Bedroom	74	35%	100	50%	50%	4380	NO
First	R1	LKD	561	100%	200	50%	50%	4380	YES
	R2	LKD	201	51%	200	50%	50%	4380	YES
	R3	Bedroom	415	100%	100	50%	50%	4380	YES
	R4	Bedroom	624	100%	100	50%	50%	4380	YES
Second	R1	Bedroom	455	100%	100	50%	50%	4380	YES
	R2	Bedroom	923	100%	100	50%	50%	4380	YES
	R3	Bedroom	351	100%	100	50%	50%	4380	YES
	R4	LKD	447	100%	200	50%	50%	4380	YES
	R5	Bedroom	694	100%	100	50%	50%	4380	YES
	R6	Bedroom	125	66%	100	50%	50%	4380	YES
Third	R1	LKD	492	100%	200	50%	50%	4380	YES
	R2	Living Room	372	100%	150	50%	50%	4380	YES
	R3	KD	86	23%	200	50%	50%	4380	NO

Table 40: Iuminance Results – Block-E Ground Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block-E									
Ground	R1	LKD	982	100%	200	50%	50%	4380	YES
	R2	Bedroom	283	97%	100	50%	50%	4380	YES
	R3	Bedroom	280	99%	100	50%	50%	4380	YES
	R4	LKD	442	98%	200	50%	50%	4380	YES
	R5	Bedroom	274	99%	100	50%	50%	4380	YES
	R6	Bedroom	267	99%	100	50%	50%	4380	YES
	R7	Bedroom	281	97%	100	50%	50%	4380	YES
	R8	LKD	709	98%	200	50%	50%	4380	YES
	R9	LKD	227	61%	200	50%	50%	4380	YES
	R10	Bedroom	16	0%	100	50%	50%	4380	NO
	R11	Bedroom	17	0%	100	50%	50%	4380	NO

Table 41: luminance Results – Block-E First Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block-E									
First	R1	LKD	936	100%	200	50%	50%	4380	YES
	R2	Bedroom	221	98%	100	50%	50%	4380	YES
	R3	Bedroom	280	100%	100	50%	50%	4380	YES
	R4	LKD	417	96%	200	50%	50%	4380	YES
	R5	Bedroom	209	99%	100	50%	50%	4380	YES
	R6	LKD	337	69%	200	50%	50%	4380	YES
	R7	Bedroom	217	97%	100	50%	50%	4380	YES
	R8	Bedroom	275	100%	100	50%	50%	4380	YES
	R9	Bedroom	195	99%	100	50%	50%	4380	YES
	R10	LKD	418	96%	200	50%	50%	4380	YES
	R11	Bedroom	270	100%	100	50%	50%	4380	YES
	R12	Bedroom	223	97%	100	50%	50%	4380	YES
	R13	LKD	679	100%	200	50%	50%	4380	YES
	R14	LKD	606	98%	200	50%	50%	4380	YES
	R15	Bedroom	178	92%	100	50%	50%	4380	YES
	R16	Bedroom	210	99%	100	50%	50%	4380	YES
	R17	LKD	265	66%	200	50%	50%	4380	YES
	R18	Bedroom	128	86%	100	50%	50%	4380	YES
	R19	LKD	222	56%	200	50%	50%	4380	YES
	R20	Bedroom	97	47%	100	50%	50%	4380	NO
	R21	Bedroom	319	100%	100	50%	50%	4380	YES
	R22	LKD	426	98%	200	50%	50%	4380	YES
	R23	LKD	442	99%	200	50%	50%	4380	YES
	R24	Bedroom	353	100%	100	50%	50%	4380	YES
	R25	Bedroom	149	81%	100	50%	50%	4380	YES
	R26	Bedroom	81	36%	100	50%	50%	4380	NO
	R27	LKD	529	91%	200	50%	50%	4380	YES
	R28	LKD	632	99%	200	50%	50%	4380	YES
	R29	Bedroom	181	95%	100	50%	50%	4380	YES
	R30	Bedroom	215	99%	100	50%	50%	4380	YES
	R31	Bedroom	221	99%	100	50%	50%	4380	YES
	R32	Bedroom	174	95%	100	50%	50%	4380	YES
	R33	LKD	747	100%	200	50%	50%	4380	YES
	R34	Bedroom	196	96%	100	50%	50%	4380	YES
	R35	LKD	612	100%	200	50%	50%	4380	YES
	R36	Bedroom	193	91%	100	50%	50%	4380	YES
	R37	Bedroom	815	100%	100	50%	50%	4380	YES
	R38	Bedroom	802	100%	100	50%	50%	4380	YES
	R39	Bedroom	182	89%	100	50%	50%	4380	YES
	R40	LKD	585	100%	200	50%	50%	4380	YES
	R41	Bedroom	199	95%	100	50%	50%	4380	YES

Table 42: luminance Results – Block-E Second Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block-E									
Second	R1	LKD	941	100%	200	50%	50%	4380	YES
	R2	Bedroom	223	98%	100	50%	50%	4380	YES
	R3	Bedroom	282	100%	100	50%	50%	4380	YES
	R4	LKD	424	97%	200	50%	50%	4380	YES
	R5	Bedroom	213	99%	100	50%	50%	4380	YES
	R6	LKD	342	70%	200	50%	50%	4380	YES
	R7	Bedroom	220	97%	100	50%	50%	4380	YES
	R8	Bedroom	279	100%	100	50%	50%	4380	YES
	R9	Bedroom	198	99%	100	50%	50%	4380	YES
	R10	LKD	425	97%	200	50%	50%	4380	YES
	R11	Bedroom	273	100%	100	50%	50%	4380	YES
	R12	Bedroom	226	97%	100	50%	50%	4380	YES
	R13	LKD	684	100%	200	50%	50%	4380	YES
	R14	LKD	627	99%	200	50%	50%	4380	YES
	R15	Bedroom	191	95%	100	50%	50%	4380	YES
	R16	Bedroom	226	99%	100	50%	50%	4380	YES
	R17	LKD	308	73%	200	50%	50%	4380	YES
	R18	Bedroom	143	93%	100	50%	50%	4380	YES
	R19	LKD	263	65%	200	50%	50%	4380	YES
	R20	Bedroom	115	65%	100	50%	50%	4380	YES
	R21	Bedroom	347	100%	100	50%	50%	4380	YES
	R22	LKD	433	98%	200	50%	50%	4380	YES
	R23	LKD	448	100%	200	50%	50%	4380	YES
	R24	Bedroom	387	100%	100	50%	50%	4380	YES
	R25	Bedroom	178	96%	100	50%	50%	4380	YES
	R26	Bedroom	117	63%	100	50%	50%	4380	YES
	R27	LKD	586	93%	200	50%	50%	4380	YES
	R28	LKD	661	99%	200	50%	50%	4380	YES
	R29	Bedroom	185	95%	100	50%	50%	4380	YES
	R30	Bedroom	219	99%	100	50%	50%	4380	YES
	R31	Bedroom	227	99%	100	50%	50%	4380	YES
	R32	Bedroom	177	95%	100	50%	50%	4380	YES
	R33	LKD	758	100%	200	50%	50%	4380	YES
	R34	Bedroom	197	96%	100	50%	50%	4380	YES
	R35	LKD	620	100%	200	50%	50%	4380	YES
	R36	Bedroom	195	91%	100	50%	50%	4380	YES
	R37	Bedroom	819	100%	100	50%	50%	4380	YES
	R38	Bedroom	809	100%	100	50%	50%	4380	YES
	R39	Bedroom	185	89%	100	50%	50%	4380	YES
	R40	LKD	590	100%	200	50%	50%	4380	YES
	R41	Bedroom	200	95%	100	50%	50%	4380	YES

Table 43: luminance Results – Block-E Third Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block-E									
Third	R1	LKD	948	100%	200	50%	50%	4380	YES
	R2	Bedroom	224	98%	100	50%	50%	4380	YES
	R3	Bedroom	286	100%	100	50%	50%	4380	YES
	R4	LKD	429	99%	200	50%	50%	4380	YES
	R5	Bedroom	215	99%	100	50%	50%	4380	YES
	R6	LKD	345	70%	200	50%	50%	4380	YES
	R7	Bedroom	222	98%	100	50%	50%	4380	YES
	R8	Bedroom	282	100%	100	50%	50%	4380	YES
	R9	Bedroom	201	99%	100	50%	50%	4380	YES
	R10	LKD	430	98%	200	50%	50%	4380	YES
	R11	Bedroom	277	100%	100	50%	50%	4380	YES
	R12	Bedroom	228	98%	100	50%	50%	4380	YES
	R13	LKD	693	100%	200	50%	50%	4380	YES
	R14	LKD	632	99%	200	50%	50%	4380	YES
	R15	Bedroom	191	95%	100	50%	50%	4380	YES
	R16	Bedroom	234	100%	100	50%	50%	4380	YES
	R17	LKD	334	76%	200	50%	50%	4380	YES
	R18	Bedroom	155	94%	100	50%	50%	4380	YES
	R19	LKD	299	72%	200	50%	50%	4380	YES
	R20	Bedroom	134	90%	100	50%	50%	4380	YES
	R21	Bedroom	392	100%	100	50%	50%	4380	YES
	R22	LKD	456	100%	200	50%	50%	4380	YES
	R23	LKD	464	100%	200	50%	50%	4380	YES
	R24	Bedroom	426	100%	100	50%	50%	4380	YES
	R25	Bedroom	211	99%	100	50%	50%	4380	YES
	R26	Bedroom	162	84%	100	50%	50%	4380	YES
	R27	LKD	655	97%	200	50%	50%	4380	YES
	R28	LKD	658	99%	200	50%	50%	4380	YES
	R29	Bedroom	185	95%	100	50%	50%	4380	YES
	R30	Bedroom	223	99%	100	50%	50%	4380	YES
	R31	Bedroom	229	99%	100	50%	50%	4380	YES
	R32	Bedroom	178	95%	100	50%	50%	4380	YES
	R33	LKD	767	100%	200	50%	50%	4380	YES
	R34	Bedroom	198	96%	100	50%	50%	4380	YES
	R35	LKD	629	100%	200	50%	50%	4380	YES
	R36	Bedroom	197	91%	100	50%	50%	4380	YES
	R37	Bedroom	826	100%	100	50%	50%	4380	YES
	R38	Bedroom	813	100%	100	50%	50%	4380	YES
	R39	Bedroom	187	89%	100	50%	50%	4380	YES
	R40	LKD	594	100%	200	50%	50%	4380	YES
	R41	Bedroom	200	95%	100	50%	50%	4380	YES

Table 44: luminance Results – Block-E Fourth Floor

Floor Ref	Room Ref	Room Use	Median Lux	% of Area Meeting Req Lux	Req Lux	Req % of Effective Area	Req % of Daylight Hours	Daylight Hours	Meets Criteria
Block-E									
Fourth	R1	LKD	1039	100%	200	50%	50%	4380	YES
	R2	Bedroom	311	100%	100	50%	50%	4380	YES
	R3	Bedroom	303	100%	100	50%	50%	4380	YES
	R4	LKD	490	100%	200	50%	50%	4380	YES
	R5	Bedroom	315	100%	100	50%	50%	4380	YES
	R6	LKD	389	75%	200	50%	50%	4380	YES
	R7	Bedroom	311	100%	100	50%	50%	4380	YES
	R8	Bedroom	301	100%	100	50%	50%	4380	YES
	R9	Bedroom	300	100%	100	50%	50%	4380	YES
	R10	LKD	517	100%	200	50%	50%	4380	YES
	R11	Bedroom	287	100%	100	50%	50%	4380	YES
	R12	Bedroom	313	100%	100	50%	50%	4380	YES
	R13	LKD	765	100%	200	50%	50%	4380	YES
	R14	LKD	696	99%	200	50%	50%	4380	YES
	R15	Bedroom	261	100%	100	50%	50%	4380	YES
	R16	Bedroom	243	100%	100	50%	50%	4380	YES
	R17	LKD	420	88%	200	50%	50%	4380	YES
	R18	Bedroom	250	99%	100	50%	50%	4380	YES
	R19	LKD	406	85%	200	50%	50%	4380	YES
	R20	Bedroom	239	99%	100	50%	50%	4380	YES
	R21	Bedroom	483	100%	100	50%	50%	4380	YES
	R22	LKD	591	100%	200	50%	50%	4380	YES
	R23	LKD	589	100%	200	50%	50%	4380	YES
	R24	Bedroom	494	100%	100	50%	50%	4380	YES
	R25	Bedroom	265	100%	100	50%	50%	4380	YES
	R26	Bedroom	291	98%	100	50%	50%	4380	YES
	R27	LKD	773	100%	200	50%	50%	4380	YES
	R28	LKD	697	99%	200	50%	50%	4380	YES
	R29	Bedroom	254	98%	100	50%	50%	4380	YES
	R30	Bedroom	230	100%	100	50%	50%	4380	YES
	R31	Bedroom	240	100%	100	50%	50%	4380	YES
	R32	Bedroom	247	97%	100	50%	50%	4380	YES
	R33	LKD	826	100%	200	50%	50%	4380	YES
	R34	Bedroom	292	100%	100	50%	50%	4380	YES
	R35	LKD	732	100%	200	50%	50%	4380	YES
	R36	Bedroom	200	94%	100	50%	50%	4380	YES
	R37	Bedroom	832	100%	100	50%	50%	4380	YES
	R38	Bedroom	826	100%	100	50%	50%	4380	YES
	R39	Bedroom	190	91%	100	50%	50%	4380	YES
	R40	LKD	681	100%	200	50%	50%	4380	YES
	R41	Bedroom	277	100%	100	50%	50%	4380	YES

Table 45: Illuminance Results Summary

Property	Number of Rooms Tested	Rooms satisfying Criteria		Rooms not satisfying Criteria
		No.	%	
Block A	320	316	99%	4
Block B	287	283	99%	4
Block C	278	272	98%	6
Block D	19	17	89%	2
Total	**904**	**888**	**98%**	**4**

The results show that 98% of all rooms meet or exceed the BRE's minimum recommendations for internal daylight provision in dwellings.

5.3.2 Sunlight to Proposed Amenity Spaces

The BRE guide recommends:

"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."

The main communal open spaces and the open space was analysed. These areas are identified in the following figures and labelled for reference in the results Table 46.

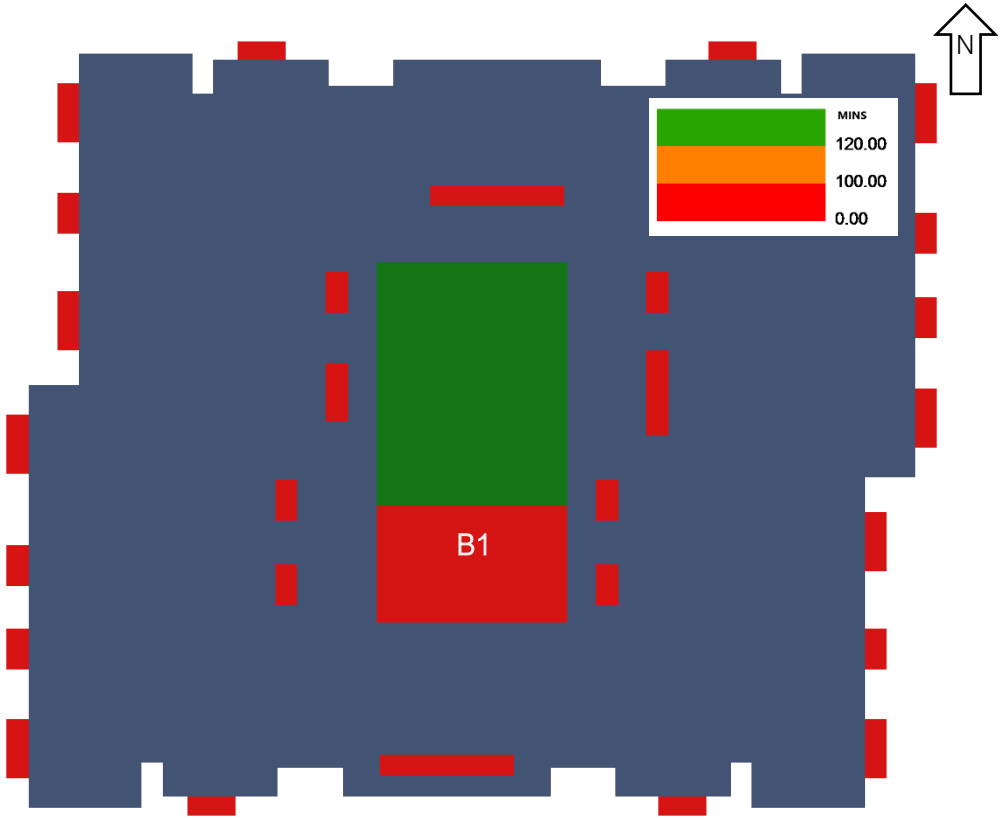


Figure 26: Proposed Block-B Amenity Space, 2hr Sunlight Test

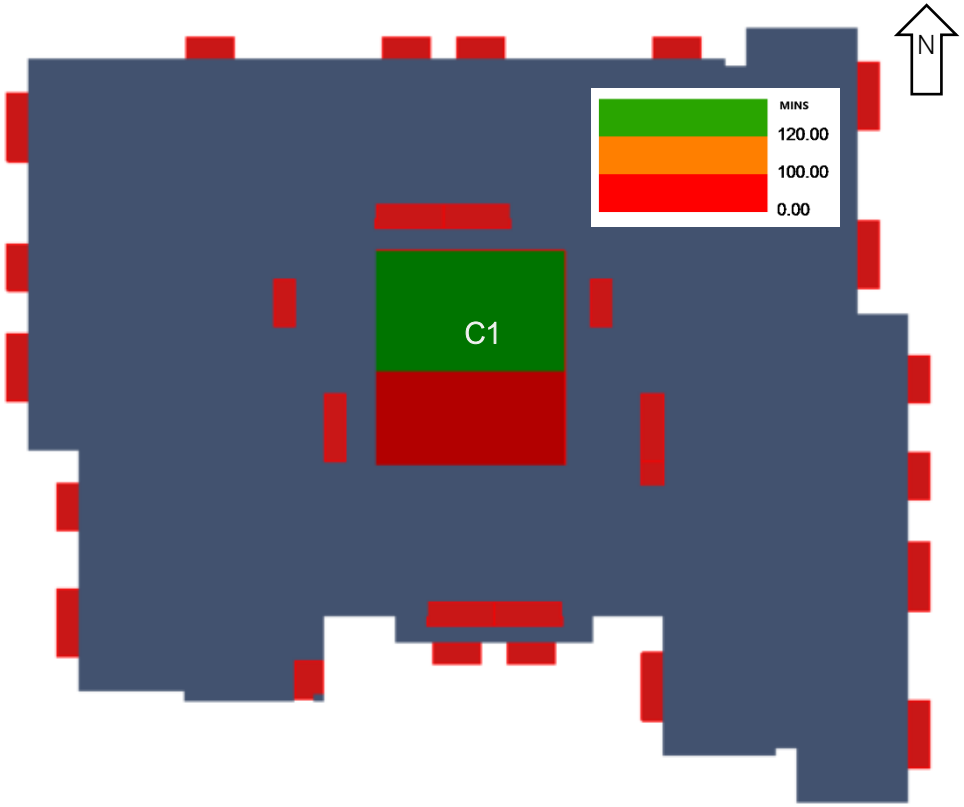


Figure 27: Proposed Block-C Amenity Space *2hr Sunlight Test*

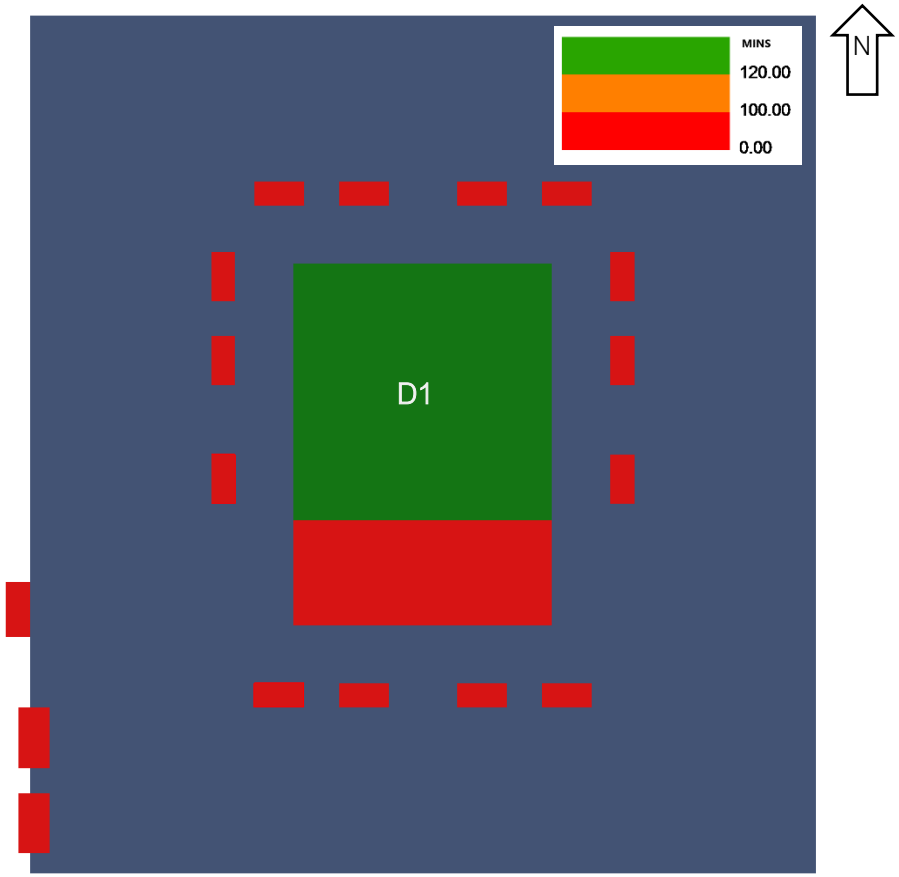


Figure 28: Proposed Block-D Amenity Space 2hr Sunlight Test

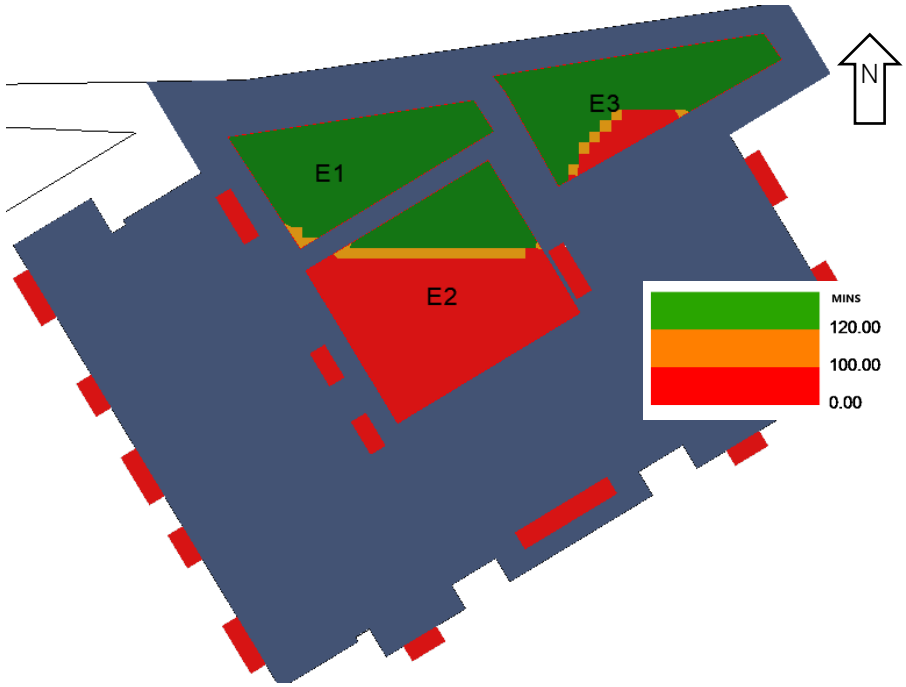


Figure 29: Proposed Block-E Amenity Space 2hr Sunlight Test

Table 46: Open Spaces 2hr Sunlight Test Results

Open Space	Area (m²)	2hr Sun Area (m²)	% Area	Meets Criteria
B1	428.30	290.14	67.74%	Yes
C1	221.10	124.36	56.25%	Yes
D1	393.01	278.38	70.83%	Yes
E1, E2 & E3	636.37	366.49	57.59%	Yes
Total	**1678.78**	**1059.37**	63.10%	

The results show that all open spaces receive greater than 2 hours of sunlight on March 21st. Therefore, the proposed open spaces exceed the BRE's recommendation for sunlight and should appear adequately sunlit throughout the year.

Trees/Shrubs, including the existing trees, have not been modelled except for around the Meadowbrook property where there is a dense band of evergreen trees. The reason other trees/shrubs have not been modelled is because the shadows they produce are almost impossible to predict and "*the dappled shade of a tree is more pleasant than the deep shadow of a building (this applies particularly to deciduous trees).*" (BRE Building Technology Group, 2022) As per the BRE guidance, in assessing the impact of buildings on sunlight in gardens, trees are not normally included in the calculation unless a dense belt of evergreens is specifically planned. Nevertheless, the location for planting trees should be chosen with care. "*The aim should normally be to have some areas of partial shade under trees while leaving other parts of the garden or amenity area in full sun.*" (BRE Building Technology Group, 2022)

6 Conclusion

The analysis and assessments in this report have been carried in line with the recommendations of BRE's "Site Layout Planning for daylight and sunlight, a Guide to good practice" (BRE Building Technology Group, 2022) and BS EN 17037.

The results show that the proposed development will have a negligible impact on surrounding buildings with respect to:

- access to skylight,
- access to sunlight, and
- sunlight to gardens/open spaces.

All surrounding buildings tested in the proposed development meet the minimum recommendations for internal daylight provision as set out in the BRE Guide and BS EN 17037 (National Annex).

In terms of internal daylight levels within the proposed development a 98% pass rate was achieved using the more onerous target of 200 lux in the Living/Kitchen/Dining room. Therefore, we believe the proposed development performs at an exemplar level for a scheme of this scale and aligns to national policy to ensure high quality sustainable development.

In order to maximise available light, glazing to all habitable rooms is in excess of 20%. The design team have developed the proposed building using the principles of the BREs "Site Layout Planning for Daylight and Sunlight, A guide to good practice".

In terms of the amenity spaces provided the results show all the amenity spaces receive greater than 2 hours of sunlight on March 21st. Therefore, the proposed open spaces exceed the BRE's recommendation for sunlight and should appear adequately sunlit throughout the year.

Overall, the development has been designed with due consideration for sunlight and daylight and meets the recommendations as set out in the BRE Guide – BR 209 "Site Layout Planning for Daylight and Sunlight, A guide to good practice (2022)."

Appendix A Proposed Illuminance Contours (with Room & Window Legends)

A.1 Block A

Figure 30: Block-B Ground Floor sDA Contours

Figure 31: Block-B First Floor sDA Contours

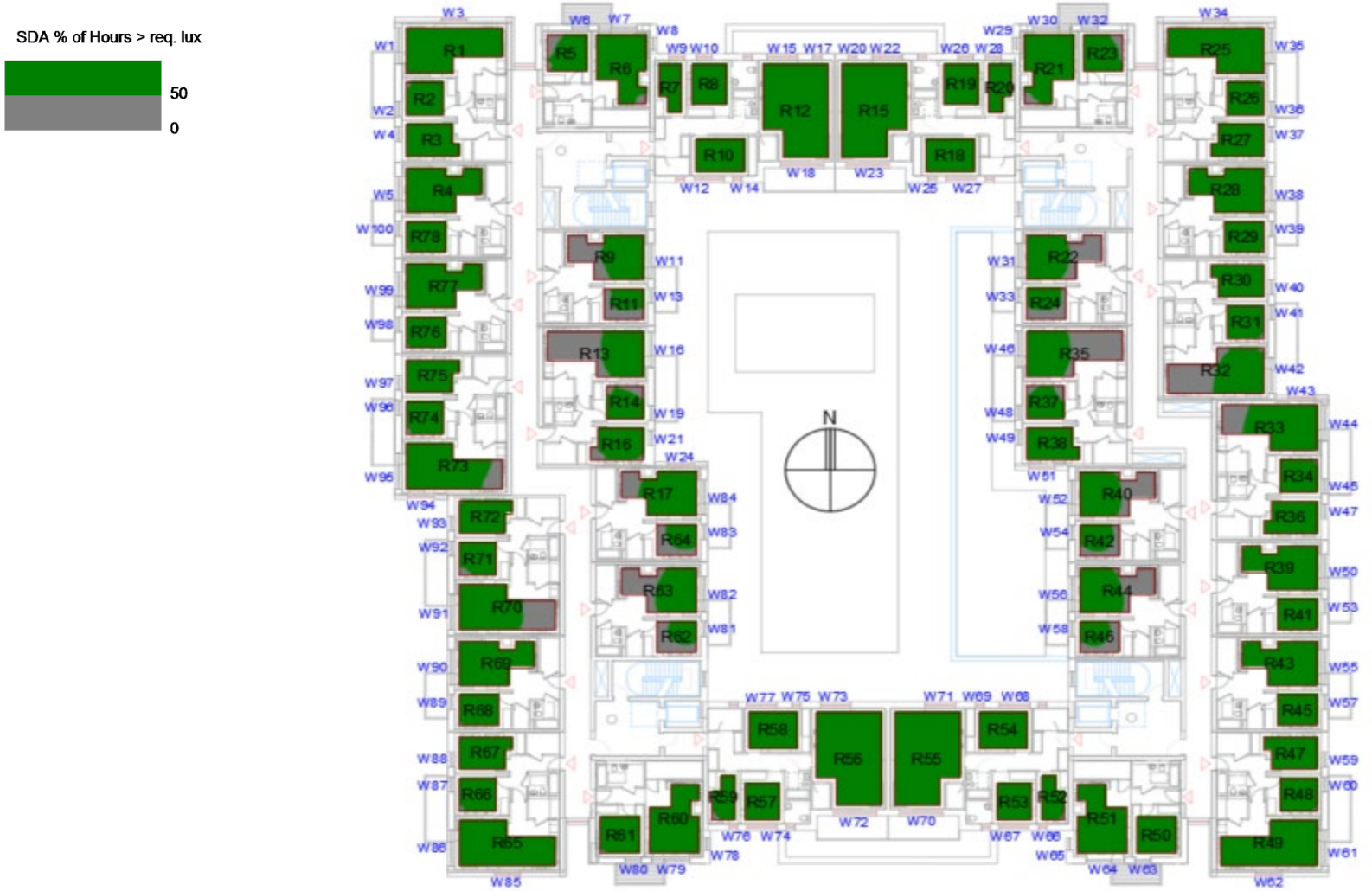


Figure 32: Block-A Second Floor sDA Contours

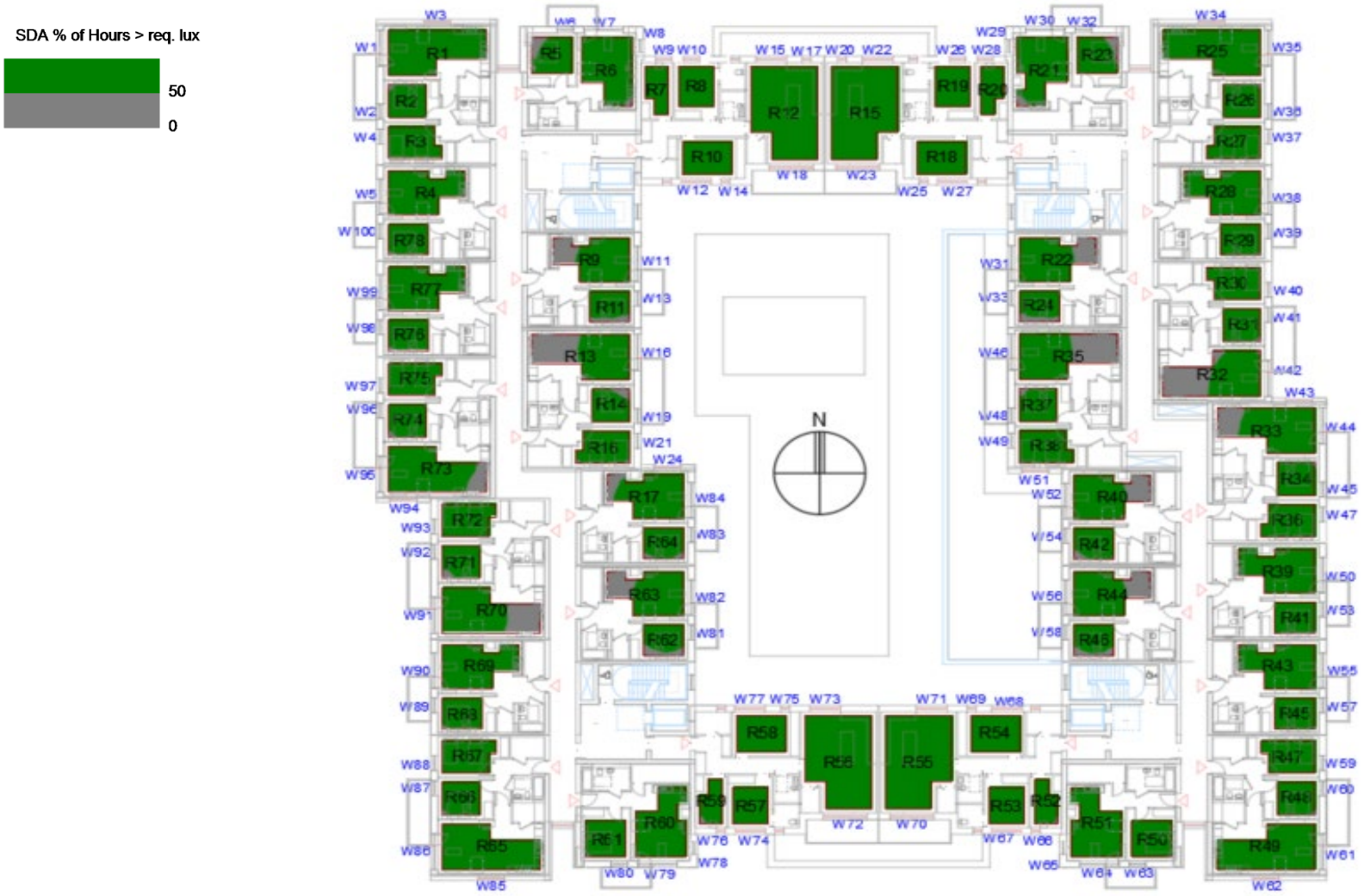


Figure 33: Block-A Third Floor sDA Contours

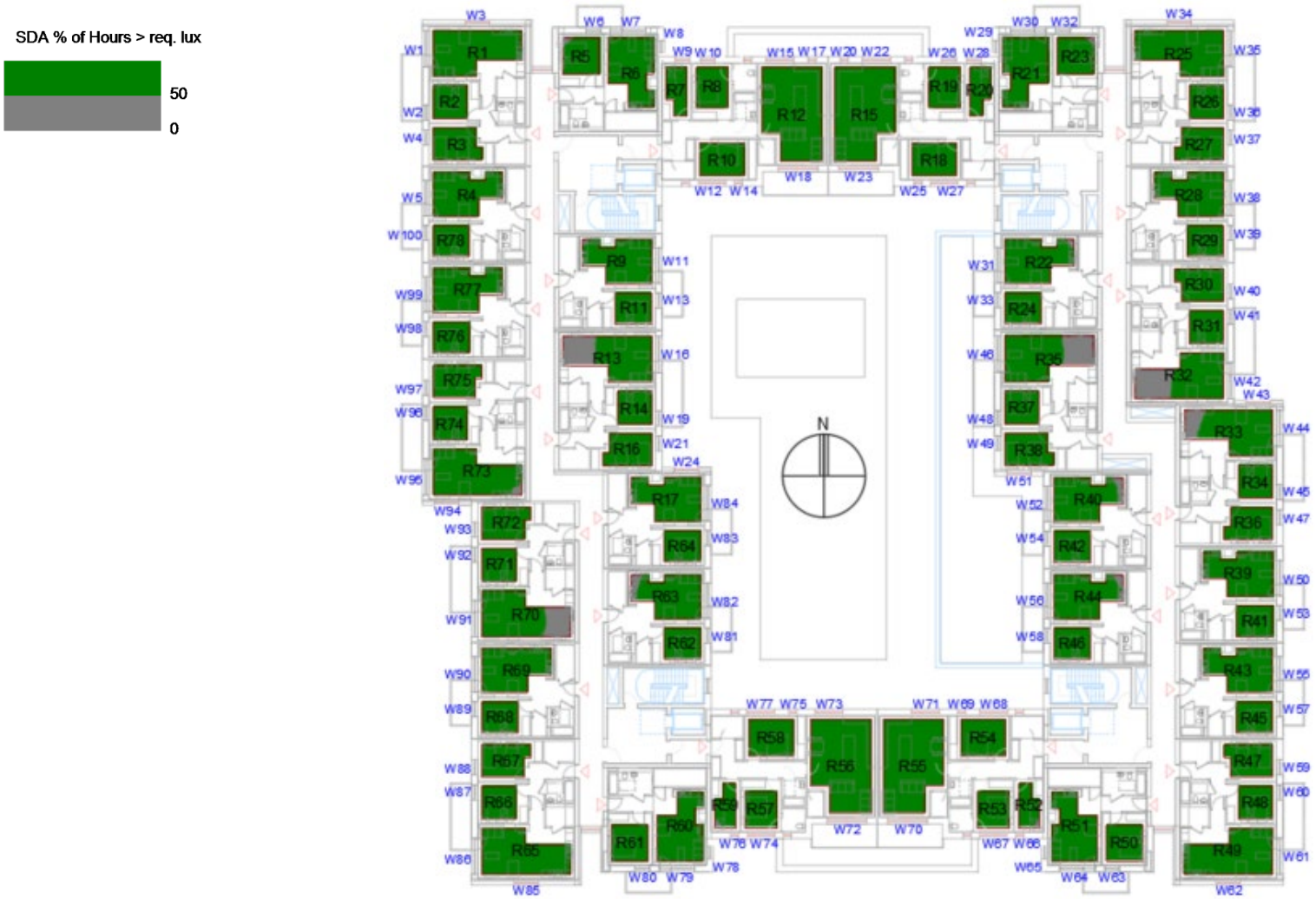
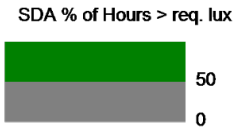


Figure 34: Block-A Fourth Floor sDA Contours

A.2 Block_B



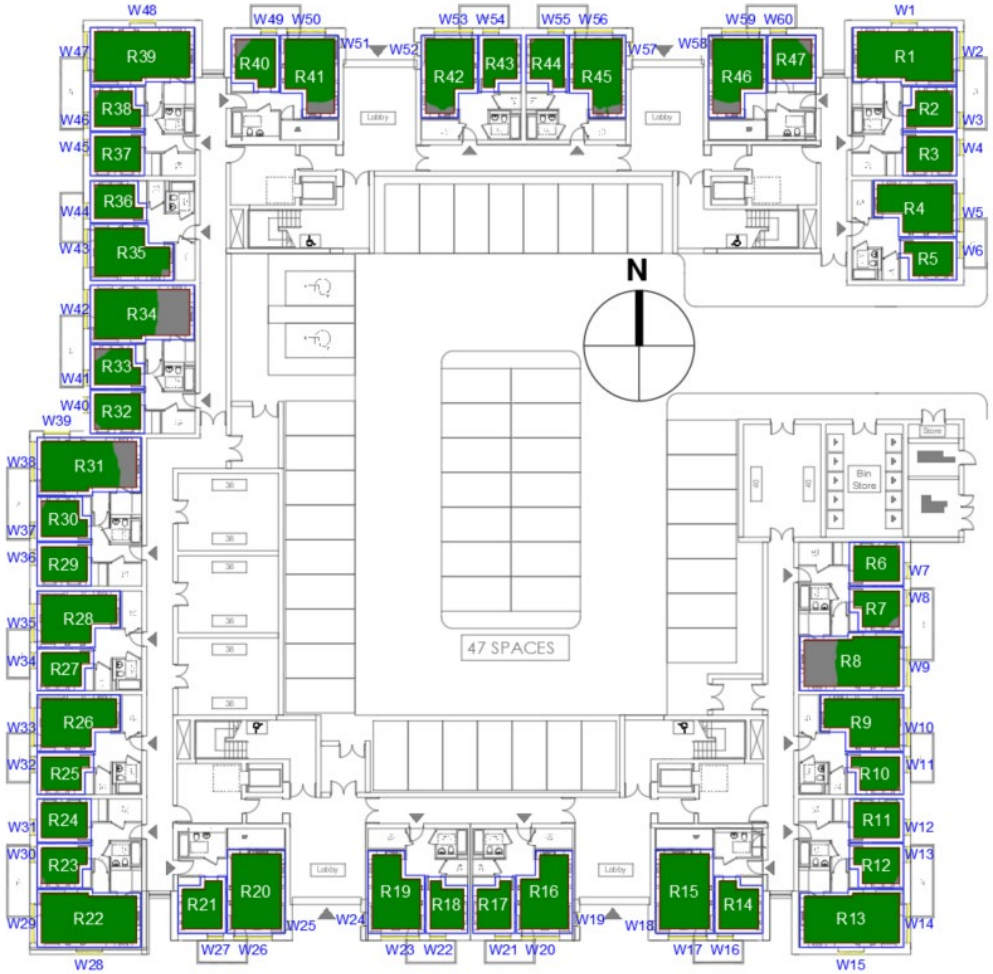


Figure 35: Block-B Ground Floor sDA Contours

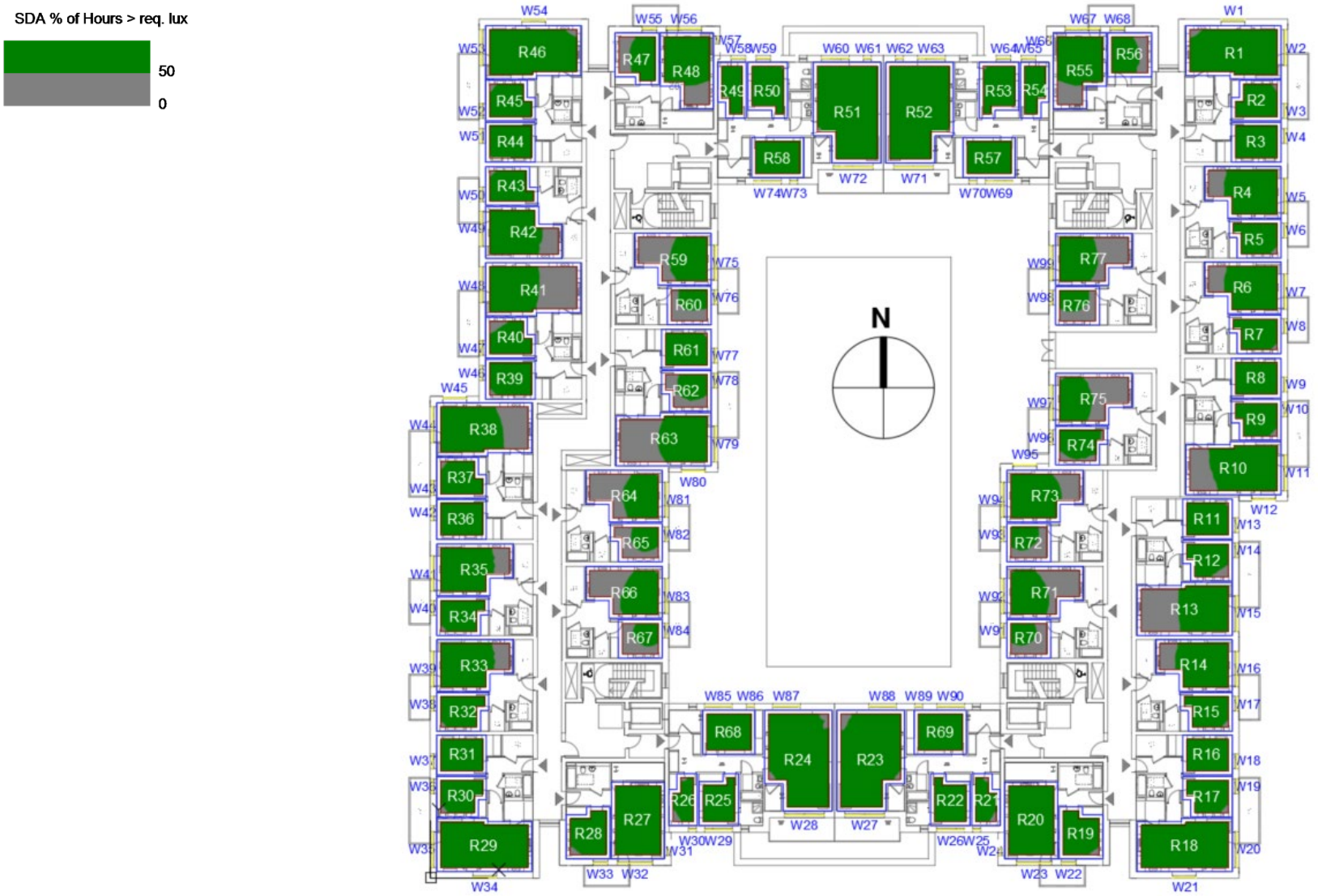


Figure 36: Block-B First Floor sDA Contours

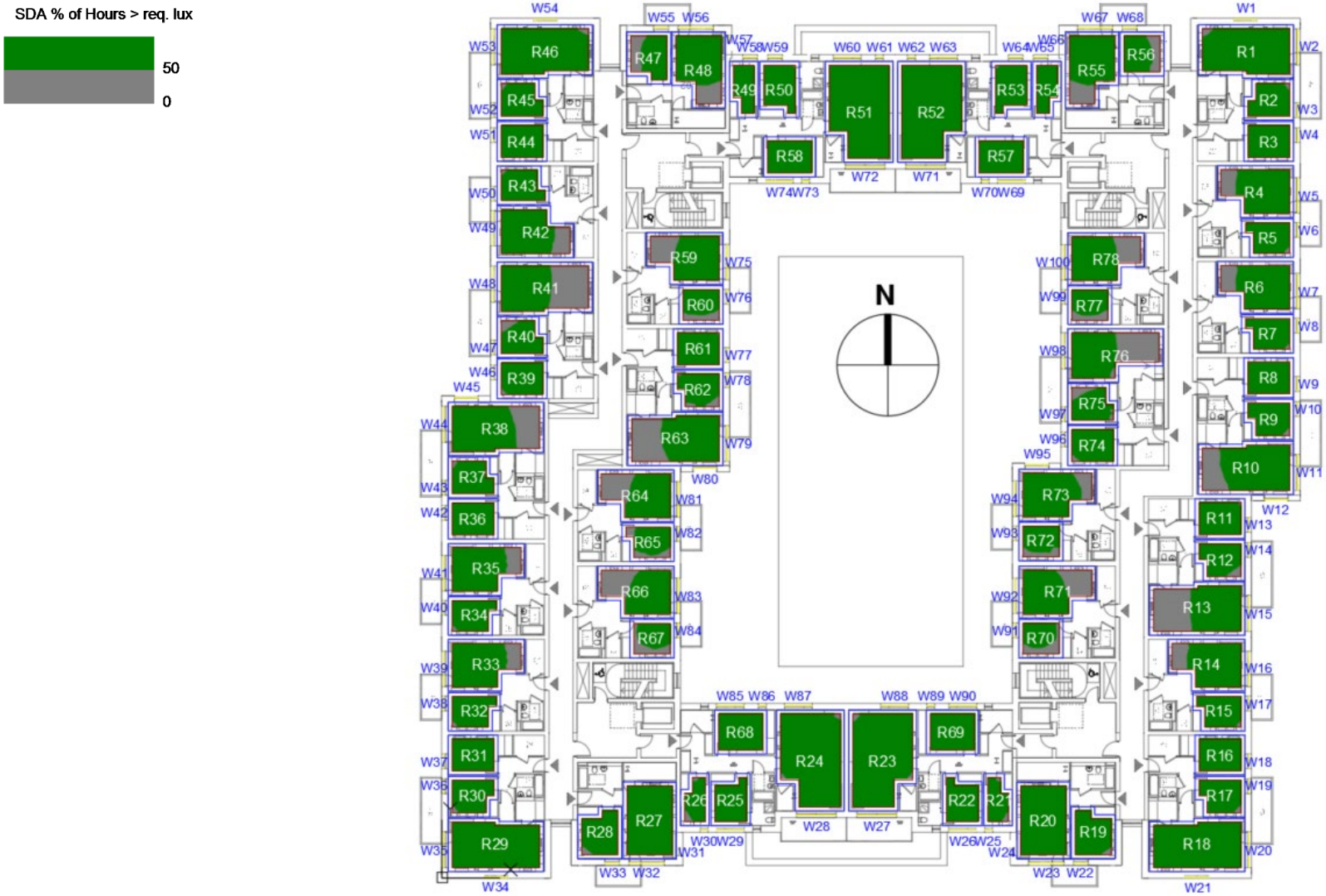


Figure 37: Block-B Second Floor sDA Contours

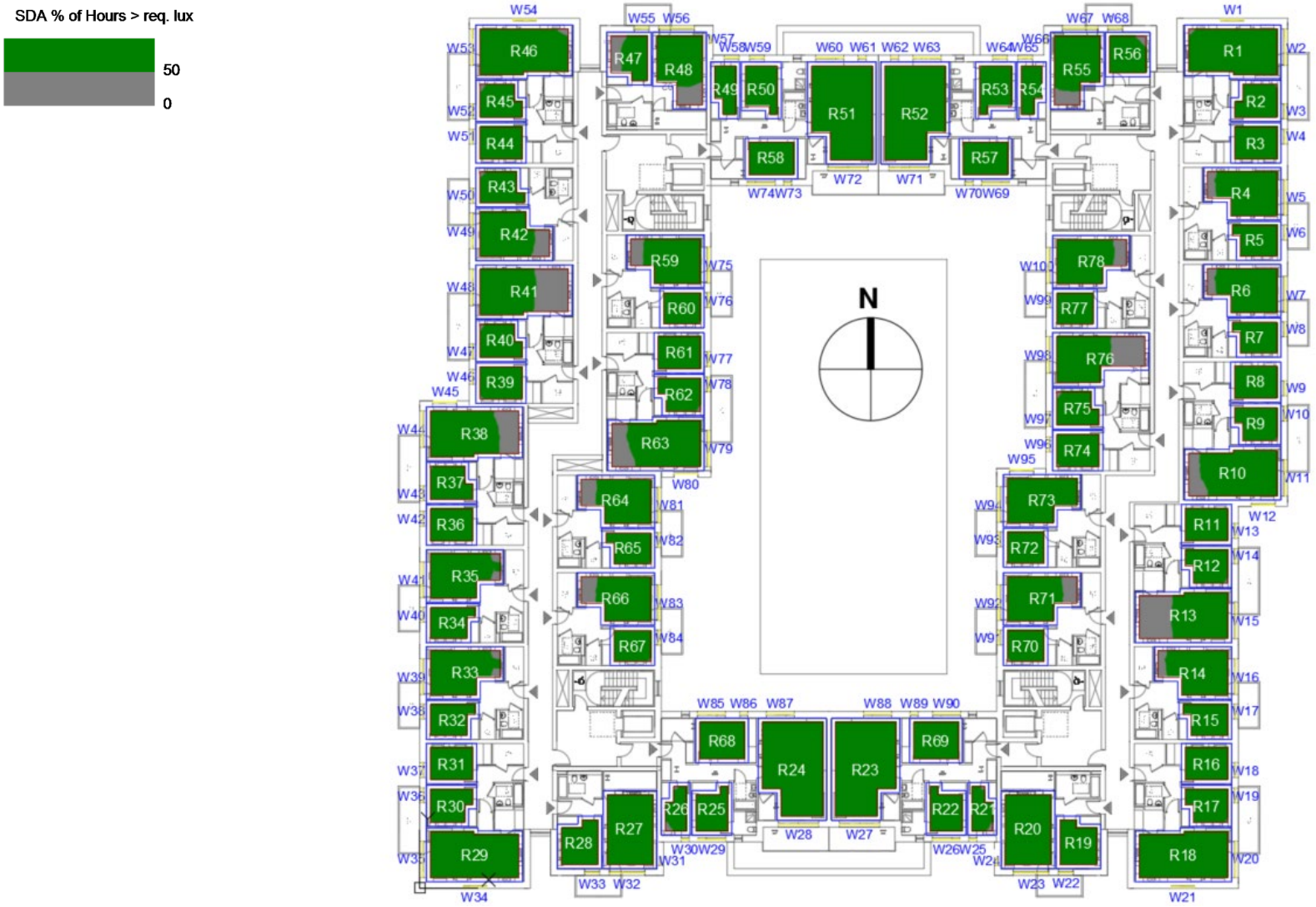


Figure 38: Block-B Third Floor sDA Contours

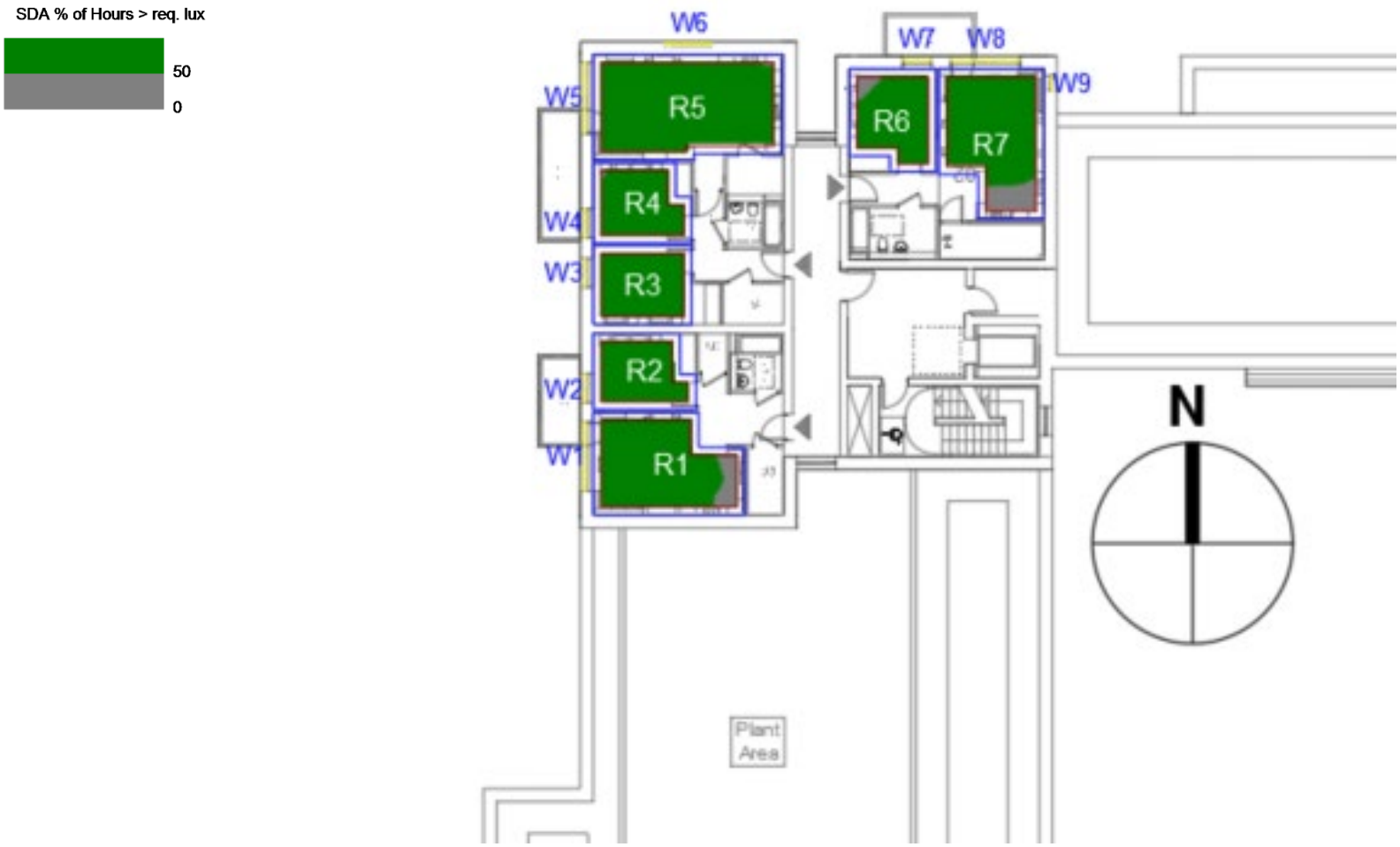


Figure 39: Block-B Fourth Floor sDA Contours

A.3 Block_C

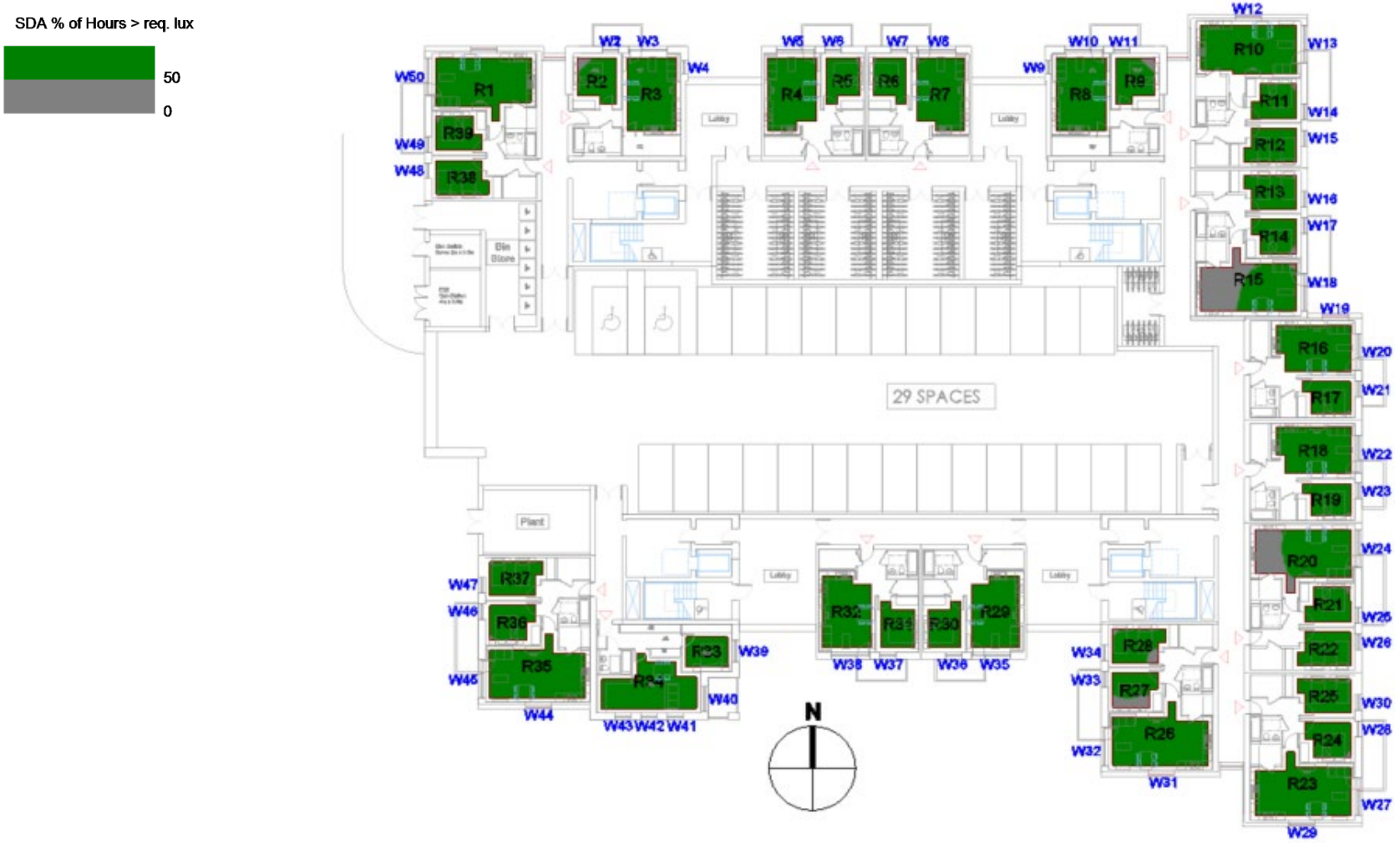


Figure 40: Block-C Ground Floor sDA Contours

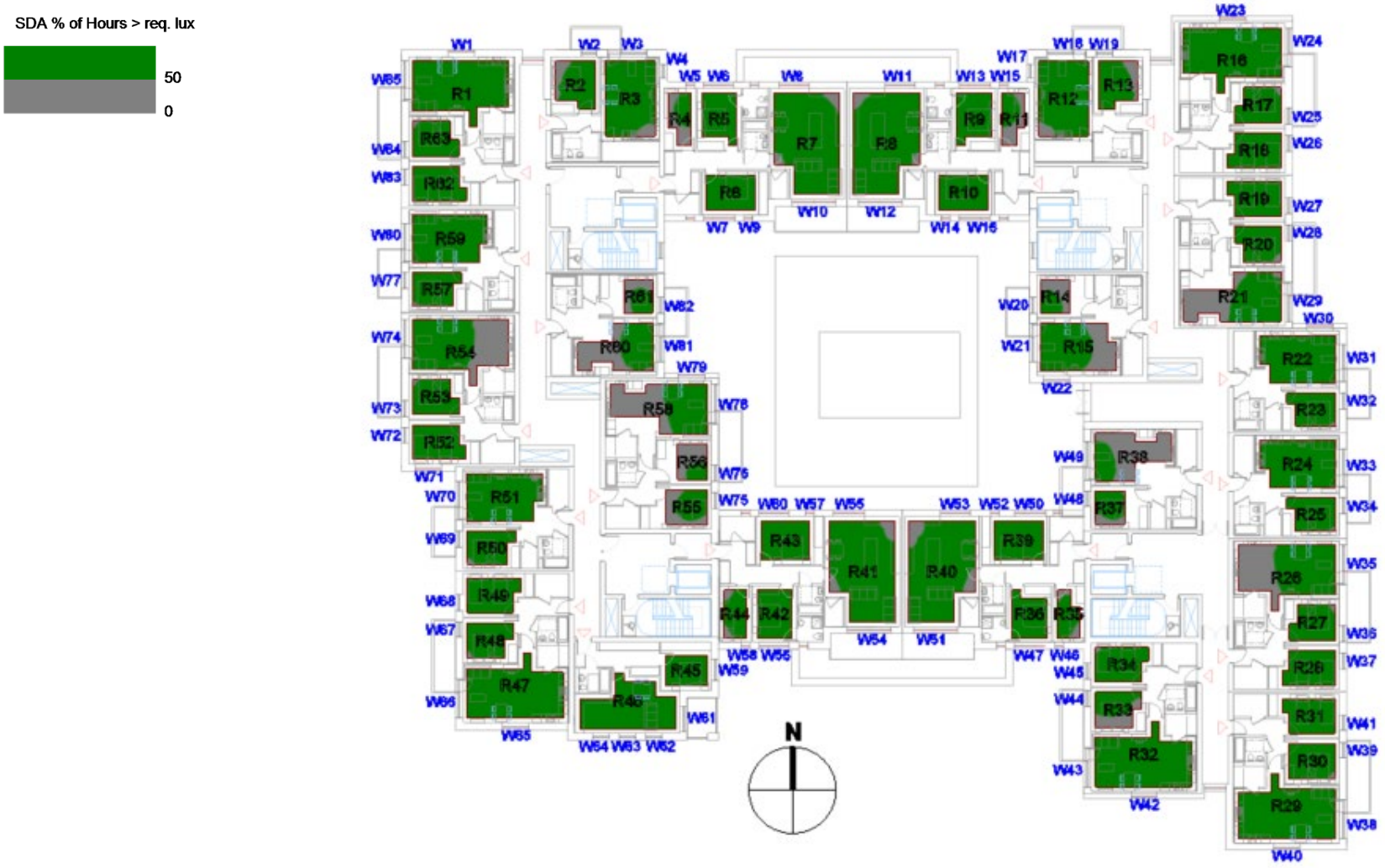


Figure 41: Block-C First Floor sDA Contours

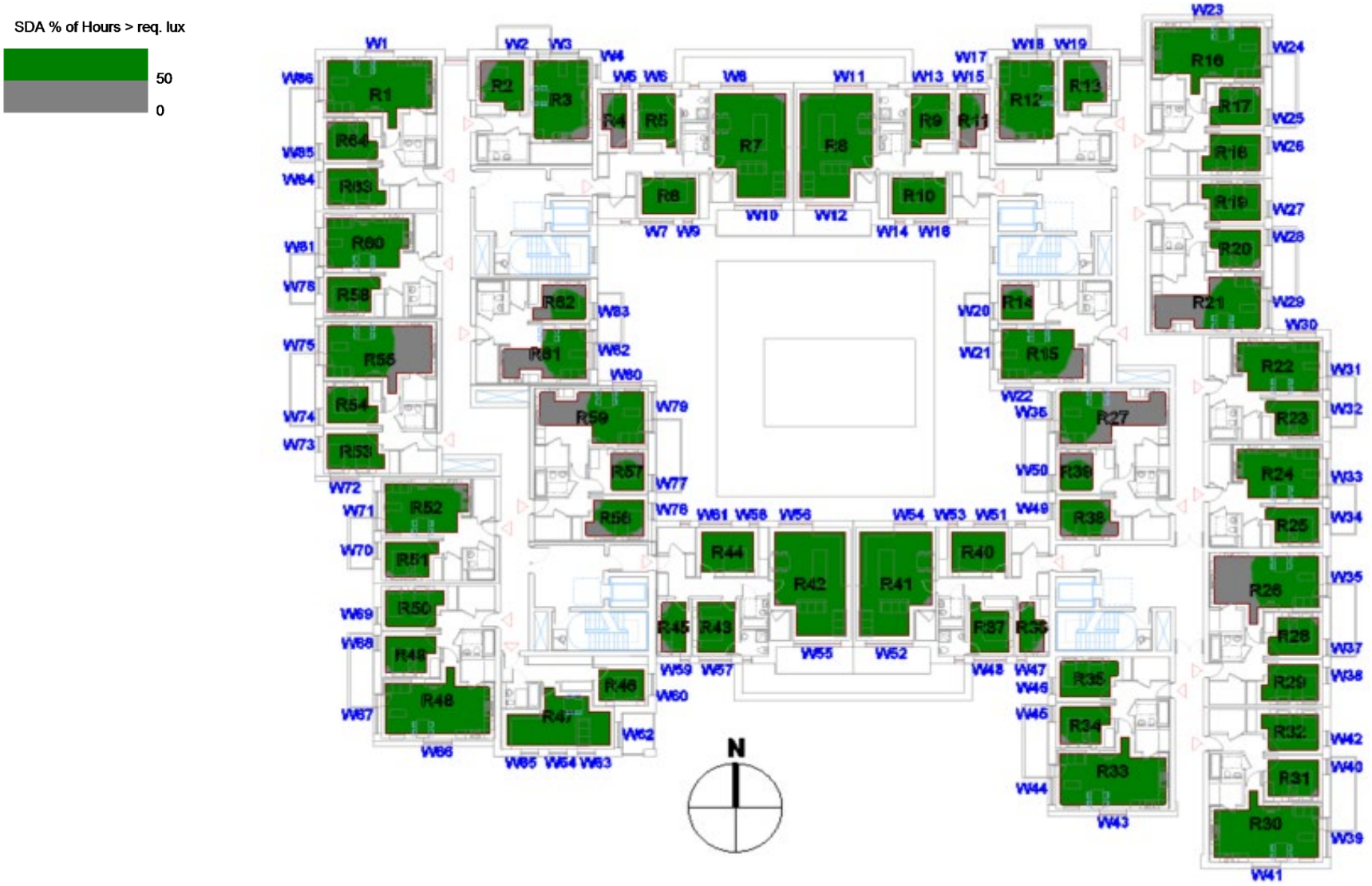


Figure 42: Block-C Second Floor sDA Contours

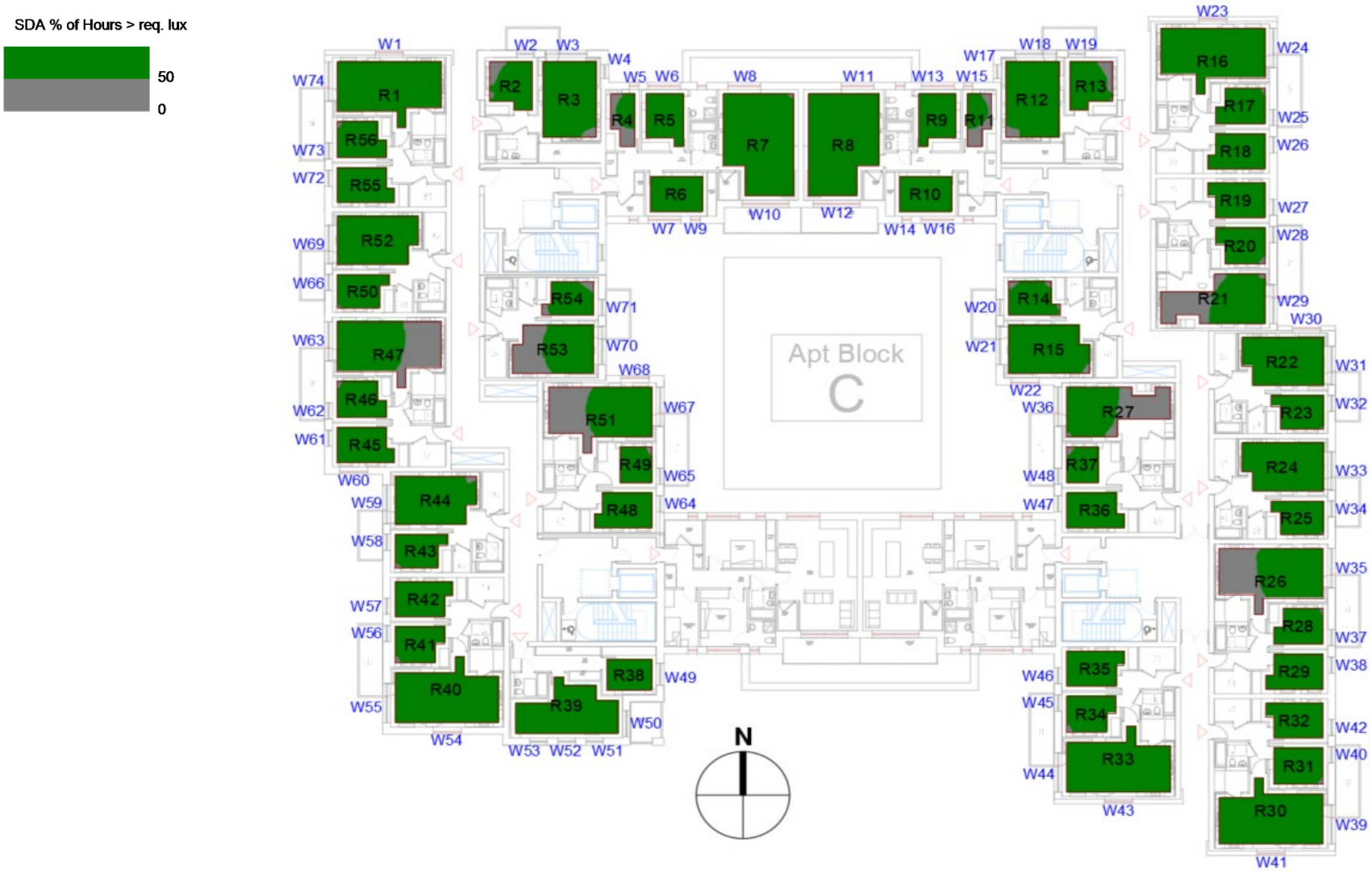


Figure 43: Block-C Third Floor sDA Contours

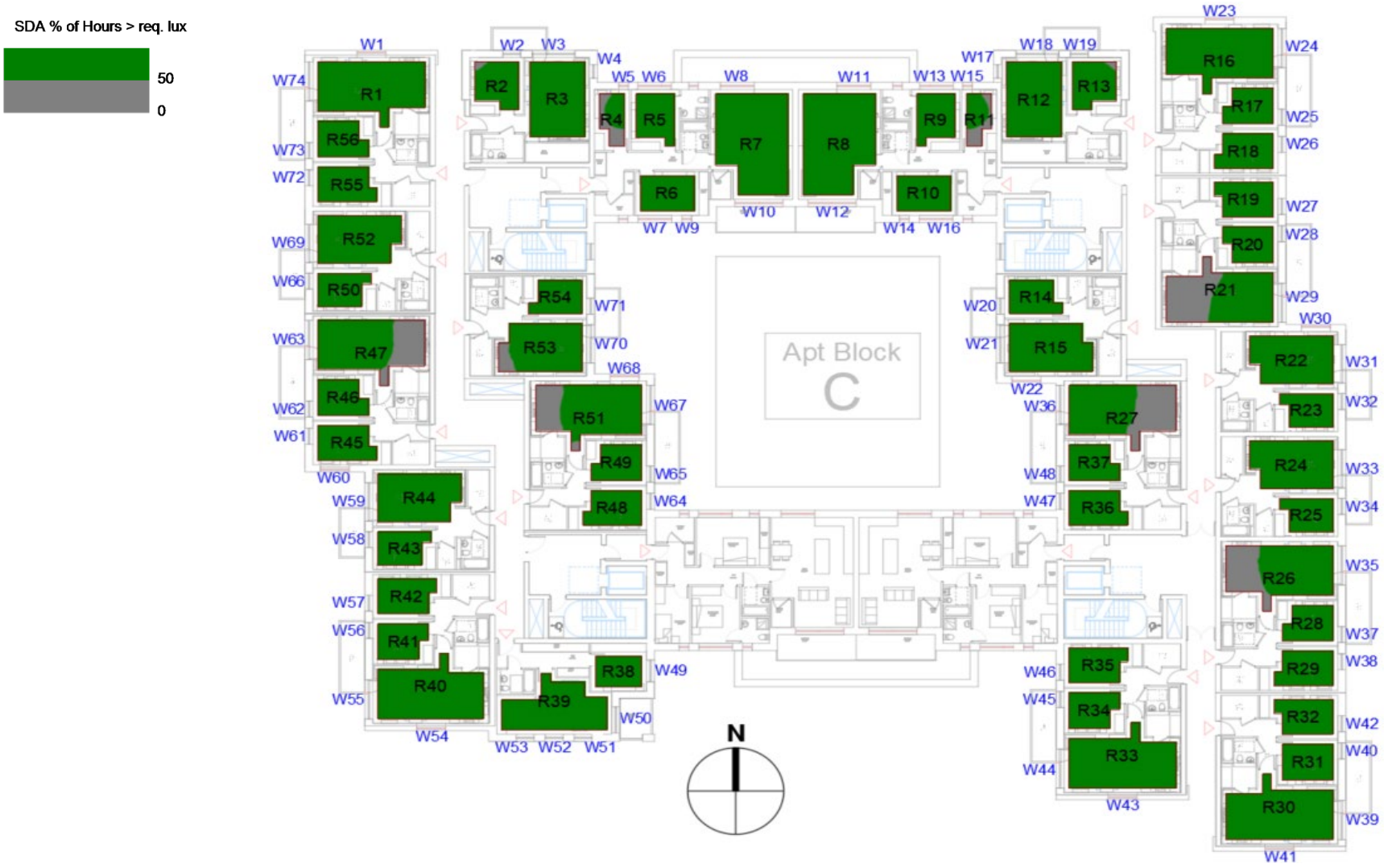
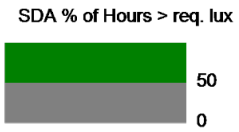


Figure 44: Block-C Fourth Floor sDA Contours

A.4 Block_D



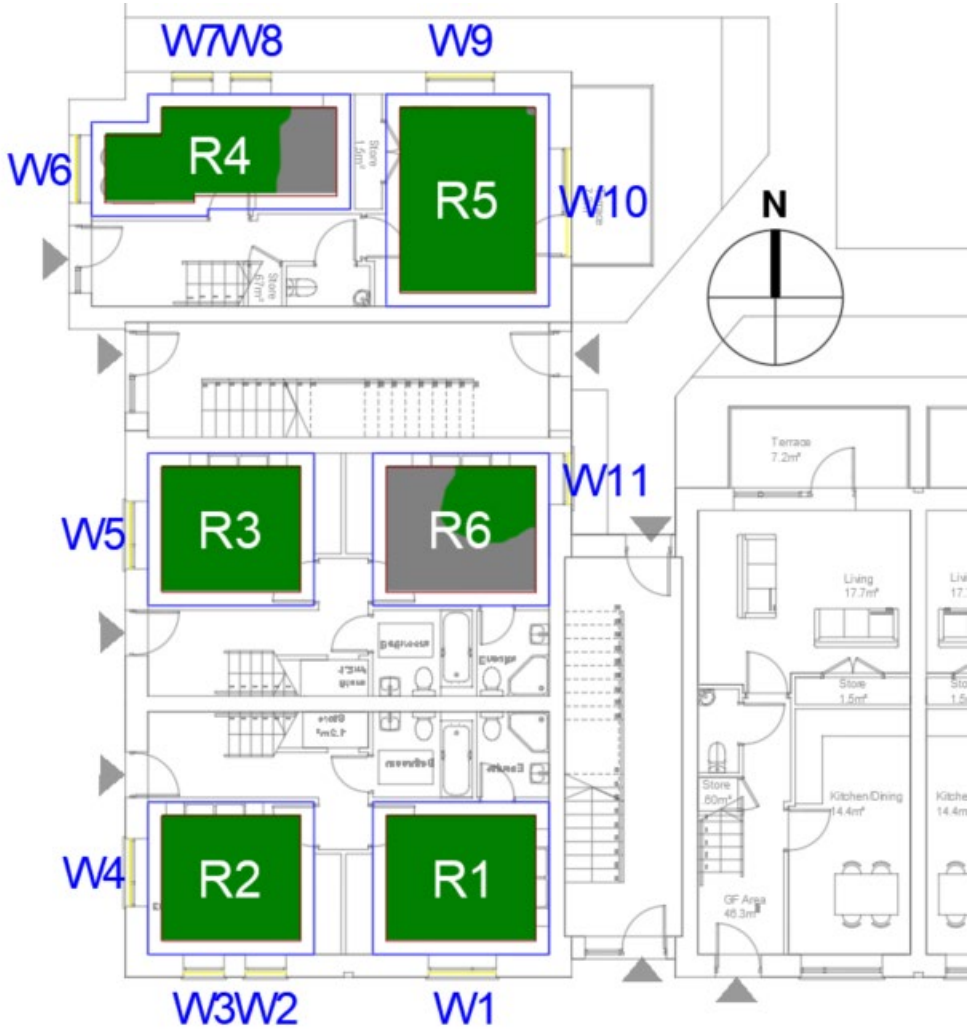


Figure 45: Block-D Ground Floor sDA Contours

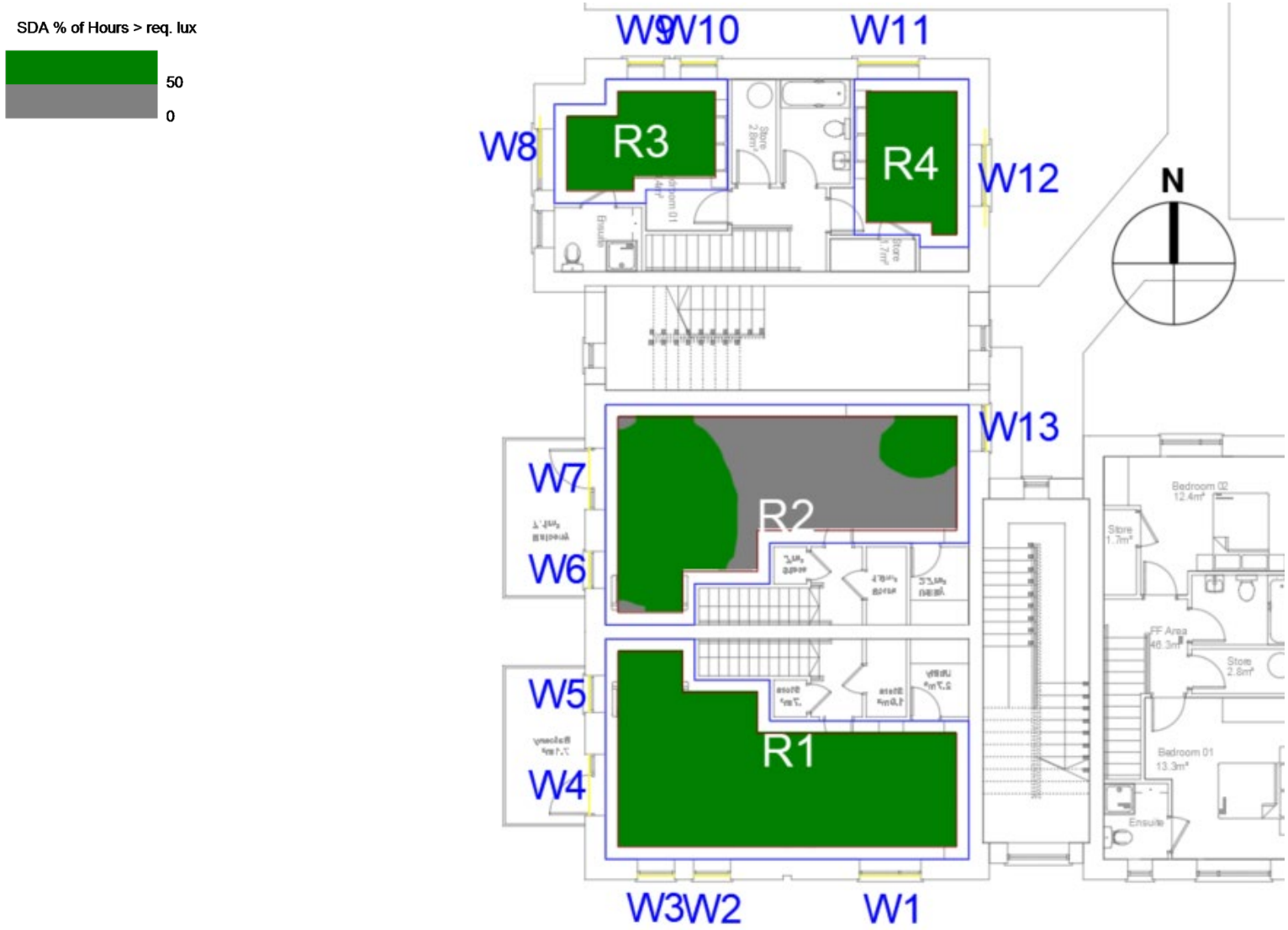


Figure 46: Block-D First Floor sDA Contours

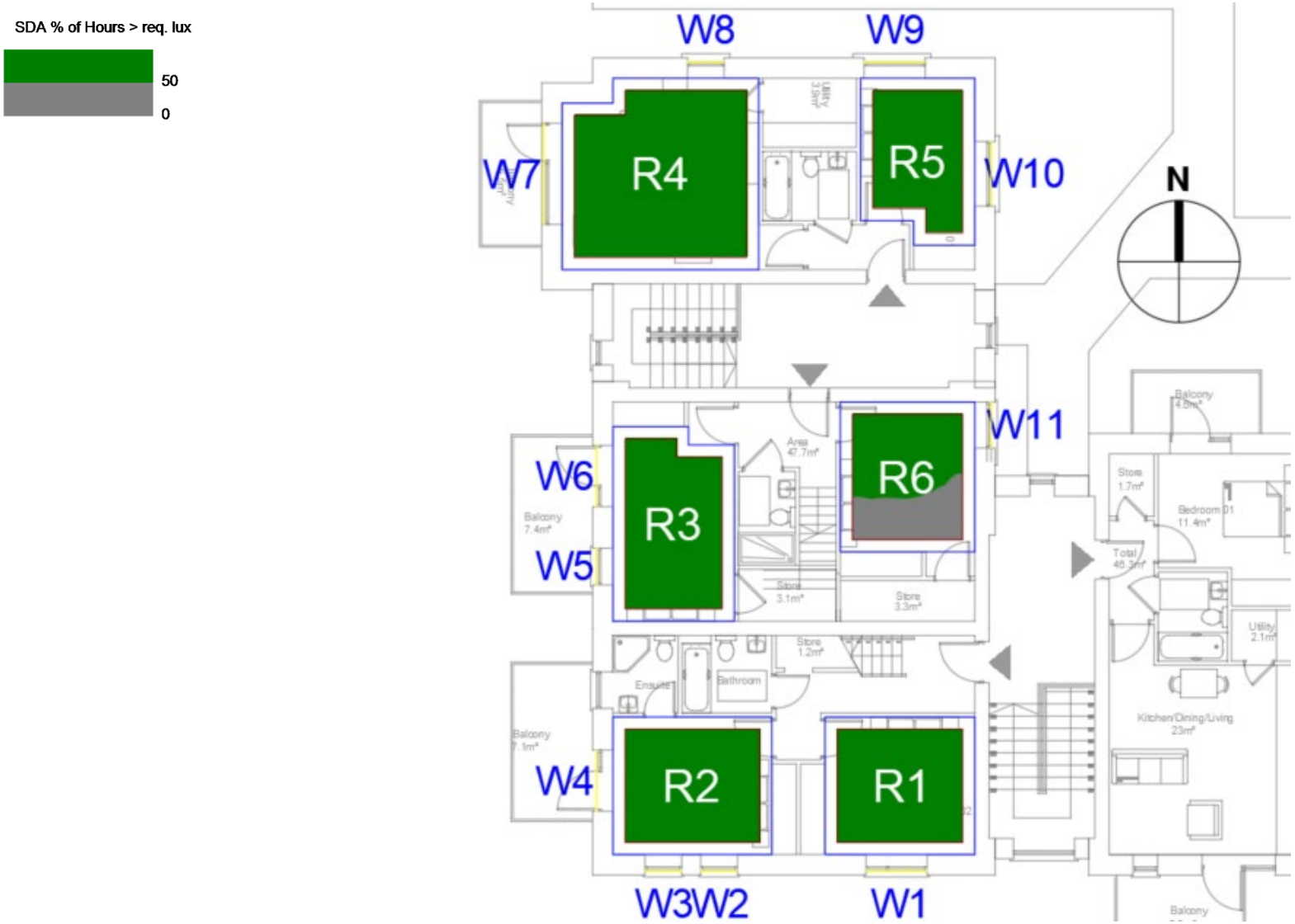


Figure 47: Block-D Second Floor sDA Contours

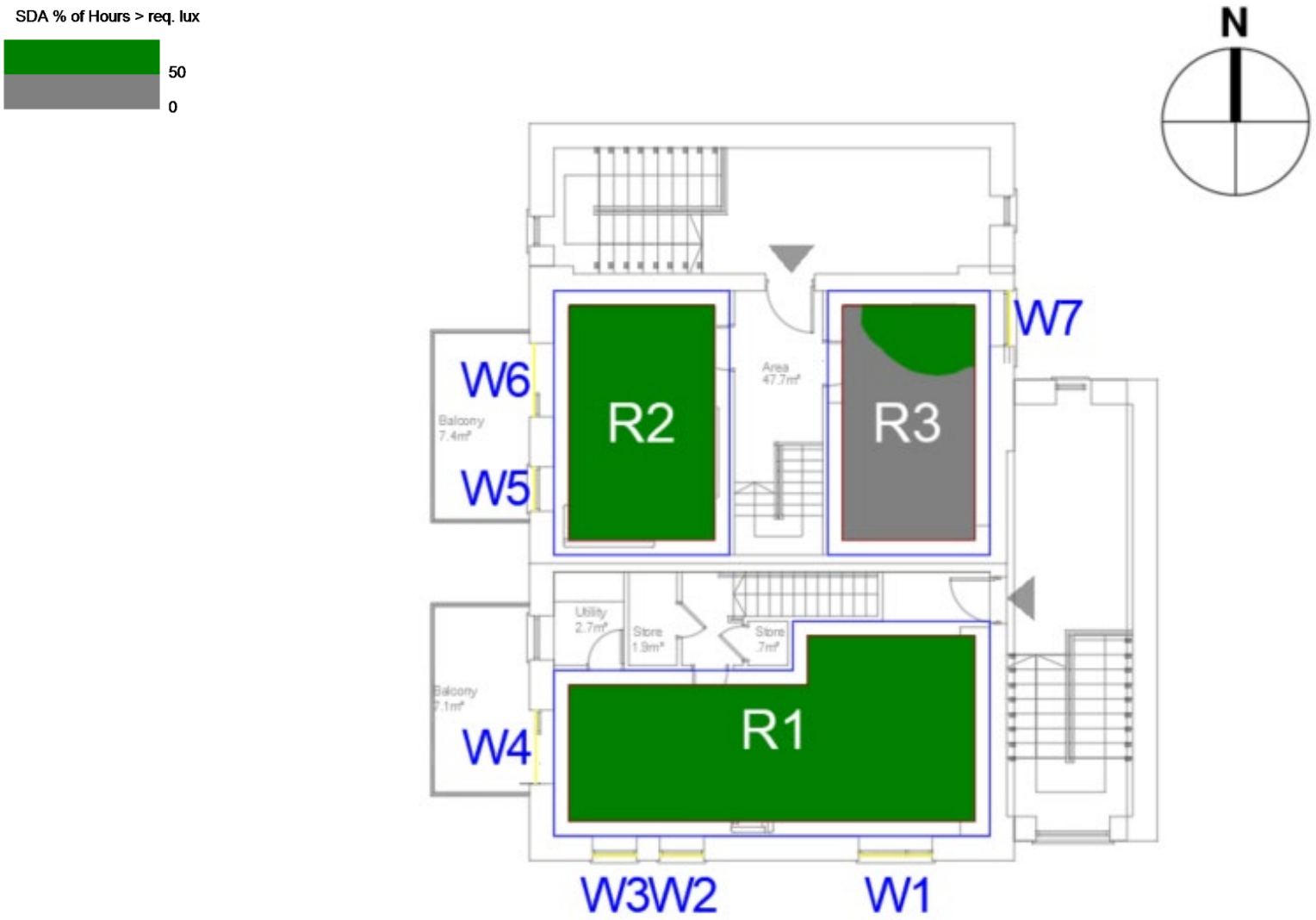


Figure 48: Block-D Third Floor sDA Contours

A.5 Block_E

Figure 49: Block-E Ground Floor sDA Contours

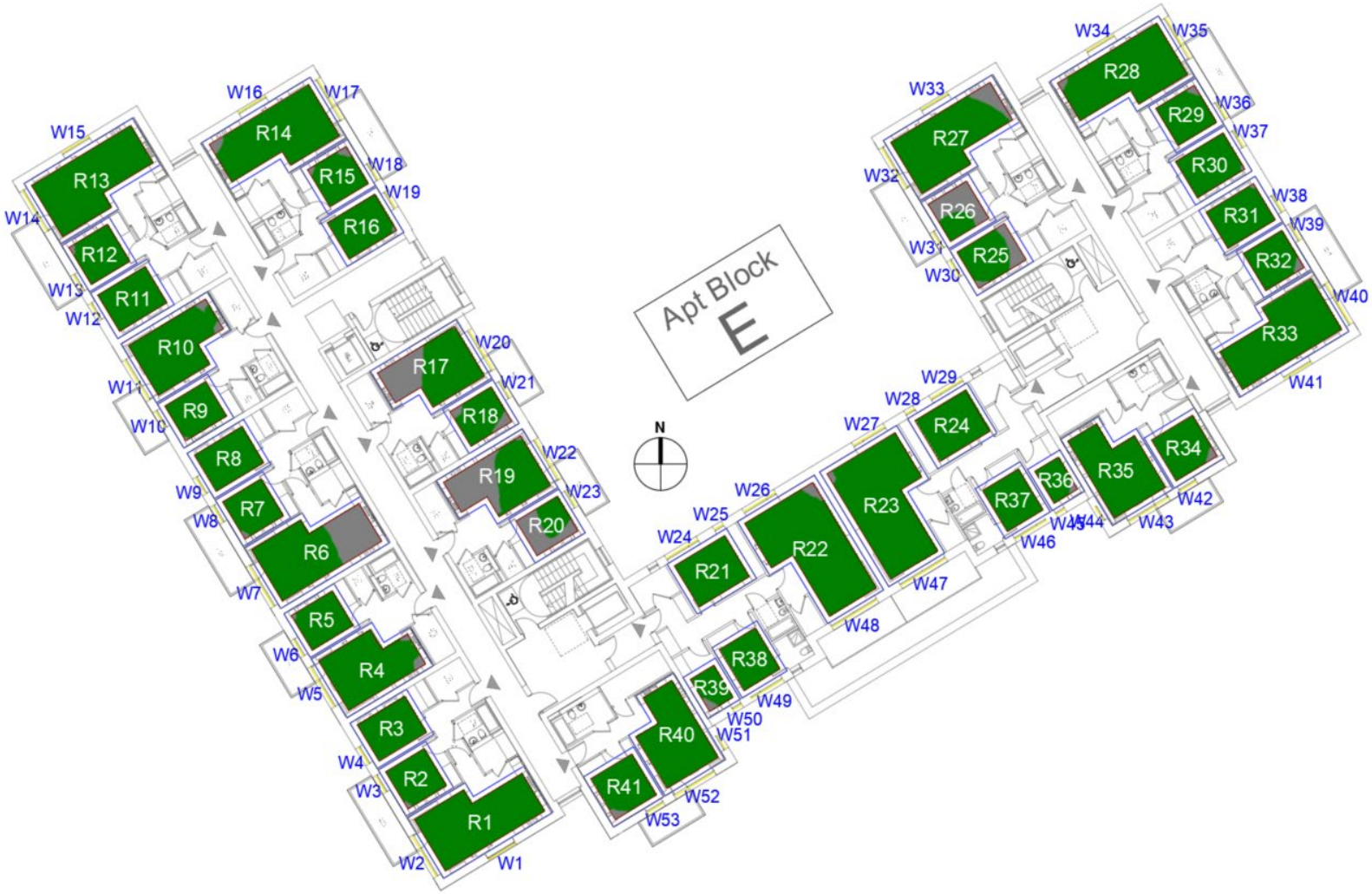


Figure 50: Block-E First Floor sDA Contours

Figure 51: Block-E Second Floor sDA Contours

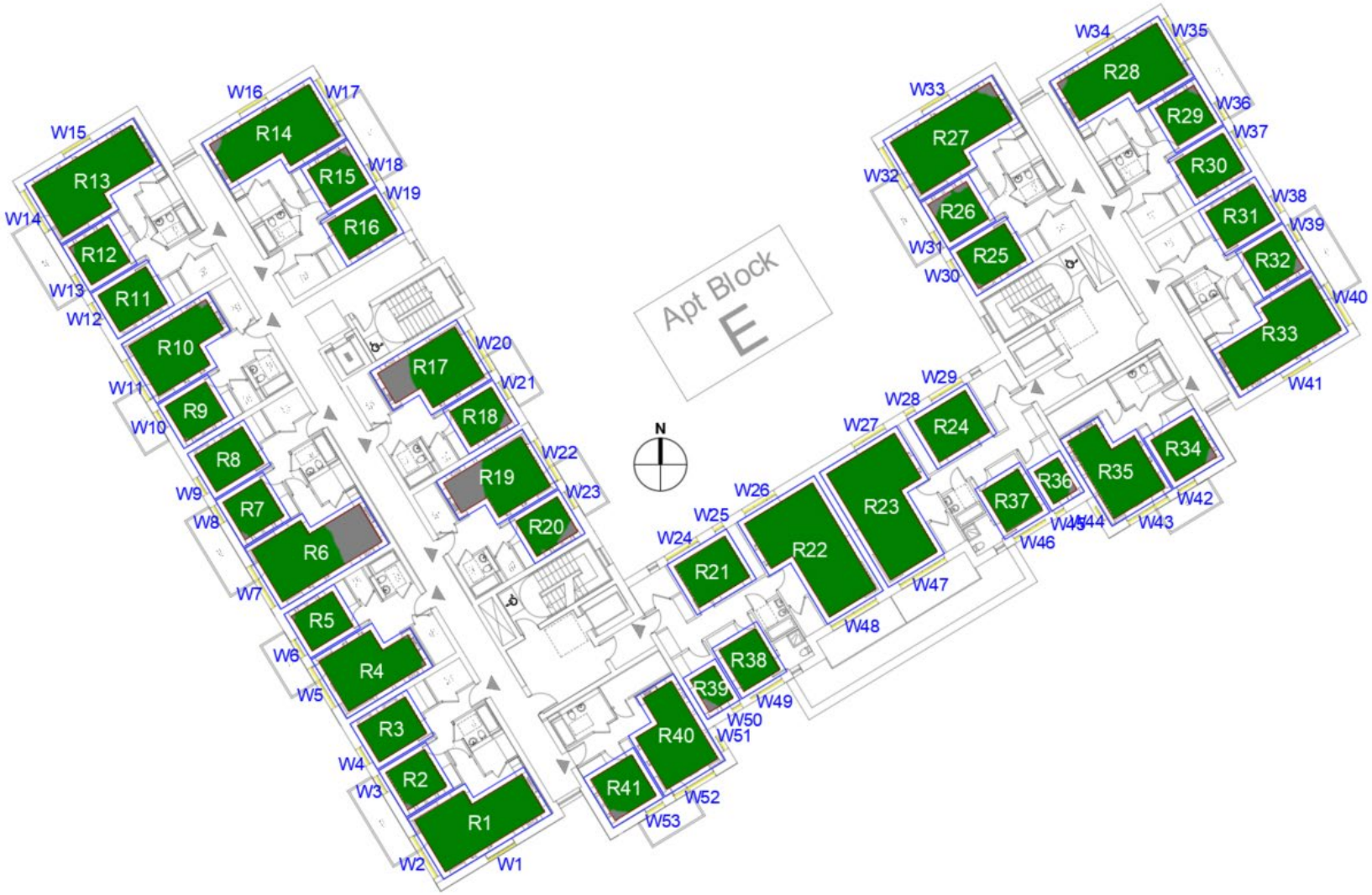


Figure 52: Block-E Third Floor sDA Contours

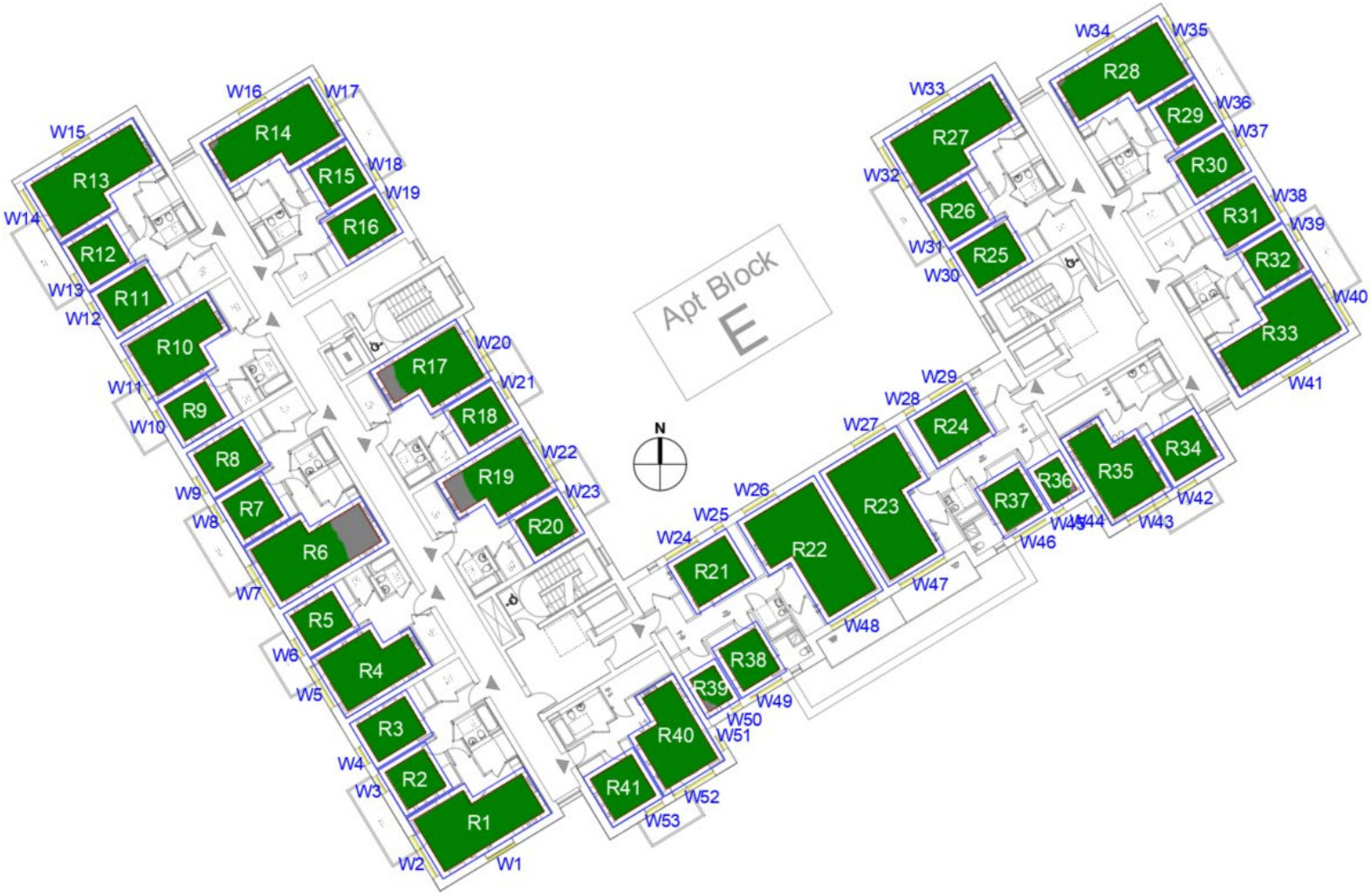


Figure 53: Block-E Fourth Floor sDA Contours

Appendix B Shadow Images

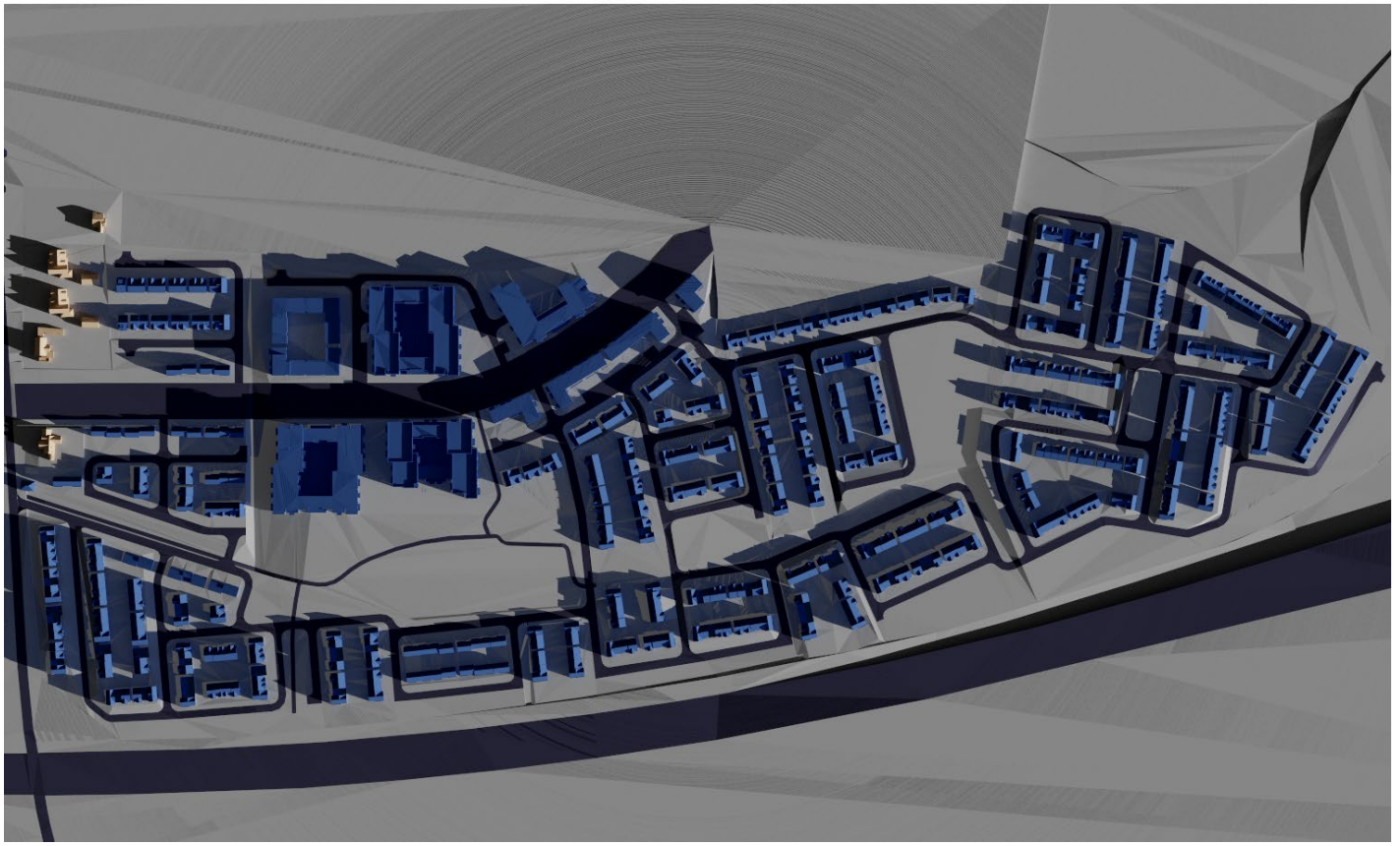
Shadow plots are used to show the shadows which the proposed building makes. "*In interpreting the impact of such differences, it must be borne in mind that nearly all structures will create areas of new shadow, and some degree of transient overshadowing of a space is to be expected.*" (BRE Building Technology Group, 2022)

Shadow plots were created for March 21st and June 21st. March 21st is the equinox and as such provides the average level of shadowing that can be expected. June 21st is a summertime plot and represents the best case for shadow. (December 21st has not been plotted as at this time of year even low buildings will cast long shadows. In a built-up area, it is common for large areas of the ground to be in shadow in December.)

The shadow plots are purely illustrative (as opposed to other quantitative or quantitative metrics used in the analysis).

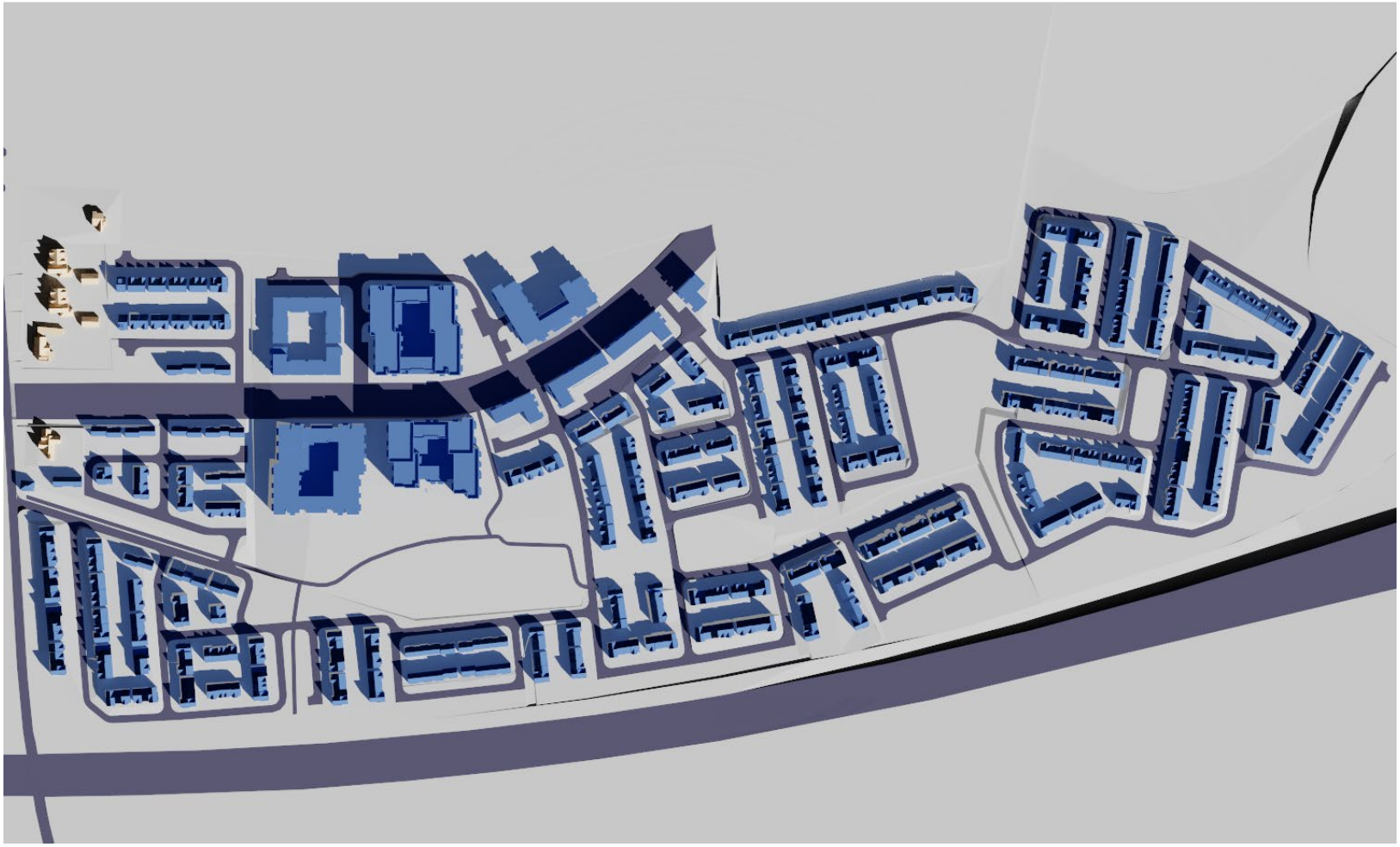
B.1 March 21st

	Proposed
March 21st - 08:00 (UTC)	20779-MAG-BPC-XX-ZZ-M3-P3-02 PROPOSED-21-Mar 08-00



March 21st – 10:00 (UTC)

20779-MAG-BPC-XX-ZZ-M3-P3-02
PROPOSED-21-Mar 10-00



March 21st - 12:00 (UTC)

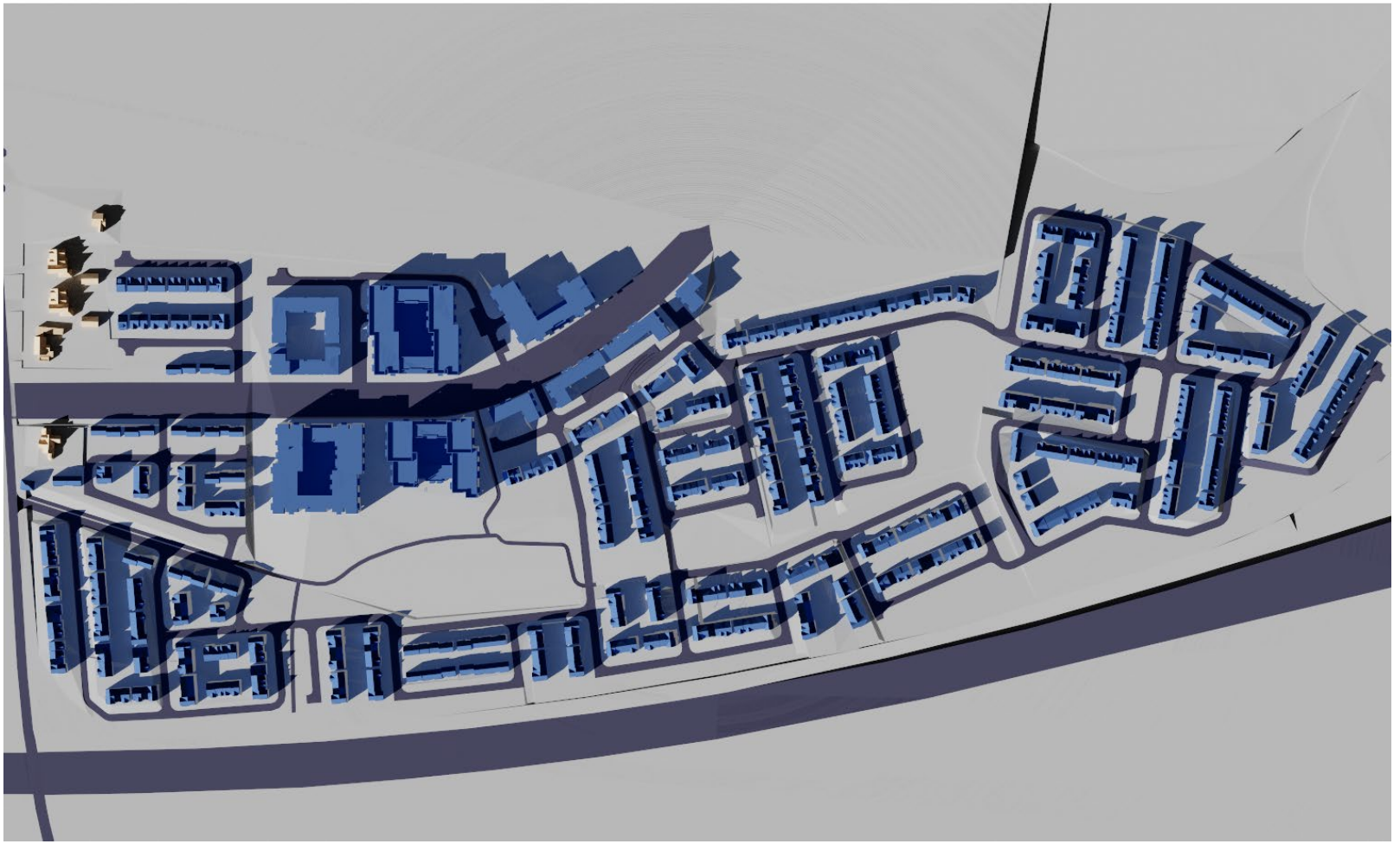
20779-MAG-BPC-XX-ZZ-M3-P3-02
PROPOSED-21-Mar 12-00

March 21st - 14:00 (UTC)

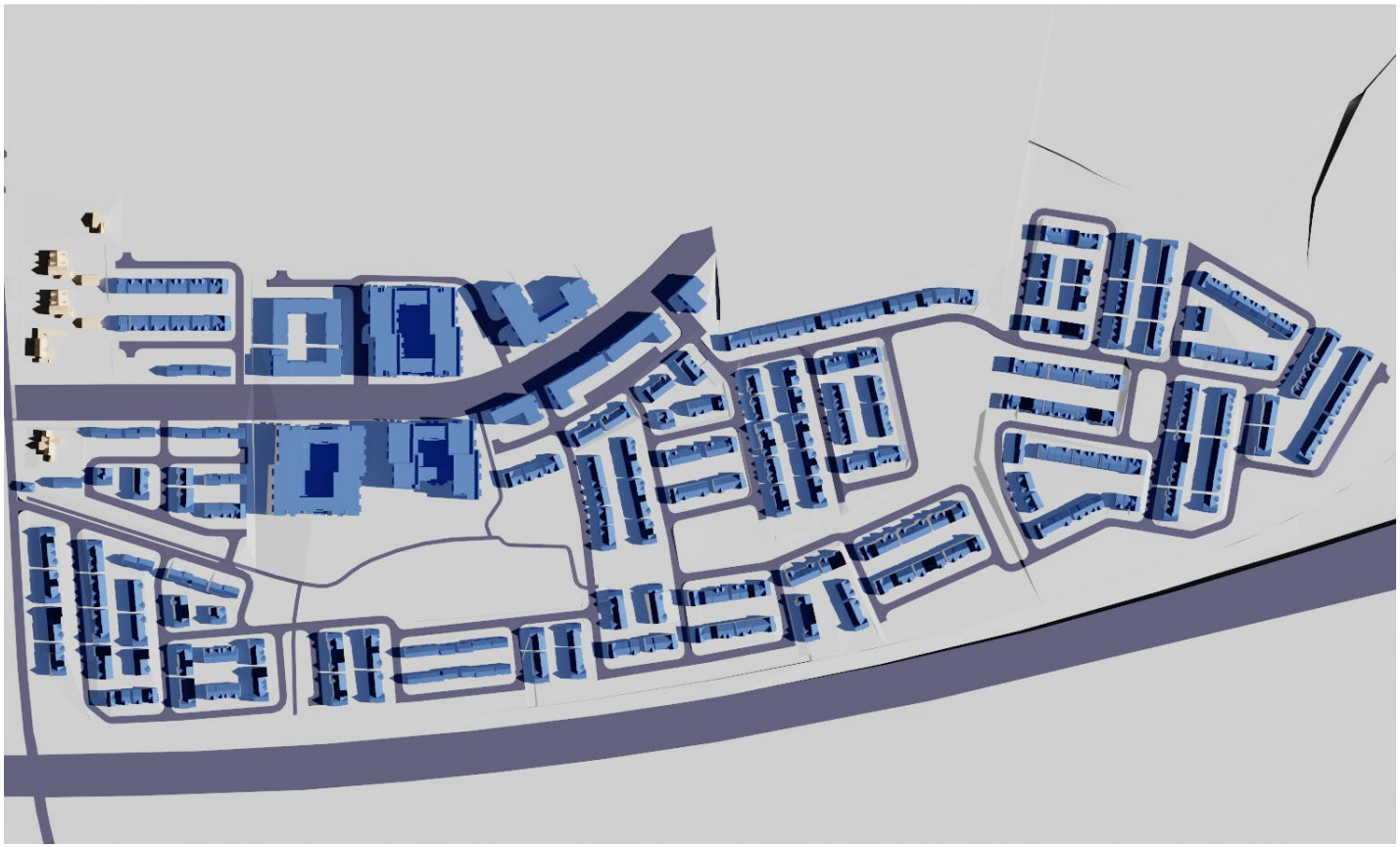
20779-MAG-BPC-XX-ZZ-M3-P3-02
PROPOSED-21-Mar 14-00

March 21st - 16:00 (UTC)

20779-MAG-BPC-XX-ZZ-M3-P3-02
PROPOSED-21-Mar 16-00



B.2 June 21st

	Proposed
June 21st - 8:00 (UTC+1)	20779-MAG-BPC-XX-ZZ-M3-P3-02 PROPOSED-21-Jun 08-00 

June 21st - 10:00 (UTC+1)

20779-MAG-BPC-XX-ZZ-M3-P3-02
PROPOSED-21-Jun 10-00

June 21st - 12:00 (UTC+1)

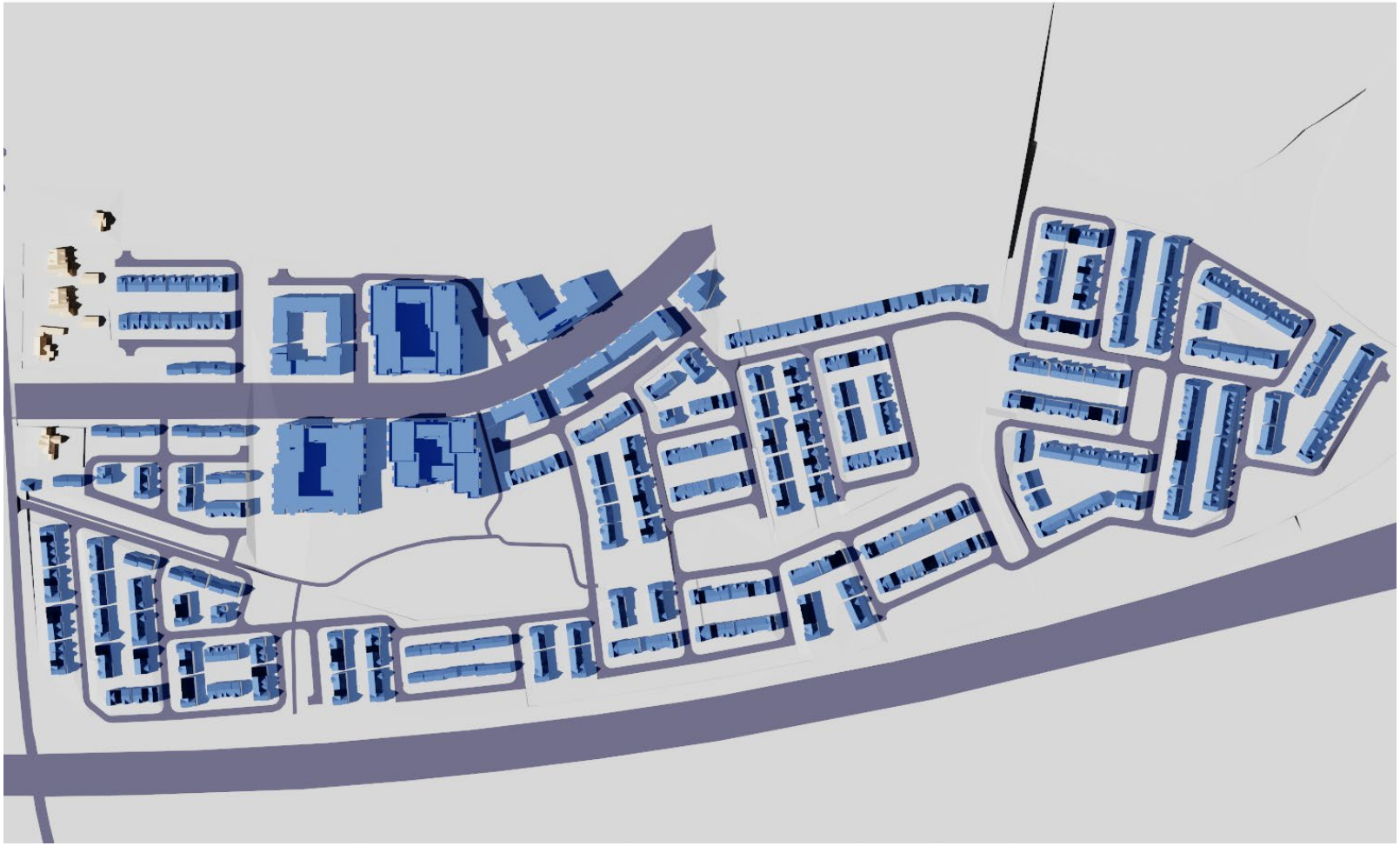
20779-MAG-BPC-XX-ZZ-M3-P3-02
PROPOSED-21-Jun 12-00

June 21st - 14:00 (UTC+1)

20779-MAG-BPC-XX-ZZ-M3-P3-02
PROPOSED-21-Jun 14-00

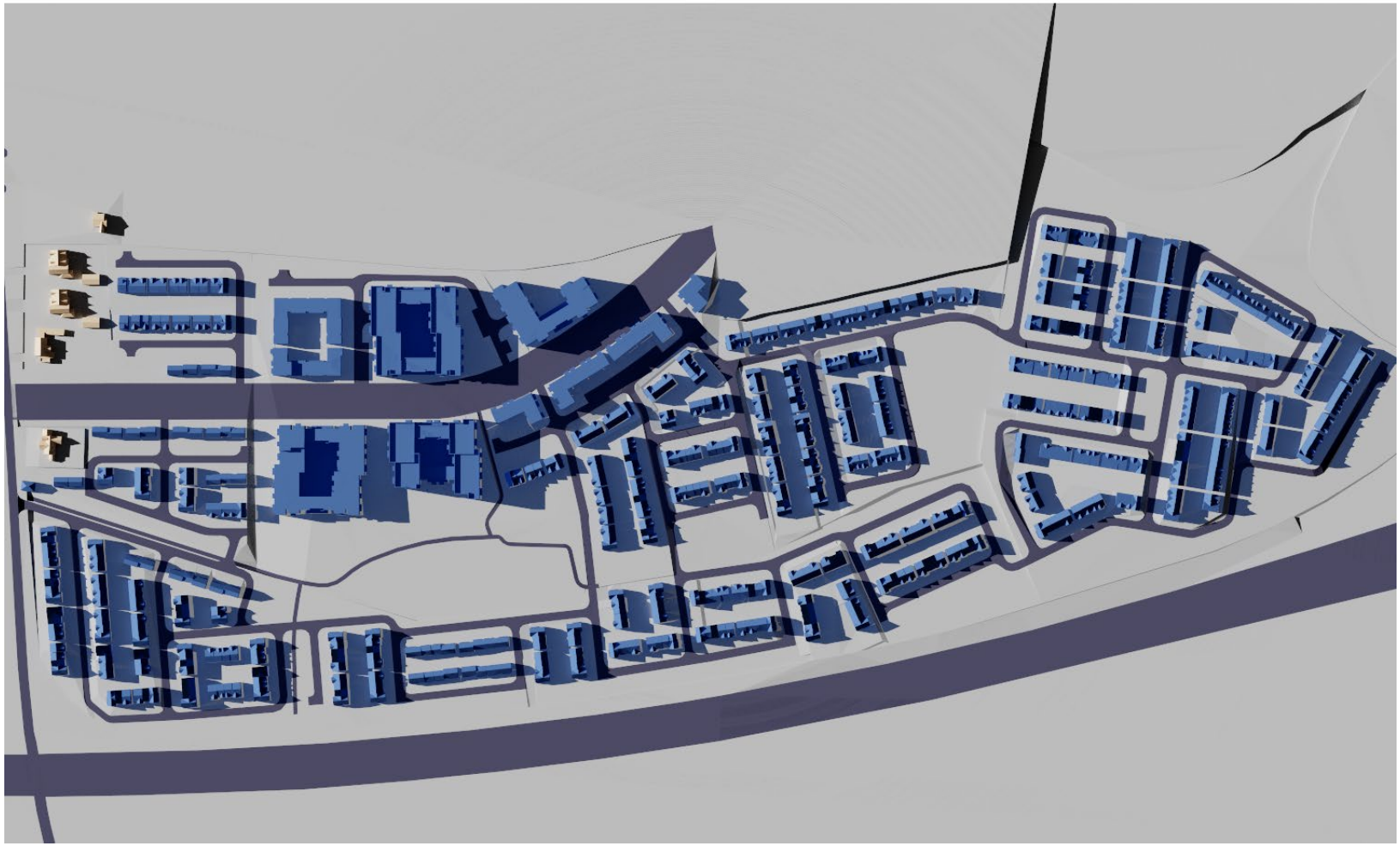
June 21st - 16:00 (UTC+1)

20779-MAG-BPC-XX-ZZ-M3-P3-02
PROPOSED-21-Jun 16-00



June 21st – 18:00 (UTC+1)

20779-MAG-BPC-XX-ZZ-M3-P3-02
PROPOSED-21-Jun 18-00



7 Bibliography

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