Daylight & Sunlight Assessments of a Residential Development at Boycetown, Kilcock, Co. Kildare.

Applicant: **Teresa Monaghan**
Date: **31th August 2022**

Prepared by John Healy
MSc Environmental Design of Buildings

1 Rathmines Road Upper, Dublin 6, D06 Y5P5 tel 01 4965340 email mail@digitaldimensions.ie
web digitaldimensions.ie Digital Dimensions Ltd trading as Digital Dimensions.

1. Introduction

This project is for a residential development at Boycetown, Kilcock, Co. Kildare, comprising of 65 no. apartment units, 58 no. duplex units, 149 no. houses and all associated site and enabling works as described in the statutory notices.

1.1 Executive Summary

This report assesses the impact of the proposed development for Daylight and Sunlight on the neighbouring buildings and the quality of daylight and sunlight within the proposed development. This analysis is carried out based on the drawings of Paul Byrne Architects.

Impact on adjacent properties

There will be a small reduction to the available daylight and sunlight levels to the adjacent dwellings. The reduction will be minor and meets the recommendations of the BRE guidelines. There will be a minimal reduction in the available sunlight to the adjacent private and public adjacent amenity spaces. All areas assessed continue to meet or exceed the recommendations of the BRE guidelines.

Assessment of the quality of the proposed development.

BR209:2022 recommends assessment methods set out in BS EN 17037 for daylight provision. 100% of habitable rooms in the apartments achieve the Minimum Illuminance levels and 96.5% achieve the Target illuminance levels. 100% of the habitable rooms to the houses achieve the Minimum Illuminance levels and 93.1% achieve the Target illuminance levels. Overall the rooms will be bright well daylit spaces.

The Target and Minimum levels set out in BS EN17037:2018 does not take into account room use or make allowance for rooms that have a lesser requirement for daylight. The UK National Annex A1 sets out room specific minimum values to be achieved in the UK and Channel Islands. 100% of the rooms to the apartments achieve the minimum illuminance levels set out in BS EN17037:2018+A1 for Bedrooms 100lux (DF0.7%), Living Rooms 150lux (1%DF) and Kitchens and living spaces containing a Kitchen 200lux (1.3%DF).

The communal amenity space are well designed for sunlight and 100% of the amenity space exceeds 2 hours sunlight over 50% the area as per the recommendations of the BRE guidelines (2022) .

Conclusion

The results find that any impact on the adjacent residential structures would be minimal and imperceivable. There would be good quality of daylight and sunlight in the proposed apartments and the amenity areas would have sufficient sunlight to be bright and pleasant spaces. The proposed development meets the recommendations of the BRE guidance document (2022) Site layout planning for daylight and sunlight.

2. Methodology

2.1 Notes on the use of BRE guidance document BR209 (2022 3rd edition) - Site Layout Planning for Daylight and Sunlight.

Building Research Establishment (BRE) BR209: 2022 “Site Layout Planning for Daylight and Sunlight” (Third edition) was released in June 2022 and supersedes BR209: 2011 (Second edition). It is intended to be used with the interior daylight recommendations of BS EN 17037 British Standard Daylight in Buildings. BR209: 2022 is a comprehensive revision of the 2011 edition of Site Layout Planning for Daylight and Sunlight.

BR209: 2022 sets out that “The guidance here is intended for use in the United Kingdom and in the Republic of Ireland, though recommendations in the Irish Standard IS EN 17037 may vary from those in BS EN17037.”

EN 17037 is a unified daylighting standard published by the European Committee for Standardization (CEN) in 2018 (CEN 17037:2018). It is applicable across all countries within the EU including Ireland with the Irish edition IS EN17037:2018. The standard is enacted in Britain under BS EN 17037:2018+A1(December 2021) with a UK National Annex for regional assessments. The daylight and sunlight assessment methods referenced in BR209: 2022 (third edition) for internal daylight and sunlight provision are common to both the Irish Standard Version and the UK version.

The UK National Annex (NA) provides further recommendations for daylight provision in the UK and Channel Islands. NA.1 states that the UK committee supports the recommendations for daylight in buildings given in BS EN17037:2018. The annex states that the daylight target levels in Clause A.2 may be hard to achieve in buildings in the UK and in particular dwellings in urban areas with significant obstructions or tall trees outside. NA.2 sets out minimum daylight provision to be achieved in UK dwellings.

BR209: 2022 updates guidance in two areas and they are summarised below:

Impact on daylight and sunlight to adjacent buildings.

This is broadly in line with the previous version of the BRE guidelines (2011) and the assessment methods are contained within BR 209:2022. The metrics are the same for assessing impact in the areas of Daylight (VSC) and Sunlight (APSH) to adjacent buildings. Sunlight to adjacent amenity space is assessed through the measurement of sunlight availability on the 21st March. Clarity has been provided in a number of areas on the appropriate use of each assessment.

Interior daylight and sunlight to proposed buildings.

The BRE guidelines (2022) recommend the use of BS EN 17037:2018 for assessing the quality of interior spaces in proposed developments, this supersedes BS 8206-2:2008. BS EN 17037 sets out assessment methods for daylight provision and access to sunlight. The use of the Average Daylight Factor (ADF) assessment is no longer recommended. BS EN 17037 is based on the European standard EN 17037 and uses assessment methodologies not directly comparable to BS 8206-2.

The UK National Annex A1 sets out room specific minimum values to be achieved in the UK and Channel Islands. All the rooms achieve the minimum DF factor levels set out in A1 for Bedrooms (DF0.7%), Living Rooms (1%DF) and Kitchens and living spaces containing a Kitchen(1.3%). The Daylight Factor percentage values are derived from minimum room specific illiminance levels set out in NA+1 and the Median External Diffuse Illuminance ($E_{v,d,med}$) for Dublin from Table A.3 EN17037:2018. The illuminance levels and corresponding DF% are given in Table 5 below.

This Daylight and Sunlight assessment demonstrates compliance with the following documents:

- BR209 2022: Site Layout Planning for Daylight and Sunlight (Third edition).
- BS EN 17037:2018+A1 Daylight in Buildings
- IS EN 17037:2018 Daylight in Buildings

The BRE guidelines (2022) state at the outset that “It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location.”

This is accordance with the most relevant S.28 Ministerial Guidelines including Section 6.6 of the Sustainable Urban Housing: Design Standards for New Apartments (2020), and Section 3.2 of the Urban Development and Building Heights Guidelines for Planning Authorities (2018). Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2020) states that planning authorities should have regard to quantitative performance approaches to daylight provision outlined in guides like the BRE guide ‘Site Layout Planning for Daylight and Sunlight’ (2nd edition) or British Standard BS 8206-2: 2008 – ‘Lighting for Buildings – Part 2: Code of Practice for Daylighting’. The 2018 Building height Guidelines state that “appropriate and reasonable regard” should be taken of quantitative performance approaches to daylight provision outlined in guides like the Building Research Establishment’s ‘Site Layout Planning for Daylight and Sunlight’ (2nd edition) or BS 8206-2: 2008 – ‘Lighting for Buildings – Part 2: Code of Practice for Daylighting. Section 12.3.4.2 of the 2022 Development Plan states that development shall be guided

by the principles of Site Layout Planning for Daylight and Sunlight, A guide to good practice (Building Research Establishment Report, 2011) and/or any updated, or subsequent guidance, in this regard and that a daylight analysis will be required for all proposed developments of 50+ units, or as otherwise required by the Planning Authority. BR209 2022 (3rd edition) and BS EN 17037 supersede and directly replace BR209 2011(second edition) and BS 8206-2:2018 and the assessment has regard to the standards for daylight and sunlight access in buildings (and the methodologies for assessment of same) in BR209 2022 (3rd edition) and BS EN 17037.

That the recommendations of the BRE guidelines (2022) are not suitable for rigid application to all developments in all contexts is of particular importance in the context of national and local policies for the consolidation and densification of urban areas.

2.2 Daylight to existing dwellings

For loss of daylight and sunlight to existing buildings BRE guidance document (2022) "Site layout planning for daylight and sunlight" BS EN 17037 Daylight in Buildings and IS EN 17037 Daylight in Buildings are used. The site is analysed in plan, section and building use. Windows and amenity areas are selected to test for impact from the proposed development.

A proposed development could potentially have a negative effect on the level of daylight that a neighbouring property receives, if the obstructing building is large in relation to their distance from the existing dwelling. To ensure a neighbouring property is not adversely affected, the Vertical Sky Component (also referred to as VSC) is calculated and assessed. VSC can be defined as the amount of skylight that falls on a vertical wall or window.

BRE guidelines (2022) recommend that: *"Loss of light to existing windows need not be assessed 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."*
The diffuse light of the existing building may be adversely affected if part of a new building measured in a vertical section perpendicular to the main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25º to the horizontal. If a window falls within a 45° angle both in plan and elevation with a new development in place then the window may be affected and should be assessed.

For loss of light the BRE guidelines (2022) recommends calculation of the Vertical Sky Component. This is the ratio of direct sky illuminance falling on the outside window, to the simultaneous horizontal illuminance under an unobstructed sky. The standard CIE Overcast Sky is used and the ratio is usually expressed as a percentage. The maximum value is just under 40% for a completely unobstructed vertical wall. The Vertical Sky Component on a window is a good measure of the amount of daylight entering it.

The BRE guidelines (2022) recommend one of two criteria is met when assessing for the Vertical Sky Component:
a) Where the Vertical Sky Component at the centre of the existing window exceeds 27% with the new development in place then enough sky light should still be reached by the existing window.

b) Where the Vertical Sky Component with the new development in place is both less than 27% and less than 0.8 times its former value, then the area lit by the window is likely to appear more gloomy, and electric light will be needed more of the time.

The BRE guidelines (2022) state that if the VSC is:

- At least 27%, then conventional window design will usually give reasonable results;
- Between 15% and 27%, then special measures (larger windows, changes to room layout) are usually needed to provide adequate daylight;
- Between 5% and 15%, then it is very difficult to prove adequate daylight unless very large windows are used;
- Less than 5%, then it is often impossible to achieve reasonable daylight, even if the whole window wall is glazed

This report assesses the percentage of direct sky illuminance that falls on the centre point of neighbouring windows that could be affected by the proposed development, The Vertical Sky Component (VSC) as per the methodologies contained in the BRE guidelines BR209:2022 (third edition).

2.3 Sunlight to existing buildings

The BRE guidelines (2022) recommend assessing the main living rooms and conservatories if they have a window wall facing within 90° of due south. Kitchens and bedrooms are less important but care should be taken not to block too much sun. If the proposed development is fully north of the existing window then sunlight need not be assessed.

The Annual Probable Sunlight Hours (APSH) is used to assess the quantity of sunlight for a given location. This is the total amount of sunshine for a given location on an unobstructed horizontal surface taking cloud cover into account. Statistical data from the Irish Meteorological Service is used to assess the APSH and the Winter Probable Sunlight Hours (taken to fall between the 21st of September and the 21st of March). Table 1 shows the average sunlight hours for each month and the maximum possible without any cloud cover. This gives the factor of possible sunlight hours for each month.

Met Eireann Sunlight Hours Data Set 1981-2010													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Average Sunlight Hours/ Day	1:54	2:45	3:36	5:32	6:44	6:40	5:17	5:13	4:16	3:17	2:10	1:44	
Average Sunlight Hours/ Month	58:54	77:00	111:36	166:00	208:44	200:00	163:47	161:43	128:00	101:47	65:00	53:44	1496.25
Total Available Sunlight Hours	252	265	358	412	488	485	496	451	375	320	250	248	4383
Probable Sunlight Hours Ratio	23.37%	29.06%	31.17%	40.29%	42.77%	41.24%	33.02%	35.86%	34.13%	31.81%	26.00%	21.67%	34.14%

Table 1: Average monthly sunlight hours recorded at Dublin Airport - Data set 1981-2010

The BRE guidelines (2022) recommend that the centre of a window or 1.6m above ground for a door be assessed and receive at least 25% of the APSH and at least 5% during the period of 21st September to 21st March. If the available APSH is less than this then it should not be reduced below 0.8 times its former value or noticeable loss of sunlight may occur.

2.4 Daylight in the Proposed Development.

BR209 (2022) Appendix C sets out interior daylight recommendations. The guideline sets out the that: “BS EN 17037 supersedes BS8206 Part 2 ‘Code of practice for daylighting’ which contained a method of assessment based on Average Daylight Factor, which is now no longer recommended.”

BS EN 17037:2018+A1 sets out two methods for assessing daylight provision in proposed buildings. One method is called the **Illuminance method**. This is based on Target illuminances for daylight to be achieved across specified fractions of a reference plane at working plane height (0.85m) for half the daylight hours in a year. The Illuminance Method requires the use of a suitable weather file local climate conditions and takes into account the orientation of the space.

The alternative method is called the **Daylight Factor Method.** This method is based on calculating the daylight factors achieved over specific fractions of a reference plane. The Daylight factor is the illuminance at a point on a reference plane in a space, divided by the illuminance on an unobstructed horizontal surface outdoors. This method uses an overcast sky for calculation and the assessment of the space is orientation independent. BS EN 17037 gives the Median External Diffuse Illuminance ($E_{v,d,med}$) for the capital cities throughout Europe to account for external local illuminance levels.

The UK Annex NA sets out additional minimum room specific Target Daylight Factor values for the UK where the target values in A2 are hard to achieve. NA.2 sets out illuminance values to be exceeded over at least 50% of the points on a reference plane 0.85m above the floor for at least half the daylight hours. The UK committee formed the opinion that the Target Illuminance in A.2 that the

BR209 (2022) recommends surface reflectances should represent real conditions and where reflectance values have not been measured or specified default values are set out in Table C4 of the guidance document. The surface reflectances have been specified and are set out in Table 2 below. This table also shows the input values for material used and additional assessment model input parameters

Input Values for Assessment Model			
Surface Reflectance			
Element	Reflectance	Transmittance	Material Description
Internal walls	80%	0%	White Painted Walls
Internal ceiling	80%	0%	White Painted Ceiling
Floor - light wood	40%	0%	Light wood Flooring
External walls - proposed development	50%	0%	Light yellow Brick
External walls - outside site	50%	0%	CIBSE
External ground	20%	0%	CIBSE
Glass		68%	Triple glazed clear glass
Maintenance Factor for Glass		Assessment Plane	
Suburban Vertical no overhang	0.96	Sensor Grid spacing	0.3m
Suburban Vertical sheltered by balcony or overhang	0.88	Sensor grid inset	0.35m
Framing Factor: Patio Doors	0.77	Minimum inset	0.3m
		Work plane offset	0.85m

Table 2: Surface reflectance parameters and input values for model calculations

The EN17037:2018 Standard was introduced prior to the publication of Sustainable Urban Housing: Design Standards for New Apartments in 2020 which has no reference to the new standard but in any event applies here.

The standard deals exclusively with new developments and does not give guidance or metrics on loss of light or sunlight to existing properties. EN 17037:2018 sets out values for Minimum and Target levels to be achieved with a minimum, medium and high compliance level for each. The guideline recommends that the minimum level should be achieved but does not give guidance on the number of units or fraction within a multiple residential unit development that should achieve these values. Additionally it does not differentiate between room use and weighted targets for rooms which would have a lesser requirement. The UK National annex sets out factors for hard UK specific settings where it is difficult to achieve natural daylighting.

The compliance calculation is based on an annual, climate-based simulation of interior illuminance distributions, BR209 refers to this method as the Illuminance Method. For each hour of the year, the percentage of the floor area achieving minimum and target illuminance thresholds are measured on a room-by-room basis. Two target types are set with the following criteria:

- Target Illuminance: 300 lux over 50% of floor area for at least 50% of daylight hours.
- Minimum Illuminance: 100 lux over 95% of floor area for at least 50% of daylight hours.

BS EN 17037 gives three levels of recommendation for daylight provision in an interior space: minimum, medium and high. BR209 (2022 3rd edition) Section C3 recommends for compliance with the standard a space should achieve the minimum level.

Daylight hours are defined as the 4380 hours with the most diffuse horizontal illuminance in the weather file. In addition to this baseline (Minimum) requirement, rooms can achieve Medium and High levels of compliance by meeting higher illuminance thresholds, as outlined in the table below:

Target Illuminance from Daylight over at least half the daylight hours		
Level of recommendation	Target illuminance E_T(lx) for half of the assessment grid	Target illuminance E_{TM}(lx) for 95% of the assessment grid
Minimum	300 lux	100 lux
Medium	500 lux	300 lux
High	750 lux	500 lux

Table 3: IS / BS EN 17037:2018 Target Illuminance from Daylight over at least half the daylight hours.

Target Daylight Factor (D) for Dublin		
Level of recommendation	Target daylight factor D for half of the assessment grid	Target daylight factor D for 95% of the assessment grid
Minimum	2%	0.7%
Medium	3.5%	2%
High	5%	3.5%

Table 4: IS / BS EN 17037:2018 Target Daylight Factor (D) for Dublin.

Target Minimum Daylight Factor (D) for Dublin based UN National Annex		
Room Type	Target illuminance E_T(lx) for half of the assessment grid	Target daylight factor D from Table A.3 EN17037 $E_{v,d,med}$ for Dublin -14,900
Bedroom	100	0.7%
Living Room	150	1%
Kitchen	200	1.3%

Table 5: BS EN 17037:2018+A1:2021 Target Illuminance levels and Daylight Factor (D) for Dublin.

2.5 Sunlight to proposed developments

The BRE guidelines (2022) recommend that for large residential developments the overall sunlight potential can be initially assessed by counting the number of windows facing south, east and west and the aim should be to minimise the number of living rooms facing solely north, north-east or north-west unless there is some compensating factor such as an appealing view to the north. The guideline acknowledges in large developments it may not be possible to have every living room facing within 90° of south, it recommends maximising the number of units with a southerly aspect.

The BRE guidelines (2022) states that BS EN 17037 should be used to assess for interior access to direct sunlight. BS EN 17037 sets recommendations for access to sunlight in a range achieving compliance from Minimum to High. In dwellings at least one habitable room, preferably a living room should achieve the minimum of 1.5 direct hours on a specified date between 1st February and 21st March be used for assessment with 21st March being the preferred date to use with a cloudless sky. The guidelines recommends a time step of 5 minutes or less for the assessment interval. The minimum level to achieve is 1.5, the medium level is 3 hours and the high level is 4 hours direct sunlight.

2.6 Sunlight to gardens and open spaces

For calculations of sunlight analysis it is general practice to use March 21st. The BRE guidelines (2022) states:

> *"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. If a detailed calculation cannot be carried out, it is recommended that the centre of the area should receive at least two hours of sunlight on 21 March."*

2.7 Calculations of Trees & Hedges

Trees are not usually included in the assessments of impact, unless specified otherwise. In relation to the effects of trees and hedges the BRE guidelines (2022) states:

> *"It is generally more difficult to calculate the effects of trees on daylight because of their irregular shape and because some light will generally penetrate through the crown. Where the effects of a new building on existing buildings nearby is being analysed, it is usual to ignore the effects of existing trees. This is because daylight is at its scarcest and most valuable in winter when most trees will not be in leaf."*

2.8 BRE Guidelines (2022) Appendix H: Environmental Impact Assessment

The BRE guidelines sets out criteria for classification for assessment of impact where a new development affects a number of existing buildings or open spaces in relation to an Environmental Impact Assessment. The guide does not give a specific range or percentages but sets out parameters set out below.

> *"Where the loss of skylight or sunlight fully meets the guidelines in this book, the impact is assessed as negligible or minor adverse. Where the loss of light is well within the guidelines, or only a small number of windows or limited area of open space lose light (within the guidelines), a classification of negligible impact is more appropriate. Where the loss of light is only just within the guidelines, and a larger number of windows or open space area are affected, a minor adverse impact would be more appropriate, especially if there is a particularly strong requirement for daylight and sunlight in the affected building or open space.*
>
> *Where the loss of skylight or sunlight does not meet the guidelines in this book, the impact is assessed as minor, moderate or major adverse. Factors tending towards a minor adverse impact include:*
>
> - *only a small number of windows or limited area of open space are affected*
> - *the loss of light is only marginally outside the guidelines*
> - *an affected room has other sources of skylight or sunlight*
> - *the affected building or open space only has a low level requirement for skylight or sunlight*
> - *there are particular reasons why an alternative, less stringent, guideline should be applied.*
>
> *Factors tending towards a major adverse impact include:*
>
> - *a large number of windows or large area of open space are affected*
> - *the loss of light is substantially outside the guidelines*
> - *all the windows in a particular property are affected*
> - *the affected indoor or outdoor spaces have a particularly strong requirement for skylight or sunlight, eg a living room in a dwelling or a children's playground.*
>
> *Beneficial impacts occur when there is a significant increase in the amount of skylight and sunlight reaching an existing building where it is required, or in the amount of sunlight reaching an open space.*
>
> *Beneficial impacts should be worked out using the same principles as adverse impacts. Thus a tiny increase in light would be classified as a negligible impact, not a minor beneficial impact."*

A flexible approach should be taken when assessing the impact with daylight and sunlight being one of many factors that influence the environment when planning a new development.

3. Daylight to adjacent buildings.

3.1 Site Overview

The site of the proposed development is in Boycetown, Kilcock West. It has road frontage to the North and South West on the R148. There is a boundary within the redline, with Kilcock Cemetery and a protected structure, former St. Patrick's Church, which does not form part of the application.

There is an existing housing estate, Boycetown Court to the East and an estate with planning approval to the South of this site, both of which have been assessed as part of this report.



Figure 1: Site location plan

3.2 Preliminary assessment of adjoining dwellings

The BRE guidelines recommend that loss of light to existing windows need not be assessed 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. The zone of influence 3 times the height of the proposal is plotted in yellow. Figure 2 shows the site plan, Figures 3 & 4 show detailed areas of the site plan.

Section planes perpendicular to the window wall of the adjacent properties facing the proposed development are indicated in blue. The planes are shown at locations A - E extend and if they intersect the proposed development, within the zone of influence, they are plotted in Figure 5.

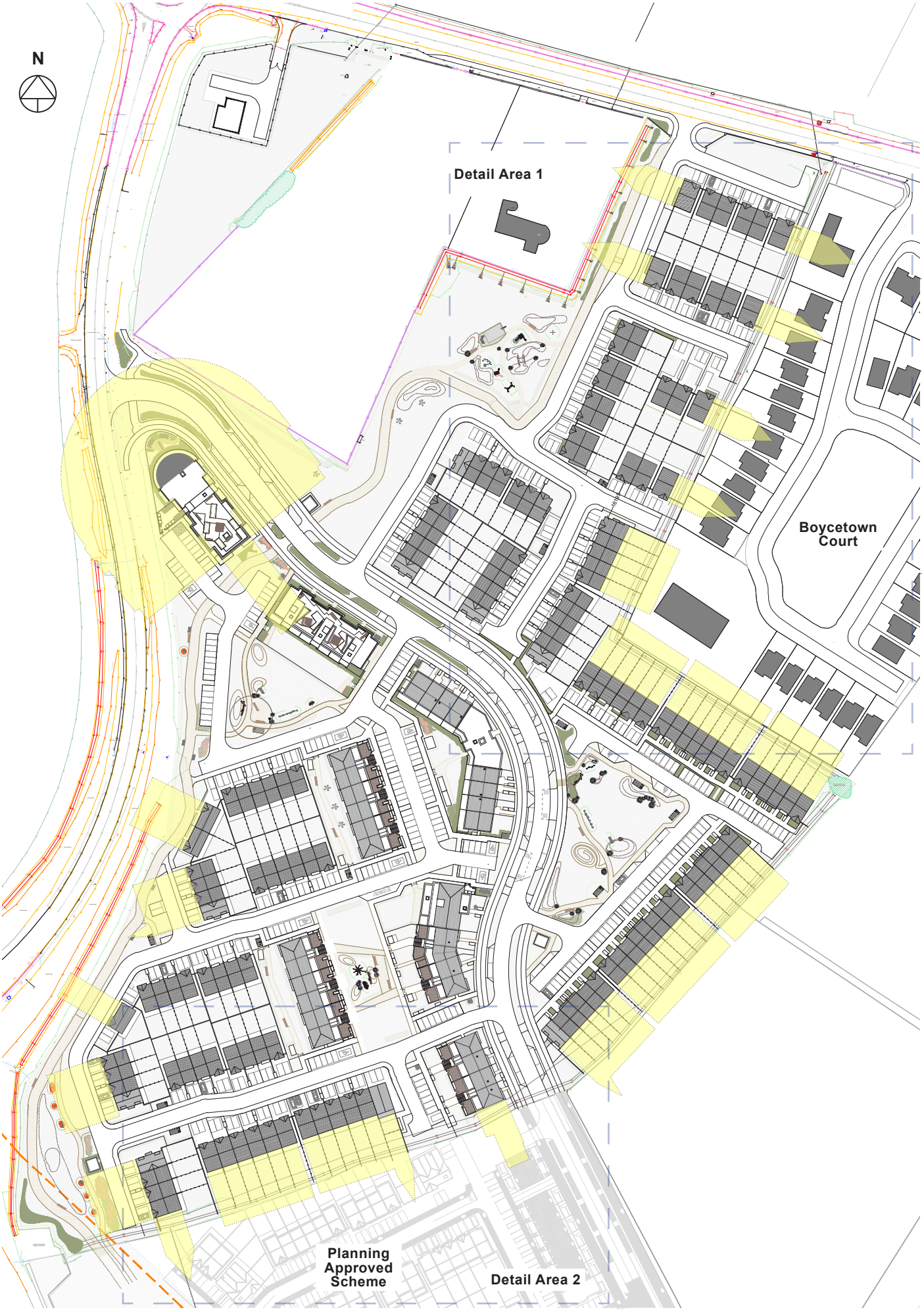


Figure 2: Proposed site plan showing the zone of influence (3 times the height of the proposed building) to adjacent residential properties.

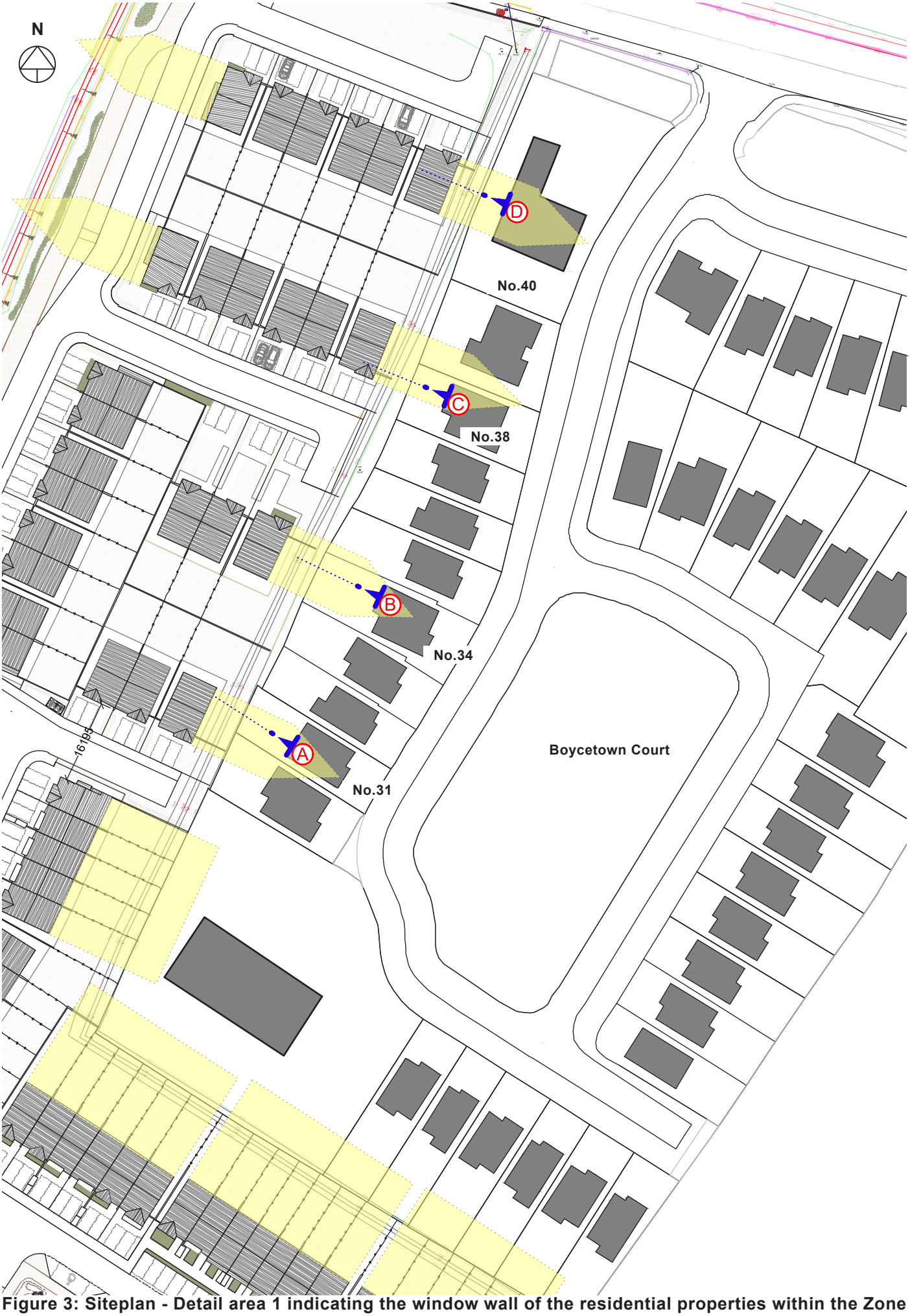


Figure 3: Siteplan - Detail area 1 indicating the window wall of the residential properties within the Zone of Influence.

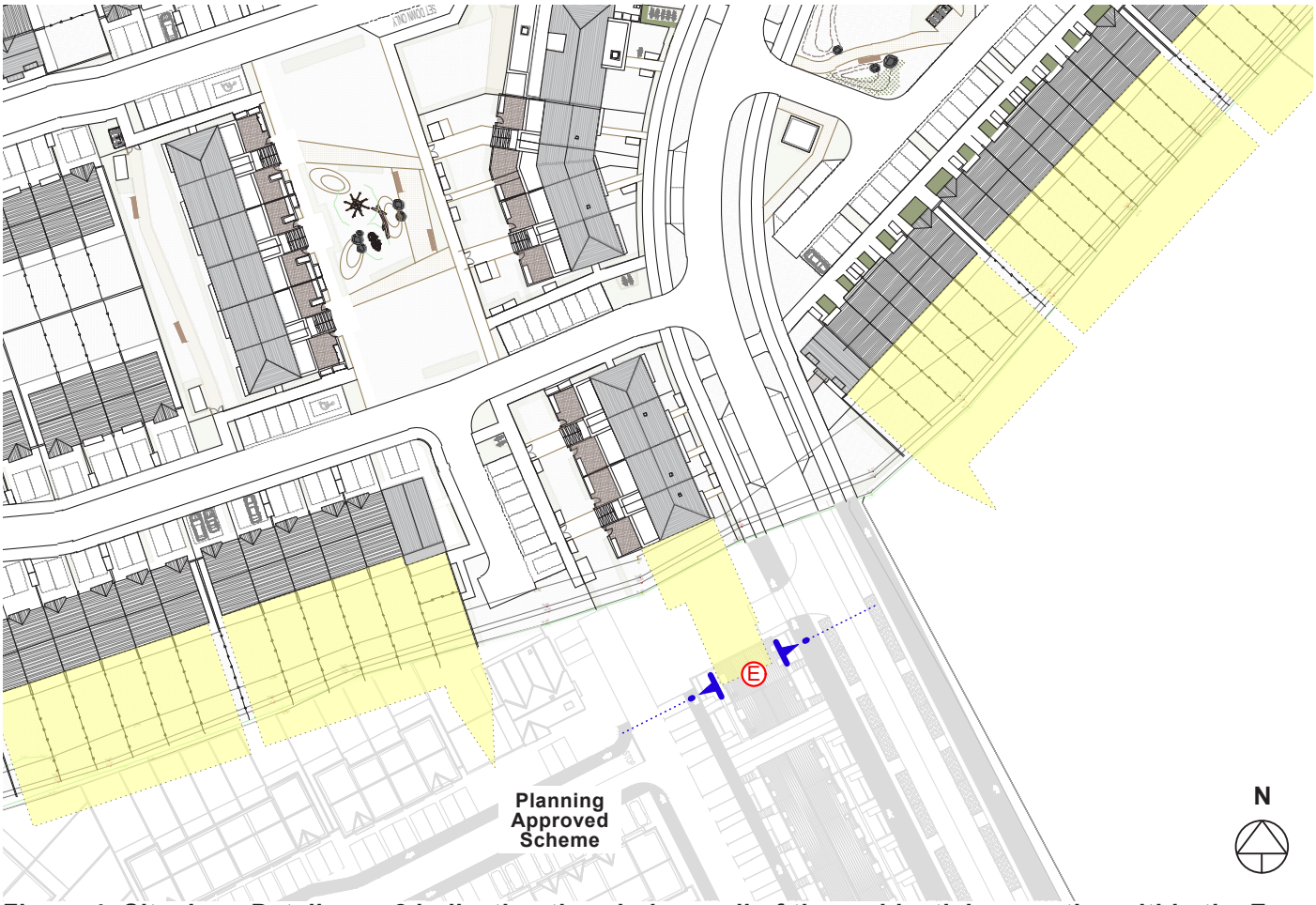


Figure 4: Siteplan - Detail area 2 indicating the window wall of the residential properties within the Zone of Influence in the planning approved scheme to the South.

3.3 Comment on the assessment of daylight in adjacent dwellings.

The windows of 4 houses in Boycetown Court would lie within the zone of influence of the proposed development, as indicated in Figure 3. These were subjected to sectional analysis, shown in Figure 5 below. In the planning approved scheme, the only building to lie within the zone of influence, is a duplex which habitable rooms face away from the proposed development.

The BRE document states that if part of a new building measured in a vertical section perpendicular to the main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25º to the horizontal, then the diffuse light of the existing building may be adversely affected.

3.3 Comment on the assessment of daylight in adjacent dwellings.

The windows of 4 houses in Boycetown Court would lie within the zone of influence of the proposed development, as indicated in Figure 3. These were subjected to sectional analysis, shown in Figure 5 below. In the planning approved scheme, the only building to lie within the zone of influence, is a duplex which habitable rooms face away from the proposed development, see Figure 4 location E.

The BRE document states that if part of a new building measured in a vertical section perpendicular to the main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25º to the horizontal, then the diffuse light of the existing building may be adversely affected.

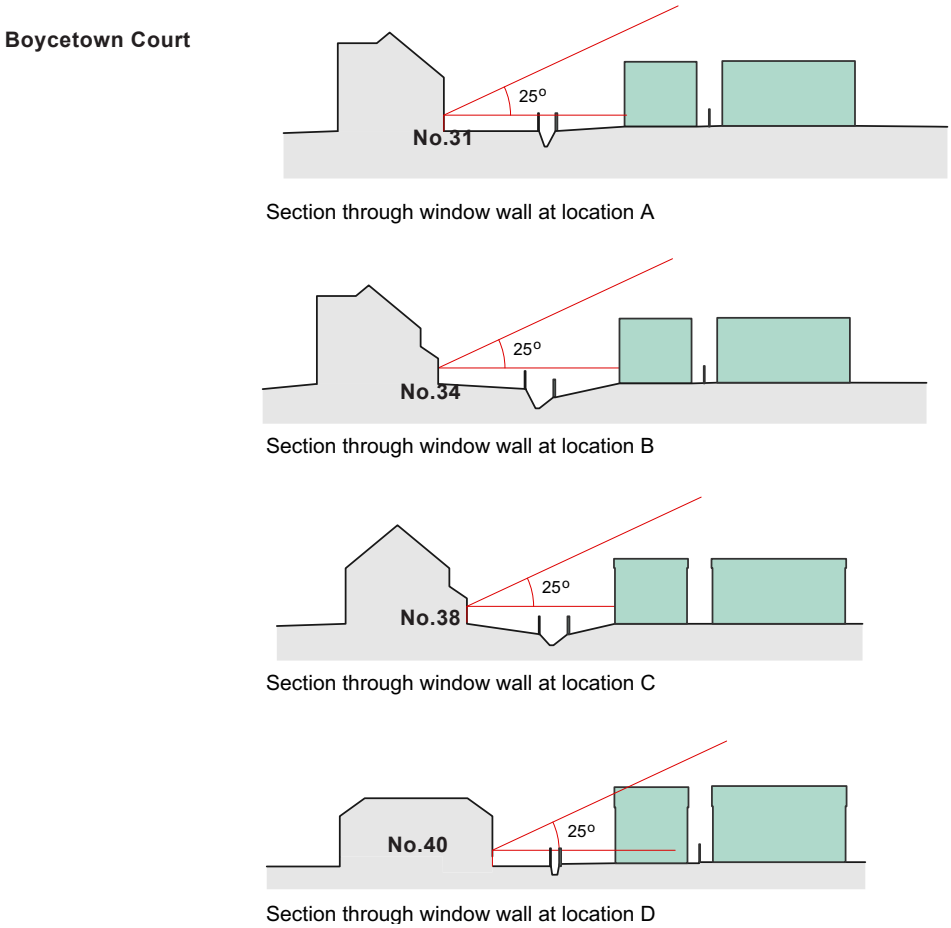


Figure 5: Sections perpendicular to window wall at locations indicated in Figure 3.

Location A, through the rear of No.31 Boycetown Court: A 25º angle though the ground floor windows would not be subtended by the proposed development, indicating that there would be no perceptible impact on their daylight.

Location B, through the rear of No.34 Boycetown Court: A 25º angle though the ground floor windows would not be subtended by the proposed development, indicating that there would be no perceptible impact on their daylight.

Location C, through the rear of No.38 Boycetown Court: A 25º angle though the ground floor windows would be marginally subtended by the proposed development and a detailed assessment is carried out in section 3.5.

Location D, through the side of No.40 Boycetown Court: A 25º angle though the ground floor windows would not be subtended by the proposed development, indicating that there would be no perceptible impact on their daylight.

Location E, though proposed duplex units, in the planning approved scheme to the South: The window to habitable rooms do not look directly towards the proposed development. There would be no perceptible impact on their daylight.

3.4 Conclusion

Preliminary analysis shows that any reduction in available daylight, to the existing and the proposed houses in the adjacent sites, from the proposed development will be negligible and meets the recommendations of the BRE guidelines BR209:2022 (third edition).

3.5 Detailed assessment of Daylight and Sunlight.

The 25° section line perpendicular to the window wall of No. 40 Boycetown Court marginally subtends the 25° angle and an assessment of the VSC is carried out below. The layout of the elevation facing the proposed development is not know. A series of test points at 3m centres, 1.6m above ground level is assessed in the absence of a contiguous elevation indicating window layout. This will give a clear indication of any potential reduction in available daylight or sunlight to any windows that may exist.

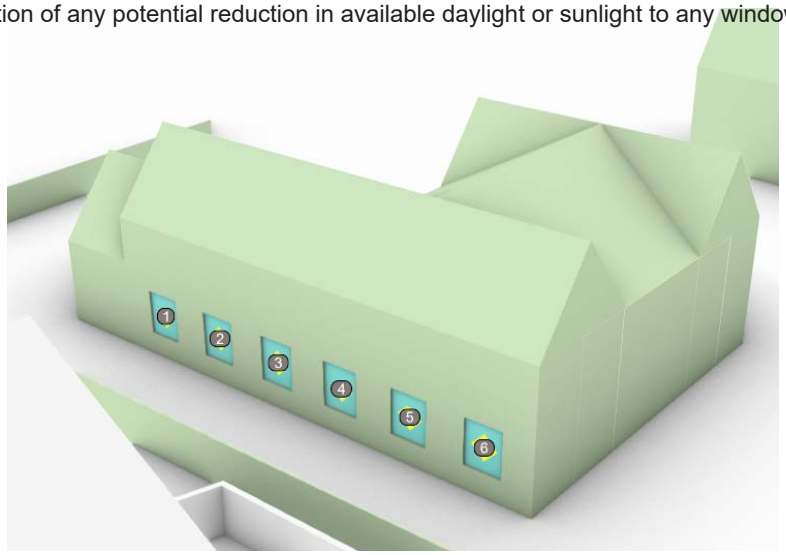


Figure 6: No.40 Boycetown Court: View and model locating VSC & APSH test points.

Vertical Sky Component					
Location	Vertical Sky Component Recommended Value > 27%		Ratio: Proposal to Existing Recommended > 80%		Meets criteria if >27% VSC or <27% but >80% Existing Value
	Existing %	Proposed %			
1	38.47	34.17	88.82%		Y
2	38.5	33.22	86.29%		Y
3	38.48	31.89	82.87%		Y
4	38.49	30.91	80.31%		Y
5	38.48	30.9	80.30%		Y
6	38.49	31.76	82.51%		Y

* The BRE guidelines recommend where there are more than one window to a room the cumulative average of the windows be used.

Table 6: Vertical sky component for windows in No.40 Boycetown Court.

Annual Probable Sunlight Hours								
	APSH >25% Target			Sept 21 - Mar 21 WPSH >5% Target			Meets criteria of >25% APSH and >5% WPSH Or <25% or <5% WPSH but >80% Existing Value	
Location ID	Existing	Proposed	Ratio	Existing	Proposed	Ratio		
	% of APSH	% of APSH	If less than 25% APSH Target >80%	% WPSH	% WPSH	If less than 5% WPSH Target >80%	APSH	WPSH
1	39.9%	29.0%	72.6%	11.1%	6.6%	59.6%	Y	Y
2	39.9%	25.9%	65.0%	11.1%	6.7%	60.0%	Y	Y
3	39.9%	26.6%	66.7%	11.1%	7.2%	64.6%	Y	Y
4	39.9%	25.4%	63.7%	11.1%	7.2%	64.8%	Y	Y
5	39.9%	28.7%	71.9%	11.1%	7.2%	64.8%	Y	Y
6	39.8%	30.7%	77.0%	11.1%	7.0%	62.9%	Y	Y

Table 7: Annual Probable Sunlight hours to windows in No.40 Boycetown Court.

3.6 Conclusion

There will be a minor reduction to the available daylight and sunlight to the potential windows facing the proposed development. All the windows retain a VSC in excess of 27% and any potential loss of daylight light will be minimal. The proposed development meets the recommendations of the BRE guidelines.

The window wall is in excess of 90° to due south and the BRE guidelines states that a window in excess of 90° to due south is unlikely to receive adequate sunlight. Only windows to main living spaces need to be assessed. It is not know if there are any windows at ground floor and if they are to a main living space. There will be minimal reduction to the APSH and all the windows retain APSH in excess of the recommended 25% annual and 5% winter months. Any reduction in available daylight from the proposed development will be negligible and meets the recommendations of the BRE guidelines BR209:2022(third edition).

4. Daylight to proposed duplex units

4.1 Assessment for Daylight Provision IS EN 17037:2018 / BS EN 17037:2021+A1

The apartments within the development were assessed for daylight provision. Compliance is demonstrated with a calculation of Daylight Provision under IS EN 17037:2018 and BS EN 17037:2021+A1 with the illuminance method and the results are presented in Tables 8 and 9 below. A complete set of room results are shown in Appendix A for reference. Appendix B contains supplementary results for the Daylight Factor method.

Daylight provision Illuminance Method IS EN 17037:2018 / BS EN 17037:2021+A1					
Apartment Units and Duplex		Below Target	Minimum	Medium	High
	Target Illuminance	0.0%	23.4%	36.2%	40.4%
	Minimum Illuminance	0.0%	24.4%	43.6%	31.9%

Table 8: Summary of room for Target Illuminance compliance with IS/BS EN 17037:2018. Percentage of rooms at each compliance level. Individual room results can be viewed in Appendix A

Minimium daylight provision UK NA.1 - BS EN 17037:2021+A1				
	Room Use	Number of rooms	Target illuminance E_T(lx) for half of the assessment grid	Percentage of rooms achieving Target
Apartment Units and Duplex	LKD & KD	123	200	100%
	Livingrooms	9	150	100%
	Bedrooms	265	100	100%

Table 9: Summary of room for Target Illuminance compliance with IS/BS EN 17037:2018. Percentage of rooms at each compliance level. Individual room results can be viewed in Appendix B

BR209:2022 (third edition) sets out two assessment methods. Each assessment method uses a different approach.

The illuminance methods assesses the daylight levels over at least 50% daylight hours in the year and uses a weather file data set. This method takes into account the orientation of the space.

The Daylight Factor method assesses the ratio of direct illumination between outside and inside the space and this is calculated with an overcast sky which does not take into account orientation.

The illuminance method uses a climate file and takes into account room orientation during calculation and will provide a more accurate representation of the daylight provision to specific rooms in the proposed environment.

Additional assessment was carried out in accordance with the recommendations of +A1(December 2021). The UK National Annex (A1) contains additional minimum room specific target values for dwellings in the UK. The committee fully supports the recommendations of EN17037:2018 but considers the target daylight levels may be hard to achieve in UK dwellings, in particular in urban areas and areas with mature trees. The Target and Minimum levels set out in BS EN17037:2018 does not take into account room use or make allowance for room that have a lesser requirement for daylight. The UK National Annex A1 sets out room specific minimum values to be achieved in the UK and Channel Islands. All the rooms achieve the minimum illuminance levels set out in table NA.1 of BS EN17037:2021+A1.

4.2 Conclusion

100% of the habitable rooms achieve the Minimum Illuminance levels and 100% of habitable rooms achieve the Target illuminance levels set out in IS EN 17037:2018 Table A.1 and BS EN17037:2021+A1 Table A.1. Overall the rooms will be bright well daylit spaces.

100% of the Living, Dining, Kitchen and Bedroom spaces to the apartments achieve the BS EN17037:2021+A1 Table NA.1, UK National Annex target values for Dublin. This is the minimum rooms specific values to be achieved.

5. Sunlight hours in all proposed units.

5.1 Sunlight Hours

BR209:2022 (third edition) and BS EN 17037 set out recommendations for sunlight hours to be achieved preferably in a main living space. The guidelines recommends the sunlight hours should be assessed preferably on the 21st March over the course of the day. The guidelines sets three levels. Minimum 1.5h, Medium 3h and High 4h.

Detailed results are set out for the main Living/ Kitchen/ Dining room, indicating if this room has a relevant South facing window. A summary of these results are displayed in the table below.

Sunlight Hours Summary Table								
Apartment Units and Duplex	Total	Units that have a LKD with a window within 90° South		Fail <1.5 hours	Minimum >1.5 hours	Medium >3 Hours	High >4 Hours	Ratio complies
		No.	Ratio					
	123	94	76.4%	12	16	20	75	90.2%
Total	123	94	76.4%	12	16	20	75	90.2%

Table 10: Summary of results of assessment of Sunlight Hours

5.2 Comment on EN 17037 Sunlight Hours

The BRE Guidelines recommend maximising the amount of units that have a window within 90° due South but does not have set targets. The guidelines acknowledges that for large developments with site constraints its not possible to achieve south facing windows to all main living spaces. Of the total 123 multi occupancy units, 94no. (76.4%) have window to a Living room or Kitchen/ Dining room which face within 90° South.

Often windows with an aspect of greater than 90° due South, to the North West or North East, will still receive sunlight, but it is likely to be lesser amounts especially in the winter period. In this development 111no. (90.2%) of living spaces achieve the minimum recommended 1.5 direct sunlight hours.

5.3 Conclusion

The BRE guidelines recommend that the design is optimised so the maximum number of dwellings can achieve the target sunlight hours. This scheme is well designed for sunlight with 90.2% of units achieving the minimum target recommended level of 1.5 direct sunlight hours on the 21st March.

6. Sunlight to Gardens and Open Spaces

The BRE document indicates that for an amenity area, such as a garden, to have good quality sunlight throughout the year, 50% should receive in excess of 2 hours sunlight on the 21st March. It also states that front gardens need not be assessed for sunlight.

The guidelines states that the 21 March should be used for the assessment and that “Sunlight at an altitude of 10° or less does not count, because it is likely to be blocked by low level planting anyway.” The amenity space is assessed for the amount of direct sunlight received by the space in 5 minute intervals between 8am and 6pm on the 21st March over an analysis grid with a 300mm grid size and the average is calculated.

6.1 Sunlight to adjacent private amenity spaces

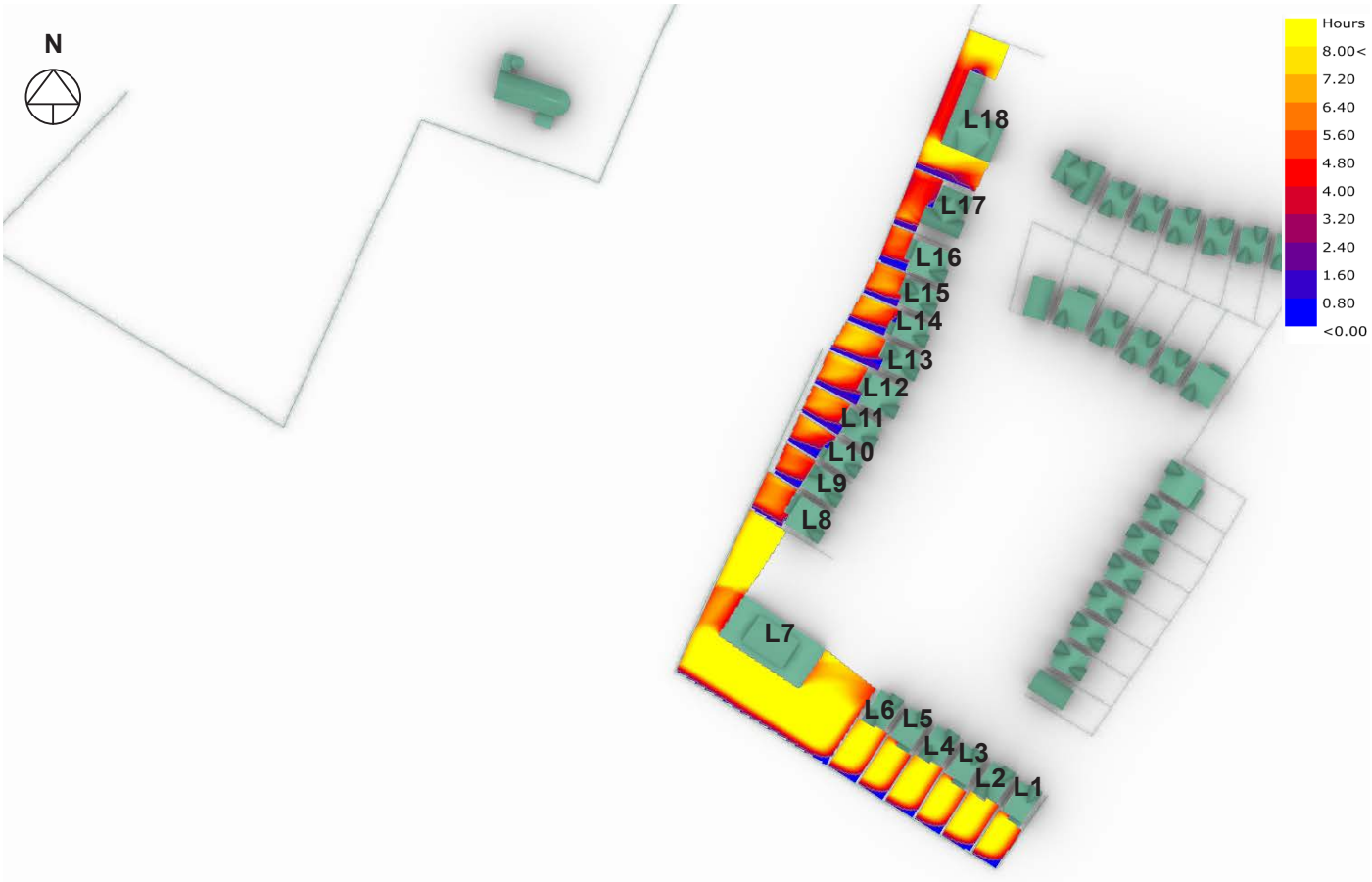
The relevant adjacent amenity spaces were selected for assessment of a calculation of Sun on the Ground.
The results are shown in Table 11 and existing and proposed radiation map of generated analysis are shown in Figure 6 below.

Sunlight on the Ground - Adjacent Residences				
Location ID	Existing	Proposed	Ratio	Meets criteria of >50% area Or if <50% but >80% Existing Value
	% Area receiving 2 hours sunlight on 21st March			
L1	90.7	90.7	100%	Y
L2	92.6	92.6	100%	Y
L3	91.7	91.7	100%	Y
L4	93.4	93.4	100%	Y
L5	92.2	92.2	100%	Y
L6	92.9	92.9	100%	Y
L7	97.7	97.7	100%	Y
L8	89.5	89.5	100%	Y
L9	81.5	81.5	100%	Y
L10	73.5	73.5	100%	Y
L11	78.3	78.3	100%	Y
L12	77.1	77.1	100%	Y
L13	77.3	77.3	100%	Y
L14	76.2	76.2	100%	Y
L15	80.7	80.7	100%	Y
L16	76.4	76.4	100%	Y
L17	89.0	89.0	100%	Y
L18	93.0	93.0	100%	Y

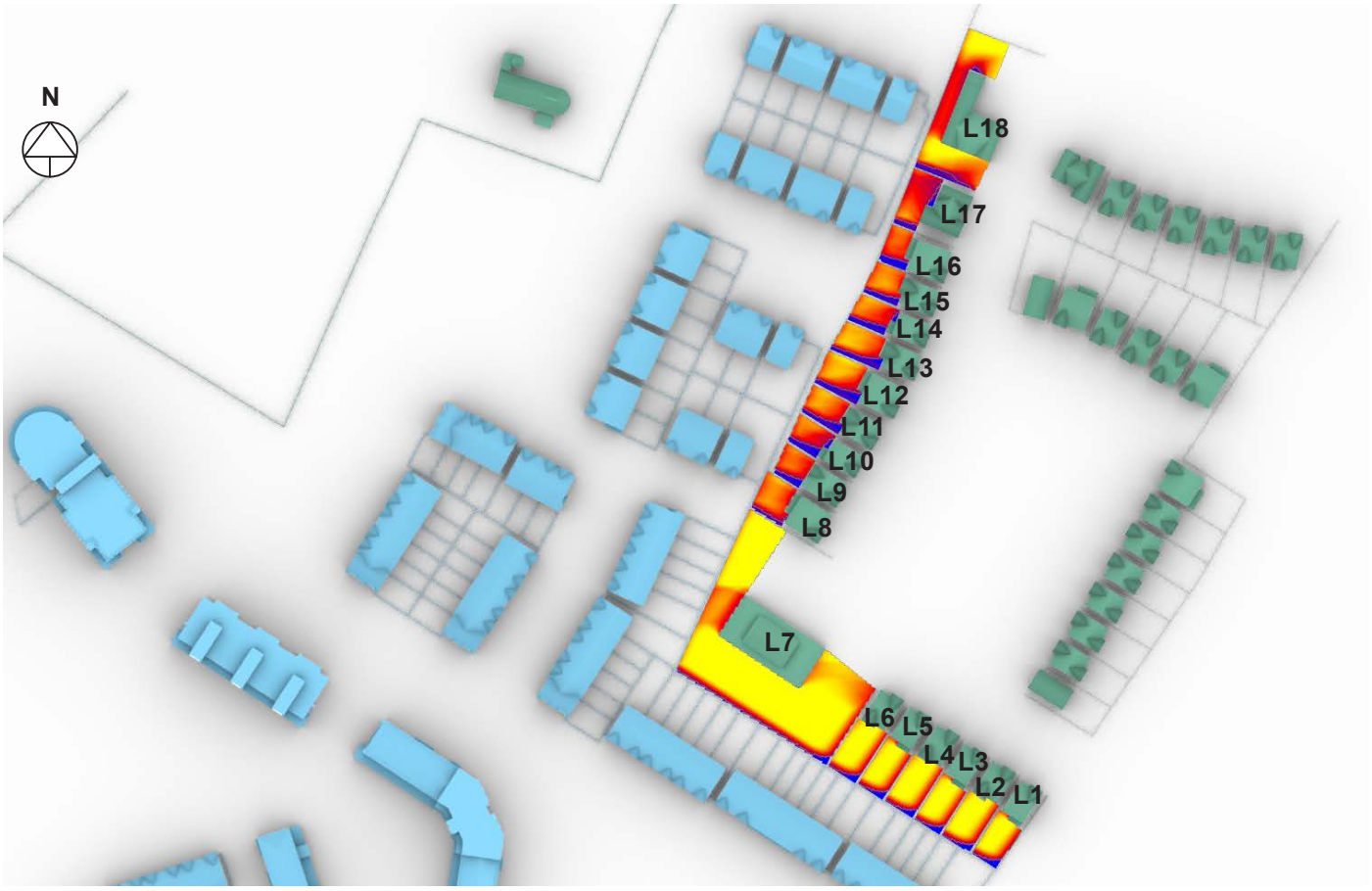
Table 11: Calculation of sun on the ground to adjacent amenity spaces.

6.2 Conclusion

All of the adjacent properties to the North of the proposed development will maintain the same access to available sunlight.
The amenity areas adjacent to the proposed development have, and will continue to have, good quality sunlight. The proposed development meets the recommendations of the BRE guidelines.



Existing



Proposed

Figure 7: Site plans with generated analysis showing sunlight to amenity areas in the adjacent properties. Scale indicates sunlight from 0 - 8 hours.

6.3 Sunlight to amenity within the proposed development

The amenity area within this proposal have been assessed with a calculation of Sun on the Ground on the 21st March. Generated analysis is shown in Figure 7 and the results are set out in Table 12 below.



Figure 8: Radiation map of amenity within the Proposed Development, showing available sunlight on 21st March. The scale represents the percentage of daylight received from 0 - 8 hrs.

Sunlight on the Ground - Proposed Development			
Location ID	Description	Proposed: % Area receiving 2 hours sunlight on 21st March	Meets criteria if >50% area receives 2 hours sunlight on 21st March
L1	Public open space	100%	Y
L2	Communal open space	100%	Y
L3	Communal open space	100%	Y
L4	Public open space including creche	100%	Y
L5	Public open space	100%	Y
L6	Communal open space	100%	Y
L7	Communal open space	100%	Y
L8	Public open space	100%	Y
L9	Communal open space	100%	Y
L10	Public open space	100%	Y
L11	Public open space	100%	Y
L12	Communal open space- Roof terrace Block A	100%	Y
L13	Communal open space Roof terrace Block B	100%	Y

Table 12: Calculation of Sun on the Ground to communal amenity spaces within the development

6.4 Conclusion

There are a number amenity areas which are well oriented for sunlight. All the communal amenity spaces exceed 2 hours sunlight over 50% of the amenity space on the 21st March. The proposed development meets the recommendations of the BRE guidelines.

7. Shadow Diagrams

7.1 BRE Guidance on Shadow Studies

Shadow diagrams are a visual aid to understand where possible shading may occur. The BRE guidelines recommend using the March Equinox due the equal length of the day and night time. It states:

"If a space is used all year round, the equinox (21 March) is the best date for which to prepare shadow plots as it gives an average level of shadowing. Lengths of shadows at the autumn equinox (21 September) will be the same as those for 21 March, so a separate set of plots for September is not required."

June 21st and December 21st are provided below for information but it should be noted that the summer solstice is the best case scenario with shadows at their shortest. In Winter even low buildings will cast long shadows and it is common for large areas of the ground to be in shadow throughout the day especially in a built up area and sun barely rises above an altitude of 10° during the course of the day. The guidelines recommends that Sunlight at an altitude of 10° or less does not count. Below are the times for the Equinox and Solstice that the sun is above 10° altitude rounded to the nearest half hour.

Equinox: between 8:30 and 17:30
Summer Solstice: Between 6:30 and 20:00
Winter Solstice: Between 10:30 and 14:00

Section 7.2 shows the existing and proposed shadow diagrams for the Equinox on the 21st March at 2 hourly intervals during the day between 09:00 and 17:00.
Section 7.3 shows the existing and proposed shadow diagrams for the Summer Solstice on the 21st June at 2 hourly intervals during the day between 09:00 and 19:00.
Section 7.4 shows the existing and proposed shadow diagrams for the Equinox on the 21st September at 2 hourly intervals during the day between 09:00 and 17:00.
Section 7.5 shows the existing and proposed shadow diagrams for the Winter Solstice on the 21st December at 2 hourly intervals during the day between 09:00 and 15:00.

This is predominantly a greenfield site, there is no shadows cast from any structures on the site at present. Shadow diagrams are a visual aid to understand where possible shading may occur. The use of shadow diagrams as an assessment method should be taken over the course of the day and not a specific time due to the transient nature of the sun and the shade caused by obstructions.

7.2 Shadow Casting diagrams March Equinox

N

Existing



Proposed



Figure 9: Shadow diagrams 21 March 09:00 UTC

N



Existing



Proposed

Figure 10: Shadow diagrams 21 March 11:00 UTC

N



Existing



Proposed

Figure 11: Shadow diagrams 21 March 13:00 UTC

N



Existing



Proposed

Figure 12: Shadow diagrams 21 March 15:00 UTC

N



Existing



Proposed

Figure 13: Shadow diagrams 21 March 17:00 UTC

7.3 Shadow Casting diagrams June Solstice

N

Existing



Proposed



Figure 14: Shadow diagrams 21 June 09:00 UTC+1

N



Existing



Proposed

Figure 15: Shadow diagrams 21 June 11:00 UTC+1

N



Existing



Proposed

Figure 16: Shadow diagrams 21 June 13:00 UTC+1

N



Existing



Proposed

Figure 17: Shadow diagrams 21 June 15:00 UTC+1

N



Existing



Proposed

Figure 18: Shadow diagrams 21 June 17:00 UTC+1

N



Existing



Proposed

Figure 19: Shadow diagrams 21 June 19:00 UTC+1

7.4 Shadow Casting diagrams September Equinox

N

Existing



Proposed



Figure 20: Shadow diagrams 21 September 09:00 UTC+1

N



Existing



Proposed

Figure 21: Shadow diagrams 21 September 11:00 UTC+1

N



Existing



Proposed

Figure 22: Shadow diagrams 21 September 13:00 UTC+1

N



Existing



Proposed

Figure 23: Shadow diagrams 21 September 15:00 UTC+1

N

Existing



Proposed



Figure 24: Shadow diagrams 21 September 17:00 UTC+1

7.5 Shadow Casting diagrams December Solstice

N

Existing



Proposed



Figure 25: Shadow diagrams 21 December 09:00 UTC

N



Existing



Proposed

Figure 26: Shadow diagrams 21 December 11:00 UTC

N



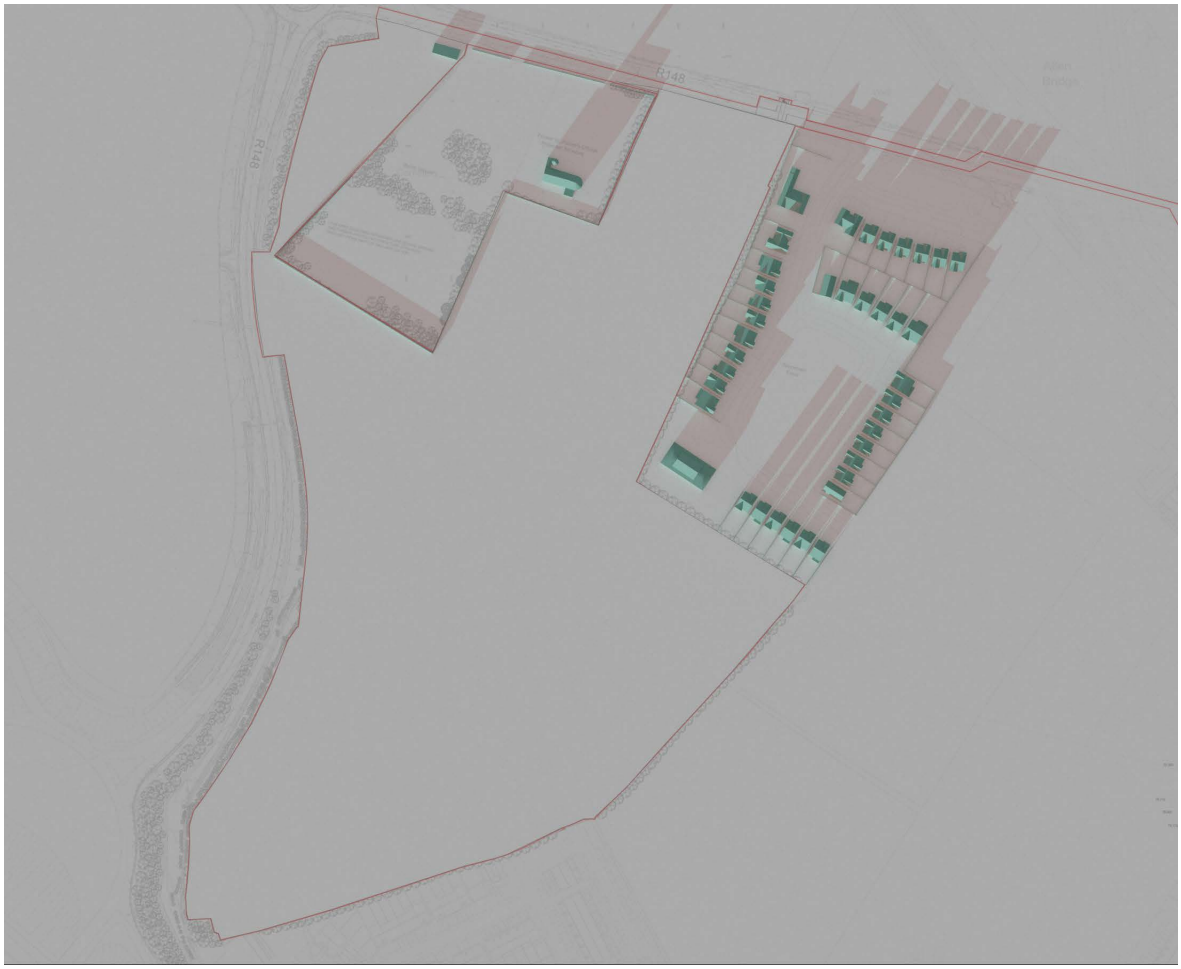
Existing



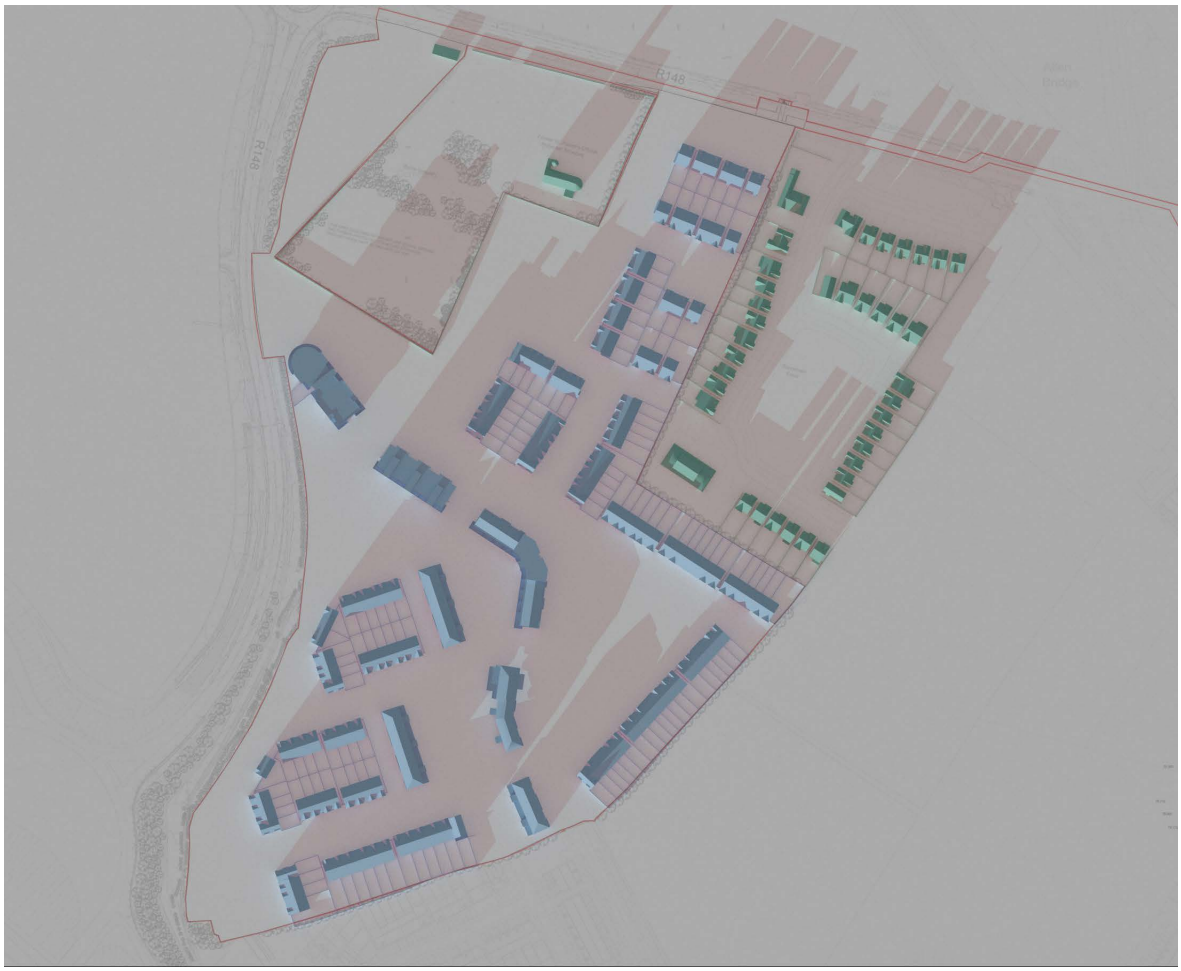
Proposed

Figure 27: Shadow diagrams 21 December 13:00 UTC

N



Existing



Proposed

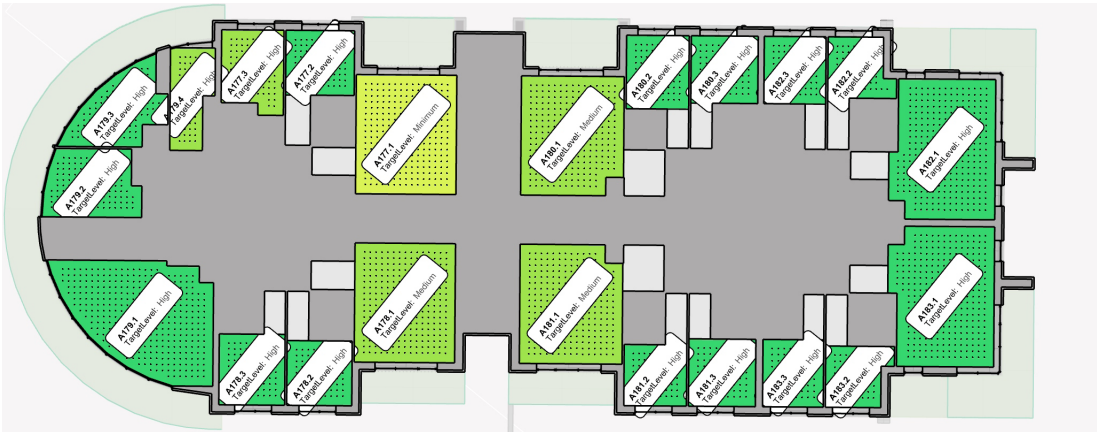
Figure 28: Shadow diagrams 21 December 15:00 UTC

Appendix A - EN17037:2018 Table A.1 Daylight Provision Room Compliance Results

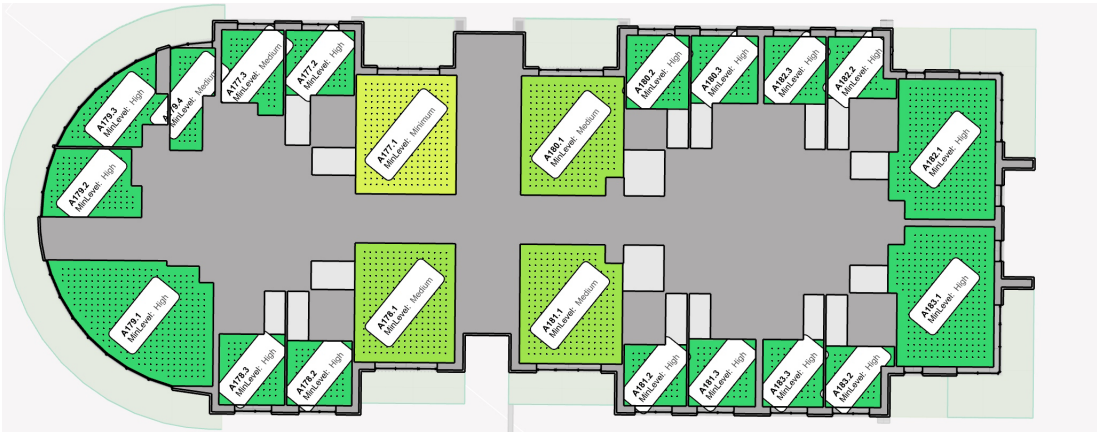
Minimum Illuminance			Target Illuminance		
High	500 lux	95%	High	750 lux	50%
Medium	300 lux	95%	Medium	500l ux	50%
Minimum	100 lux	95%	Minimum	300 lux	50%

EN 17037:2018 Compliance threshold levels.

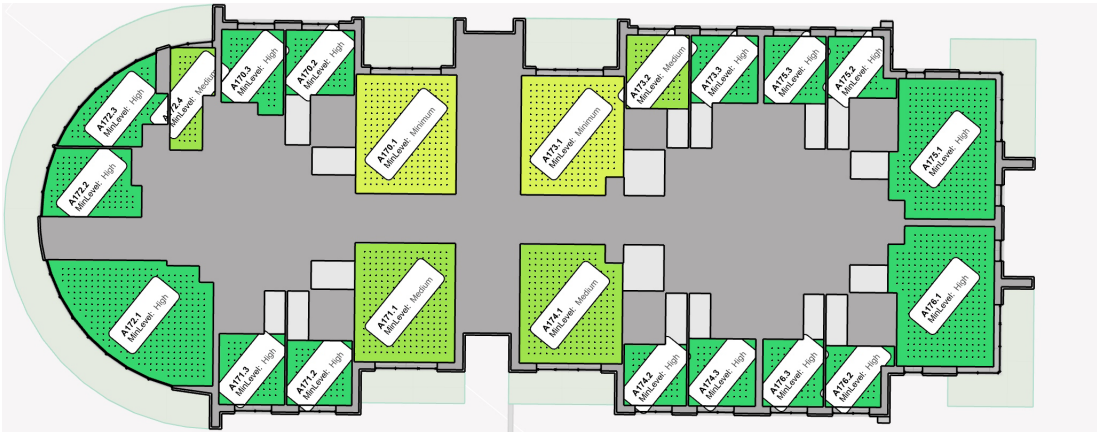
03 Floor
Minimum Illuminance



03 Floor
Target Illuminance



02 Floor
Minimum Illuminance



02 Floor
Target Illuminance

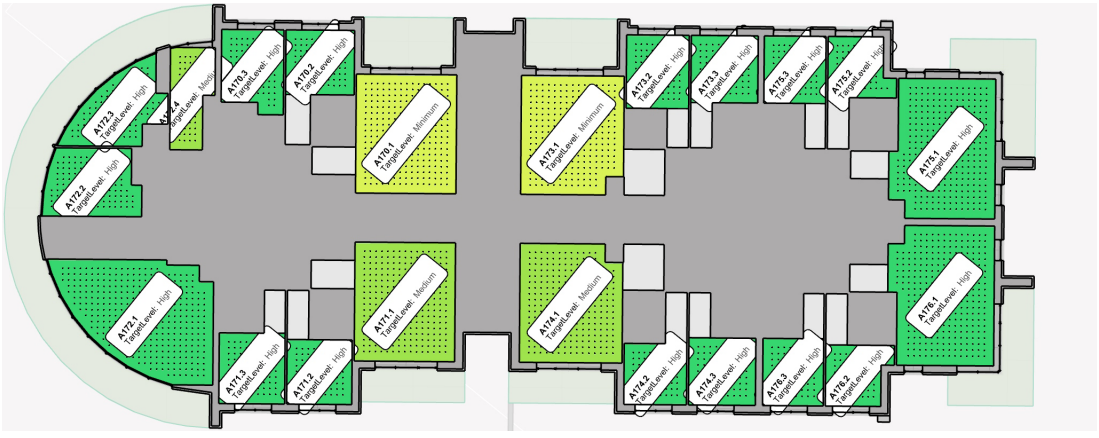
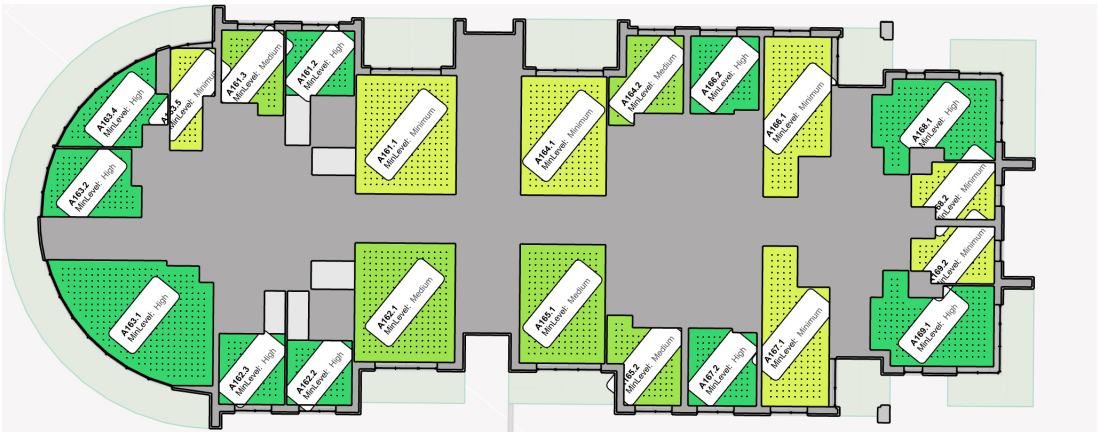
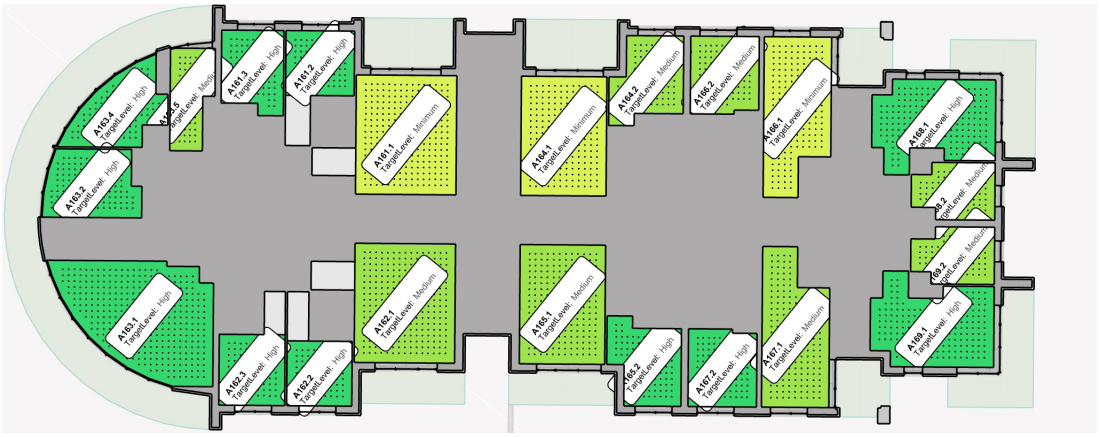


Figure 29: Block A - Daylight Provision of habitable rooms EN 17037 Table A.1

01 Floor
Minimum Illuminance



01 Floor
Target Illuminance



00 Floor
Minimum Illuminance



00 Floor
Target Illuminance



Figure 30: Block A - Daylight Provision of habitable rooms EN 17037 Table A.1

Block A - EN17037:2018 Daylight Provision Room Compliance

Space ID	Description	Area [m^2]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
A152.1	LKD	23.4	200	Minimum	60.0%	37.1%	15.8%	Minimum	74.8%	30.0%	5.2%
A152.2	Bed	11.1	92	Minimum	61.4%	38.6%	15.8%	Minimum	80.7%	48.4%	18.4%
A153.1	LKD	23.4	210	Medium	66.8%	52.1%	38.5%	Minimum	68.5%	31.8%	12.0%
A153.2	Bed	11.1	99	High	77.9%	66.8%	54.5%	High	85.4%	67.4%	52.0%
A154.1	LKD	36.7	350	High	84.5%	77.7%	67.9%	High	89.2%	78.2%	66.2%
A154.2	Bed	14.6	130	High	80.8%	71.7%	57.6%	High	88.3%	74.3%	58.1%
A154.3	Bed	14.2	119	High	88.1%	82.9%	77.3%	High	94.2%	86.1%	79.3%
A154.4	Bed	9.4	72	Medium	74.5%	58.4%	40.4%	Minimum	78.9%	44.9%	10.3%
A155.1	LKD	24.4	216	Minimum	55.5%	27.2%	6.6%	Minimum	76.5%	35.3%	5.5%
A155.2	Bed	12.9	104	Medium	71.4%	54.8%	33.1%	Minimum	79.3%	46.4%	18.5%
A156.1	LKD	24.4	216	Medium	67.6%	52.8%	38.7%	Medium	79.9%	53.3%	33.6%
A156.2	Bed	12.9	104	High	76.1%	63.6%	52.1%	Medium	81.1%	57.2%	39.7%
A157.1	LKD	22.7	190	Minimum	66.1%	47.9%	24.1%	Minimum	66.7%	15.1%	3.7%
A157.2	Bed	12.5	106	Medium	73.2%	57.1%	37.1%	Medium	85.4%	63.1%	42.1%
A158.1	LKD	22.7	190	Medium	71.4%	58.5%	46.0%	Minimum	71.7%	38.1%	17.1%
A158.2	Bed	12.5	106	High	76.1%	64.1%	52.6%	High	86.2%	69.2%	54.2%
A159.1	LKD	21.0	195	High	80.0%	69.6%	59.4%	Medium	83.5%	62.9%	45.6%
A159.2	Bed	10.2	82	Minimum	62.6%	46.4%	31.9%	Minimum	69.6%	36.3%	12.0%
A160.1	LKD	21.0	195	High	81.8%	74.3%	64.9%	High	85.1%	68.1%	54.7%
A160.2	Bed	10.2	82	Minimum	60.5%	43.3%	26.1%	Minimum	69.8%	33.7%	10.0%
A161.1	LKD	28.7	270	Minimum	53.8%	26.7%	5.4%	Minimum	75.9%	36.3%	4.3%
A161.2	Bed	10.6	90	High	79.1%	67.2%	53.2%	High	87.3%	70.9%	54.1%
A161.3	Bed	11.6	94	High	78.3%	65.0%	50.3%	Medium	86.6%	68.2%	49.7%
A162.1	LKD	28.7	270	Medium	66.3%	52.0%	37.7%	Medium	79.8%	53.7%	34.2%
A162.2	Bed	10.1	81	High	81.1%	73.3%	61.8%	High	88.4%	76.7%	63.9%
A162.3	Bed	11.2	90	High	79.6%	70.5%	59.2%	High	87.3%	73.7%	59.8%
A163.1	LKD	36.7	350	High	84.8%	78.0%	68.6%	High	89.8%	79.3%	68.4%
A163.2	Bed	14.6	130	High	80.8%	71.5%	58.1%	High	88.8%	75.9%	61.0%
A163.4	Bed	14.2	119	High	88.1%	82.8%	77.3%	High	94.2%	86.3%	79.5%
A163.5	Bed	9.4	72	Medium	74.1%	58.4%	40.9%	Minimum	79.9%	47.9%	14.8%
A164.1	LKD	24.4	216	Minimum	57.1%	32.0%	7.8%	Minimum	78.1%	43.2%	9.5%
A164.2	Bed	12.9	104	Medium	75.6%	60.6%	44.2%	Medium	83.2%	57.1%	32.2%
A165.1	LKD	24.4	216	Medium	70.3%	56.1%	41.0%	Medium	81.7%	57.6%	38.7%
A165.2	Bed	12.9	104	High	78.0%	67.1%	55.8%	Medium	83.1%	62.4%	46.8%
A166.1	LKD	22.7	190	Minimum	67.0%	49.7%	28.0%	Minimum	67.6%	19.1%	3.3%
A166.2	Bed	12.5	106	Medium	77.2%	62.3%	46.9%	High	86.6%	68.7%	50.7%
A167.1	LKD	22.7	190	Medium	72.1%	58.7%	46.7%	Minimum	73.5%	40.2%	18.8%
A167.2	Bed	12.5	106	High	79.0%	68.7%	57.4%	High	87.1%	73.3%	59.2%
A168.1	LKD	22.7	195	High	80.7%	71.7%	61.8%	High	84.7%	65.9%	50.5%
A168.2	Bed	10.2	82	Medium	66.3%	52.3%	38.3%	Minimum	75.9%	46.7%	26.2%
A169.1	LKD	22.7	195	High	82.4%	75.1%	65.8%	High	85.5%	69.1%	56.1%
A169.2	Bed	10.2	82	Medium	65.1%	51.2%	33.8%	Minimum	75.9%	44.5%	20.4%
A170.1	LKD	28.7	270	Minimum	54.8%	28.2%	5.5%	Minimum	76.4%	37.9%	4.5%
A170.2	Bed	10.6	90	High	79.2%	67.7%	54.1%	High	87.5%	71.2%	54.5%
A170.3	Bed	11.6	94	High	78.4%	65.3%	51.1%	High	86.5%	68.4%	50.2%
A171.1	LKD	28.7	270	Medium	66.7%	52.6%	38.5%	Medium	79.9%	53.9%	34.7%
A171.2	Bed	10.1	81	High	81.1%	73.1%	61.9%	High	88.1%	75.9%	63.2%
A171.3	Bed	11.2	90	High	79.7%	70.5%	59.7%	High	87.4%	74.0%	60.0%
A172.1	LKD	36.7	350	High	84.8%	78.1%	68.6%	High	89.8%	79.5%	68.6%
A172.2	Bed	14.6	130	High	81.0%	72.2%	58.8%	High	88.8%	76.1%	61.2%

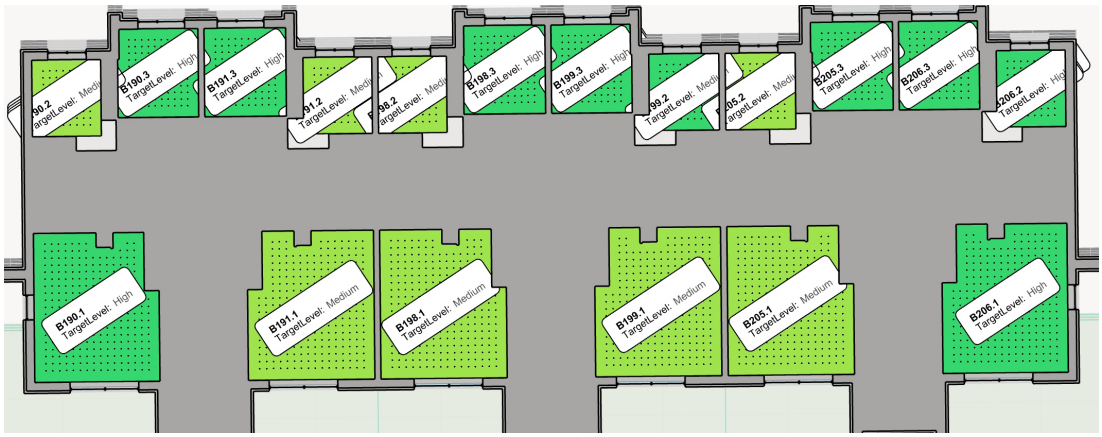
Block A - EN17037:2018 Daylight Provision Room Compliance											
Space ID	Description	Area [m^2]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
A172.3	Bed	14.2	119	High	88.2%	83.2%	77.5%	High	94.2%	86.1%	79.3%
A172.4	Bed	9.4	72	Medium	75.3%	59.5%	43.3%	Medium	80.9%	50.8%	18.4%
A173.1	LKD	28.6	261	Minimum	51.8%	23.9%	4.4%	Minimum	75.7%	35.7%	3.5%
A173.2	Bed	11.0	90	High	78.9%	66.8%	53.1%	Medium	86.4%	67.7%	50.0%
A173.3	Bed	10.8	81	High	78.5%	65.8%	51.6%	High	87.1%	70.6%	53.7%
A174.1	LKD	28.6	261	Medium	67.1%	52.1%	35.9%	Medium	80.5%	55.0%	34.9%
A174.2	Bed	9.2	72	High	82.4%	75.3%	65.1%	High	88.5%	77.0%	64.7%
A174.3	Bed	10.8	81	High	80.0%	70.5%	59.3%	High	87.6%	74.6%	60.8%
A175.1	LKD	33.4	304	High	78.0%	67.0%	55.8%	High	85.5%	68.3%	54.5%
A175.2	Bed	8.8	66	High	82.1%	72.7%	60.0%	High	88.1%	72.8%	56.9%
A175.3	Bed	10.0	81	High	80.3%	69.4%	55.8%	High	88.0%	72.2%	56.1%
A176.1	LKD	33.4	304	High	79.3%	68.7%	60.2%	High	85.6%	69.2%	56.4%
A176.2	Bed	8.8	66	High	82.5%	75.5%	65.0%	High	88.2%	76.2%	63.8%
A176.3	Bed	9.8	72	High	81.9%	74.1%	62.8%	High	87.8%	75.2%	62.2%
A177.1	LKD	28.7	270	Minimum	66.5%	48.1%	26.5%	Minimum	80.0%	48.2%	19.5%
A177.2	Bed	10.6	90	High	79.5%	68.1%	54.3%	High	87.8%	71.9%	55.6%
A177.3	Bed	11.6	94	High	79.1%	67.4%	53.7%	Medium	86.2%	66.8%	49.3%
A178.1	LKD	28.7	270	Medium	73.5%	59.9%	47.7%	Medium	82.1%	59.0%	42.6%
A178.2	Bed	10.1	81	High	81.6%	73.9%	62.6%	High	88.4%	76.6%	63.9%
A178.3	Bed	11.2	90	High	80.6%	72.4%	60.9%	High	87.3%	73.6%	59.8%
A179.1	LKD	36.7	350	High	87.5%	82.1%	76.6%	High	92.0%	82.6%	74.7%
A179.2	Bed	14.6	130	High	85.9%	78.3%	69.4%	High	90.0%	78.7%	67.2%
A179.3	Bed	14.2	119	High	91.4%	87.4%	83.4%	High	95.6%	88.5%	83.9%
A179.4	Bed	9.4	72	High	81.6%	71.7%	58.4%	Medium	84.6%	60.4%	38.6%
A180.1	LKD	28.6	261	Medium	68.6%	50.2%	28.1%	Medium	81.8%	52.5%	23.8%
A180.2	Bed	11.0	90	High	78.6%	66.0%	52.3%	High	86.7%	69.2%	52.1%
A180.3	Bed	10.8	81	High	78.7%	66.5%	53.1%	High	87.8%	71.8%	55.7%
A181.1	LKD	28.6	261	Medium	73.4%	59.7%	45.7%	Medium	82.6%	60.3%	41.2%
A181.2	Bed	9.2	72	High	82.2%	74.9%	64.3%	High	88.6%	77.4%	65.9%
A181.3	Bed	10.8	81	High	79.8%	70.8%	59.6%	High	87.8%	75.1%	61.6%
A182.1	LKD	33.4	304	High	81.6%	73.9%	63.8%	High	86.7%	71.2%	57.8%
A182.2	Bed	8.8	66	High	81.4%	71.6%	59.0%	High	88.1%	73.0%	57.5%
A182.3	Bed	10.0	81	High	79.8%	68.9%	55.8%	High	88.1%	72.7%	56.8%
A183.1	LKD	33.4	304	High	82.7%	75.8%	66.4%	High	87.2%	74.9%	62.7%
A183.2	Bed	8.8	66	High	82.6%	75.6%	65.6%	High	88.4%	76.8%	64.4%
A183.3	Bed	9.8	72	High	81.8%	74.2%	63.1%	High	88.3%	76.2%	63.7%

Table 13: Block A - Daylight Provision individual room compliance values for all habitable rooms.

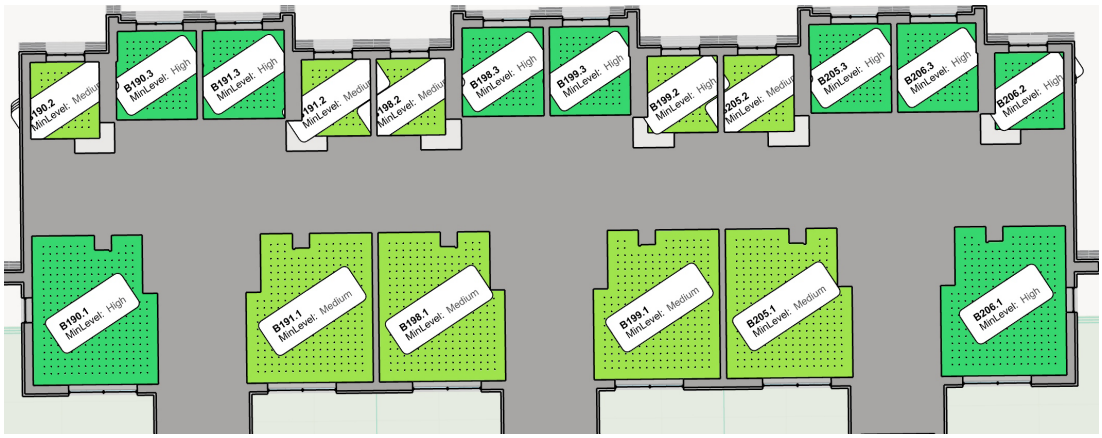
Minimum Illuminance			Target Illuminance		
High	500 lux	95%	High	750 lux	50%
Medium	300 lux	95%	Medium	500l ux	50%
Minimum	100 lux	95%	Minimum	300 lux	50%

EN 17037:2018 Compliance threshold levels.

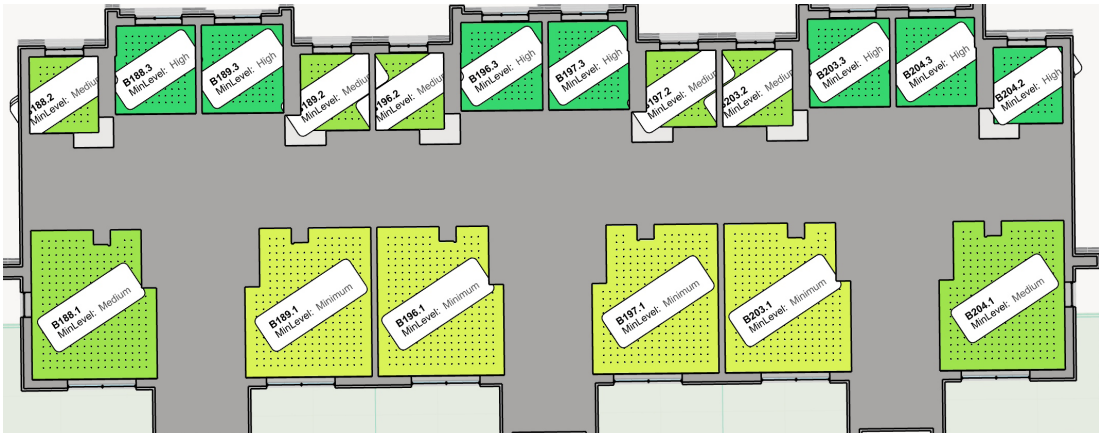
03 Floor
Minimum Illuminance



03 Floor
Target Illuminance



02 Floor
Minimum Illuminance



02 Floor
Target Illuminance

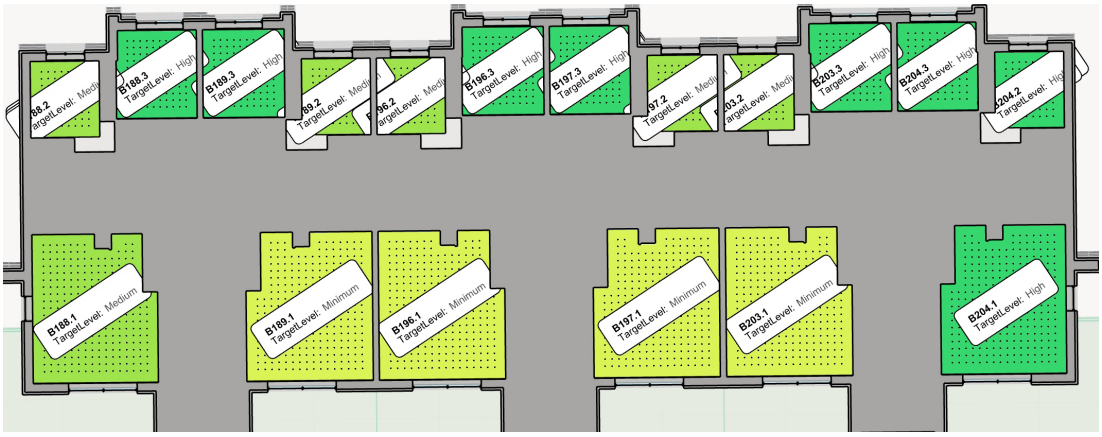
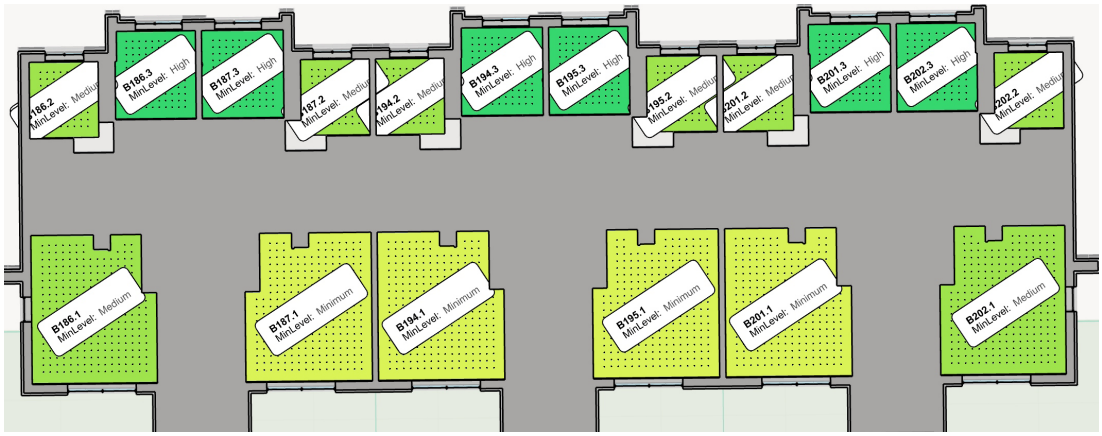
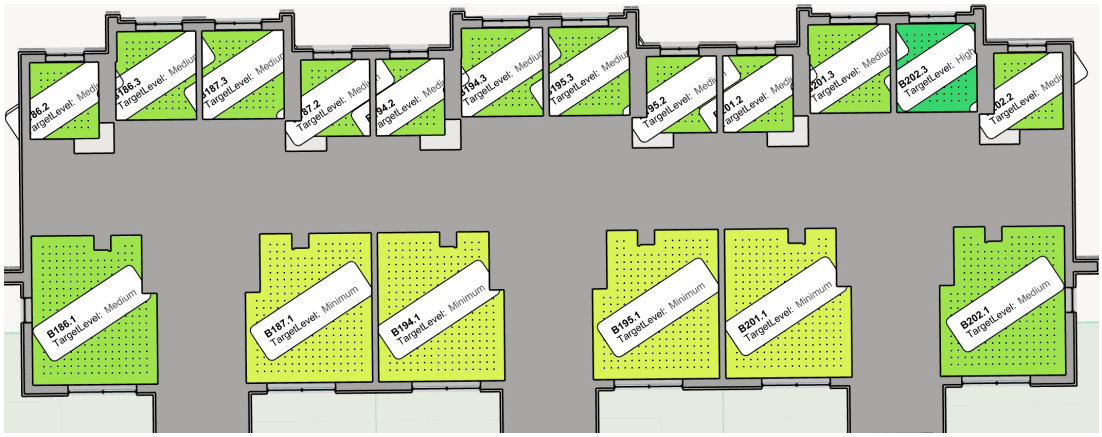


Figure 31: Block B - Daylight Provision of habitable rooms EN 17037 Table A.1

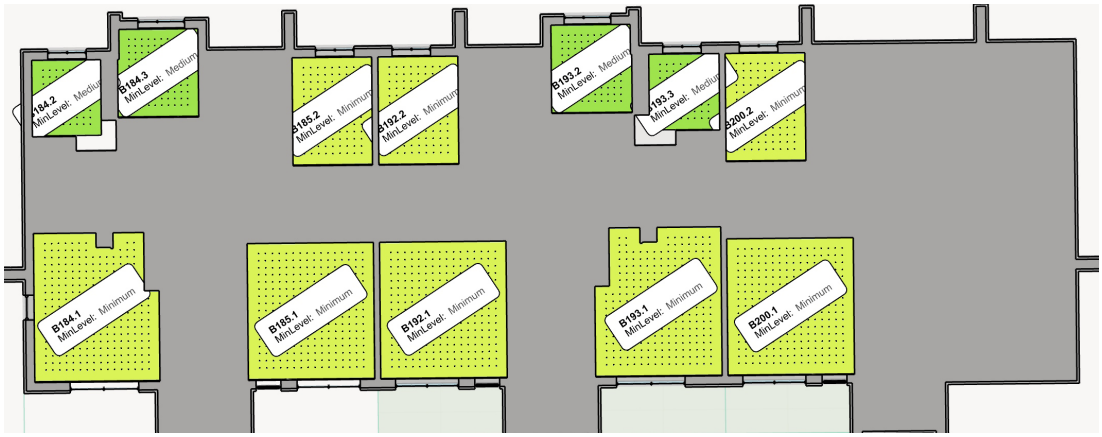
01 Floor
Minimum Illuminance



01 Floor
Target Illuminance



00 Floor
Minimum Illuminance



00 Floor
Target Illuminance

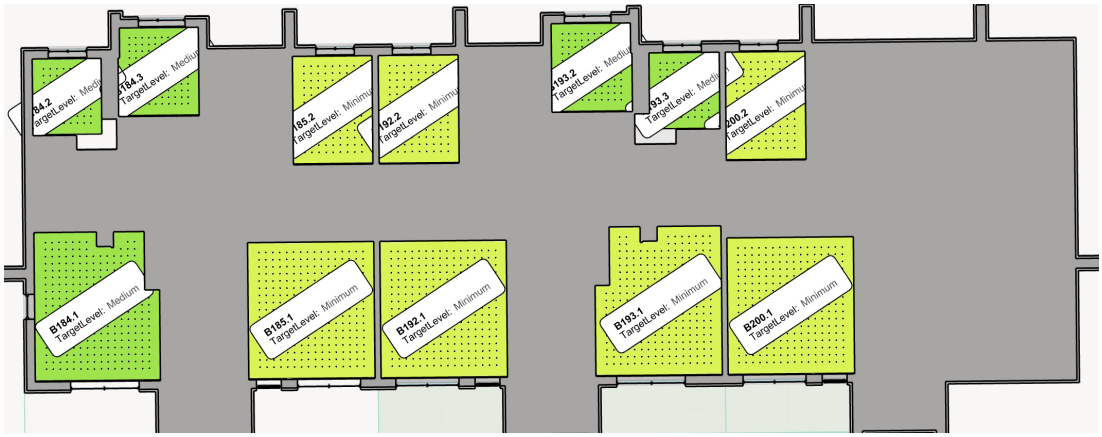


Figure 32: Block B - Daylight Provision of habitable rooms EN 17037 Table A.1

Block B - EN17037:2018 Daylight Provision Room Compliance

Space ID	Description	Area [m^2]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
B184.1	LKD	29.7	279	Medium	68.0%	53.0%	37.6%	Minimum	78.5%	50.0%	30.1%
B184.2	Bed	8.9	72	Medium	72.0%	55.3%	32.6%	Medium	82.9%	55.8%	26.4%
B184.3	Bed	12.0	110	Medium	72.7%	56.1%	35.4%	Medium	84.5%	59.7%	35.4%
B185.1	LKD	29.3	272	Minimum	56.1%	38.9%	22.4%	Minimum	73.8%	40.7%	18.9%
B185.2	Bed	14.6	117	Minimum	56.2%	26.8%	4.7%	Minimum	72.4%	22.8%	1.3%
B186.1	LKD	29.7	279	Medium	71.8%	57.2%	43.3%	Medium	82.2%	59.1%	40.8%
B186.2	Bed	8.9	72	Medium	76.8%	61.4%	45.3%	Medium	86.5%	67.0%	48.3%
B186.3	Bed	12.0	110	Medium	78.0%	64.2%	49.7%	High	87.5%	70.4%	53.3%
B187.1	LKD	30.0	280	Minimum	58.3%	41.9%	26.4%	Minimum	75.4%	45.4%	22.9%
B187.2	Bed	8.9	72	Medium	75.9%	60.7%	43.8%	Medium	85.9%	64.3%	44.8%
B187.3	Bed	12.2	110	Medium	77.6%	63.4%	48.6%	High	87.2%	69.9%	52.1%
B188.1	LKD	29.7	279	Medium	72.4%	58.1%	44.4%	Medium	82.2%	59.0%	41.0%
B188.2	Bed	8.9	72	Medium	77.5%	63.2%	47.9%	Medium	86.2%	65.9%	47.1%
B188.3	Bed	12.0	110	High	78.2%	65.2%	51.0%	High	87.4%	70.6%	53.5%
B189.1	LKD	30.0	280	Minimum	59.6%	43.3%	28.0%	Minimum	75.8%	46.1%	23.4%
B189.2	Bed	8.9	72	Medium	77.1%	62.2%	46.7%	Medium	86.4%	66.8%	48.7%
B189.3	Bed	12.2	110	High	78.5%	65.9%	51.7%	High	87.4%	70.6%	53.6%
B190.1	LKD	29.7	279	High	79.0%	68.7%	57.1%	High	84.9%	65.8%	50.3%
B190.2	Bed	8.9	72	Medium	77.9%	64.2%	49.6%	Medium	86.3%	66.0%	47.0%
B190.3	Bed	12.0	110	High	78.1%	65.1%	51.2%	High	87.5%	70.9%	54.3%
B191.1	LKD	30.0	280	Medium	71.3%	58.4%	46.8%	Medium	81.3%	56.9%	40.9%
B191.2	Bed	8.9	72	Medium	77.2%	63.0%	47.6%	Medium	86.6%	68.1%	50.0%
B191.3	Bed	12.2	110	High	77.7%	64.4%	50.3%	High	87.5%	70.8%	54.2%
B192.1	LKD	29.3	272	Minimum	60.8%	44.2%	28.9%	Minimum	78.2%	49.7%	31.2%
B192.2	Bed	14.7	117	Minimum	57.1%	29.3%	4.2%	Minimum	76.5%	31.1%	0.1%
B193.1	LKD	30.1	278	Minimum	59.8%	44.0%	29.8%	Minimum	75.7%	46.0%	26.1%
B193.2	Bed	12.0	110	Medium	75.7%	59.7%	42.1%	Medium	85.4%	62.7%	41.3%
B193.3	Bed	9.1	72	Medium	74.4%	58.1%	38.1%	Medium	84.0%	58.3%	32.4%
B194.1	LKD	30.0	280	Minimum	59.1%	42.3%	27.0%	Minimum	76.1%	45.3%	24.1%
B194.2	Bed	8.9	72	Medium	77.1%	62.2%	45.3%	Medium	85.8%	63.6%	42.9%
B194.3	Bed	12.2	110	Medium	77.7%	63.7%	48.4%	High	86.6%	68.4%	50.5%
B195.1	LKD	30.0	278	Minimum	58.6%	42.1%	26.6%	Minimum	75.6%	45.1%	24.1%
B195.2	Bed	9.1	72	Medium	76.1%	61.0%	44.3%	Medium	85.6%	64.0%	44.7%
B195.3	Bed	12.0	110	Medium	78.0%	64.9%	49.7%	High	87.1%	69.7%	52.1%
B196.1	LKD	30.0	280	Minimum	59.7%	42.9%	26.9%	Minimum	76.8%	46.5%	25.7%
B196.2	Bed	8.9	72	Medium	77.4%	63.0%	48.0%	Medium	86.0%	64.7%	45.0%
B196.3	Bed	12.2	110	High	78.3%	65.5%	51.2%	High	87.3%	70.4%	53.7%
B197.1	LKD	30.0	278	Minimum	59.8%	43.8%	28.8%	Minimum	75.9%	46.2%	23.7%
B197.2	Bed	9.1	72	Medium	77.5%	63.8%	48.5%	Medium	86.1%	66.2%	47.5%
B197.3	Bed	12.0	110	High	77.9%	64.9%	51.1%	High	87.2%	70.2%	53.5%
B198.1	LKD	30.0	280	Medium	71.9%	58.1%	44.2%	Medium	81.5%	56.8%	38.6%
B198.2	Bed	8.9	72	Medium	77.9%	64.4%	49.7%	Medium	86.6%	67.7%	49.5%
B198.3	Bed	12.2	110	High	78.0%	65.1%	51.1%	High	87.7%	71.7%	55.1%
B199.1	LKD	30.0	278	Medium	72.4%	59.2%	47.4%	Medium	81.6%	57.9%	42.0%
B199.2	Bed	9.1	72	Medium	77.7%	64.4%	49.8%	High	86.7%	68.1%	50.6%
B199.3	Bed	12.0	110	High	78.3%	66.0%	52.1%	High	87.6%	71.4%	55.0%
B200.1	LKD	29.3	272	Minimum	59.5%	43.1%	27.2%	Minimum	77.3%	48.3%	29.7%
B200.2	Bed	14.6	117	Minimum	58.5%	32.9%	5.1%	Minimum	76.1%	33.4%	0.6%
B201.1	LKD	30.0	278	Minimum	58.4%	41.2%	25.5%	Minimum	75.1%	42.7%	21.2%
B201.2	Bed	9.1	72	Medium	75.5%	60.4%	43.4%	Medium	85.9%	64.5%	44.8%

Block B - EN17037:2018 Daylight Provision Room Compliance											
Space ID	Description	Area [m^2]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
B201.3	Bed	12.1	110	Medium	77.6%	64.4%	49.7%	High	86.7%	69.0%	51.6%
B202.1	LKD	29.8	279	Medium	71.8%	59.9%	48.7%	Medium	81.8%	59.9%	44.8%
B202.2	Bed	8.9	72	Medium	77.0%	63.0%	48.1%	Medium	85.9%	65.5%	46.8%
B202.3	Bed	12.0	99	High	77.8%	64.6%	50.3%	High	87.0%	69.5%	52.2%
B203.1	LKD	30.0	278	Minimum	59.5%	42.2%	26.3%	Minimum	76.4%	45.3%	24.0%
B203.2	Bed	9.1	72	Medium	77.3%	63.1%	47.7%	Medium	85.8%	64.8%	45.3%
B203.3	Bed	12.1	110	High	78.0%	65.3%	51.3%	High	87.5%	71.0%	54.7%
B204.1	LKD	29.8	279	High	73.5%	61.6%	50.4%	Medium	82.2%	61.1%	45.9%
B204.2	Bed	8.9	72	High	77.7%	64.6%	50.4%	High	86.6%	68.0%	50.5%
B204.3	Bed	12.0	99	High	78.3%	66.2%	52.2%	High	87.6%	71.3%	55.2%
B205.1	LKD	30.0	278	Medium	72.1%	58.0%	43.9%	Medium	81.4%	56.7%	37.7%
B205.2	Bed	9.1	72	Medium	77.3%	63.5%	49.2%	Medium	86.3%	66.3%	47.8%
B205.3	Bed	12.1	110	High	78.5%	66.3%	52.9%	High	87.5%	71.0%	55.0%
B206.1	LKD	29.8	279	High	80.3%	70.4%	61.5%	High	84.8%	67.6%	54.2%
B206.2	Bed	8.9	72	High	78.1%	65.4%	51.6%	High	86.7%	68.8%	51.1%
B206.3	Bed	12.0	99	High	78.6%	66.5%	52.9%	High	87.4%	71.0%	55.0%

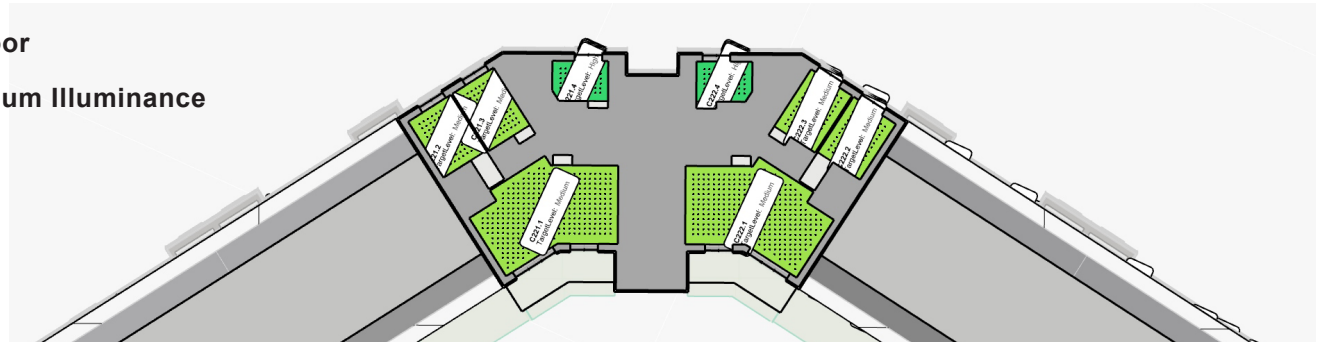
Table 14: Block B - Daylight Provision individual room compliance values for all habitable rooms.

Minimum Illuminance			Target Illuminance		
High	500 lux	95%	High	750 lux	50%
Medium	300 lux	95%	Medium	500l ux	50%
Minimum	100 lux	95%	Minimum	300 lux	50%

EN 17037:2018 Compliance threshold levels.

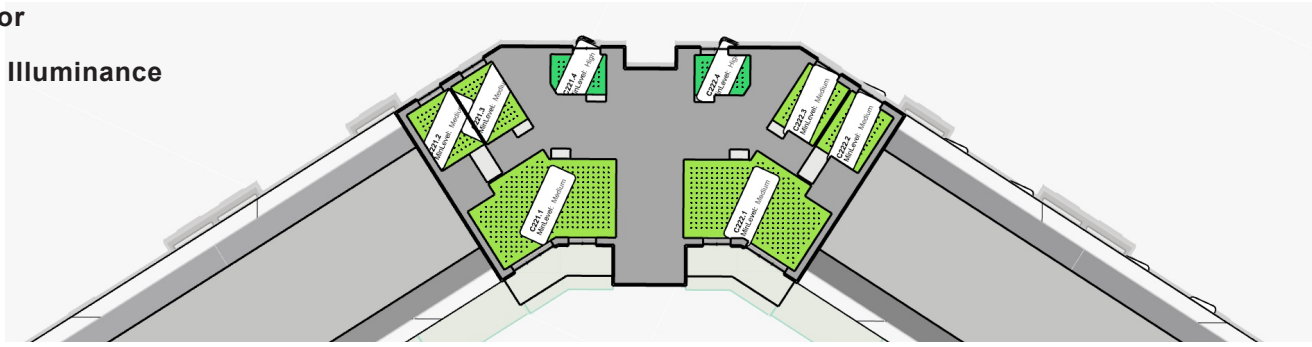
03 Floor

Minimum Illuminance



03 Floor

Target Illuminance



02 Floor

Minimum Illuminance



02 Floor

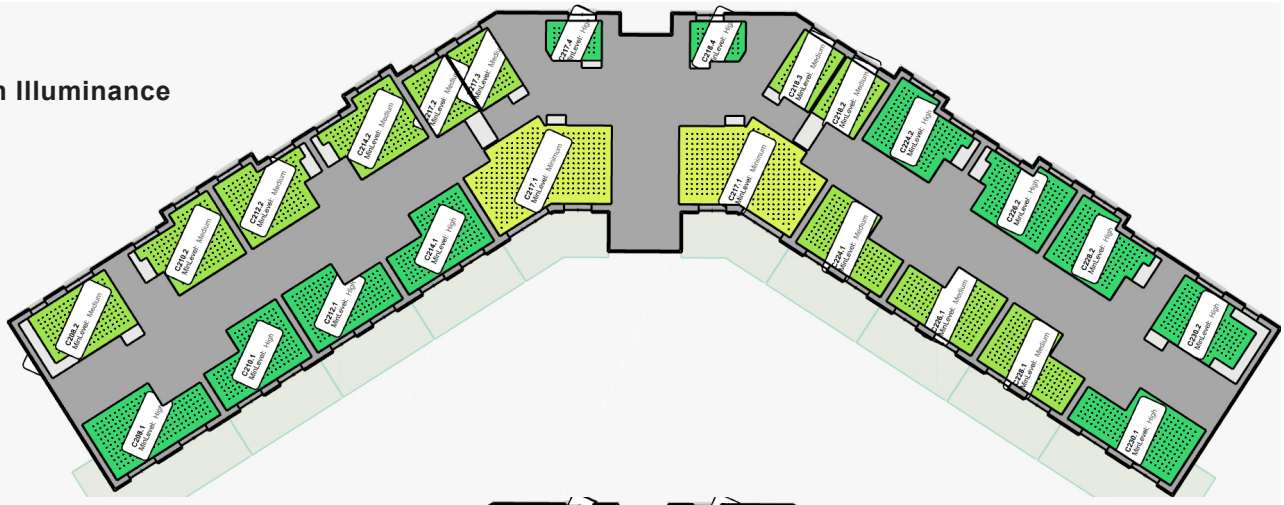
Target Illuminance



Figure 33: Block C - Daylight Provision of habitable rooms EN 17037 Table A.1

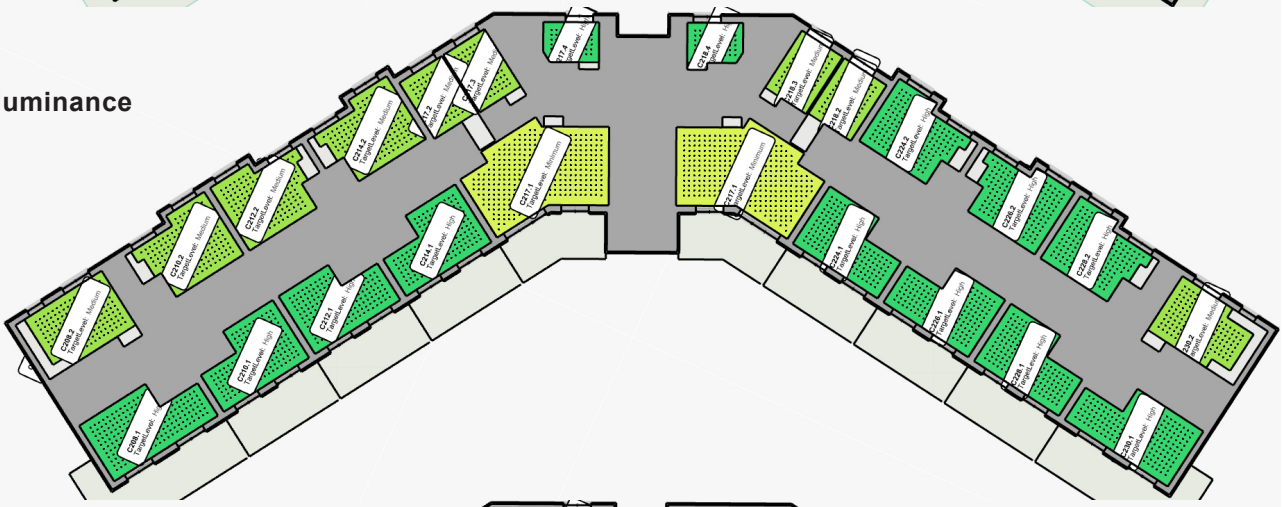
01 Floor

Minimum Illuminance



01 Floor

Target Illuminance



00 Floor

Minimum Illuminance



00 Floor

Target Illuminance



Figure 34: Block C - Daylight Provision of habitable rooms EN 17037 Table A.1

Block C - EN17037:2018 Daylight Provision Room Compliance

Space ID	Description	Area [m^2]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
C207.1	LKD	27.5	243	Medium	68.7%	56.2%	42.8%	Medium	82.5%	60.6%	44.9%
C207.2	Bed	11.5	92	Medium	73.3%	57.9%	39.7%	Medium	83.4%	57.6%	33.4%
C207.3	Bed	7.4	49	Medium	68.8%	52.9%	34.2%	Medium	81.9%	56.2%	31.3%
C208.1	Liv	22.6	197	High	80.4%	71.4%	61.5%	High	87.6%	74.3%	61.9%
C208.2	KD	18.6	168	Medium	73.7%	58.0%	41.1%	Medium	85.1%	62.2%	42.4%
C208.3	Bed	10.2	81	High	81.3%	73.1%	63.0%	High	87.9%	75.6%	63.7%
C208.4	Bed	10.6	80	High	80.1%	70.7%	60.8%	High	87.7%	74.7%	62.1%
C208.5	Bed	12.3	96	Medium	75.7%	60.8%	45.0%	Medium	84.2%	59.8%	39.6%
C208.6	Bed	8.0	60	Minimum	67.0%	49.2%	29.1%	Medium	82.2%	55.0%	30.3%
C209.1	LKD	23.2	216	Minimum	64.3%	49.2%	35.3%	Medium	80.3%	54.8%	37.0%
C209.2	Bed	12.8	112	Minimum	64.4%	44.4%	18.6%	Minimum	79.7%	47.0%	15.3%
C210.1	KD	19.3	176	High	80.6%	71.8%	61.6%	High	86.5%	70.9%	57.2%
C210.2	Liv	19.3	169	Medium	75.5%	60.1%	44.2%	Medium	86.2%	66.2%	47.5%
C210.3	Bed	10.5	82	High	79.0%	68.4%	58.6%	High	87.0%	73.4%	60.5%
C210.4	Bed	9.0	72	Medium	70.7%	57.3%	45.5%	Medium	81.4%	57.6%	40.5%
C210.5	Bed	13.7	116	Medium	69.5%	52.6%	32.6%	Minimum	79.9%	49.7%	20.4%
C211.1	LKD	23.2	216	Minimum	63.8%	47.8%	34.2%	Medium	80.4%	54.7%	37.1%
C211.2	Bed	12.8	112	Minimum	63.6%	43.1%	16.9%	Minimum	78.6%	42.9%	11.4%
C212.1	KD	19.3	176	High	80.6%	71.8%	61.4%	High	86.4%	70.7%	57.2%
C212.2	Liv	19.2	169	Medium	75.7%	60.6%	44.9%	Medium	86.2%	66.2%	47.5%
C212.3	Bed	9.0	72	Medium	69.4%	56.7%	44.7%	Medium	81.1%	56.6%	39.6%
C212.4	Bed	10.5	82	High	78.8%	68.3%	58.6%	High	87.2%	73.6%	60.3%
C212.5	Bed	13.7	116	Medium	69.7%	53.0%	33.1%	Medium	81.4%	51.8%	24.5%
C213.1	LKD	23.2	216	Minimum	62.7%	46.6%	32.4%	Medium	79.7%	52.9%	34.7%
C213.2	Bed	12.8	113	Minimum	65.3%	46.1%	20.2%	Minimum	79.2%	45.3%	13.7%
C214.1	KD	19.2	176	High	79.7%	69.8%	59.1%	High	85.8%	68.1%	54.6%
C214.2	Liv	19.2	169	Medium	75.7%	60.4%	44.6%	Medium	86.2%	66.2%	47.4%
C214.3	Bed	10.5	82	High	78.3%	67.4%	57.3%	High	87.4%	73.8%	60.1%
C214.4	Bed	9.0	72	Medium	68.0%	55.2%	40.8%	Medium	80.5%	55.5%	37.0%
C214.5	Bed	13.7	116	Medium	70.1%	53.2%	32.8%	Medium	80.7%	50.8%	21.3%
C215.1	LKD	37.6	346	Minimum	53.2%	33.2%	17.4%	Minimum	71.7%	35.0%	12.8%
C215.2	Bed	11.0	88	Minimum	68.0%	49.2%	24.6%	Medium	81.7%	52.1%	21.5%
C215.3	Bed	11.6	92	Minimum	66.8%	48.7%	24.7%	Medium	81.0%	50.8%	20.3%
C215.4	Bed	7.7	55	High	78.7%	67.1%	53.1%	High	86.9%	70.6%	53.4%
C216.1	LKD	30.2	278	Minimum	52.9%	28.1%	11.8%	Minimum	70.7%	29.2%	9.5%
C216.2	Bed	10.6	80	Medium	74.5%	60.8%	46.0%	Medium	82.1%	56.8%	34.9%
C216.3	Bed	9.3	72	Medium	74.4%	60.6%	44.8%	Medium	85.3%	66.8%	48.8%
C217.1	LKD	37.0	342	Minimum	56.3%	37.9%	19.1%	Minimum	74.2%	40.3%	14.7%
C217.1	LKD	37.0	342	Minimum	55.2%	34.7%	15.7%	Minimum	75.0%	39.0%	15.1%
C217.2	Bed	11.0	88	Medium	70.4%	53.7%	34.8%	Medium	82.9%	56.8%	32.5%
C217.3	Bed	10.9	88	Medium	71.4%	55.5%	37.1%	Medium	83.5%	58.1%	35.8%
C217.4	Bed	7.3	54	High	81.4%	71.7%	59.3%	High	87.9%	73.7%	58.9%
C218.2	Bed	11.0	88	Medium	74.3%	60.7%	45.7%	Medium	83.7%	62.1%	42.7%
C218.3	Bed	10.9	88	Medium	75.3%	61.8%	48.2%	Medium	84.2%	63.3%	45.8%
C218.4	Bed	7.3	54	High	81.3%	71.2%	59.0%	High	88.0%	72.6%	56.9%
C219.1	LKD	34.3	324	Medium	65.0%	50.2%	33.6%	Medium	79.7%	53.0%	30.3%
C219.2	Bed	11.0	88	Medium	71.7%	56.3%	38.6%	Medium	83.5%	59.2%	37.1%
C219.3	Bed	10.9	88	Medium	72.6%	57.4%	40.5%	Medium	84.6%	61.7%	40.9%
C219.4	Bed	7.3	54	High	81.6%	72.1%	60.6%	High	88.6%	76.1%	63.3%
C220.1	LKD	34.3	324	Minimum	64.2%	48.1%	29.9%	Medium	79.2%	51.4%	28.4%

Block C - EN17037:2018 Daylight Provision Room Compliance											
Space ID	Description	Area [m^2]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
C220.2	Bed	11.0	88	Medium	75.4%	61.9%	48.8%	Medium	84.0%	62.9%	45.4%
C220.3	Bed	10.9	88	Medium	75.7%	62.2%	49.2%	Medium	84.6%	65.3%	49.4%
C220.4	Bed	7.3	54	High	81.5%	71.4%	59.6%	High	88.2%	74.1%	59.6%
C221.1	LKD	37.0	342	Medium	74.2%	60.5%	47.8%	Medium	83.2%	62.4%	46.1%
C221.2	Bed	11.0	88	Medium	71.7%	57.0%	39.7%	Medium	83.8%	59.7%	39.2%
C221.3	Bed	10.9	88	Medium	73.4%	58.2%	42.4%	Medium	84.8%	61.5%	41.3%
C221.4	Bed	7.3	54	High	81.4%	71.5%	60.0%	High	88.2%	75.0%	60.8%
C222.1	LKD	37.0	342	Medium	73.0%	59.2%	45.4%	Medium	83.0%	61.8%	44.0%
C222.2	Bed	11.0	88	Medium	75.0%	61.7%	48.5%	Medium	84.4%	64.2%	47.0%
C222.3	Bed	10.9	88	Medium	75.6%	62.6%	49.7%	Medium	84.4%	64.8%	48.2%
C222.4	Bed	7.3	54	High	81.5%	71.5%	60.0%	High	88.1%	73.9%	58.9%
C223.1	LKD	23.2	216	Minimum	58.0%	36.0%	15.7%	Minimum	78.5%	46.3%	20.8%
C223.2	Bed	12.8	113	Medium	68.7%	53.3%	35.7%	Medium	81.4%	55.0%	33.0%
C224.1	KD	19.2	176	High	78.2%	66.9%	53.5%	Medium	86.0%	66.6%	48.4%
C224.2	Liv	19.2	169	High	77.7%	66.1%	53.7%	High	86.4%	70.1%	55.7%
C224.3	Bed	9.0	72	Medium	67.4%	50.5%	32.7%	Minimum	79.0%	49.0%	24.1%
C224.4	Bed	10.5	82	High	77.3%	65.1%	51.8%	High	87.0%	69.7%	53.7%
C224.5	Bed	13.7	116	Medium	73.2%	59.0%	45.0%	Medium	81.1%	55.8%	35.7%
C225.1	LKD	23.2	216	Minimum	57.9%	36.3%	15.1%	Minimum	78.5%	45.6%	20.0%
C225.2	Bed	12.8	112	Medium	70.0%	54.7%	38.0%	Medium	81.2%	54.8%	32.6%
C226.1	KD	19.2	176	High	79.1%	68.1%	54.6%	Medium	86.5%	67.5%	49.4%
C226.2	Liv	19.2	169	High	77.7%	66.1%	53.2%	High	86.4%	69.7%	54.9%
C226.3	Bed	10.5	82	High	77.3%	65.0%	51.2%	High	87.1%	70.4%	54.9%
C226.4	Bed	9.0	72	Medium	67.1%	50.3%	32.1%	Medium	80.1%	50.8%	26.6%
C226.5	Bed	13.7	116	Medium	73.0%	59.2%	45.0%	Medium	82.1%	57.5%	36.4%
C227.1	LKD	23.2	216	Minimum	58.1%	37.2%	15.6%	Minimum	78.5%	46.3%	20.6%
C227.2	Bed	12.8	112	Medium	68.8%	53.6%	36.6%	Medium	80.7%	53.2%	29.9%
C228.1	KD	19.3	176	High	79.3%	68.8%	55.8%	Medium	86.3%	67.7%	49.9%
C228.2	Liv	19.2	169	High	77.7%	66.1%	53.7%	High	86.3%	70.2%	55.8%
C228.3	Bed	9.0	72	Minimum	65.0%	48.6%	29.9%	Medium	79.9%	50.7%	25.7%
C228.4	Bed	10.5	82	High	77.8%	65.7%	52.3%	High	87.2%	70.5%	54.8%
C228.5	Bed	13.7	116	Medium	72.9%	59.3%	45.5%	Medium	82.3%	58.4%	38.2%
C229.1	LKD	27.5	243	Medium	66.3%	52.0%	33.2%	Medium	81.3%	56.8%	35.5%
C229.2	Bed	11.5	92	High	77.7%	65.4%	51.9%	Medium	84.5%	64.4%	46.3%
C229.3	Bed	7.4	49	High	75.1%	63.4%	51.8%	High	84.1%	64.6%	50.2%
C230.1	Liv	22.6	197	High	78.9%	68.4%	55.6%	High	87.2%	70.3%	54.2%
C230.2	KD	17.5	156	Medium	76.0%	63.0%	49.7%	High	85.5%	67.4%	51.7%
C230.3	Bed	10.6	80	High	79.9%	70.0%	57.9%	High	88.3%	75.6%	61.8%
C230.4	Bed	10.2	81	High	78.4%	67.0%	54.2%	High	87.2%	71.3%	55.9%
C230.5	Bed	8.0	60	Medium	70.2%	55.8%	40.8%	Medium	83.0%	60.3%	40.7%
C230.6	Bed	12.3	96	High	77.6%	66.1%	53.7%	Medium	84.5%	65.0%	49.0%

Table 15: Block C - Daylight Provision individual room compliance values for all habitable rooms.

Minimum Illuminance			Target Illuminance		
High	500 lux	95%	High	750 lux	50%
Medium	300 lux	95%	Medium	500l ux	50%
Minimum	100 lux	95%	Minimum	300 lux	50%

EN 17037:2018 Compliance threshold levels.

Target Illuminance

Minimum Illuminance

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Figure 35: Block D - Daylight Provision of habitable rooms EN 17037 Table A.1

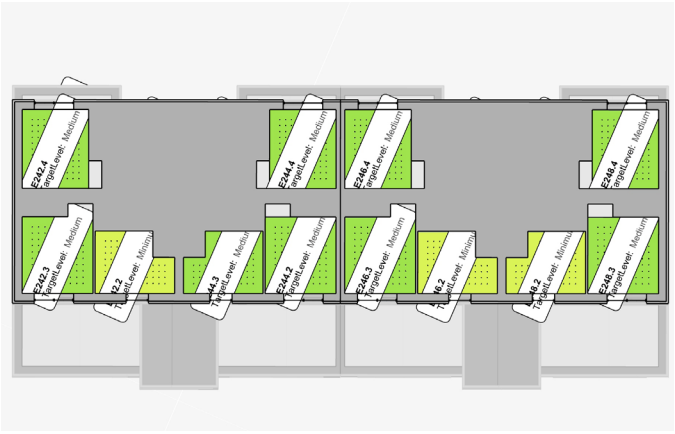
Block D - EN17037:2018 Daylight Provision Room Compliance											
Space ID	Description	Area [m^2]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
D231.1	LKD	28.2	241	Minimum	61.8%	44.7%	27.4%	Minimum	69.6%	29.1%	6.3%
D231.2	Bed	9.9	80	Medium	69.6%	54.7%	37.9%	Medium	81.6%	54.7%	33.7%
D231.3	Bed	8.3	64	Minimum	53.6%	30.5%	12.2%	Minimum	75.0%	34.9%	10.9%
D232.1	LKD	27.7	243	High	78.5%	67.7%	54.7%	Medium	85.2%	64.5%	46.2%
D232.2	Bed	11.2	90	Medium	67.0%	50.2%	32.8%	Medium	80.2%	50.6%	27.4%
D232.3	Bed	9.6	72	Medium	69.3%	54.7%	38.0%	Medium	82.5%	58.3%	36.6%
D233.1	LKD	29.2	266	Medium	76.4%	63.7%	49.0%	Medium	82.1%	57.1%	35.8%
D233.2	Bed	11.8	98	Medium	71.9%	56.8%	39.7%	Minimum	79.8%	49.8%	27.9%
D233.3	Bed	10.3	88	Medium	74.7%	60.5%	43.7%	Medium	84.6%	64.3%	44.6%
D234.1	LKD	42.6	411	High	76.3%	63.4%	50.8%	Medium	85.0%	65.2%	49.5%
D234.2	Bed	11.4	90	Medium	66.7%	51.3%	32.4%	Medium	80.4%	52.8%	29.0%
D234.3	Bed	9.2	72	Minimum	57.3%	35.0%	17.0%	Minimum	76.1%	39.5%	15.3%
D234.4	Bed	11.0	99	Medium	68.4%	53.2%	34.9%	Medium	80.7%	54.0%	29.9%
D235.1	LKD	28.6	276	Minimum	59.5%	40.8%	23.4%	Minimum	61.5%	18.4%	5.5%
D235.2	Bed	7.3	56	Medium	74.4%	60.5%	44.7%	Medium	84.6%	63.6%	44.2%
D235.3	Bed	11.7	93	Minimum	52.7%	28.4%	11.9%	Minimum	74.6%	32.4%	10.7%
D236.1	LKD	28.8	249	High	80.2%	71.1%	60.1%	High	85.2%	65.7%	50.1%
D236.2	Bed	13.9	111	Minimum	63.9%	48.6%	30.6%	Minimum	78.6%	49.1%	25.4%
D236.3	Bed	6.2	46	Medium	75.5%	61.7%	46.5%	Medium	81.5%	53.3%	30.7%
D237.1	LKD	29.3	266	High	78.3%	67.0%	54.9%	Medium	82.6%	59.5%	41.0%
D237.2	Bed	11.8	98	Medium	68.8%	51.7%	32.2%	Minimum	79.8%	48.6%	23.0%
D237.3	Bed	10.3	88	Medium	73.5%	58.0%	39.3%	Medium	84.4%	62.0%	39.6%
D238.1	LKD	42.6	411	High	77.6%	65.2%	53.5%	High	85.7%	67.1%	51.5%
D238.2	Bed	11.4	90	Medium	69.3%	55.3%	39.1%	Medium	80.6%	55.0%	32.5%
D238.3	Bed	9.2	72	Minimum	59.7%	40.8%	23.9%	Minimum	76.2%	42.9%	19.9%
D238.4	Bed	11.0	99	Medium	72.0%	56.6%	39.2%	Medium	82.4%	55.7%	31.7%
D239.1	LKD	29.3	266	High	81.0%	72.6%	62.2%	High	86.8%	71.3%	58.1%
D239.2	Bed	11.2	90	Medium	76.1%	62.2%	46.8%	Medium	86.3%	67.8%	49.5%
D239.3	Bed	10.3	88	Medium	72.0%	55.8%	35.7%	Medium	84.9%	62.5%	41.1%
D240.1	LKD	42.6	411	High	82.4%	75.9%	65.9%	High	88.4%	77.4%	65.1%
D240.2	Bed	9.2	72	Minimum	59.0%	40.3%	22.8%	Minimum	76.7%	44.0%	20.9%
D240.3	Bed	11.4	90	Medium	68.6%	54.5%	38.3%	Medium	81.0%	56.5%	36.0%
D240.4	Bed	11.0	99	Medium	71.4%	56.3%	38.8%	Medium	82.4%	56.7%	33.0%

Table 16: Block D - Daylight Provision individual room compliance values for all habitable rooms.

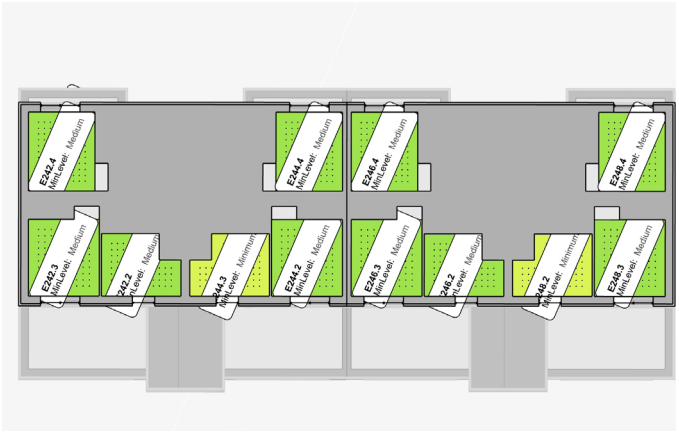
Minimum Illuminance			Target Illuminance		
High	500 lux	95%	High	750 lux	50%
Medium	300 lux	95%	Medium	500l ux	50%
Minimum	100 lux	95%	Minimum	300 lux	50%

EN 17037:2018 Compliance threshold levels.

Target Illuminance



Minimum Illuminance



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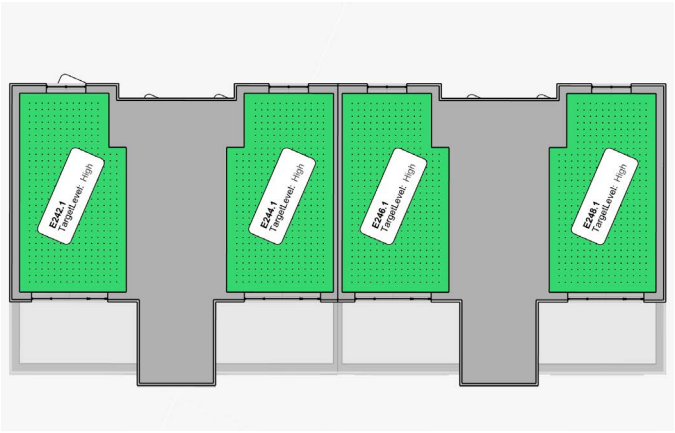

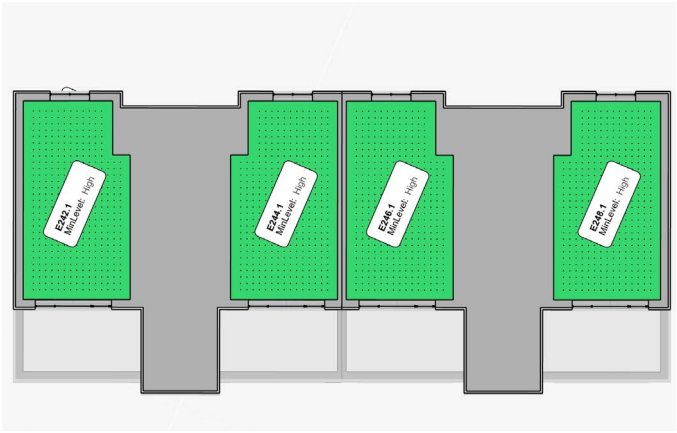

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Figure 36: Block E - Daylight Provision of habitable rooms EN 17037 Table A.1

Block E - EN17037:2018 Daylight Provision Room Compliance											
Space ID	Description	Area [m^2]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
E241.1	LKD	29.3	266	High	80.3%	71.3%	60.2%	High	87.2%	72.5%	58.1%
E241.2	Bed	11.2	90	Medium	75.8%	61.9%	46.5%	Medium	86.2%	67.6%	49.2%
E241.3	Bed	10.3	88	Medium	74.0%	58.7%	41.3%	Medium	84.3%	61.8%	40.8%
E242.1	LKD	42.6	411	High	77.8%	65.5%	54.3%	High	85.9%	67.8%	52.2%
E242.2	Bed	9.2	72	Minimum	64.6%	49.4%	33.0%	Medium	78.7%	50.4%	27.7%
E242.3	Bed	11.4	90	Medium	72.9%	59.0%	45.6%	Medium	82.1%	58.7%	39.5%
E242.4	Bed	11.0	99	Medium	70.8%	55.3%	38.3%	Medium	82.5%	56.4%	32.9%
E243.1	LKD	29.3	266	High	79.1%	68.4%	57.5%	Medium	83.2%	62.4%	46.9%
E243.2	Bed	11.8	98	Medium	72.2%	56.1%	36.7%	Minimum	79.9%	48.6%	22.3%
E243.3	Bed	10.3	88	Medium	73.4%	57.6%	39.5%	Medium	84.5%	61.5%	39.6%
E244.1	LKD	42.6	411	High	78.0%	66.3%	56.2%	High	85.9%	68.1%	55.3%
E244.2	Bed	11.4	90	Medium	73.7%	59.9%	47.2%	Medium	83.1%	61.5%	44.0%
E244.3	Bed	9.2	72	Medium	66.0%	50.0%	33.5%	Minimum	79.1%	49.9%	26.4%
E244.4	Bed	11.0	99	Medium	70.9%	55.3%	37.9%	Medium	82.9%	57.6%	35.2%
E245.1	LKD	29.3	266	High	77.1%	64.8%	53.5%	Medium	82.0%	58.4%	40.0%
E245.2	Bed	11.8	98	Minimum	67.4%	49.6%	28.2%	Minimum	76.1%	38.6%	13.0%
E245.3	Bed	10.3	88	Medium	71.9%	56.2%	36.3%	Medium	83.0%	57.7%	33.6%
E246.1	LKD	42.6	411	High	77.9%	65.5%	54.8%	High	85.8%	67.4%	52.2%
E246.2	Bed	9.2	72	Minimum	65.2%	49.4%	33.1%	Medium	79.2%	51.1%	28.7%
E246.3	Bed	11.4	90	Medium	73.6%	60.4%	47.4%	Medium	82.5%	60.5%	42.5%
E246.4	Bed	11.0	99	Medium	71.3%	56.1%	39.2%	Medium	82.6%	55.9%	32.4%
E247.1	LKD	29.3	266	High	77.8%	66.3%	55.1%	Medium	82.0%	58.8%	41.3%
E247.2	Bed	11.8	98	Medium	69.9%	53.3%	34.9%	Minimum	78.9%	46.3%	20.3%
E247.3	Bed	10.3	88	Medium	70.4%	53.7%	33.5%	Medium	83.0%	57.1%	32.6%
E248.1	LKD	42.6	411	High	78.4%	67.3%	57.6%	High	86.3%	70.1%	56.8%
E248.2	Bed	9.2	72	Minimum	65.7%	49.8%	33.2%	Minimum	78.3%	49.3%	26.1%
E248.3	Bed	11.4	90	Medium	74.1%	60.8%	48.0%	Medium	83.0%	61.7%	44.1%
E248.4	Bed	11.0	99	Medium	70.7%	54.9%	37.1%	Medium	82.8%	56.8%	33.6%
B19-08.2	K/D	16.9	154	High	81.7%	72.9%	64.0%	High	87.0%	72.1%	59.6%
B19-08.3	Bed	13.1	100	Minimum	65.6%	49.6%	31.7%	Medium	81.3%	56.2%	35.3%
B19-08.4	Bed	11.8	99	Medium	71.9%	57.8%	41.6%	Medium	85.0%	64.4%	45.7%
B19-08.5	Bed	7.2	53	Minimum	58.6%	38.9%	22.1%	Minimum	75.9%	42.9%	22.8%

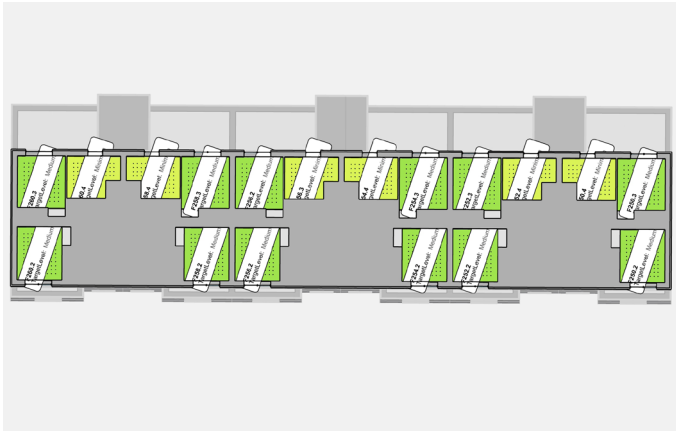
Table 17: Block E - Daylight Provision individual room compliance values for all habitable rooms.

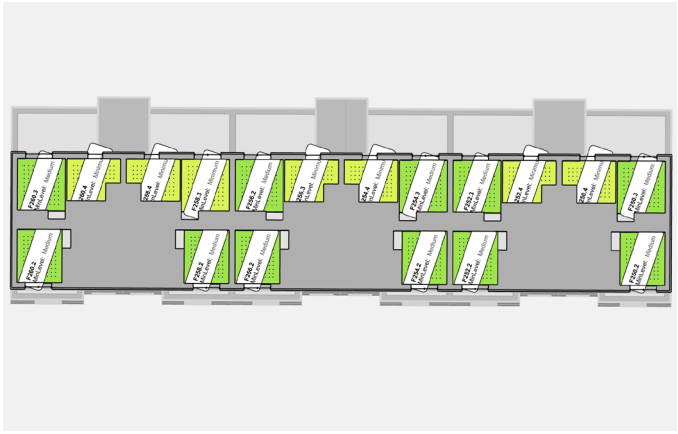
Minimum Illuminance			Target Illuminance		
High	500 lux	95%	High	750 lux	50%
Medium	300 lux	95%	Medium	500l ux	50%
Minimum	100 lux	95%	Minimum	300 lux	50%

EN 17037:2018 Compliance threshold levels.

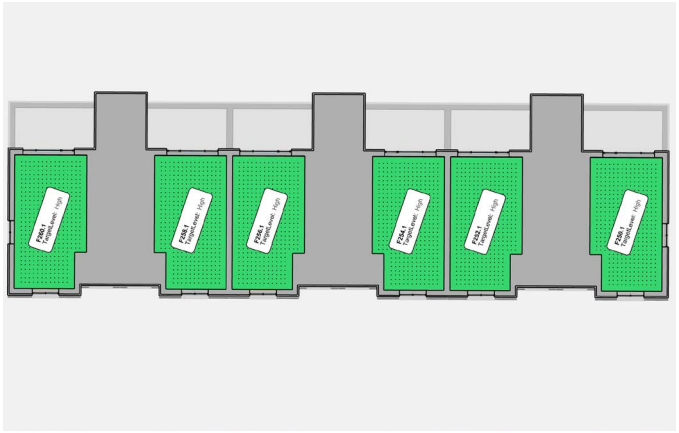
Target Illuminance

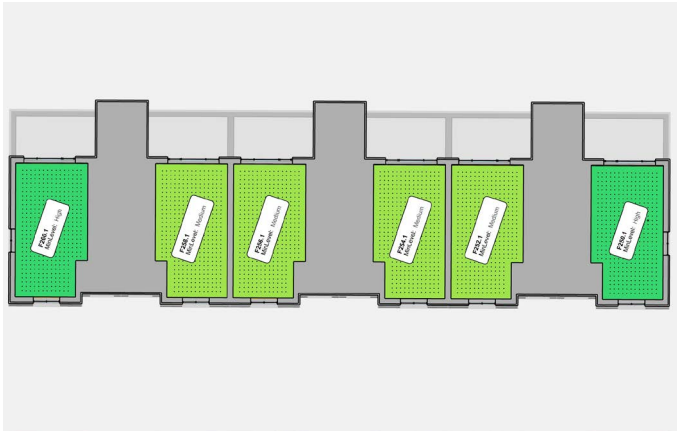
Minimum Illuminance





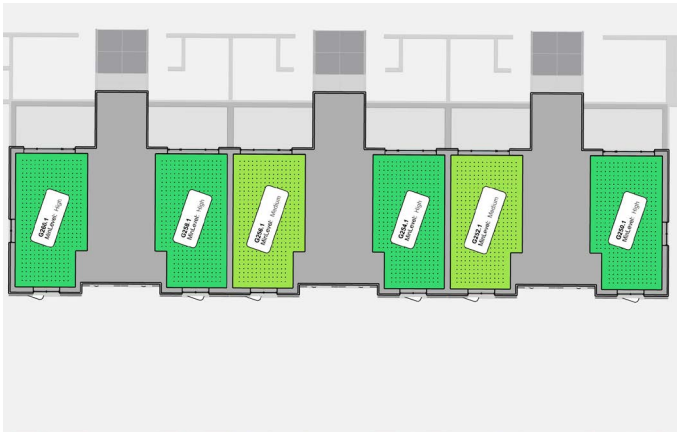
02 Floor





01 Floor





00 Floor

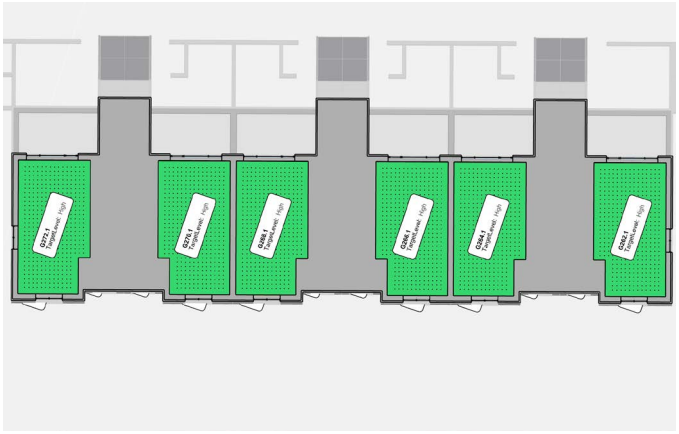
Figure 37: Block F - Daylight Provision of habitable rooms EN 17037 Table A.1

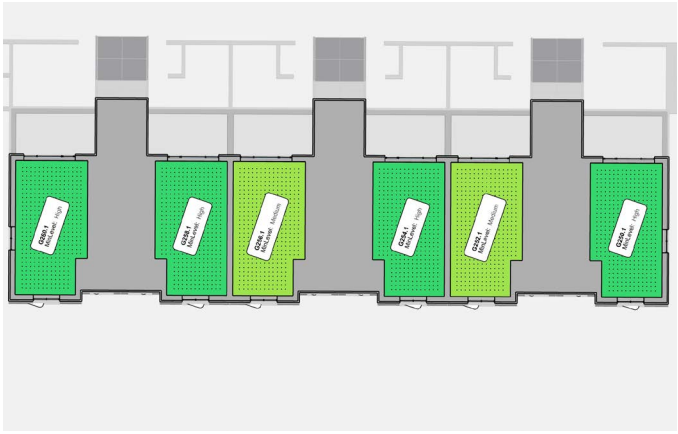
Minimum Illuminance			Target Illuminance		
High	500 lux	95%	High	750 lux	50%
Medium	300 lux	95%	Medium	500l ux	50%
Minimum	100 lux	95%	Minimum	300 lux	50%

EN 17037:2018 Compliance threshold levels.

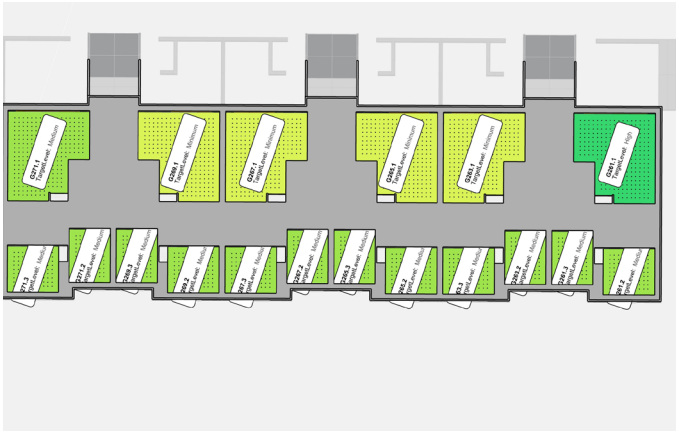
Target Illuminance

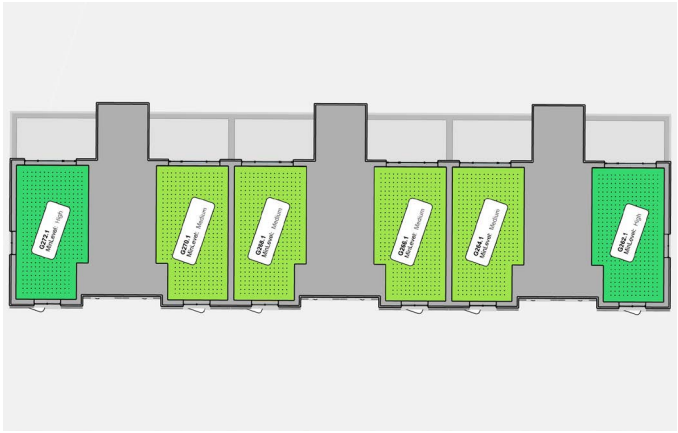
Minimum Illuminance



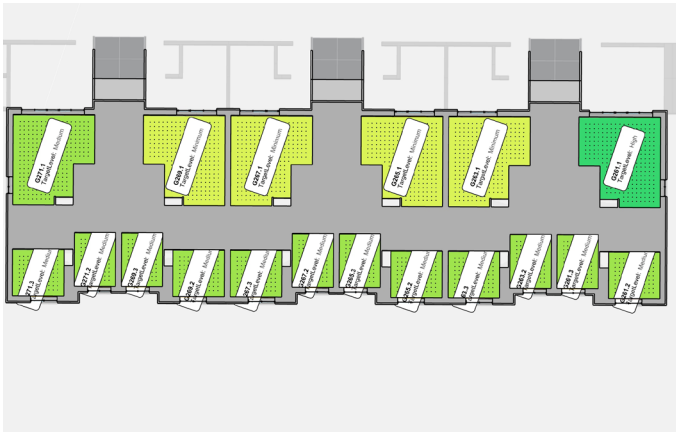


02 Floor





01 Floor





00 Floor

Figure 38: Block G - Daylight Provision of habitable rooms EN 17037 Table A.1

Block G - EN17037:2018 Daylight Provision Room Compliance											
Space ID	Description	Area [m^2]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
G261.1	LKD	29.3	266	High	77.7%	66.8%	54.9%	High	84.6%	65.9%	50.5%
G261.2	Bed	11.2	90	Medium	72.2%	58.4%	45.0%	Medium	82.7%	60.4%	44.0%
G261.3	Bed	10.3	88	Medium	69.1%	54.4%	38.9%	Medium	79.5%	51.8%	31.0%
G262.1	LKD	42.6	411	High	82.1%	75.2%	65.7%	High	88.6%	77.4%	65.5%
G262.2	Bed	11.0	99	Medium	74.2%	61.1%	48.3%	Medium	82.8%	60.6%	41.0%
G262.3	Bed	11.4	90	Medium	68.4%	53.0%	36.7%	Medium	82.3%	55.8%	31.7%
G262.4	Bed	9.2	72	Minimum	60.2%	40.8%	18.5%	Minimum	76.8%	40.3%	11.7%
G263.1	LKD	29.3	266	Minimum	52.6%	28.6%	9.2%	Minimum	65.4%	19.6%	3.4%
G263.2	Bed	10.3	88	Medium	68.4%	54.8%	39.4%	Medium	79.5%	52.9%	31.9%
G264.1	LKD	42.6	411	High	76.4%	63.5%	50.9%	Medium	84.8%	64.3%	47.3%
G264.2	Bed	11.0	99	Medium	73.6%	60.2%	46.5%	Medium	82.3%	58.6%	39.2%
G264.3	Bed	11.4	90	Medium	71.3%	55.7%	38.5%	Medium	81.0%	53.8%	28.8%
G264.4	Bed	9.2	72	Minimum	60.7%	40.8%	19.9%	Minimum	75.3%	36.8%	11.0%
G265.1	LKD	29.3	266	Minimum	52.6%	29.9%	11.4%	Minimum	64.0%	17.5%	2.0%
G265.2	Bed	11.2	90	Medium	73.9%	60.1%	46.4%	Medium	84.1%	62.5%	44.4%
G265.3	Bed	10.3	88	Medium	70.9%	55.5%	39.1%	Medium	82.7%	59.4%	38.7%
G266.1	LKD	42.6	411	High	76.8%	64.1%	52.2%	Medium	85.0%	65.1%	49.3%
G266.2	Bed	11.0	99	Medium	73.0%	58.9%	45.3%	Medium	82.9%	61.1%	41.8%
G266.3	Bed	11.4	90	Medium	69.8%	53.5%	37.0%	Medium	81.5%	53.1%	28.4%
G266.4	Bed	9.2	72	Minimum	60.4%	40.8%	19.0%	Minimum	77.3%	41.3%	15.3%
G267.1	LKD	29.3	266	Minimum	51.4%	27.8%	8.4%	Minimum	64.9%	18.4%	2.8%
G267.2	Bed	10.3	88	Medium	70.5%	55.5%	41.2%	Medium	82.0%	57.8%	37.7%
G267.3	Bed	11.2	90	Medium	74.1%	60.1%	47.2%	Medium	84.2%	63.1%	46.3%
G268.1	LKD	42.6	411	High	76.1%	63.1%	50.4%	Medium	84.8%	64.2%	47.6%
G268.2	Bed	11.0	99	Medium	73.7%	59.7%	46.0%	Medium	83.0%	61.2%	42.5%
G268.3	Bed	11.4	90	Medium	70.4%	54.6%	37.1%	Medium	80.5%	52.9%	27.7%
G268.4	Bed	9.2	72	Minimum	60.3%	41.2%	19.9%	Minimum	78.1%	41.8%	16.6%
G269.1	LKD	29.3	266	Minimum	52.4%	29.0%	11.8%	Minimum	64.9%	18.1%	1.6%
G269.2	Bed	11.2	90	Medium	72.6%	58.4%	44.5%	Medium	82.8%	60.4%	43.7%
G269.3	Bed	10.3	88	Medium	69.1%	54.4%	38.2%	Medium	79.9%	52.1%	30.8%
G270.1	LKD	42.6	411	High	76.9%	64.5%	52.6%	Medium	84.6%	64.7%	48.9%
G270.2	Bed	11.0	99	Medium	73.6%	60.0%	46.8%	Medium	82.7%	60.2%	41.2%
G270.3	Bed	11.4	90	Medium	70.1%	54.8%	37.4%	Medium	80.3%	52.2%	27.9%
G270.4	Bed	9.2	72	Minimum	60.6%	40.5%	19.6%	Minimum	75.8%	40.3%	12.2%
G271.1	LKD	29.3	266	Medium	76.8%	63.7%	49.3%	Medium	82.8%	59.3%	40.6%
G271.2	Bed	10.3	88	Medium	71.1%	56.2%	41.6%	Medium	80.2%	53.3%	33.6%
G271.3	Bed	11.2	90	Medium	73.0%	58.8%	46.0%	Medium	83.0%	60.7%	43.1%
G272.1	LKD	42.6	411	High	80.9%	72.6%	61.1%	High	87.8%	74.3%	59.9%
G272.2	Bed	11.0	99	Medium	74.2%	60.4%	47.9%	Medium	82.8%	60.1%	40.5%
G272.3	Bed	11.4	90	Medium	69.3%	53.8%	36.5%	Medium	81.3%	54.0%	28.7%
G272.4	Bed	9.2	72	Minimum	61.3%	41.1%	19.7%	Minimum	77.7%	41.0%	16.9%
G263.3	Bed	11.2	90	Medium	73.6%	59.6%	47.3%	Medium	83.0%	60.8%	43.9%

Table 18: Block G - Daylight Provision individual room compliance values for all habitable rooms.

Minimum Illuminance			Target Illuminance		
High	500 lux	95%	High	750 lux	50%
Medium	300 lux	95%	Medium	500l ux	50%
Minimum	100 lux	95%	Minimum	300 lux	50%

EN 17037:2018 Compliance threshold levels.

Target Illuminance

Minimum Illuminance

02 Floor

01 Floor

00 Floor



Figure 39: Type N- Daylight Provision of habitable rooms EN 17037 Table A.1

Type N - EN17037:2018 Daylight Provision Room Compliance											
Space ID	Description	Area [m^2]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
N096.1	LKD	28.1	250	High	76.3%	64.8%	54.0%	High	85.4%	68.6%	54.4%
N096.2	Bed	10.7	90	Minimum	58.7%	35.2%	5.8%	Minimum	73.6%	26.8%	0.1%
N096.3	Bed	6.0	48	Medium	76.5%	60.5%	44.1%	Medium	83.7%	57.4%	35.2%
N097.1	KD	20.8	177	High	77.7%	66.8%	56.3%	High	85.1%	67.6%	54.3%
N097.2	Liv	19.8	176	High	80.5%	71.4%	58.2%	High	87.9%	73.8%	57.7%
N097.3	Bed	7.7	56	High	75.3%	63.5%	51.7%	Medium	83.6%	64.7%	49.7%
N097.4	Bed	9.5	72	High	76.5%	64.3%	50.3%	High	85.7%	67.4%	51.1%
N097.5	Bed	9.6	81	Medium	75.9%	63.3%	49.4%	High	86.1%	67.7%	50.9%
N097.6	Bed	8.6	70	Minimum	60.1%	39.6%	9.4%	Minimum	71.5%	24.1%	0.1%

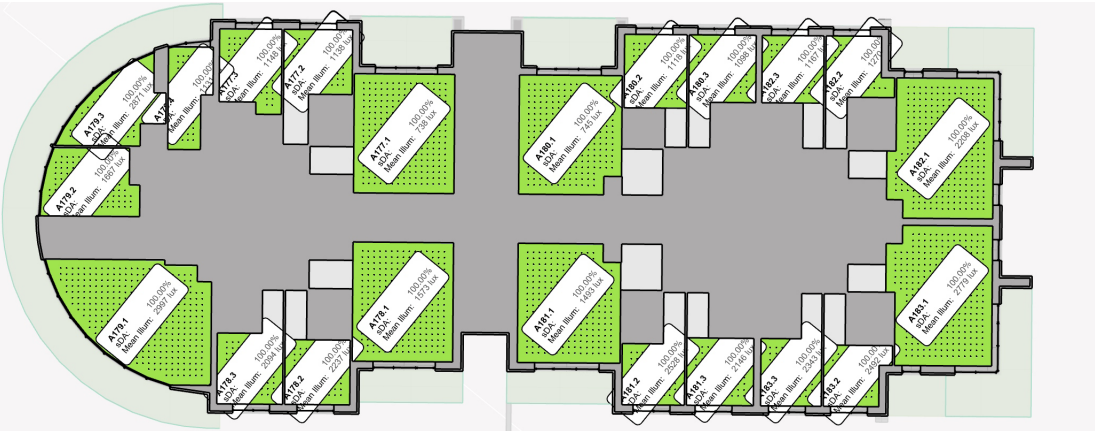
Table 19: Type N - Daylight Provision individual room compliance values for all habitable rooms.

Appendix B -BS EN17037:2021+A1 Minimum room specific Daylight Provision in accordance with UK National Annex Table NA.1.

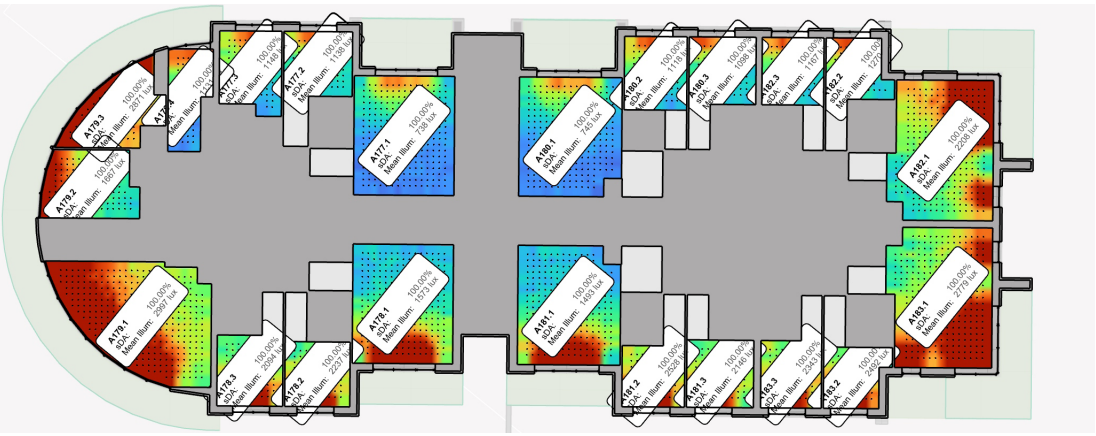
Minimum illuminance levels NA.1 and Target Minimum Daylight Factor (D) for Dublin based UN Annex		
Room Type	Target illuminance E_T(lx) for half of the assessment grid	Target daylight factor D from Table A.3 $E_{v,d,med}$ for Dublin -14,900
Bedroom	100	0.7%
Living Room	150	1%
Kitchen	200	1.3%

Table A.1 Room specific targets to be achieved over 50% of the assessment grid.
Target illuminance levels have been set for each room type. sDA value indicated is the percentage of the assessment grid to achieve target illuminance which is 50% of the assessment grid.

sDA - Spatial Daylight Autonomy



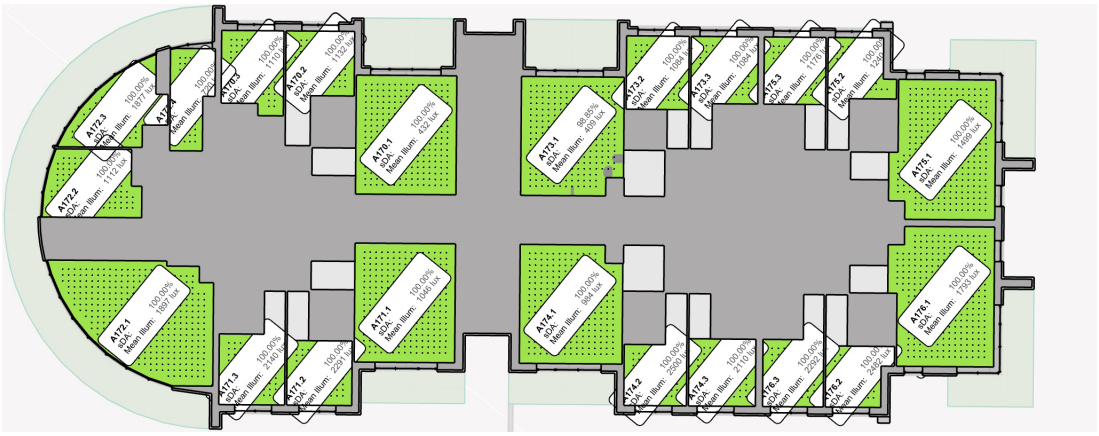
03 Floor



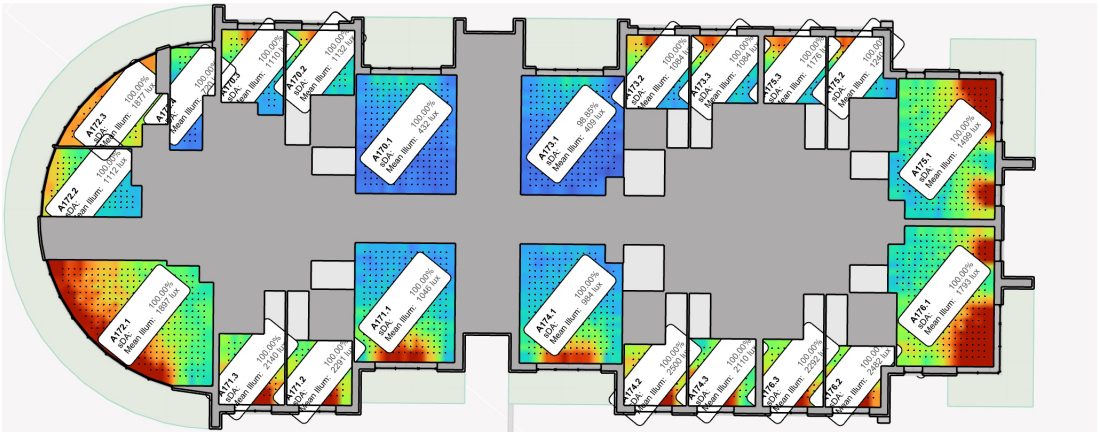
03 Floor

Figure 40: UK NA.1 Minimum Illuminance levels of Apartment Block A

02 Floor



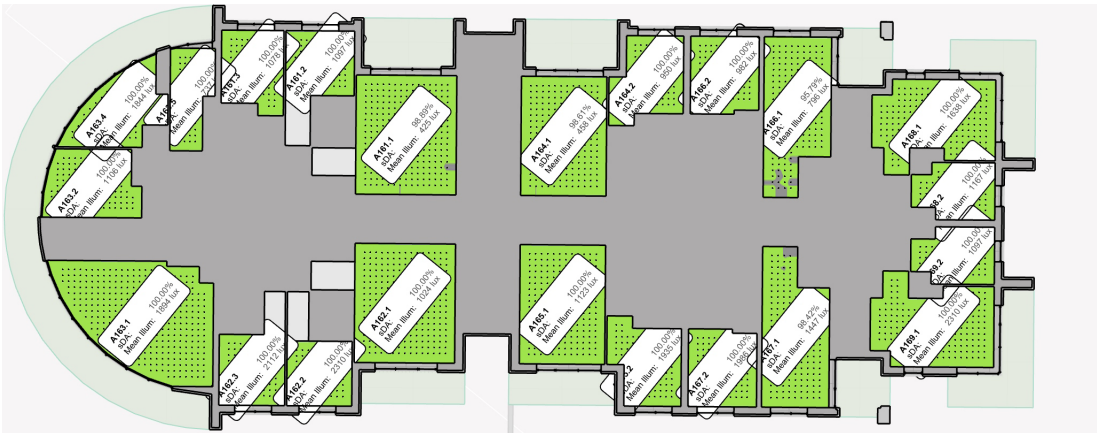




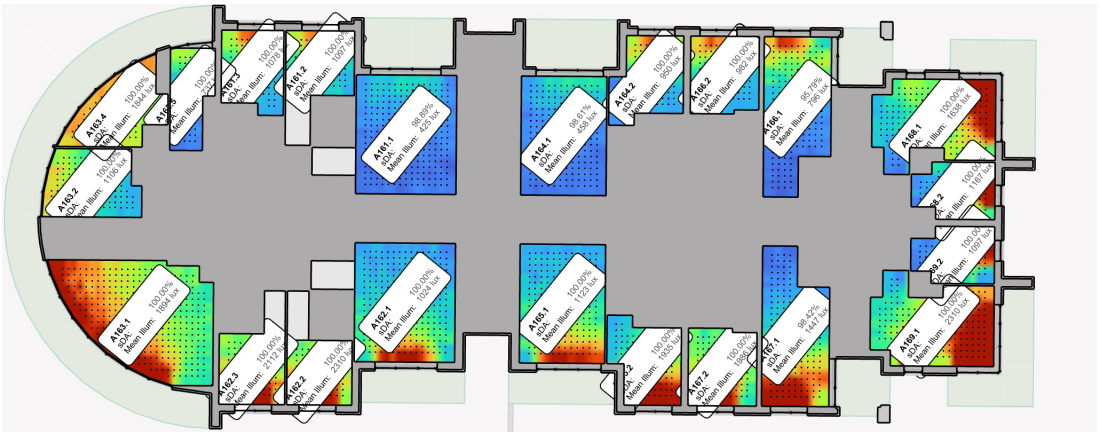
02 Floor

sDA - Spatial Daylight Autonomy

01 Floor







01 Floor

Figure 41: UK NA.1 Minimum Illuminance levels of Apartment Block A

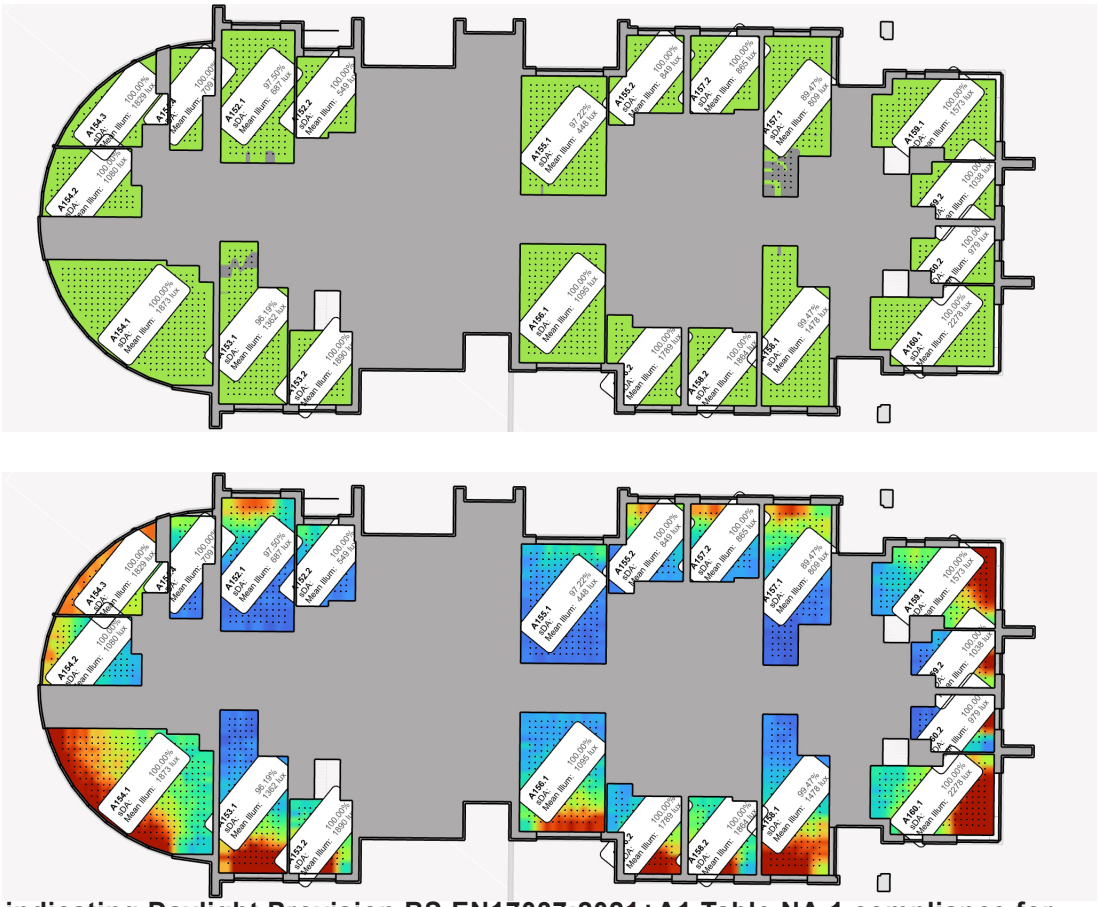


Figure 42: Floor plans indicating Daylight Provision BS EN17037:2021+A1 Table NA.1 compliance for habitable rooms

Block A - Minimum illuminance levels from BS EN17037:2021+A1 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Median DF	Target Lux	% of grid target exceeded: Minimum 50% of grid	Meets Criteria
A152.1	LKD	23.38	200	687	200	97.50%	Y
A152.2	Bed	11.10	92	549	100	100.00%	Y
A153.1	LKD	23.36	210	1362	200	96.19%	Y
A153.2	Bed	11.10	99	1890	100	100.00%	Y
A154.1	LKD	36.73	350	1873	200	100.00%	Y
A154.2	Bed	14.64	130	1080	100	100.00%	Y
A154.3	Bed	14.16	119	1829	100	100.00%	Y
A154.4	Bed	9.42	72	709	100	100.00%	Y
A155.1	LKD	24.38	216	448	200	97.22%	Y
A155.2	Bed	12.90	104	849	100	100.00%	Y
A156.1	LKD	24.38	216	1095	200	100.00%	Y
A156.2	Bed	12.90	104	1789	100	100.00%	Y
A157.1	LKD	22.74	190	809	200	89.47%	Y
A157.2	Bed	12.51	106	865	100	100.00%	Y
A158.1	LKD	22.74	190	1478	200	99.47%	Y
A158.2	Bed	12.51	106	1864	100	100.00%	Y
A159.1	LKD	21.04	195	1573	200	100.00%	Y
A159.2	Bed	10.16	82	1038	100	100.00%	Y
A160.1	LKD	21.04	195	2278	200	100.00%	Y
A160.2	Bed	10.16	82	979	100	100.00%	Y
A161.1	LKD	28.68	270	425	200	98.89%	Y
A161.2	Bed	10.64	90	1097	100	100.00%	Y
A161.3	Bed	11.63	94	1078	100	100.00%	Y
A162.1	LKD	28.68	270	1024	200	100.00%	Y
A162.2	Bed	10.09	81	2310	100	100.00%	Y

Block A - Minimum illuminance levels from BS EN17037:2021+A1 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Median DF	Target Lux	% of grid target exceeded: Minimum 50% of grid	Meets Criteria
A162.3	Bed	11.17	90	2112	100	100.00%	Y
A163.1	LKD	36.73	350	1894	200	100.00%	Y
A163.2	Bed	14.64	130	1106	100	100.00%	Y
A163.4	Bed	14.16	119	1844	100	100.00%	Y
A163.5	Bed	9.42	72	737	100	100.00%	Y
A164.1	LKD	24.38	216	458	200	98.61%	Y
A164.2	Bed	12.90	104	950	100	100.00%	Y
A165.1	LKD	24.38	216	1123	200	100.00%	Y
A165.2	Bed	12.90	104	1935	100	100.00%	Y
A166.1	LKD	22.74	190	796	200	95.79%	Y
A166.2	Bed	12.51	106	982	100	100.00%	Y
A167.1	LKD	22.74	190	1447	200	98.42%	Y
A167.2	Bed	12.51	106	1986	100	100.00%	Y
A168.1	LKD	22.71	195	1638	200	100.00%	Y
A168.2	Bed	10.16	82	1167	100	100.00%	Y
A169.1	LKD	22.71	195	2310	200	100.00%	Y
A169.2	Bed	10.16	82	1097	100	100.00%	Y
A170.1	LKD	28.68	270	432	200	100.00%	Y
A170.2	Bed	10.64	90	1132	100	100.00%	Y
A170.3	Bed	11.63	94	1110	100	100.00%	Y
A171.1	LKD	28.68	270	1046	200	100.00%	Y
A171.2	Bed	10.09	81	2291	100	100.00%	Y
A171.3	Bed	11.17	90	2140	100	100.00%	Y
A172.1	LKD	36.73	350	1897	200	100.00%	Y
A172.2	Bed	14.64	130	1112	100	100.00%	Y
A172.3	Bed	14.16	119	1877	100	100.00%	Y
A172.4	Bed	9.42	72	720	100	100.00%	Y
A173.1	LKD	28.55	261	409	200	98.85%	Y
A173.2	Bed	11.02	90	1084	100	100.00%	Y
A173.3	Bed	10.80	81	1084	100	100.00%	Y
A174.1	LKD	28.55	261	984	200	100.00%	Y
A174.2	Bed	9.18	72	2500	100	100.00%	Y
A174.3	Bed	10.80	81	2110	100	100.00%	Y
A175.1	LKD	33.39	304	1499	200	100.00%	Y
A175.2	Bed	8.76	66	1240	100	100.00%	Y
A175.3	Bed	9.96	81	1176	100	100.00%	Y
A176.1	LKD	33.39	304	1793	200	100.00%	Y
A176.2	Bed	8.76	66	2482	100	100.00%	Y
A176.3	Bed	9.79	72	2292	100	100.00%	Y
A177.1	LKD	28.68	270	738	200	100.00%	Y
A177.2	Bed	10.64	90	1138	100	100.00%	Y
A177.3	Bed	11.63	94	1148	100	100.00%	Y
A178.1	LKD	28.68	270	1573	200	100.00%	Y
A178.2	Bed	10.09	81	2237	100	100.00%	Y
A178.3	Bed	11.17	90	2094	100	100.00%	Y
A179.1	LKD	36.73	350	2997	200	100.00%	Y
A179.2	Bed	14.64	130	1667	100	100.00%	Y
A179.3	Bed	14.16	119	2871	100	100.00%	Y
A179.4	Bed	9.42	72	1131	100	100.00%	Y
A180.1	LKD	28.55	261	745	200	100.00%	Y
A180.2	Bed	11.02	90	1118	100	100.00%	Y

Block A - Minimum illuminance levels from BS EN17037:2021+A1 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Median DF	Target Lux	% of grid target exceeded: Minimum 50% of grid	Meets Criteria
A180.3	Bed	10.80	81	1098	100	100.00%	Y
A181.1	LKD	28.55	261	1493	200	100.00%	Y
A181.2	Bed	9.18	72	2528	100	100.00%	Y
A181.3	Bed	10.80	81	2146	100	100.00%	Y
A182.1	LKD	33.39	304	2208	200	100.00%	Y
A182.2	Bed	8.76	66	1270	100	100.00%	Y
A182.3	Bed	9.96	81	1167	100	100.00%	Y
A183.1	LKD	33.39	304	2779	200	100.00%	Y
A183.2	Bed	8.76	66	2492	100	100.00%	Y
A183.3	Bed	9.79	72	2343	100	100.00%	Y

Table 20: Block A - Minimum Daylight Provision individual room compliance values for all habitable rooms BS EN17037:2021+A1 Table NA.1.

sDA - Spatial Daylight Autonomy

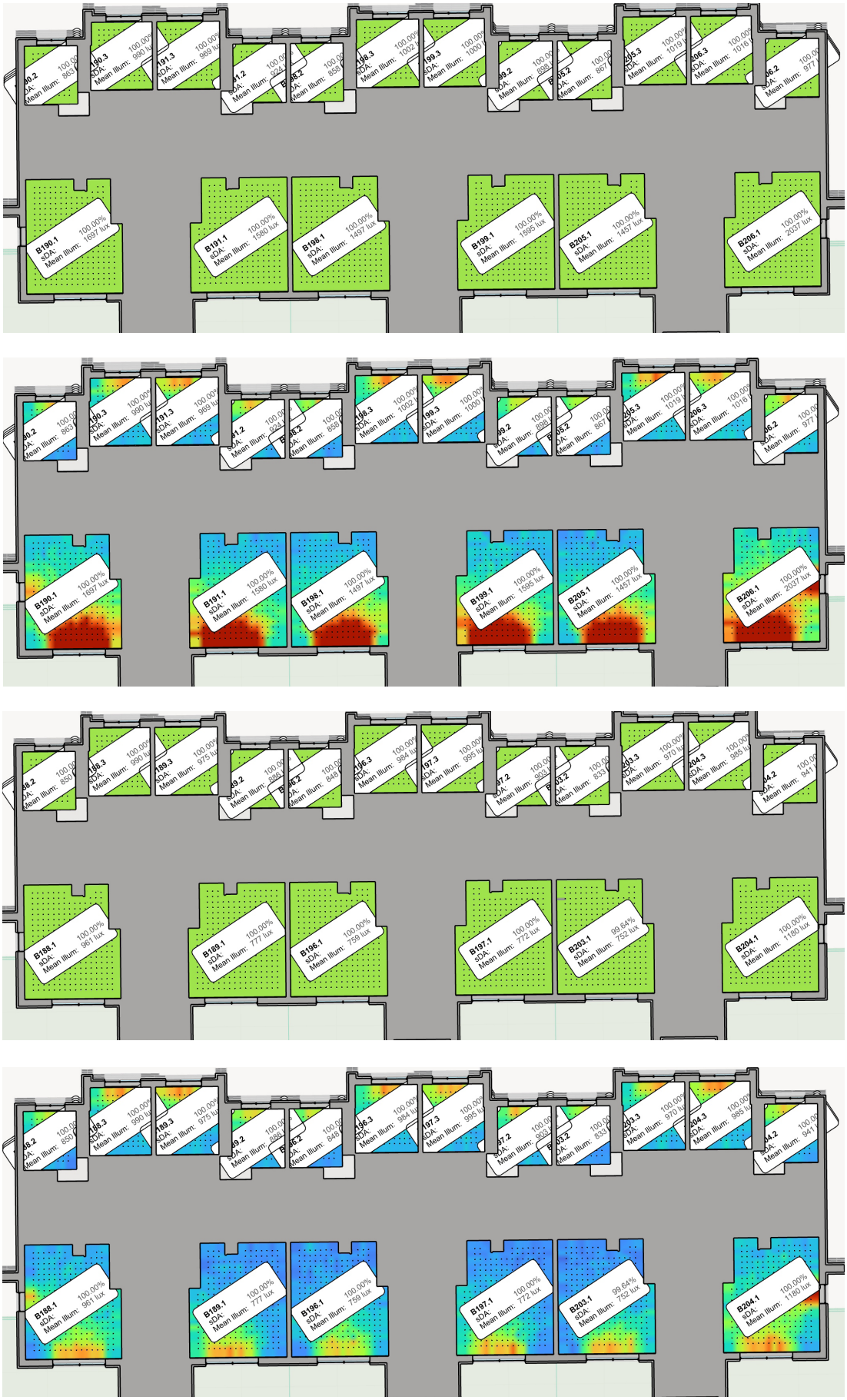
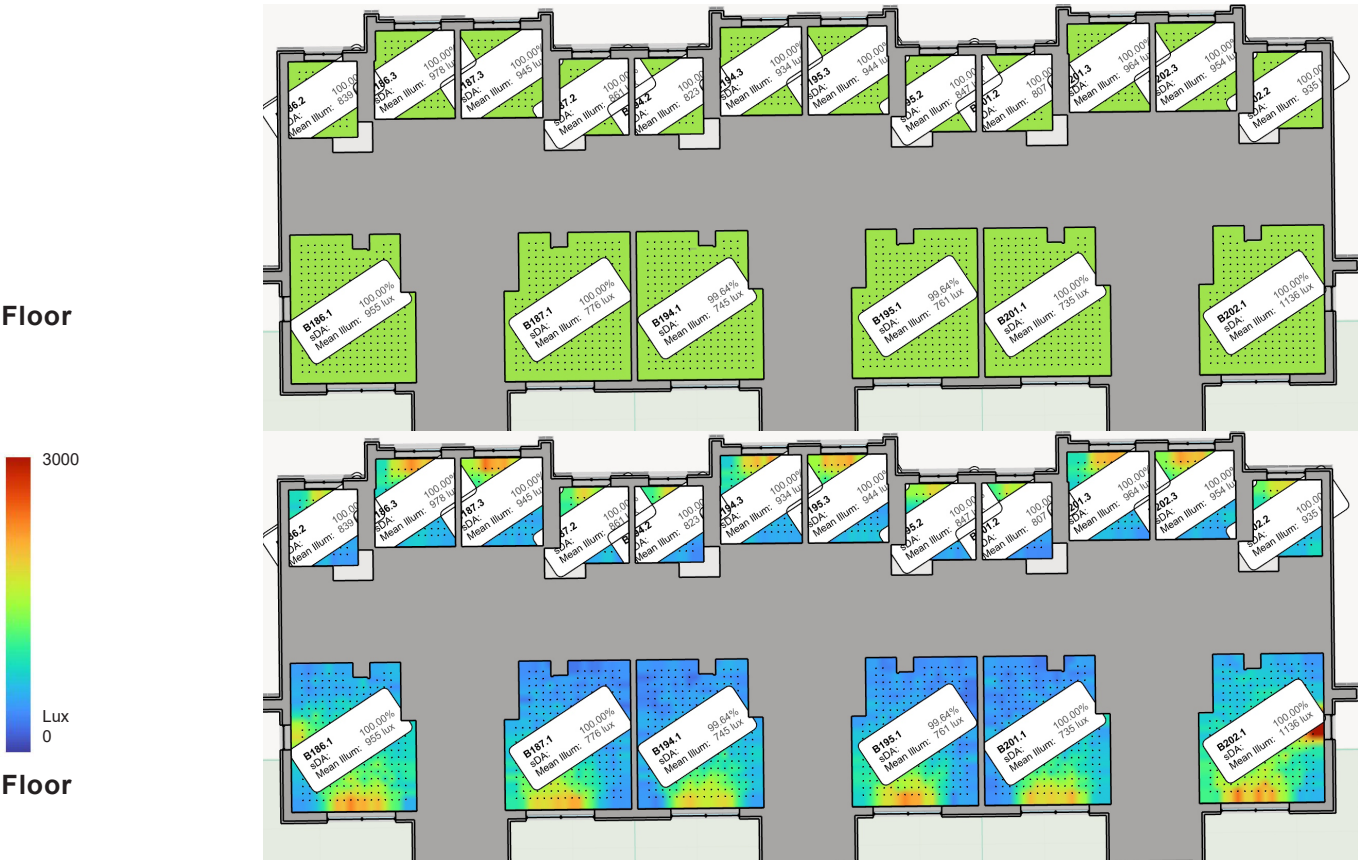


Figure 43: Floor plans indicating Daylight Provision BS EN17037:2021+A1 Table NA.1 compliance for habitable rooms

sDA - Spatial Daylight Autonomy

01 Floor



00 Floor

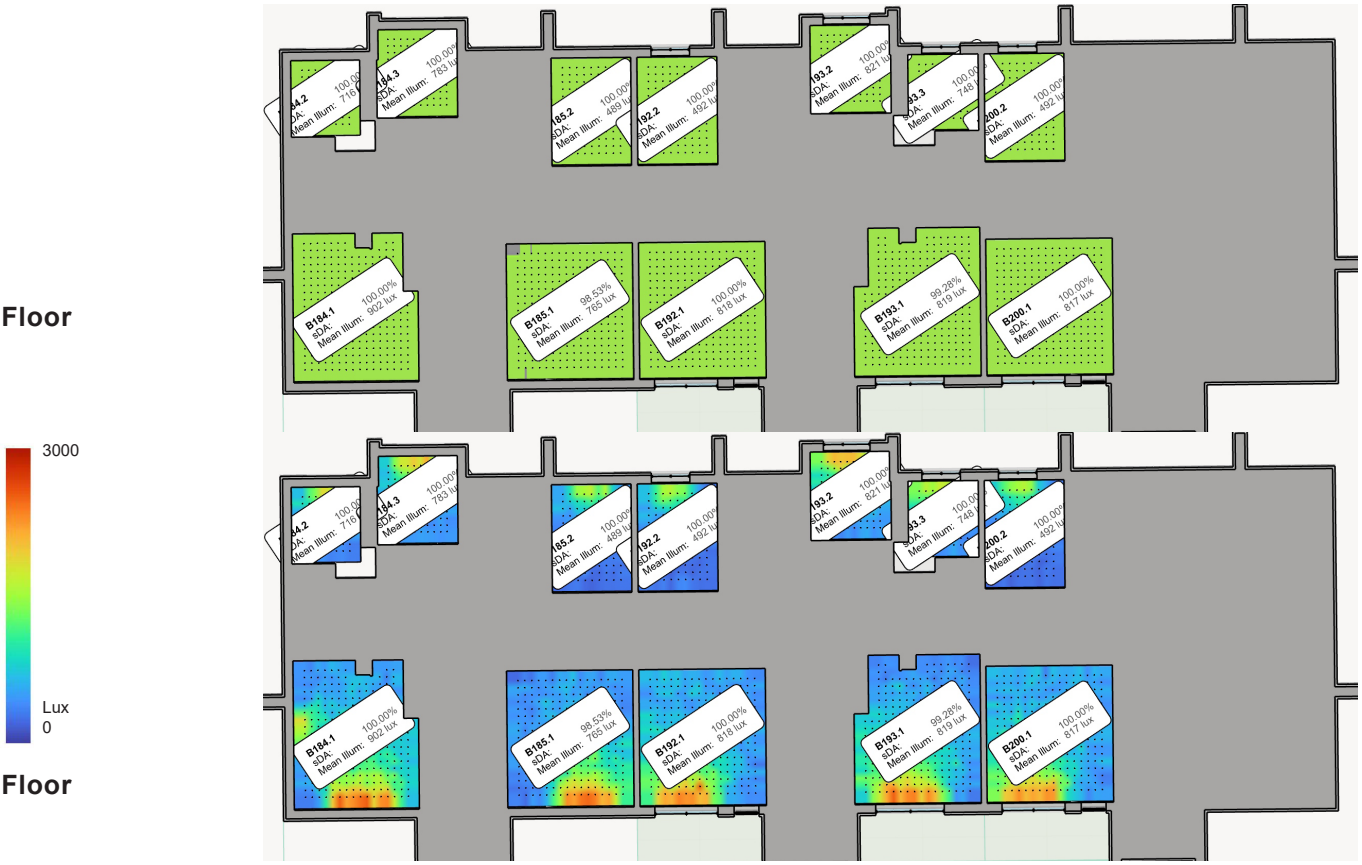


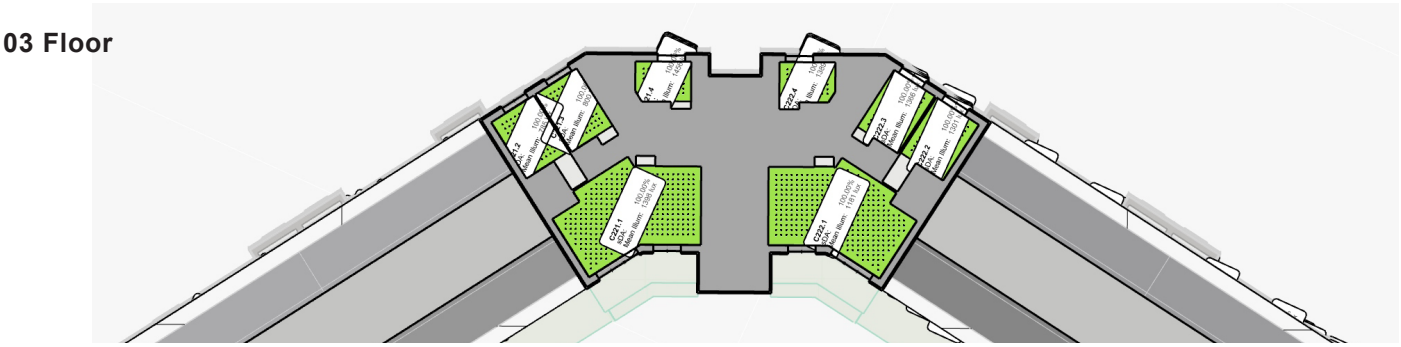
Figure 44: Floor plans indicating Daylight Provision BS EN17037:2021+A1 Table NA.1 compliance for habitable rooms

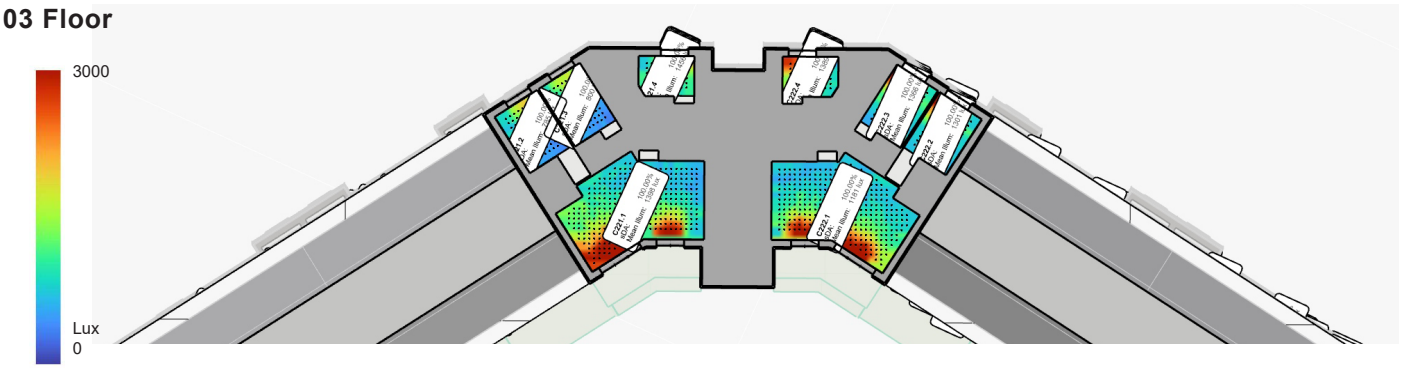
Block B - Minimum illuminance levels from BS EN17037:2021+A1 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Median DF	Target Lux	% of grid target exceeded: Minimum 50% of grid	Meets Criteria
B184.1	LKD	29.70	279	902	200	100.00%	Y
B184.2	Bed	8.94	72	716	100	100.00%	Y
B184.3	Bed	11.98	110	783	100	100.00%	Y
B185.1	LKD	29.27	272	765	200	98.53%	Y
B185.2	Bed	14.57	117	489	100	100.00%	Y
B186.1	LKD	29.70	279	955	200	100.00%	Y
B186.2	Bed	8.94	72	839	100	100.00%	Y
B186.3	Bed	11.98	110	978	100	100.00%	Y
B187.1	LKD	30.03	280	776	200	100.00%	Y
B187.2	Bed	8.92	72	861	100	100.00%	Y
B187.3	Bed	12.23	110	945	100	100.00%	Y
B188.1	LKD	29.70	279	961	200	100.00%	Y
B188.2	Bed	8.94	72	850	100	100.00%	Y
B188.3	Bed	11.98	110	990	100	100.00%	Y
B189.1	LKD	30.03	280	777	200	100.00%	Y
B189.2	Bed	8.92	72	886	100	100.00%	Y
B189.3	Bed	12.23	110	975	100	100.00%	Y
B190.1	LKD	29.70	279	1697	200	100.00%	Y
B190.2	Bed	8.94	72	863	100	100.00%	Y
B190.3	Bed	11.98	110	990	100	100.00%	Y
B191.1	LKD	30.03	280	1580	200	100.00%	Y
B191.2	Bed	8.92	72	924	100	100.00%	Y
B191.3	Bed	12.23	110	969	100	100.00%	Y
B192.1	LKD	29.33	272	818	200	100.00%	Y
B192.2	Bed	14.65	117	492	100	100.00%	Y
B193.1	LKD	30.06	278	819	200	99.28%	Y
B193.2	Bed	11.99	110	821	100	100.00%	Y
B193.3	Bed	9.11	72	748	100	100.00%	Y
B194.1	LKD	29.99	280	745	200	99.64%	Y
B194.2	Bed	8.88	72	823	100	100.00%	Y
B194.3	Bed	12.20	110	934	100	100.00%	Y
B195.1	LKD	30.00	278	761	200	99.64%	Y
B195.2	Bed	9.08	72	847	100	100.00%	Y
B195.3	Bed	11.99	110	944	100	100.00%	Y
B196.1	LKD	29.99	280	759	200	100.00%	Y
B196.2	Bed	8.88	72	848	100	100.00%	Y
B196.3	Bed	12.20	110	984	100	100.00%	Y
B197.1	LKD	30.00	278	772	200	100.00%	Y
B197.2	Bed	9.08	72	903	100	100.00%	Y
B197.3	Bed	11.99	110	995	100	100.00%	Y
B198.1	LKD	29.99	280	1497	200	100.00%	Y
B198.2	Bed	8.88	72	858	100	100.00%	Y
B198.3	Bed	12.20	110	1002	100	100.00%	Y
B199.1	LKD	30.00	278	1595	200	100.00%	Y
B199.2	Bed	9.08	72	898	100	100.00%	Y
B199.3	Bed	11.99	110	1000	100	100.00%	Y
B200.1	LKD	29.33	272	817	200	100.00%	Y
B200.2	Bed	14.61	117	492	100	100.00%	Y
B201.1	LKD	30.00	278	735	200	100.00%	Y
B201.2	Bed	9.08	72	807	100	100.00%	Y
B201.3	Bed	12.13	110	964	100	100.00%	Y

Block B - Minimum illuminance levels from BS EN17037:2021+A1 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Median DF	Target Lux	% of grid target exceeded: Minimum 50% of grid	Meets Criteria
B202.1	LKD	29.78	279	1136	200	100.00%	Y
B202.2	Bed	8.94	72	935	100	100.00%	Y
B202.3	Bed	11.96	99	954	100	100.00%	Y
B203.1	LKD	30.00	278	752	200	99.64%	Y
B203.2	Bed	9.08	72	833	100	100.00%	Y
B203.3	Bed	12.13	110	970	100	100.00%	Y
B204.1	LKD	29.78	279	1180	200	100.00%	Y
B204.2	Bed	8.94	72	941	100	100.00%	Y
B204.3	Bed	11.96	99	985	100	100.00%	Y
B205.1	LKD	30.00	278	1457	200	100.00%	Y
B205.2	Bed	9.08	72	867	100	100.00%	Y
B205.3	Bed	12.13	110	1019	100	100.00%	Y
B206.1	LKD	29.78	279	2037	200	100.00%	Y
B206.2	Bed	8.94	72	977	100	100.00%	Y
B206.3	Bed	11.96	99	1016	100	100.00%	Y

Table 21: Block B - Minimum Daylight Provision individual room compliance values for all habitable rooms BS EN17037:2021+A1 Table NA.1.

sDA - Spatial Daylight Autonomy







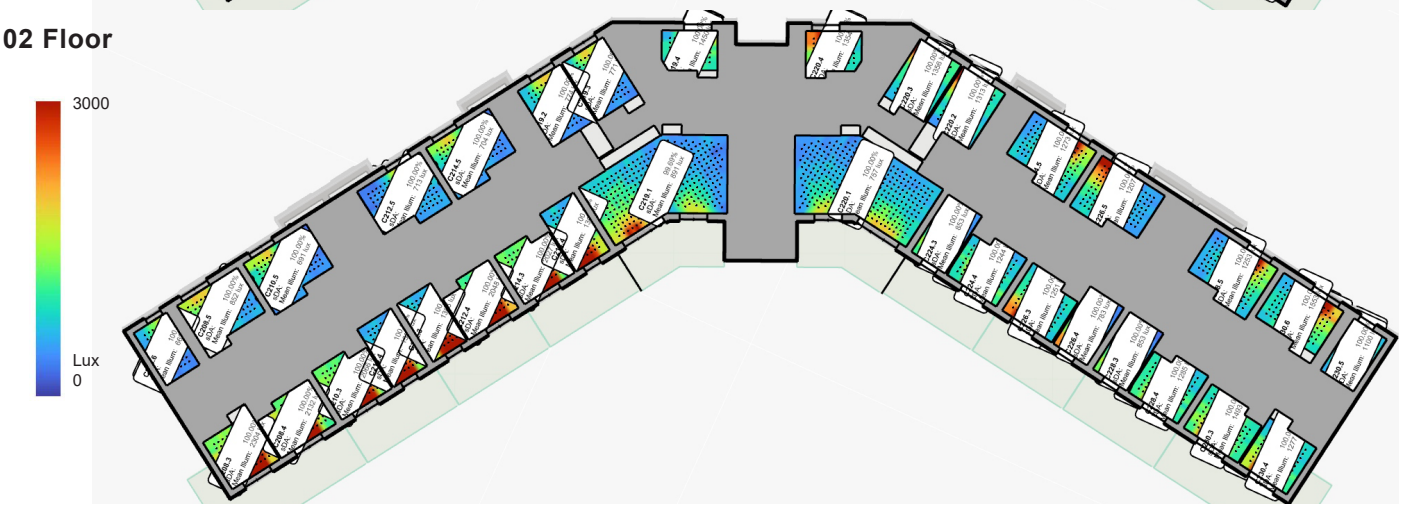
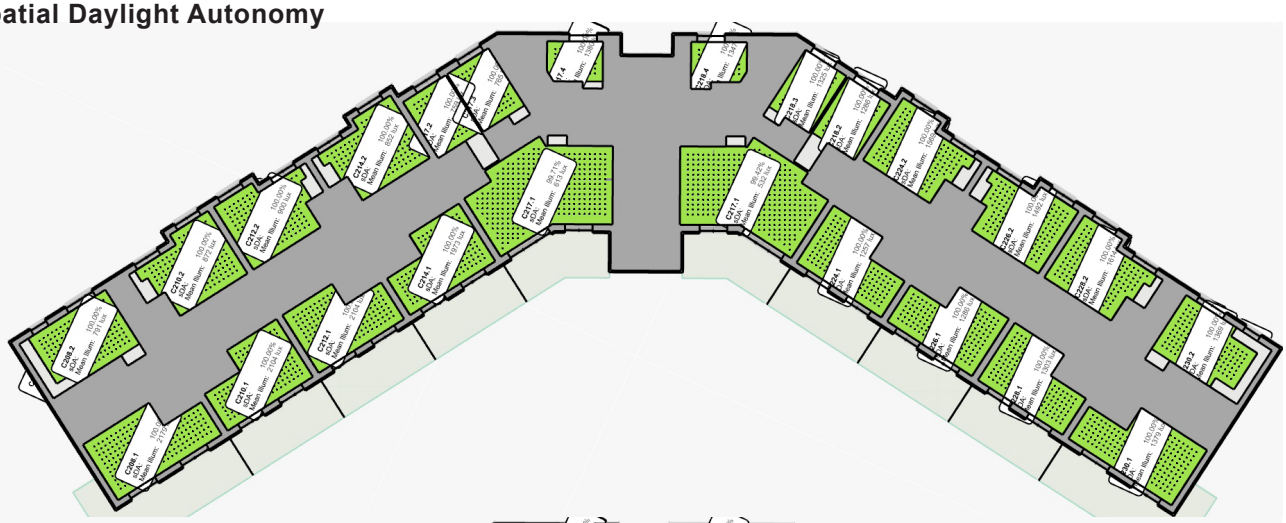


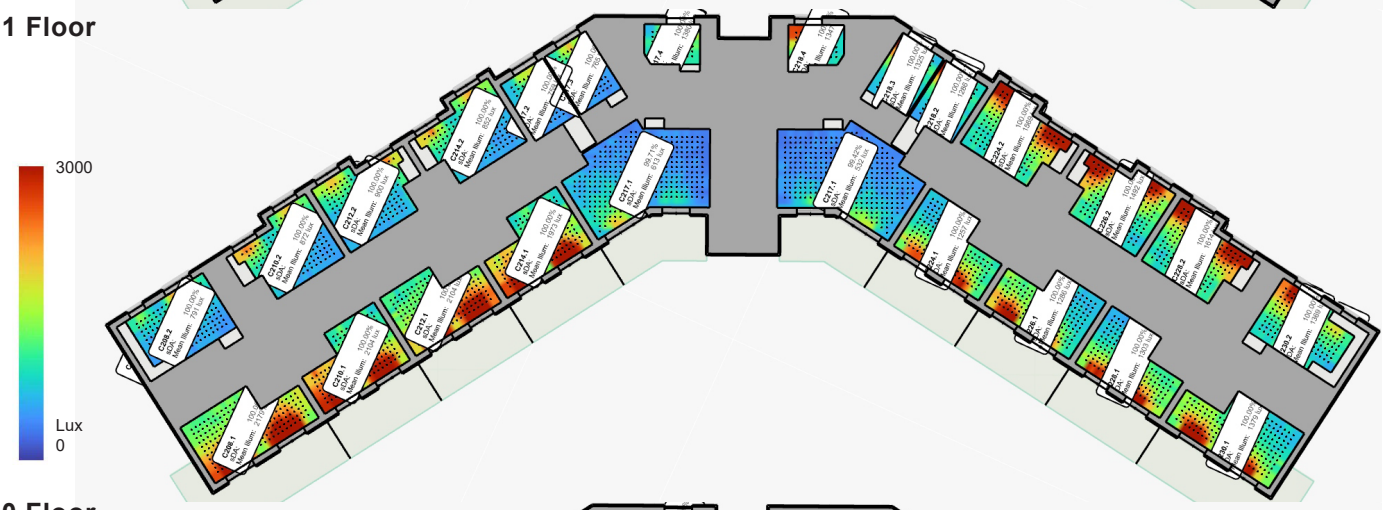
Figure 45: Block C Floor plans indicating Daylight Provision BS EN17037:2021+A1 Table NA.1 compliance for habitable rooms

sDA - Spatial Daylight Autonomy

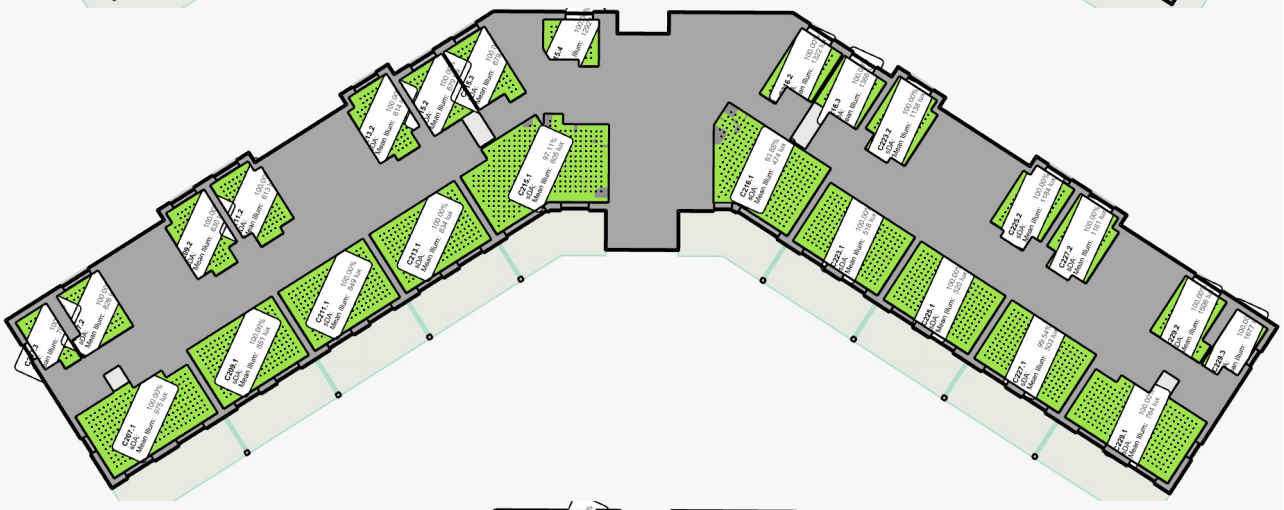
01 Floor



01 Floor



00 Floor



00 Floor



Figure 46: Block C Floor plans indicating Daylight Provision BS EN17037:2021+A1 Table NA.1 compliance for habitable rooms

Block C - Minimum illuminance levels from BS EN17037:2021+A1 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Median DF	Target Lux	% of grid target exceeded: Minimum 50% of grid	Meets Criteria
C207.1	LKD	27.54	243	975	200	100.00%	Y
C207.2	Bed	11.45	92	826	100	100.00%	Y
C207.3	Bed	7.38	49	704	100	100.00%	Y
C208.1	Liv	22.58	197	2179	150	100.00%	Y
C208.2	KD	18.57	168	791	200	100.00%	Y
C208.3	Bed	10.22	81	2304	100	100.00%	Y
C208.4	Bed	10.61	80	2132	100	100.00%	Y
C208.5	Bed	12.30	96	852	100	100.00%	Y
C208.6	Bed	7.99	60	662	100	100.00%	Y
C209.1	LKD	23.20	216	851	200	100.00%	Y
C209.2	Bed	12.80	112	630	100	100.00%	Y
C210.1	KD	19.25	176	2104	200	100.00%	Y
C210.2	Liv	19.25	169	872	150	100.00%	Y
C210.3	Bed	10.52	82	2066	100	100.00%	Y
C210.4	Bed	9.02	72	1351	100	100.00%	Y
C210.5	Bed	13.66	116	691	100	100.00%	Y
C211.1	LKD	23.20	216	849	200	100.00%	Y
C211.2	Bed	12.80	112	613	100	100.00%	Y
C212.1	KD	19.25	176	2104	200	100.00%	Y
C212.2	Liv	19.25	169	900	150	100.00%	Y
C212.3	Bed	9.02	72	1386	100	100.00%	Y
C212.4	Bed	10.52	82	2048	100	100.00%	Y
C212.5	Bed	13.66	116	713	100	100.00%	Y
C213.1	LKD	23.20	216	834	200	100.00%	Y
C213.2	Bed	12.80	113	614	100	100.00%	Y
C214.1	KD	19.24	176	1973	200	100.00%	Y
C214.2	Liv	19.25	169	852	150	100.00%	Y
C214.3	Bed	10.52	82	2027	100	100.00%	Y
C214.4	Bed	9.02	72	1363	100	100.00%	Y
C214.5	Bed	13.66	116	704	100	100.00%	Y
C215.1	LKD	37.62	346	605	200	97.11%	Y
C215.2	Bed	11.02	88	679	100	100.00%	Y
C215.3	Bed	11.58	92	679	100	100.00%	Y
C215.4	Bed	7.72	55	1292	100	100.00%	Y
C216.1	LKD	30.16	278	474	200	93.88%	Y
C216.2	Bed	10.56	80	1322	100	100.00%	Y
C216.3	Bed	9.28	72	1366	100	100.00%	Y
C217.1	LKD	36.96	342	613	200	99.71%	Y
C217.1	LKD	36.96	342	532	200	99.42%	Y
C217.2	Bed	11.02	88	759	100	100.00%	Y
C217.3	Bed	10.92	88	765	100	100.00%	Y
C217.4	Bed	7.26	54	1380	100	100.00%	Y
C218.2	Bed	11.02	88	1286	100	100.00%	Y
C218.3	Bed	10.92	88	1325	100	100.00%	Y
C218.4	Bed	7.26	54	1347	100	100.00%	Y
C219.1	LKD	34.35	324	891	200	99.69%	Y
C219.2	Bed	11.02	88	774	100	100.00%	Y
C219.3	Bed	10.92	88	771	100	100.00%	Y
C219.4	Bed	7.26	54	1450	100	100.00%	Y
C220.1	LKD	34.35	324	757	200	100.00%	Y
C220.2	Bed	11.02	88	1313	100	100.00%	Y

Block C - Minimum illuminance levels from BS EN17037:2021+A1 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Median DF	Target Lux	% of grid target exceeded: Minimum 50% of grid	Meets Criteria
C220.3	Bed	10.92	88	1356	100	100.00%	Y
C220.4	Bed	7.26	54	1354	100	100.00%	Y
C221.1	LKD	36.96	342	1398	200	100.00%	Y
C221.2	Bed	11.02	88	785	100	100.00%	Y
C221.3	Bed	10.92	88	800	100	100.00%	Y
C221.4	Bed	7.26	54	1456	100	100.00%	Y
C222.1	LKD	36.96	342	1181	200	100.00%	Y
C222.2	Bed	11.02	88	1301	100	100.00%	Y
C222.3	Bed	10.92	88	1366	100	100.00%	Y
C222.4	Bed	7.26	54	1389	100	100.00%	Y
C223.1	LKD	23.20	216	518	200	100.00%	Y
C223.2	Bed	12.80	113	1138	100	100.00%	Y
C224.1	KD	19.24	176	1257	200	100.00%	Y
C224.2	Liv	19.25	169	1569	150	100.00%	Y
C224.3	Bed	9.02	72	853	100	100.00%	Y
C224.4	Bed	10.52	82	1244	100	100.00%	Y
C224.5	Bed	13.66	116	1273	100	100.00%	Y
C225.1	LKD	23.20	216	520	200	100.00%	Y
C225.2	Bed	12.80	112	1184	100	100.00%	Y
C226.1	KD	19.25	176	1286	200	100.00%	Y
C226.2	Liv	19.25	169	1492	150	100.00%	Y
C226.3	Bed	10.52	82	1251	100	100.00%	Y
C226.4	Bed	9.02	72	783	100	100.00%	Y
C226.5	Bed	13.66	116	1207	100	100.00%	Y
C227.1	LKD	23.20	216	503	200	99.54%	Y
C227.2	Bed	12.80	112	1161	100	100.00%	Y
C228.1	KD	19.25	176	1303	200	100.00%	Y
C228.2	Liv	19.25	169	1614	150	100.00%	Y
C228.3	Bed	9.02	72	853	100	100.00%	Y
C228.4	Bed	10.52	82	1285	100	100.00%	Y
C228.5	Bed	13.66	116	1253	100	100.00%	Y
C229.1	LKD	27.54	243	764	200	100.00%	Y
C229.2	Bed	11.45	92	1506	100	100.00%	Y
C229.3	Bed	7.38	49	1677	100	100.00%	Y
C230.1	Liv	22.58	197	1379	150	100.00%	Y
C230.2	KD	17.50	156	1369	200	100.00%	Y
C230.3	Bed	10.61	80	1493	100	100.00%	Y
C230.4	Bed	10.22	81	1277	100	100.00%	Y
C230.5	Bed	7.99	60	1100	100	100.00%	Y
C230.6	Bed	12.30	96	1553	100	100.00%	Y

Table 22: Block C - Minimum Daylight Provision individual room compliance values for all habitable rooms BS EN17037:2021+A1 Table NA.1.

sDA - Spatial Daylight Autonomy

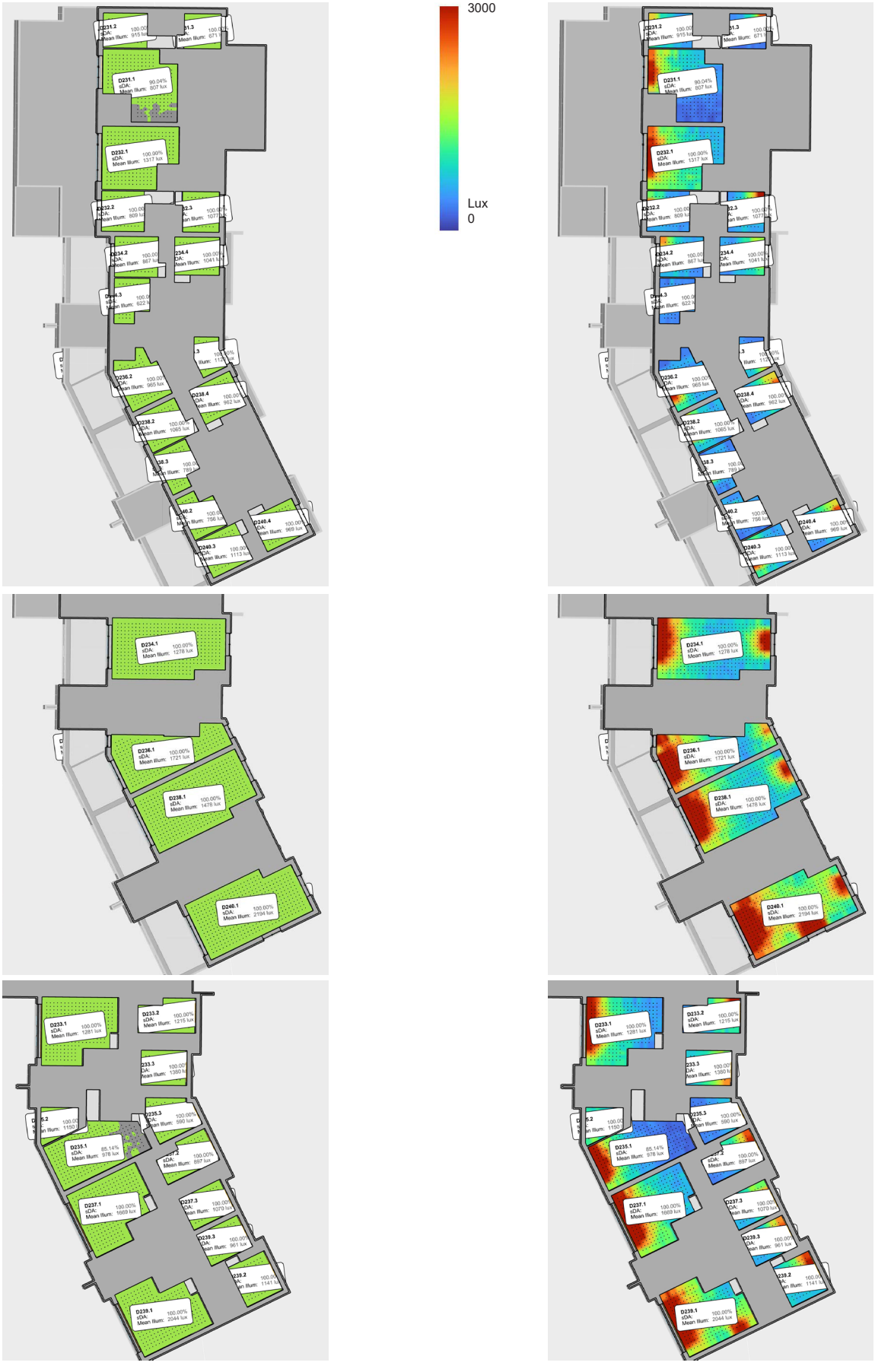
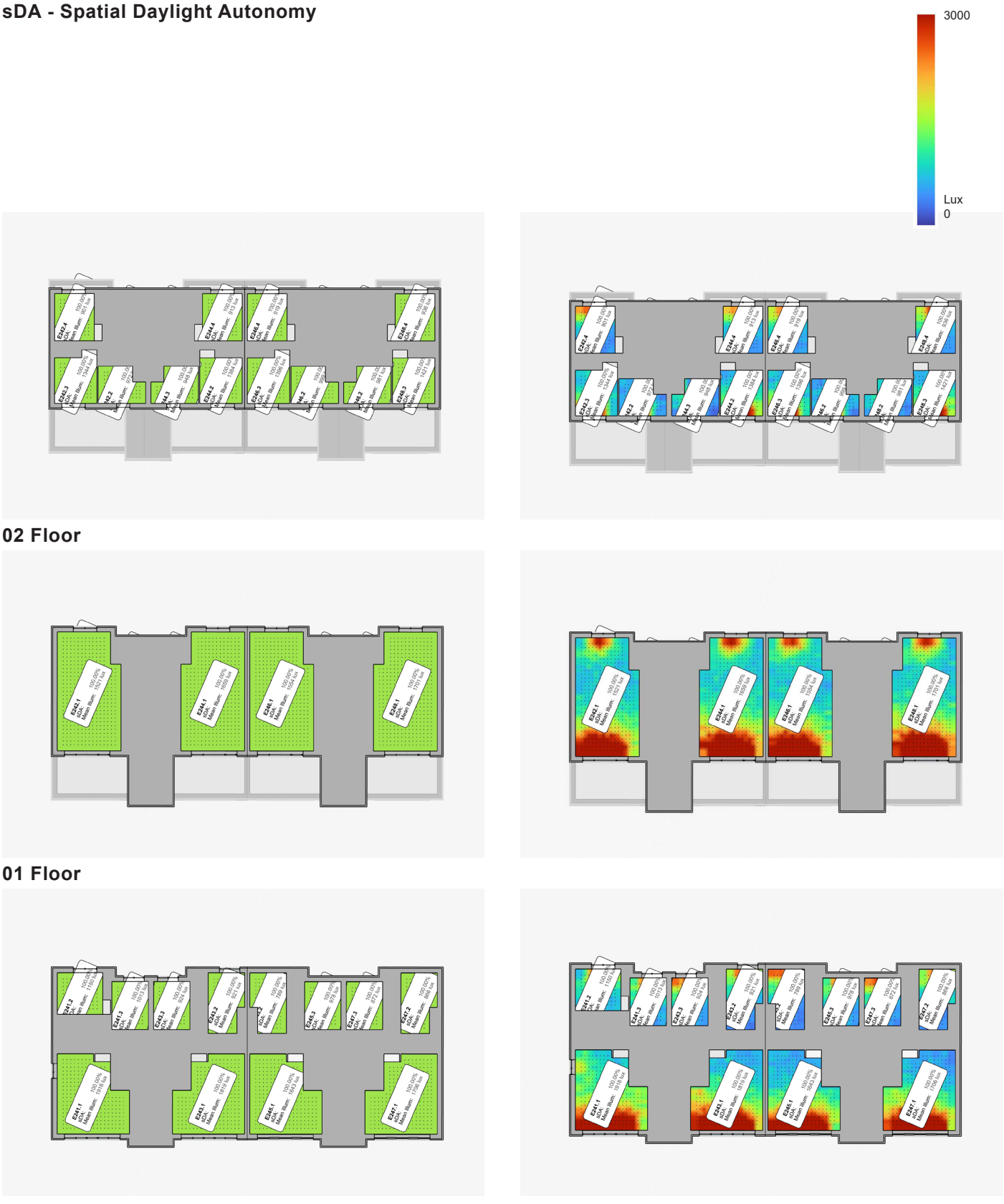


Figure 47: Block D Floor plans indicating Daylight Provision BS EN17037:2021+A1 Table NA.1 compliance for habitable rooms

Block D - Minimum illuminance levels from BS EN17037:2021+A1 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Median DF	Target Lux	% of grid target exceeded: Minimum 50% of grid	Meets Criteria
D231.1	LKD	28.18	241	807	200	90.04%	Y
D231.2	Bed	9.94	80	915	100	100.00%	Y
D231.3	Bed	8.26	64	671	100	100.00%	Y
D232.1	LKD	27.72	243	1317	200	100.00%	Y
D232.2	Bed	11.21	90	809	100	100.00%	Y
D232.3	Bed	9.59	72	1077	100	100.00%	Y
D233.1	LKD	29.18	266	1281	200	100.00%	Y
D233.2	Bed	11.82	98	1215	100	100.00%	Y
D233.3	Bed	10.30	88	1380	100	100.00%	Y
D234.1	LKD	42.62	411	1278	200	100.00%	Y
D234.2	Bed	11.42	90	867	100	100.00%	Y
D234.3	Bed	9.24	72	622	100	100.00%	Y
D234.4	Bed	11.03	99	1041	100	100.00%	Y
D235.1	LKD	28.56	276	978	200	85.14%	Y
D235.2	Bed	7.35	56	1150	100	100.00%	Y
D235.3	Bed	11.74	93	590	100	100.00%	Y
D236.1	LKD	28.80	249	1721	200	100.00%	Y
D236.2	Bed	13.95	111	965	100	100.00%	Y
D236.3	Bed	6.19	46	1120	100	100.00%	Y
D237.1	LKD	29.34	266	1669	200	100.00%	Y
D237.2	Bed	11.82	98	897	100	100.00%	Y
D237.3	Bed	10.30	88	1070	100	100.00%	Y
D238.1	LKD	42.62	411	1478	200	100.00%	Y
D238.2	Bed	11.42	90	1065	100	100.00%	Y
D238.3	Bed	9.24	72	789	100	100.00%	Y
D238.4	Bed	11.03	99	962	100	100.00%	Y
D239.1	LKD	29.34	266	2044	200	100.00%	Y
D239.2	Bed	11.21	90	1141	100	100.00%	Y
D239.3	Bed	10.30	88	961	100	100.00%	Y
D240.1	LKD	42.62	411	2194	200	100.00%	Y
D240.2	Bed	9.24	72	756	100	100.00%	Y
D240.3	Bed	11.42	90	1113	100	100.00%	Y
D240.4	Bed	11.02	99	969	100	100.00%	Y
A183.2	Bed	8.76	66	2492	100	100.00%	Y
A183.3	Bed	9.79	72	2343	100	100.00%	Y

Table 23: Block D - Minimum Daylight Provision individual room compliance values for all habitable rooms BS EN17037:2021+A1 Table NA.1.

sDA - Spatial Daylight Autonomy



02 Floor

01 Floor

00 Floor

Figure 48: Block E Floor plans indicating Daylight Provision BS EN17037:2021+A1 Table NA.1 compliance for habitable rooms

Block E - Minimum illuminance levels from BS EN17037:2021+A1 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Median DF	Target Lux	% of grid target exceeded: Minimum 50% of grid	Meets Criteria
E241.1	LKD	29.34	266	1918	200	100.00%	Y
E241.2	Bed	11.21	90	1150	100	100.00%	Y
E241.3	Bed	10.30	88	1013	100	100.00%	Y
E242.1	LKD	42.62	411	1521	200	100.00%	Y
E242.2	Bed	9.24	72	972	100	100.00%	Y
E242.3	Bed	11.42	90	1344	100	100.00%	Y
E242.4	Bed	11.03	99	901	100	100.00%	Y
E243.1	LKD	29.34	266	1819	200	100.00%	Y
E243.2	Bed	11.82	98	921	100	100.00%	Y
E243.3	Bed	10.30	88	924	100	100.00%	Y
E244.1	LKD	42.62	411	1659	200	100.00%	Y
E244.2	Bed	11.42	90	1384	100	100.00%	Y
E244.3	Bed	9.24	72	948	100	100.00%	Y
E244.4	Bed	11.03	99	913	100	100.00%	Y
E245.1	LKD	29.34	266	1643	200	100.00%	Y
E245.2	Bed	11.82	98	789	100	100.00%	Y
E245.3	Bed	10.30	88	978	100	100.00%	Y
E246.1	LKD	42.62	411	1554	200	100.00%	Y
E246.2	Bed	9.24	72	999	100	100.00%	Y
E246.3	Bed	11.42	90	1396	100	100.00%	Y
E246.4	Bed	11.03	99	919	100	100.00%	Y
E247.1	LKD	29.34	266	1706	200	100.00%	Y
E247.2	Bed	11.82	98	866	100	100.00%	Y
E247.3	Bed	10.30	88	872	100	100.00%	Y
E248.1	LKD	42.62	411	1701	200	100.00%	Y
E248.2	Bed	9.24	72	981	100	100.00%	Y
E248.3	Bed	11.42	90	1421	100	100.00%	Y
E248.4	Bed	11.03	99	936	100	100.00%	Y

Table 24: Block E - Minimum Daylight Provision individual room compliance values for all habitable rooms BS EN17037:2021+A1 Table NA.1.

sDA - Spatial Daylight Autonomy

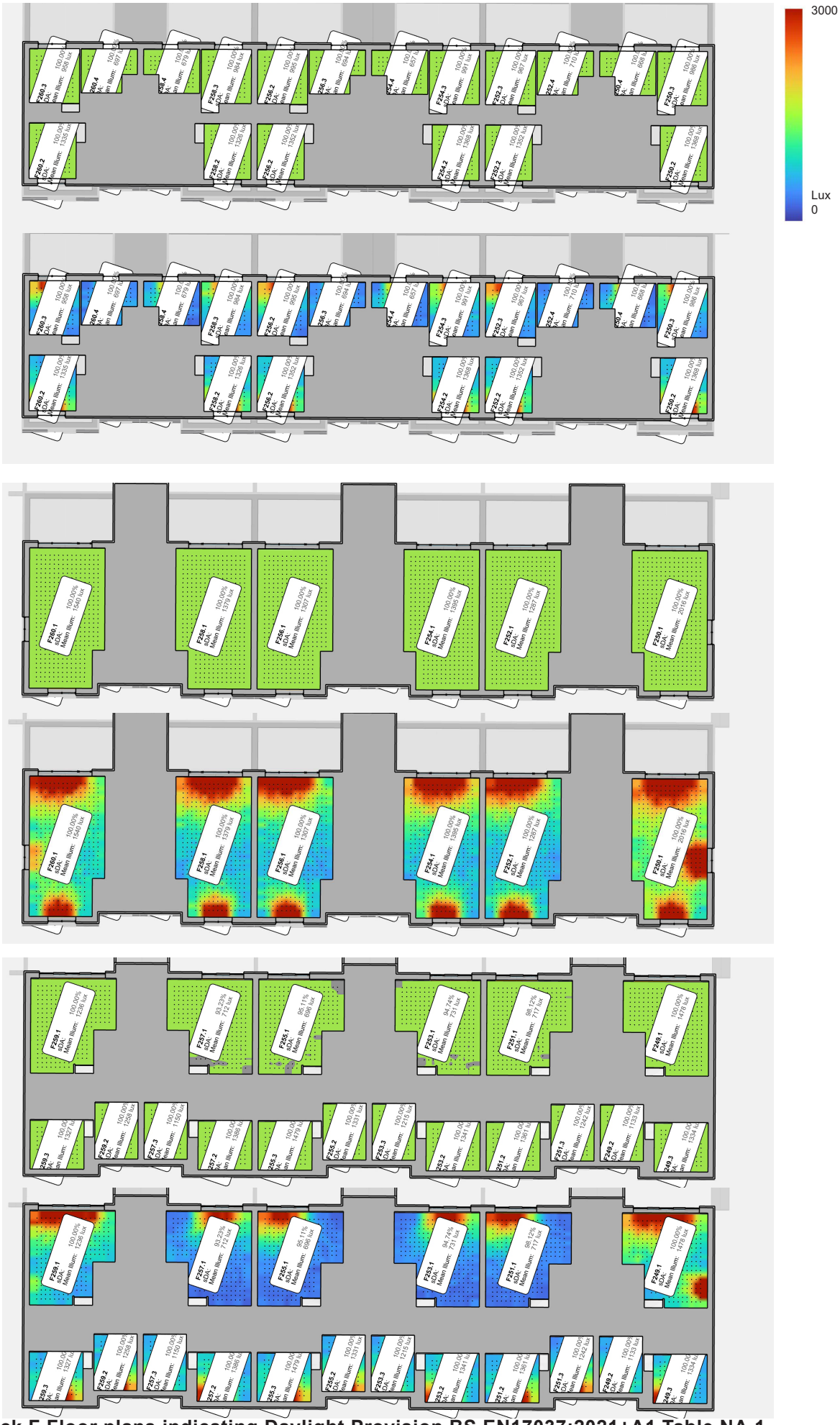


Figure 49: Block F Floor plans indicating Daylight Provision BS EN17037:2021+A1 Table NA.1 compliance for habitable rooms

Block F - Minimum illuminance levels from BS EN17037:2021+A1 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Median DF	Target Lux	% of grid target exceeded: Minimum 50% of grid	Meets Criteria
F249.1	LKD	29.34	266	1478	200	100.00%	Y
F249.2	Bed	10.30	88	1133	100	100.00%	Y
F249.3	Bed	11.21	90	1334	100	100.00%	Y
F250.1	LKD	42.62	411	2016	200	100.00%	Y
F250.2	Bed	11.03	99	1368	100	100.00%	Y
F250.3	Bed	11.42	90	986	100	100.00%	Y
F250.4	Bed	9.24	72	668	100	100.00%	Y
F251.1	LKD	29.34	266	717	200	98.12%	Y
F251.2	Bed	11.21	90	1361	100	100.00%	Y
F251.3	Bed	10.30	88	1242	100	100.00%	Y
F252.1	LKD	42.62	411	1287	200	100.00%	Y
F252.2	Bed	11.03	99	1352	100	100.00%	Y
F252.3	Bed	11.42	90	967	100	100.00%	Y
F252.4	Bed	9.24	72	710	100	100.00%	Y
F253.1	LKD	29.34	266	731	200	94.74%	Y
F253.2	Bed	11.21	90	1341	100	100.00%	Y
F253.3	Bed	10.30	88	1215	100	100.00%	Y
F254.1	LKD	42.62	411	1395	200	100.00%	Y
F254.2	Bed	11.03	99	1368	100	100.00%	Y
F254.3	Bed	11.42	90	991	100	100.00%	Y
F254.4	Bed	9.24	72	657	100	100.00%	Y
F255.1	LKD	29.34	266	696	200	95.11%	Y
F255.2	Bed	10.30	88	1331	100	100.00%	Y
F255.3	Bed	11.21	90	1479	100	100.00%	Y
F256.1	LKD	42.62	411	1307	200	100.00%	Y
F256.2	Bed	11.03	99	1352	100	100.00%	Y
F256.2	Bed	11.42	90	995	100	100.00%	Y
F256.3	Bed	9.24	72	694	100	100.00%	Y
F257.1	LKD	29.34	266	712	200	93.23%	Y
F257.2	Bed	11.21	90	1386	100	100.00%	Y
F257.3	Bed	10.30	88	1150	100	100.00%	Y
F258.1	LKD	42.62	411	1379	200	100.00%	Y
F258.2	Bed	11.03	99	1326	100	100.00%	Y
F258.3	Bed	11.42	90	984	100	100.00%	Y
F258.4	Bed	9.24	72	679	100	100.00%	Y
F259.1	LKD	29.34	266	1236	200	100.00%	Y
F259.2	Bed	10.30	88	1258	100	100.00%	Y
F259.3	Bed	11.21	90	1327	100	100.00%	Y
F260.1	LKD	42.62	411	1540	200	100.00%	Y
F260.2	Bed	11.03	99	1335	100	100.00%	Y
F260.3	Bed	11.42	90	958	100	100.00%	Y
F260.4	Bed	9.24	72	697	100	100.00%	Y

Table 25: Block F - Minimum Daylight Provision individual room compliance values for all habitable rooms BS EN17037:2021+A1 Table NA.1.

sDA - Spatial Daylight Autonomy

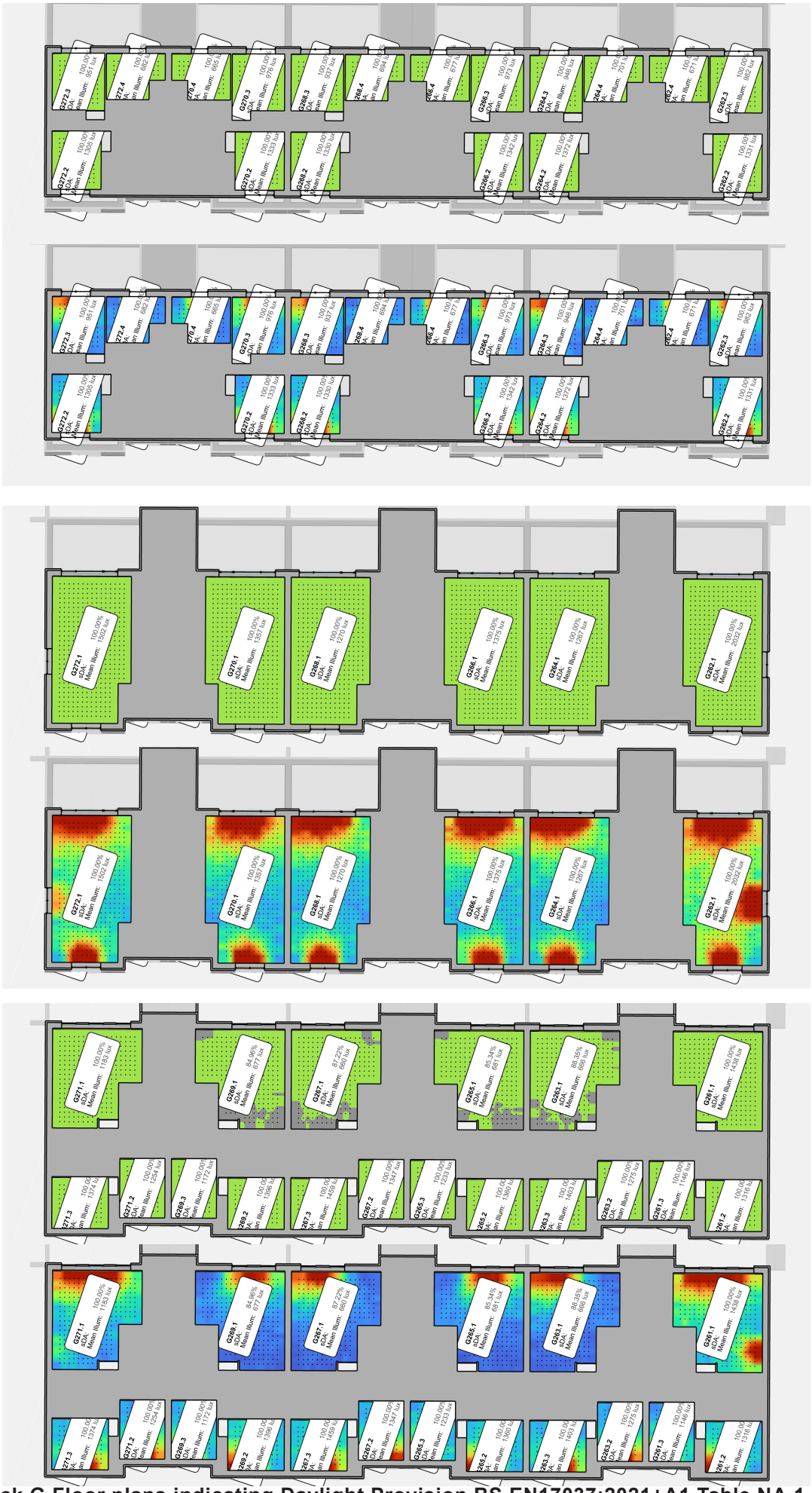


Figure 50: Block G Floor plans indicating Daylight Provision BS EN17037:2021+A1 Table NA.1 compliance for habitable rooms

Block G - Minimum illuminance levels from BS EN17037:2021+A1 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Median DF	Target Lux	% of grid target exceeded: Minimum 50% of grid	Meets Criteria
G261.1	LKD	29.34	266	1438	200	100.00%	Y
G261.2	Bed	11.21	90	1316	100	100.00%	Y
G261.3	Bed	10.30	88	1146	100	100.00%	Y
G262.1	LKD	42.62	411	2032	200	100.00%	Y
G262.2	Bed	11.03	99	1331	100	100.00%	Y
G262.3	Bed	11.42	90	982	100	100.00%	Y
G262.4	Bed	9.24	72	671	100	100.00%	Y
G263.1	LKD	29.34	266	666	200	88.35%	Y
G263.2	Bed	10.30	88	1275	100	100.00%	Y
G263.3	Bed	11.21	90	1403	100	100.00%	Y
G264.1	LKD	42.62	411	1267	200	100.00%	Y
G264.2	Bed	11.03	99	1372	100	100.00%	Y
G264.3	Bed	11.42	90	946	100	100.00%	Y
G264.4	Bed	9.24	72	701	100	100.00%	Y
G265.1	LKD	29.34	266	681	200	85.34%	Y
G265.2	Bed	11.21	90	1360	100	100.00%	Y
G265.3	Bed	10.30	88	1233	100	100.00%	Y
G266.1	LKD	42.62	411	1375	200	100.00%	Y
G266.2	Bed	11.03	99	1342	100	100.00%	Y
G266.3	Bed	11.42	90	973	100	100.00%	Y
G266.4	Bed	9.24	72	677	100	100.00%	Y
G267.1	LKD	29.34	266	660	200	87.22%	Y
G267.2	Bed	10.30	88	1347	100	100.00%	Y
G267.3	Bed	11.21	90	1459	100	100.00%	Y
G268.1	LKD	42.62	411	1270	200	100.00%	Y
G268.2	Bed	11.03	99	1330	100	100.00%	Y
G268.3	Bed	11.42	90	937	100	100.00%	Y
G268.4	Bed	9.24	72	694	100	100.00%	Y
G269.1	LKD	29.34	266	677	200	84.96%	Y
G269.2	Bed	11.21	90	1396	100	100.00%	Y
G269.3	Bed	10.30	88	1172	100	100.00%	Y
G270.1	LKD	42.62	411	1357	200	100.00%	Y
G270.2	Bed	11.03	99	1333	100	100.00%	Y
G270.3	Bed	11.42	90	976	100	100.00%	Y
G270.4	Bed	9.24	72	665	100	100.00%	Y
G271.1	LKD	29.34	266	1183	200	100.00%	Y
G271.2	Bed	10.30	88	1254	100	100.00%	Y
G271.3	Bed	11.21	90	1374	100	100.00%	Y
G272.1	LKD	42.62	411	1502	200	100.00%	Y
G272.2	Bed	11.03	99	1305	100	100.00%	Y
G272.3	Bed	11.42	90	951	100	100.00%	Y
G272.4	Bed	9.24	72	682	100	100.00%	Y

Table 26: Block G - Minimum Daylight Provision individual room compliance values for all habitable rooms BS EN17037:2021+A1 Table NA.1.

sDA - Spatial Daylight Autonomy

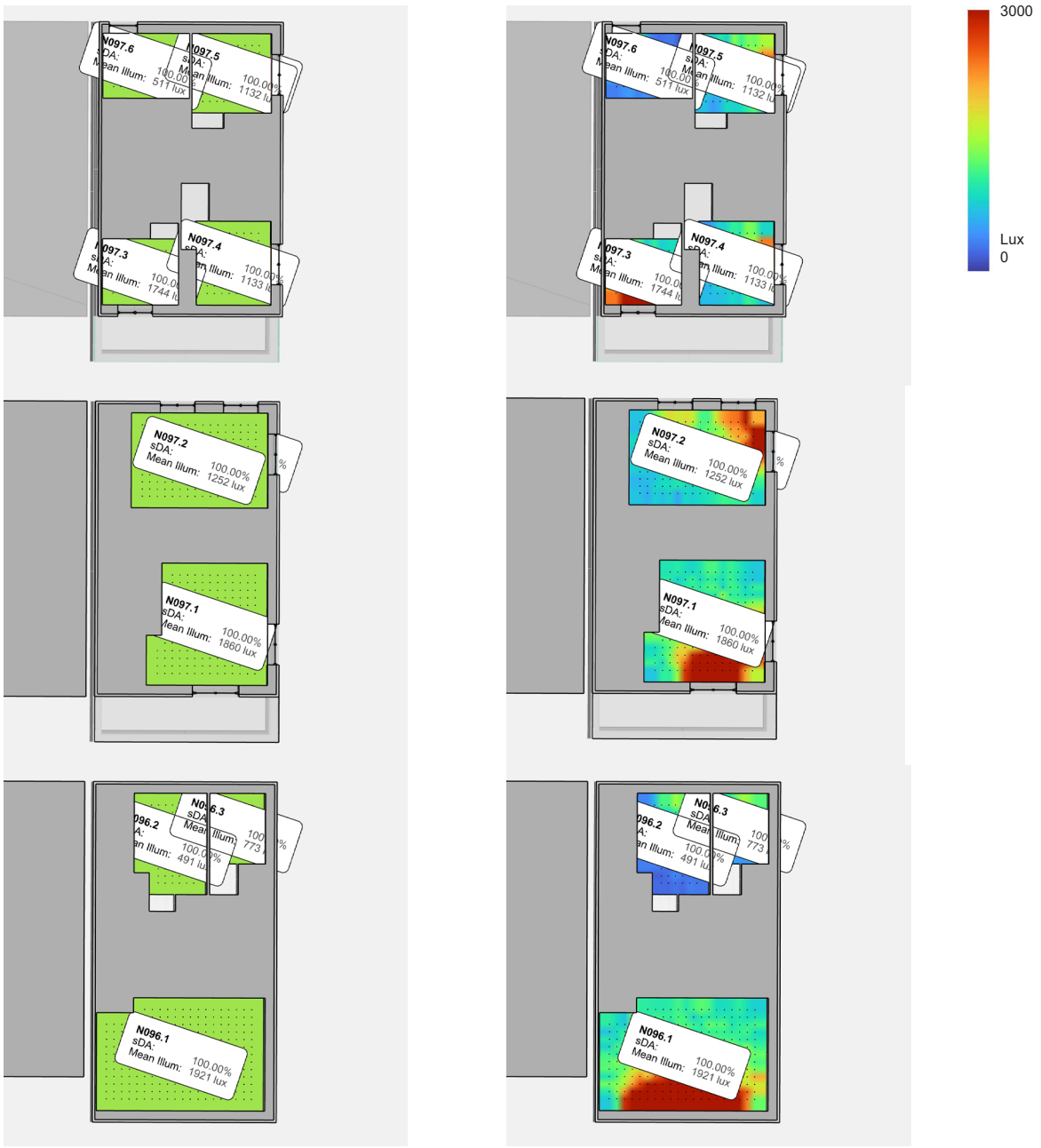


Figure 51: Type N Floor plans indicating Daylight Provision BS EN17037:2021+A1 Table NA.1 compliance for habitable rooms

Type N - Minimum illuminance levels from BS EN17037:2021+A1 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Median DF	Target Lux	% of grid target exceeded: Minimum 50% of grid	Meets Criteria
N096.1	LKD	28.14	250	1921	200	100.00%	Y
N096.2	Bed	10.75	90	491	100	100.00%	Y
N096.3	Bed	6.01	48	773	100	100.00%	Y
N097.1	KD	20.82	177	1860	200	100.00%	Y
N097.2	Liv	19.75	176	1252	150	100.00%	Y
N097.3	Bed	7.68	56	1744	100	100.00%	Y
N097.4	Bed	9.55	72	1133	100	100.00%	Y
N097.5	Bed	9.64	81	1132	100	100.00%	Y
N097.6	Bed	8.57	70	511	100	100.00%	Y

Table 27: Type N - Minimum Daylight Provision individual room compliance values for all habitable rooms BS EN17037:2021+A1 Table NA.1.

Appendix C - Sunlight Hours for Living Spaces

Sunlight Hours - Block A			
Unit ID	LKD window within 90° South	No. sunlight hours on 21st March	Compliance
A152	N	2.5	Minimum
A153	Y	7.2	High
A154	Y	5.2	High
A155	N	0.0	Fail
A156	Y	4.7	High
A157	N	2.8	Minimum
A158	Y	1.6	Minimum
A159	Y	5.4	High
A160	Y	5.0	High
A161	N	0.2	Fail
A162	Y	4.9	High
A163	Y	4.7	High
A164	N	0.0	Fail
A165	Y	4.9	High
A166	N	1.2	Fail
A167	Y	1.3	Fail
A168	Y	5.3	High
A169	Y	5.3	High
A170	N	0.1	Fail
A171	Y	4.9	High
A172	Y	4.7	High
A173	N	0.1	Fail
A174	Y	4.9	High
A175	Y	5.3	High
A176	Y	5.3	High
A177	N	0.8	Fail
A178	Y	7.4	High
A179	Y	6.4	High
A180	N	0.4	Fail
A181	Y	5.6	High
A182	Y	7.6	High
A183	Y	8.8	High

Table 28: Sunlight Hours - Block A

Sunlight Hours - Block B			
Unit ID	LKD window within 90° South	No. sunlight hours on 21st March	Compliance
B184	Y	4.8	High
B185	Y	4.2	High
B186	Y	3.8	Medium
B187	Y	2.1	Minimum
B188	Y	3.8	Medium
B189	Y	2.1	Minimum
B190	Y	6.3	High
B191	Y	6.5	High
B192	Y	4.3	High
B193	Y	2.6	Minimum
B194	Y	3.8	Medium
B195	Y	2.1	Minimum

Sunlight Hours - Block B			
Unit ID	LKD window within 90° South	No. sunlight hours on 21st March	Compliance
B196	Y	3.8	Medium
B197	Y	2.1	Minimum
B198	Y	6.3	High
B199	Y	6.5	High
B200	Y	4.3	High
B201	Y	3.8	Medium
B202	Y	2.2	Minimum
B203	Y	3.8	Medium
B204	Y	2.2	Minimum
B205	Y	6.3	High
B206	Y	6.8	High

Table 29: Sunlight Hours - Block B

Sunlight Hours - Block C			
Unit ID	LKD window within 90° South	No. sunlight hours on 21st March	Compliance
C207	Y	4.0	High
C208	Y	8.2	High
C209	Y	4.1	High
C210	Y	7.9	High
C211	Y	4.0	High
C212	Y	7.8	High
C213	Y	4.0	High
C214	Y	7.8	High
C215	Y	3.2	Medium
C216	N	1.3	Fail
C217	Y	3.4	Medium
C218	Y	4.0	High
C219	Y	5.3	High
C220	Y	4.7	High
C221	Y	7.8	High
C222	Y	4.5	High
C223	N	1.6	Minimum
C224	Y	3.4	Medium
C225	N	1.6	Minimum
C226	Y	3.4	Medium
C227	N	1.4	Fail
C228	Y	3.3	Medium
C229	Y	1.4	Fail
C230	Y	3.3	Medium

Table 30: Sunlight Hours - Block C

Sunlight Hours - Block D			
Unit ID	LKD window within 90° South	No. sunlight hours on 21st March	Compliance
D231	N	4.7	High
D232	N	4.8	High
D233	N	3.5	Medium
D234	Y	4.3	High
D235	Y	5.2	High
D236	Y	5.3	High
D237	Y	4.7	High
D238	Y	5.4	High
D239	Y	5.3	High
D240	Y	5.4	High

Table 31: Sunlight Hours - Block D

Sunlight Hours - Block E			
Unit ID	LKD window within 90° South	No. sunlight hours on 21st March	Compliance
E241	Y	5.8	High
E242	Y	6.5	High
E243	Y	5.3	High
E244	Y	6.1	High
E245	Y	4.7	High
E246	Y	5.4	High
E247	Y	6.3	High
E248	Y	6.0	High

Table 32: Sunlight Hours - Block E

Sunlight Hours - Block F			
Unit ID	LKD window within 90° South	No. sunlight hours on 21st March	Compliance
F249	N	3.5	Medium
F250	Y	5.8	High
F251	N	3.5	Medium
F252	Y	6.2	High
F253	N	4.2	High
F254	Y	6.2	High
F255	N	3.3	Medium
F256	Y	6.0	High
F257	N	3.4	Medium
F258	Y	5.8	High
F259	N	2.8	Minimum
F260	Y	3.8	Medium

Table 33: Sunlight Hours - Block F

Sunlight Hours - Block G			
Unit ID	LKD window within 90° South	No. sunlight hours on 21st March	Compliance
G261	N	4.5	High
G262	Y	5.9	High
G263	N	3.6	Medium
G264	Y	6.2	High
G265	N	3.3	Medium
G266	Y	6.2	High
G267	N	2.7	Minimum
G268	Y	6.0	High
G269	N	2.9	Minimum
G270	Y	5.9	High
G271	N	2.8	Minimum
G272	Y	6.2	High

Table 34: Sunlight Hours - Block G

Sunlight Hours - Type N			
Unit ID	LKD window within 90° South	No. sunlight hours on 21st March	Compliance
N096	Y	9.8	High
N097	Y	8.7	High

Table 35: Sunlight Hours - Block D