

**Daylight & Sunlight Assessments of a Proposed Strategic
Housing Development on lands at Back Road and Kinsealy
Lane, Kinsaley, Broomfield, Malahide, Co. Dublin**

Date: 8th April 2022

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1. Introduction

A proposed Strategic Housing Development consisting of the demolition of the former rugby clubhouse building on site and the construction of 415 no. residential units comprising of duplexes, apartments and houses, all with associated car parking; a childcare facility with associated car parking; landscaping including play equipment; boundary treatments; public lighting; and all associated engineering and site works necessary to facilitate the development.

1.1 Executive Summary

The 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 McCrossan O'Rourke Manning Architects.

Impact on adjacent properties

There will be minimal impact to the daylight and sunlight to the adjacent dwellings with no perceivable reduction in either daylight or sunlight. There will be a minimal reduction in the sunlight to any of the adjacent amenity spaces.

Assessment of the quality of the proposed development.

All the proposed units within the development will exceed the recommendations of the BRE guidelines for quality of Daylight. The multi-dwelling unit layouts have been optimised for daylight and sunlight. The proposed amenity spaces will be bright well sunlit places and exceed the recommendations of the BRE guidelines.

Overall the results find that any impact on the adjacent residential structures would be minimal. There would be a good quality of daylight in the multi-dwelling units analysed and the amenity areas would have sufficient sunlight to be bright and a pleasant spaces. The proposed development meets the recommendations of the BRE guidelines.

2. Methodology

2.1 Notes on the use of BS 8206-2 2008 and BRE guidance document (2011) Site layout planning for daylight and sunlight (BR209).

This Daylight and Sunlight Assessment demonstrates compliance with the BRE guide 'Site Layout Planning for Daylight and Sunlight' (2nd edition) and BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting'. This in 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) directs planning authorities to 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 standards for daylight and sunlight access in buildings (and the methodologies for assessment of same) suggested in both of these documents have been referenced in this Sunlight and Daylight Access Analysis.

The former standard BS 8206-2 was read in conjunction with BRE BR209 Site layout planning for daylight and sunlight and CIBSE LG10 as guidance only, but the launch of BS EN 17037 directly impacts on the recommendations of these other technical documents due to the withdrawal of BS8206-2:2008. The new standard can no longer be interpreted as guidance and cannot be incorporated into BR209 but BR209 continues to reference a standard that no longer exists. The updated 3rd Edition of the BRE guide 'Site Layout Planning for Daylight and Sunlight' intends to address this and is due to be published in spring 2022.

Neither the British Standard nor the BRE Guide set out rigid standards or limits. The BRE Guide is preceded by the following very clear warning as to how the design advice contained therein should be used:

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

That the recommendations of the BRE Guide 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 the existing dwellings

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. The site is analysed in plan, section and building use. Windows and amenity area are selected to test for impact from the proposed development.

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 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 25° 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 daylight and sunlight to existing buildings BRE guidance document (2011) "Site layout planning for daylight and sunlight" is used and BS8206 Part 2:2008 Lighting for Buildings, Code of Practice for Daylighting.

For loss of light the report 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 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 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.

2.3 Sunlight

The BRE guidelines recommend assessing the loss of sunlight to 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 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 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 Probable Sunlight Hours for winter. 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 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 Sunlight to gardens and open spaces

For calculations of sunlight analysis it is general practice to use March 21 and the recommendations of the BRE guidance document (2011) "Site layout planning for daylight and sunlight". P.J Littlefair, in relation to Gardens and open spaces section 3.3.17 state:

"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."

2.5 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 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."

2.6 Daylight in the Proposed Development.

The rooms are assessed for Average Daylight Factor (ADF) and compliance with EN 17037 (2018). Table 2 contains the Input values for material used in the assessment model.

Surface Reflectance			
Element	Reflectance	Transmissivity	Material Description
Internal walls	84%	0%	White Painted Walls
Internal ceiling	88%	0%	White Painted Ceiling
Floor	52%	0%	Light wood Flooring
External walls - proposed development	58.3%	0%	Light yellow Brick
External walls - outside site	20%	0%	CIBSE
External ground	20%	0%	CIBSE
Glass	20.1%	68.8%	Triple glazed clear glass

Table 2: Surface reflectance parameters for ADF calculation

Additional assessment model input parameters:

- Sensor Grid spacing 0.6m
- Sensor grid inset 0.35m
- Minimum inset 0.3m
- Work plane offset 0.85

2.7 EN17037:2018

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 assessment is carried out in addition to the assessment of the Average Daylight Factor as specified in the BRE guidelines and BS8206 Part 2:2008 Lighting for Buildings, Code of Practice for Daylighting.

The EN17037:2018 Standard was enacted prior to the publication of Sustainable Urban Housing: Design Standards for New Apartments in 2020 which has no reference to the new standard. Additionally to date it is not referenced in any planning guidance document by any local authority.

The standard deals exclusively with new developments and does not give guidance or metrics on loss of light or sunlight to existing properties. EN17037:2018 sets out values for Minimum and Target levels but does not give guidance on the number of units within a 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 and to date there are no guidelines or directives on the implementation of their use.

The compliance calculation is based on an annual, climate-based simulation of interior illuminance distributions. For each hour of the year, the percentage of the floor area achieving minimum and target illuminance thresholds is measured on a room-by-room basis. To meet the standard, a room must achieve both of 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.

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:

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

Table 3: EN 17037:2018 Compliance threshold levels.

2.8 Environmental Impact Assessment (BRE Guidelines Appendix I)

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. 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 location is a greenfield site on Back Road, Malahide, County Dublin. This application is the second phase of a residential development. Phase I is currently under construction. In this phase, there are a mix of houses, duplex units and apartments. The houses are 2 - 3 storeys, duplex 3 storeys and apartment blocks of 3 - 5 storeys in height. For clarity in this report, we refer to the North Site and the South Site.

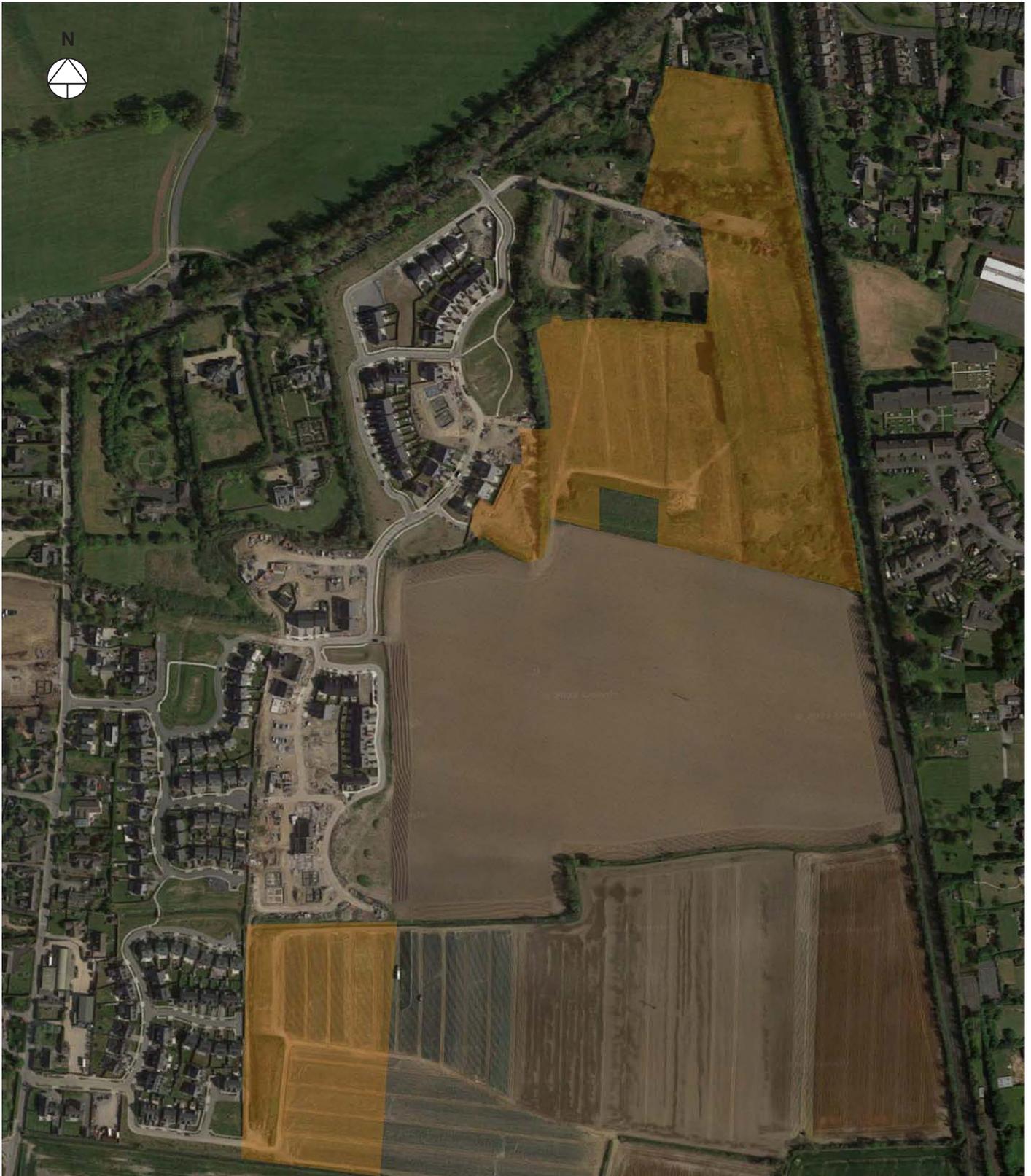


Figure 1: Aerial view of site.

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.

Section planes perpendicular to the window wall of the adjacent properties facing the proposed development are indicated in blue in Figure 2. The section planes at locations A to C that intersect the proposed development are assessed to check if they subtend the 25° angle in Figure 4.

The document also 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 25° to the horizontal, then the diffuse light of the existing building may be adversely affected. 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.

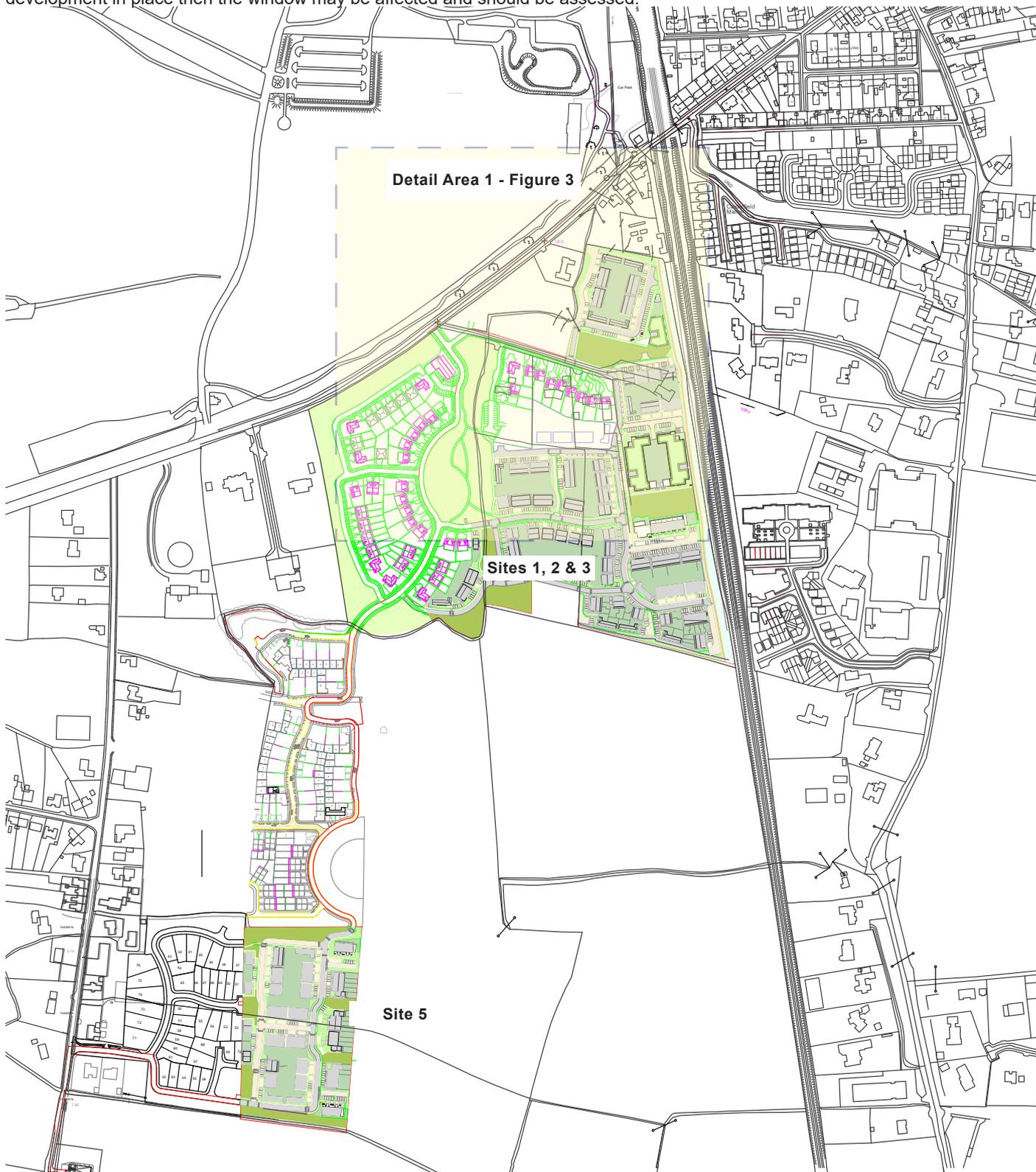


Figure 2: Proposed Site plan

3.2 Comment on the assessment of daylight in adjacent dwellings.

The two nearest houses are assessed for potentials impact on their daylight. A section is taken through their windows walls facing the proposed development at the locations indicated in Figure 4.

Location A, through No.5 Bloomfield, indicates the proposed development does not subtend the 25° angle and further assessment is not required.

Location B, through 'Lermoos', Back Road, indicates the proposed development does not subtend the 25° angle and further assessment is not required.

Location C, through 'Camp David' at No.3 Back Road, the windows do not face towards the proposed development, and there will be no reduction in available daylight or sunlight.

3.3 Conclusion

The daylight of adjacent residential properties not be impacted. The proposed development would meet the BRE guidelines.

4. Daylight to Proposed Development.

The habitable rooms in the apartment blocks have been assessed for compliance with the BRE guide by calculation of Average Daylight Factor. For supplementary information, compliance is also demonstrated with a calculation of Daylight Provision under EN 17037:2018.

4.1 Assessment for Average Daylight Factor

The BRE guidelines recommend that the Average Daylight Factor (ADF) be assessed in habitable rooms of new developments. BS 8206-2 gives minimum values of ADF of 2% for kitchens and living rooms which include a kitchen, 1.5% for living rooms and 1% for bedrooms. An average daylight factor of 5% is a well 'daylit' space. Where there are two room uses within a space then the higher ADF value should be used. The assessment plane covers 100% of living space being considered.

The factors that affect ADF are room depth, window size relative to floor area and closeness to an adjacent obstruction. A full schedule of results and the associated false colour plans representing the analysis of ADF are shown in Appendix A. The room numbering follows the architectural drawings. A summary of the results are displayed in the table below.

Summary of results of the assessment of Average Daylight Factor				
	No. of Units Assessed	No. of Rooms Assessed	No. Meets Criteria	% Meets Criteria
Blocks A & B	110	299	299	100%
Block C	25	68	68	100%
Duplex D	12	42	42	100%
Duplex E1+2	16	40	40	100%

Table 4: Summary of results of multi - dwelling buildings assessed for ADF. Individual room results can be viewed in Appendix A

4.2 Conclusion

100% of the rooms assessed exceed the minimum recommendations for the Average Daylight Factor and will be well daylit. The proposed development meets the recommendations of the BRE Guidelines and BS8206 Part 2:2008 Lighting for Buildings, Code of Practice for Daylighting.

4.3 Assessment for Daylight Provision EN17037:2018

For supplementary information, the rooms were assessed for daylight provision in accordance with the criteria set out in EN17037:2018. A complete set of results are shown in Appendix B. In the assessment, the room numbering followed that of the architectural drawings. A summary of the results are displayed in here below.

Fraction of rooms at each compliance level (area-weighted)					
		Fail	Minimum	Medium	High
Block A&B	Target Illuminance	3.59%	19.39%	26.94%	50.07%
	Minimum Illuminance	0.00%	13.36%	44.24%	42.40%
Block C	Target Illuminance	0.00%	0.00%	32.37%	67.63%
	Minimum Illuminance	0.00%	4.27%	36.22%	59.51%
Duplex D	Target Illuminance	0.0%	25.6%	27.3%	47.1%
	Minimum Illuminance	0.0%	25.6%	19.1%	55.3%
Duplex E1+2	Target Illuminance	0.00%	0.00%	14.22%	85.78%
	Minimum Illuminance	0.00%	10.63%	14.40%	74.97%

Table 5: Summary of room compliance with EN 17037:2018. Individual room results can be viewed in Appendix B

4.4 Conclusion

All the rooms assessed in the proposed development exceed the Minimum Illuminance values for EN17037:2018 daylight provision. The majority of the rooms to the units in the development meet the Target Illuminance values for EN17037:2018.

5. Sunlight to Habitable Rooms of Proposed Multi Dwelling Blocks

5.1 Annual Probable Sunlight Hours

The BRE guidelines recommends that living rooms with window that face within 90° of due South be assessed for Annual Probable Sunlight Hours (APSH) and Probable Sunlight Hours (PSH) for the winter period from September to March. It is recommended that the APSH be greater than 25% of the total sunlight hours possible and that the PSH in winter be greater than 5%.

All windows to the main living rooms in the apartment & duplex blocks have been assessed. Bedrooms need not be assessed. Appendix C shows the results per block, indicating if this room has a relevant south facing window. The apartment numbering follows that of the architectural drawings. A summary of the results are displayed in the table below.

Annual Probable Sunlight Hours Summary Table					
	Total Units	No. of units with a living room window within 90° South	Ratio of units that have a window within 90° South	No. of windows that meet criteria for sunlight	Ratio that meet the criteria for sunlight
Block A & B	110	70	63.6%	97	88.2%
Block C	25	15	60.0%	18	72.0%
Duplex D	12	12	100.0%	12	100.0%
Duplex E North	8	8	100.0%	8	100.0%
Duplex E South	8	4	50.0%	4	50.0%
Total	135	85	63.0%	115	85.2%

Table 6: Summary of results of assessment of APSH & PSH.

5.2 Comment on the assessment of Annual Probable 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 BRE guidelines gives an example in Section 3.1.8 and Figure 23 of an apartment block with 5 units on a floor and states "Careful layout design means that four out of five flats shown have a south facing living room.". This is an isolated example and does not take into account site constraints and other design factors but it would indicate that a ratio of 80% of living spaces exceeding the recommended target levels is a good achievement. Additionally windows with an aspect of greater than 90° due south, like north west or north east, will still receive sunlight, but it is likely to be lesser amounts especially in the winter period. This scheme is well designed for Sunlight, many apartments that do not have a window that faces within 90° South, still meet the criteria for sunlight, as shown in Table 6 and Appendix C with 85% of units receiving the recommended levels of sunlight.

5.3 Conclusion

The design and layout of the apartment blocks is optimised to receive the available sunlight and maximise the number of units with a window wall within 90° of due South at 63%. However due to good orientation of the blocks for sunlight 85% of all units exceed the BRE criteria for sunlight.

6. Sunlight to gardens and open spaces

The BRE document indicates that for an amenity area 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.

6.1 Private amenity space to neighbouring properties.

This is a predominantly low rise development, with buildings as distances consistent of a typical housing estate. The nearest houses on Back Road and the adjoining housing estate have been assessed for an impact on their sun on the ground. Figure 5 shows a site overview and Figures 6 - 8 show these area in detail. Results are itemised in Table 7 below.



Figure 5: Site plan indicating the areas of amenity to neighbouring properties.



Figure 6: Detail Area 2 - Existing and Proposed radiation maps of amenity areas.

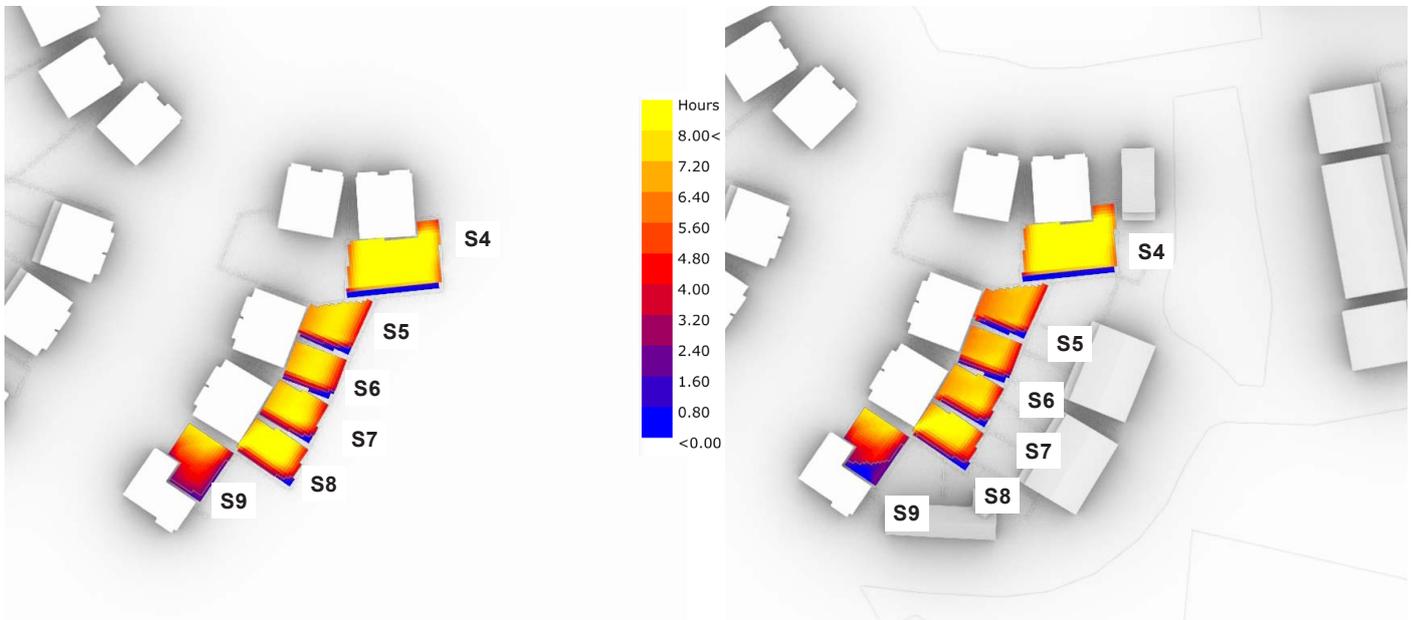


Figure 7: Detail Area 3 - Existing and Proposed radiation maps of amenity areas.

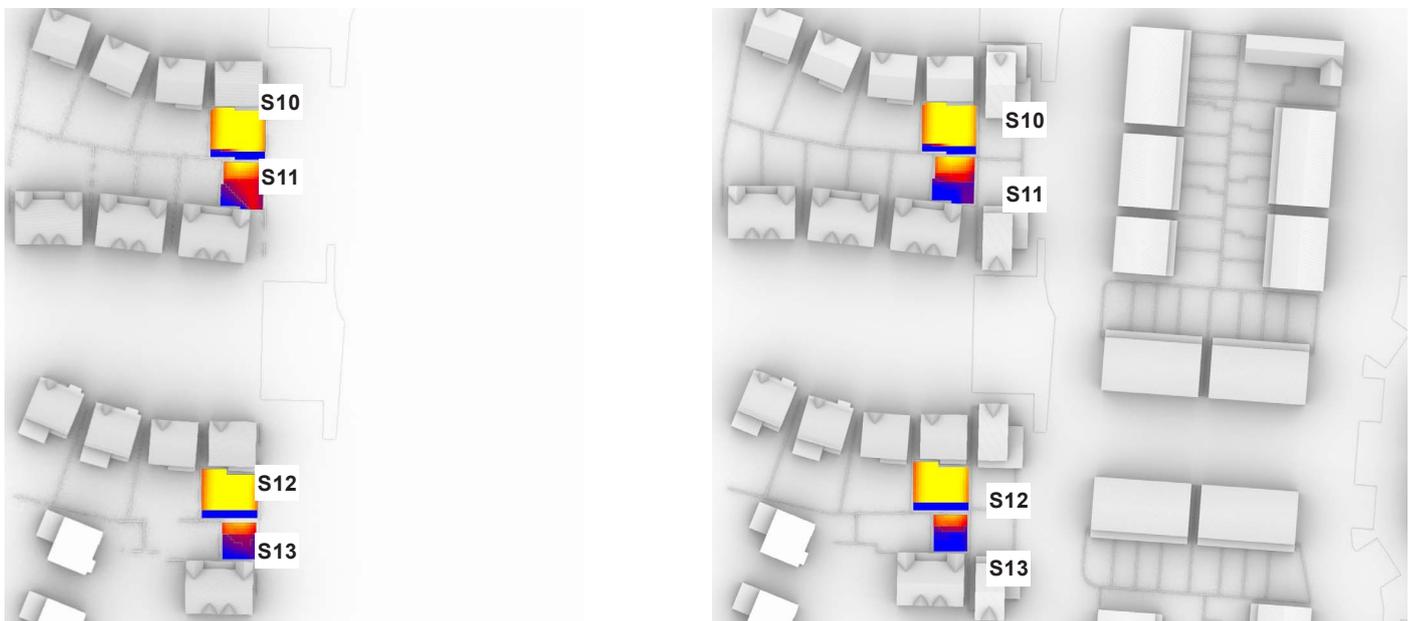


Figure 8: Detail Area 4 - Existing and Proposed radiation maps of amenity areas.

Sunlight on the Ground - Adjacent Residences					
Location ID	Location	Existing	Proposed	Ratio	Meets criteria of >50% area Or if <50% but >80% Existing Value
		% Area receiving 2 hours sunlight on 21st March			
S1	Castellina & Camp David	96.2	96.2	100.0%	Y
S2	Lermoos	96.6	96.6	100.0%	Y
S3	Lermoos	93.0	92.9	99.9%	Y
S4	Ashwood Hall	89.1	89.1	100.0%	Y
S5	Ashwood Hall	90.3	88.4	97.9%	Y
S6	Ashwood Hall	88.9	88.9	100.0%	Y
S7	Ashwood Hall	95.2	90.8	95.4%	Y
S8	Ashwood Hall	95.8	89.3	93.2%	Y
S9	Ashwood Hall	89.5	75.6	84.5%	Y
S10	37 Hazelbrook	83.6	83.6	100.0%	Y
S11	51 Hazelbrook	80.0	52.1	65.1%	Y
S12	52 Hazelbrook	80.2	80.2	100.0%	Y
S13	70 Hazelbrook	47.4	41.6	87.7%	Y

Table 7: Calculation of Sun on the Ground to Adjacent Amenity Spaces.

6.2 Conclusion

All the rear amenity spaces to the existing houses will receive 2 hours sunlight over 50% of the amenity space or will not be reduced below 80% of their existing sunlight levels. The proposed development meets the recommendations of the BRE guidelines.

6.3 Sunlight to amenity within the proposed development

The areas of amenity within this proposal have been assessed with a calculation of Sun on the Ground on the 21st March. A plan with generated analysis is shown in Figure 9 and the results are set out in Table 8 below.

Sunlight on the ground - within development			
Location ID	Location	Proposed	Meets criteria if >50% area receiving 2 hours sunlight on 21st March
		% Area receiving 2 hours sunlight on 21st March	
L1	Area 1	100.0	Meets criteria
L2	Block A & B - First Floor level	81.0	Meets criteria
L3	Area 2	93.7	Meets criteria
L4	Area 3	100.0	Meets criteria
L5	Area 4	100.0	Meets criteria
L6	Area 5	98.3	Meets criteria
L7	Area 6 & 7	94.8	Meets criteria
L8	Area 8	100.0	Meets criteria
L9	Area 10	97.2	Meets criteria

Table 8: Calculation of Sun on the Ground to amenity area within the proposed development.

6.4 Conclusion

All amenity areas within the development would have sun on the ground for in excess of 2 hours of sunlight on March 21st. The proposed development meets the BRE guidelines for gardens and open spaces.

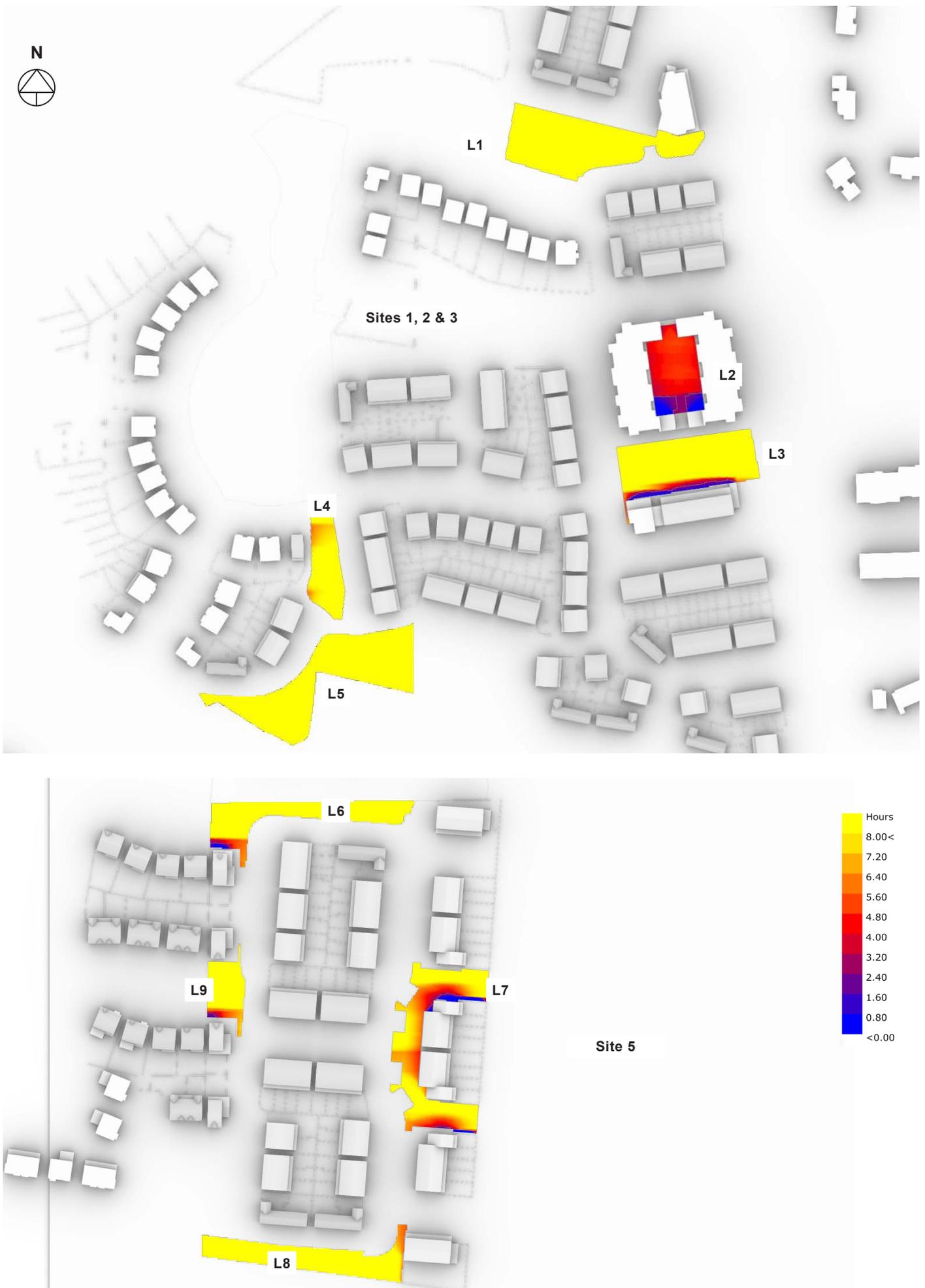


Figure 9: Radiation map of amenity areas, showing available sunlight on 21st March. The scale represents the percentage of daylight received from 0 - 8 hrs.

7. Shadow Diagrams

7.1 BRE Guidance on Shadow Studies

The BRE guidelines recommend using the 21st March for plotting shadow, 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. The guidelines recommend that “Sunlight at an altitude of 10° or less does not count”. 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 as the sun barely rises above an altitude of 10° during the course of the day. 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

7.2 Comment on the Shadow Study

The site is predominantly a greenfield site, there is no shadows cast from any structures on the site at present so only the proposed condition is plotted.

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.

Section 7.3 shows the proposed shadow diagrams for the Equinox on the 21st March at two hour intervals during the day between 09:00 and 17:00.

Section 7.4 shows the proposed shadow diagrams for the Summer Solstice on the 21st June at two hourly intervals during the day between 10:00 and 18:00.

Section 7.5 shows the proposed shadow diagrams for the Equinox on the 21st September at two hour intervals during the day between 09:00 and 17:00.

Section 7.6 shows the proposed shadow diagrams for the Winter Solstice on the 21st December at two hourly intervals during the day between 10:00 and 14:00.

7.3 Shadow Casting diagrams March Equinox



Northern Site



Southern Site



Figure 10: Shadow diagrams 21 March 09:00 GMT



Northern Site



Southern Site



Figure 11: Shadow diagrams 21 March 11:00 GMT



Northern Site



Southern Site



Figure 12: Shadow diagrams 21 March 13:00 GMT



Northern Site



Southern Site



Figure 13: Shadow diagrams 21 March 15:00 GMT



Northern Site



Southern Site



Figure 14: Shadow diagrams 21 March 17:00 GMT

7.4 Shadow Casting diagrams June Solstice



Northern Site



Southern Site



Figure 15: Shadow diagrams 21 June 10:00 GMT+1 (DST)



Northern Site



Southern Site



Figure 16: Shadow diagrams 21 June 12:00 GMT+1 (DST)

Northern Site



Southern Site



Figure 17: Shadow diagrams 21 June 14:00 GMT+1 (DST)

Northern Site



Southern Site



Figure 18: Shadow diagrams 21 June 16:00 GMT+1 (DST)



Northern Site



Southern Site

Figure 19: Shadow diagrams 21 June 18:00 GMT+1 (DST)

7.5 Shadow Casting diagrams September Equinox



Northern Site



Southern Site



Figure 20: Shadow diagrams 21 September 09:00 GMT+1 (DST)



Northern Site



Southern Site



Figure 21: Shadow diagrams 21 September 11:00 GMT+1 (DST)



Northern Site



Southern Site



Figure 22: Shadow diagrams 21 September 13:00 GMT+1 (DST)



Northern Site



Southern Site



Figure 23: Shadow diagrams 21 September 15:00 GMT+1 (DST)



Northern Site



Southern Site



Figure 24: Shadow diagrams 21 September 17:00 GMT+1 (DST)

7.6 Shadow Casting diagrams December Solstice



Northern Site



Southern Site



Figure 25: Shadow diagrams 21 December 10:00 GMT



Northern Site



Southern Site



Figure 26: Shadow diagrams 21 December 12:00 GMT

Northern Site



Southern Site



Figure 27: Shadow diagrams 21 December 14:00 GMT

Appendix A - Average Daylight Factor Tables for Habitable Rooms in Apartments

Blocks A & B

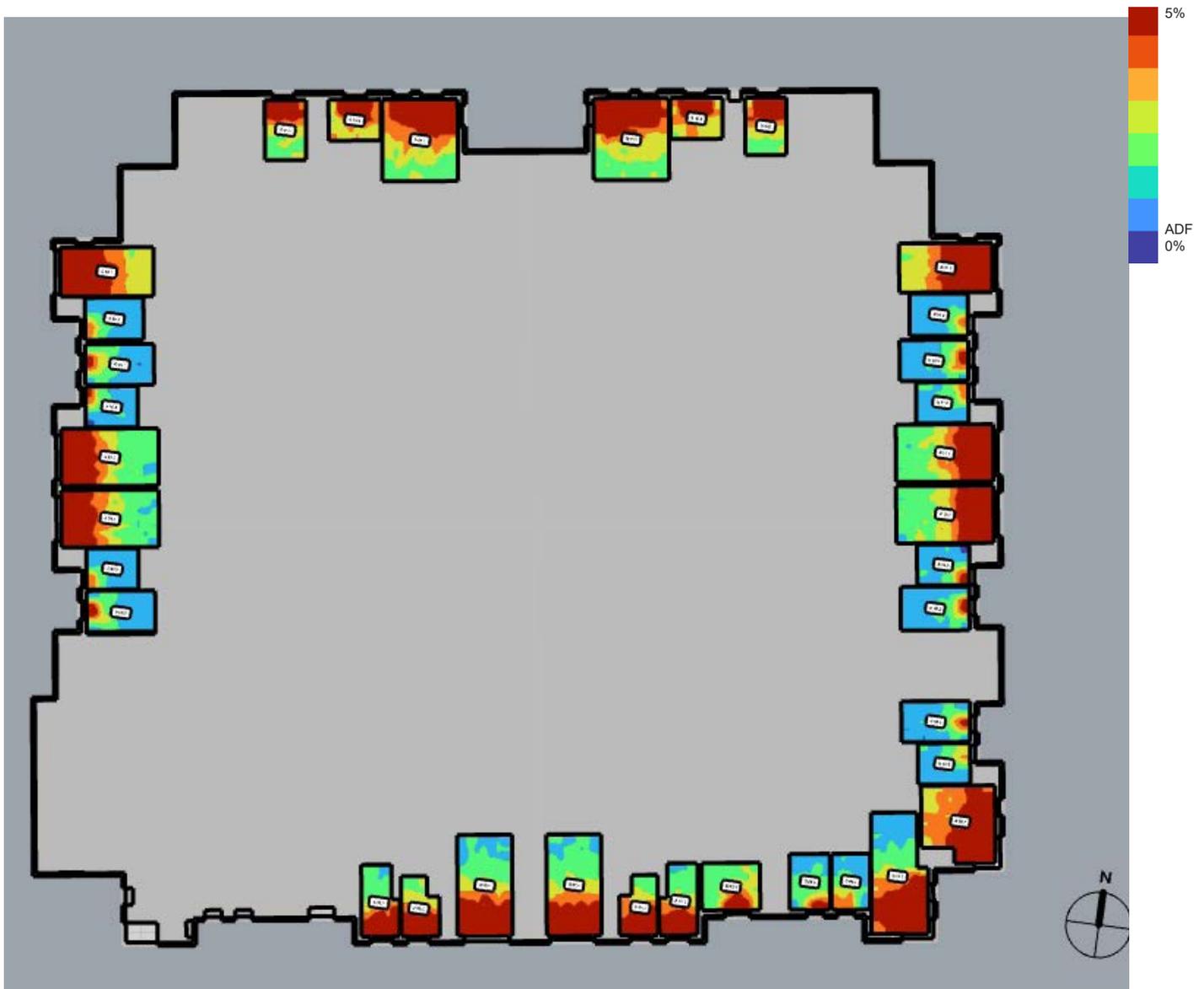


Figure 28: Blocks A & B Ground Floor, showing rooms assessed with false colour plan for the ADF. The scale is from 0-5%.

Average Daylight Factor - Blocks A & B - Ground Floor						
Space ID	Description	Area m2	Sensor Count	ADF	Minimum Recommended ADF	Meets Criteria
A 01.1	LKD	33.0	90	4.28%	2%	Y
A 01.2	Bed	11.4	30	4.45%	1%	Y
A 01.3	Bed	13.2	35	4.07%	1%	Y
A 02.1	LKD	24.5	66	6.40%	2%	Y
A 02.2	Bed	13.2	35	1.61%	1%	Y
A 03.1	LKD	29.8	84	4.36%	2%	Y
A 03.2	Bed	11.4	30	1.76%	1%	Y
A 03.3	Bed	15.0	40	1.86%	1%	Y
A 04.1	LKD	29.8	84	4.29%	2%	Y
A 04.2	Bed	11.4	30	1.61%	1%	Y
A 04.3	Bed	16.0	40	1.76%	1%	Y
A 05.1	LKD	29.6	84	4.20%	2%	Y
A 05.2	Bed	11.0	29	4.89%	1%	Y
A 05.3	Bed	13.2	40	4.10%	1%	Y
B 55.1	LKD	33.0	90	4.25%	2%	Y
B 55.2	Bed	11.4	30	4.47%	1%	Y
B 55.3	Bed	12.6	35	4.12%	1%	Y
B 56.1	LKD	24.5	66	6.55%	2%	Y
B 56.2	Bed	13.2	35	1.57%	1%	Y
B 57.1	LKD	29.8	84	4.57%	2%	Y
B 57.2	Bed	11.4	30	1.80%	1%	Y
B 57.3	Bed	15.0	40	1.85%	1%	Y
B 58.1	LKD	29.8	84	4.57%	2%	Y
B 58.2	Bed	11.4	30	1.75%	1%	Y
B 58.3	Bed	16.0	40	1.69%	1%	Y
B 59.1	LKD	28.0	71	6.24%	2%	Y
B 59.2	Bed	11.4	30	1.71%	1%	Y
B 59.3	Bed	15.0	40	1.72%	1%	Y
B 60.1	LKD	33.6	91	4.68%	2%	Y
B 60.2	Bed	11.5	35	2.07%	1%	Y
B 60.3	Bed	12.1	35	2.16%	1%	Y
B 60.4	Bed	14.7	42	2.91%	1%	Y
B 61.1	LKD	29.6	84	4.29%	2%	Y
B 61.2	Bed	11.0	29	4.86%	1%	Y
B 61.3	Bed	13.2	40	3.93%	1%	Y

Table 9: Blocks A & B - Average Daylight Factor of all habitable rooms on Ground Floor



Figure 29: Blocks A & B First Floor, showing rooms assessed with false colour plan for the ADF. The scale is from 0-5%.

Average Daylight Factor - Blocks A & B - First Floor						
Space ID	Description	Area m2	Sensor Count	ADF	Minimum Recommended ADF	Meets Criteria
A 06.1	LKD	29.8	84	6.26%	2%	Y
A 06.2	Bed	11.4	30	2.88%	1%	Y
A 06.3	Bed	16.0	40	2.11%	1%	Y
A 07.1	LKD	29.8	84	5.89%	2%	Y
A 07.2	Bed	11.4	30	2.72%	1%	Y
A 07.3	Bed	15.0	40	2.54%	1%	Y
A 08.1	LKD	24.5	66	9.05%	2%	Y
A 08.2	Bed	13.2	35	2.51%	1%	Y
A 09.1	LKD	29.9	84	6.50%	2%	Y
A 09.2	Bed	11.4	30	2.81%	1%	Y
A 09.3	Bed	15.0	40	2.50%	1%	Y
A 10.1	LKD	30.6	86	6.05%	2%	Y
A 10.2	Bed	10.5	30	3.16%	1%	Y
A 10.3	Bed	13.6	40	3.56%	1%	Y
A 11.1	LKD	30.2	84	4.40%	2%	Y
A 11.2	Bed	11.4	30	1.54%	1%	Y
A 11.3	Bed	12.4	30	1.57%	1%	Y

Average Daylight Factor - Blocks A & B - First Floor

Space ID	Description	Area m2	Sensor Count	ADF	Minimum Recommended ADF	Meets Criteria
A 12.1	LKD	28.5	77	5.04%	2%	Y
A 12.2	Bed	13.4	35	1.82%	1%	Y
A 13.1	LKD	25.2	66	5.42%	2%	Y
A 13.2	Bed	13.9	35	1.71%	1%	Y
A 14.1	LKD	29.8	84	4.88%	2%	Y
A 14.2	Bed	11.4	30	1.96%	1%	Y
A 14.3	Bed	15.0	40	1.56%	1%	Y
A 15.1	LKD	23.4	58	5.97%	2%	Y
A 15.2	Bed	11.7	30	3.63%	1%	Y
A 16.1	LKD	33.7	91	6.17%	2%	Y
A 16.2	Bed	10.0	30	2.97%	1%	Y
A 16.3	Bed	10.6	30	3.13%	1%	Y
A 17.1	LKD	28.0	71	8.77%	2%	Y
A 17.2	Bed	11.4	30	2.90%	1%	Y
A 17.3	Bed	15.0	40	2.52%	1%	Y
A 18.1	LKD	38.0	94	8.03%	2%	Y
B 62.1	LKD	28.0	71	8.78%	2%	Y
B 62.2	Bed	11.4	30	3.14%	1%	Y
B 62.3	Bed	15.0	40	2.53%	1%	Y
B 63.1	LKD	33.6	91	7.35%	2%	Y
B 63.2	Bed	10.0	30	3.51%	1%	Y
B 63.3	Bed	10.6	30	3.44%	1%	Y
B 64.1	LKD	23.4	58	6.40%	2%	Y
B 64.2	Bed	11.7	30	4.71%	1%	Y
B 65.1	LKD	29.8	84	5.75%	2%	Y
B 65.2	Bed	11.4	30	2.19%	1%	Y
B 65.3	Bed	15.0	40	1.78%	1%	Y
B 66.1	LKD	25.2	66	6.24%	2%	Y
B 66.2	Bed	13.9	35	1.99%	1%	Y
B 67.1	LKD	28.5	77	5.91%	2%	Y
B 67.2	Bed	13.4	35	2.28%	1%	Y
B 68.1	LKD	30.2	84	5.06%	2%	Y
B 68.2	Bed	11.4	30	1.94%	1%	Y
B 68.3	Bed	12.4	30	1.76%	1%	Y
B 69.1	LKD	30.6	86	6.60%	2%	Y
B 69.2	Bed	10.5	30	3.64%	1%	Y
B 69.3	Bed	13.6	40	3.86%	1%	Y
B 70.1	LKD	29.9	84	8.02%	2%	Y
B 70.2	Bed	11.4	30	3.05%	1%	Y
B 70.3	Bed	15.0	40	2.68%	1%	Y
B 71.1	LKD	24.5	66	10.36%	2%	Y
B 71.2	Bed	13.2	35	2.80%	1%	Y
B 72.1	LKD	29.8	84	6.15%	2%	Y
B 72.2	Bed	11.4	30	3.34%	1%	Y
B 72.3	Bed	15.0	40	2.73%	1%	Y
B 73.1	LKD	29.8	84	7.18%	2%	Y
B 73.2	Bed	11.4	30	3.20%	1%	Y
B 73.3	Bed	16.0	40	2.48%	1%	Y
B 74.1	LKD	38.0	94	9.38%	2%	Y

Table 10: Blocks A & B - Average Daylight Factor of all habitable rooms on First Floor



Figure 30: Blocks A & B Second Floor, showing rooms assessed with false colour plan for the ADF. The scale is from 0-5%.

Average Daylight Factor - Blocks A & B - Second Floor

Space ID	Description	Area m2	Sensor Count	ADF	Minimum Recommended ADF	Meets Criteria
A 18.2	Bed	12.0	35	3.82%	1%	Y
A 18.3	Bed	11.8	30	5.15%	1%	Y
A 18.4	Bed	13.4	34	4.37%	1%	Y
A 19.1	LKD	29.8	84	6.49%	2%	Y
A 19.2	Bed	11.4	30	2.96%	1%	Y
A 19.3	Bed	16.0	40	2.25%	1%	Y
A 20.1	LKD	29.8	84	6.01%	2%	Y
A 20.2	Bed	11.4	30	2.90%	1%	Y
A 20.3	Bed	15.0	40	2.57%	1%	Y
A 21.1	LKD	24.5	66	9.17%	2%	Y
A 21.2	Bed	13.2	35	2.60%	1%	Y
A 22.1	LKD	29.9	84	6.71%	2%	Y
A 22.2	Bed	11.4	30	4.65%	1%	Y
A 22.3	Bed	15.0	40	4.15%	1%	Y
A 23.1	LKD	30.6	86	8.09%	2%	Y
A 23.2	Bed	10.5	30	5.45%	1%	Y
A 23.3	Bed	13.6	40	5.96%	1%	Y
A 24.1	LKD	30.2	84	5.02%	2%	Y
A 24.2	Bed	11.4	30	2.02%	1%	Y
A 24.3	Bed	12.4	30	1.89%	1%	Y
A 25.1	LKD	28.5	77	5.75%	2%	Y

Average Daylight Factor - Blocks A & B - Second Floor

Space ID	Description	Area m2	Sensor Count	ADF	Minimum Recommended ADF	Meets Criteria
A 25.2	Bed	13.4	35	2.30%	1%	Y
A 26.1	LKD	25.2	66	6.08%	2%	Y
A 26.2	Bed	13.9	35	1.99%	1%	Y
A 27.1	LKD	29.8	84	5.64%	2%	Y
A 27.2	Bed	11.4	30	2.46%	1%	Y
A 27.3	Bed	15.0	40	1.98%	1%	Y
A 28.1	LKD	23.4	58	6.27%	2%	Y
A 28.2	Bed	11.7	30	4.86%	1%	Y
A 29.1	LKD	33.7	91	6.04%	2%	Y
A 29.2	Bed	10.0	30	3.25%	1%	Y
A 29.3	Bed	10.6	30	3.00%	1%	Y
A 30.1	LKD	28.0	71	8.25%	2%	Y
A 30.2	Bed	11.4	30	3.00%	1%	Y
A 30.2	Bed	15.0	40	2.43%	1%	Y
B 74.2	Bed	12.0	35	3.82%	1%	Y
B 74.3	Bed	11.8	30	5.15%	1%	Y
B 74.5	Bed	13.4	34	4.37%	1%	Y
B 75.1	LKD	28.0	71	8.94%	2%	Y
B 75.2	Bed	11.4	30	3.20%	1%	Y
B 75.3	Bed	15.0	40	2.60%	1%	Y
B 76.1	LKD	33.6	91	7.51%	2%	Y
B 76.2	Bed	10.0	30	3.46%	1%	Y
B 76.3	Bed	10.6	30	3.65%	1%	Y
B 77.1	LKD	23.4	58	6.75%	2%	Y
B 77.2	Bed	11.7	30	5.52%	1%	Y
B 78.1	LKD	29.8	84	6.63%	2%	Y
B 78.2	Bed	11.4	30	2.67%	1%	Y
B 78.3	Bed	15.0	40	2.27%	1%	Y
B 79.1	LKD	25.2	66	6.94%	2%	Y
B 79.2	Bed	14.0	35	2.28%	1%	Y
B 80.1	LKD	28.5	77	6.63%	2%	Y
B 80.2	Bed	13.4	35	2.53%	1%	Y
B 81.1	LKD	30.2	84	5.54%	2%	Y
B 81.2	Bed	11.4	30	2.32%	1%	Y
B 81.3	Bed	12.4	30	2.12%	1%	Y
B 82.1	LKD	30.6	86	8.93%	2%	Y
B 82.2	Bed	10.5	30	6.38%	1%	Y
B 82.3	Bed	13.6	40	6.65%	1%	Y
B 83.1	LKD	15.0	40	4.72%	2%	Y
B 83.2	Bed	11.4	30	5.47%	1%	Y
B 83.3	Bed	29.9	84	8.77%	1%	Y
B 84.1	LKD	24.5	66	10.46%	2%	Y
B 84.2	Bed	13.2	35	2.99%	1%	Y
B 85.1	LKD	29.8	84	5.74%	2%	Y
B 85.2	Bed	11.4	30	3.21%	1%	Y
B 85.3	Bed	15.0	40	2.80%	1%	Y
B 86.1	LKD	29.8	84	7.18%	2%	Y
B 86.2	Bed	11.4	30	3.31%	1%	Y
B 86.3	Bed	16.0	40	2.62%	1%	Y

Table 11: Blocks A & B - Average Daylight Factor of all habitable rooms on Second Floor



Figure 31: Blocks A & B Third Floor, showing rooms assessed with false colour plan for the ADF. The scale is from 0-5%.

Average Daylight Factor - Blocks A & B - Third Floor						
Space ID	Description	Area m2	Sensor Count	ADF	Minimum Recommended ADF	Meets Criteria
A 31.1	LKD	29.8	84	7.64%	2%	Y
A 31.2	Bed	11.4	30	3.50%	1%	Y
A 31.3	Bed	16.0	40	2.87%	1%	Y
A 32.1	LKD	29.8	84	7.01%	2%	Y
A 32.2	Bed	11.4	30	3.46%	1%	Y
A 32.3	Bed	15.0	40	2.88%	1%	Y
A 33.1	LKD	24.5	66	10.47%	2%	Y
A 33.2	Bed	13.2	35	2.86%	1%	Y
A 34.1	LKD	29.9	84	8.65%	2%	Y
A 34.2	Bed	11.4	30	5.21%	1%	Y
A 34.3	Bed	15.0	40	4.32%	1%	Y
A 35.1	LKD	30.6	86	9.05%	2%	Y
A 35.2	Bed	10.5	30	5.91%	1%	Y
A 35.3	Bed	13.6	40	5.84%	1%	Y
A 36.1	LKD	30.2	84	6.62%	2%	Y
A 36.2	Bed	11.4	30	2.84%	1%	Y
A 36.3	Bed	12.4	30	2.69%	1%	Y

Average Daylight Factor - Blocks A & B - Third Floor

Space ID	Description	Area m2	Sensor Count	ADF	Minimum Recommended ADF	Meets Criteria
A 37.1	LKD	28.5	77	7.22%	2%	Y
A 37.2	Bed	13.4	35	2.89%	1%	Y
A 38.1	LKD	25.2	66	7.59%	2%	Y
A 38.2	Bed	13.9	35	2.68%	1%	Y
A 39.1	LKD	29.8	84	7.21%	2%	Y
A 39.2	Bed	11.4	30	3.27%	1%	Y
A 39.3	Bed	15.0	40	2.64%	1%	Y
A 40.1	LKD	23.4	58	7.84%	2%	Y
A 40.2	Bed	11.7	30	6.96%	1%	Y
A 41.1	LKD	33.6	91	7.83%	2%	Y
A 41.2	Bed	10.0	30	3.79%	1%	Y
A 41.3	Bed	10.6	30	3.89%	1%	Y
A 42.1	LKD	28.0	71	9.59%	2%	Y
A 42.2	Bed	11.4	30	3.56%	1%	Y
A 42.3	Bed	15.0	40	2.96%	1%	Y
B 87.1	LKD	28.0	71	7.98%	2%	Y
B 87.2	Bed	11.4	30	2.85%	1%	Y
B 87.3	Bed	15.0	40	2.16%	1%	Y
B 88.1	LKD	33.6	91	6.75%	2%	Y
B 88.2	Bed	10.0	30	3.11%	1%	Y
B 88.3	Bed	10.6	30	3.41%	1%	Y
B 89.1	LKD	23.4	58	6.04%	2%	Y
B 89.2	Bed	11.7	30	5.72%	1%	Y
B 90.1	LKD	29.8	84	6.09%	2%	Y
B 90.2	Bed	11.4	30	2.85%	1%	Y
B 90.3	Bed	15.0	40	2.14%	1%	Y
B 91.1	LKD	25.2	66	6.49%	2%	Y
B 91.2	Bed	14.0	35	2.37%	1%	Y
B 92.1	LKD	28.5	77	6.50%	2%	Y
B 92.2	Bed	13.4	35	2.61%	1%	Y
B 93.1	LKD	30.2	84	5.75%	2%	Y
B 93.2	Bed	11.4	30	2.35%	1%	Y
B 93.3	Bed	12.4	30	2.16%	1%	Y
B 94.1	LKD	30.6	86	7.99%	2%	Y
B 94.2	Bed	10.5	30	4.99%	1%	Y
B 94.3	Bed	13.6	40	5.41%	1%	Y
B 95.1	LKD	29.9	84	7.88%	2%	Y
B 95.2	Bed	11.4	30	4.32%	1%	Y
B 95.3	Bed	15.0	40	3.65%	1%	Y
B 96.1	LKD	24.5	66	9.32%	2%	Y
B 96.2	Bed	13.2	35	2.65%	1%	Y
B 97.1	LKD	29.8	84	6.04%	2%	Y
B 97.2	Bed	11.4	30	2.87%	1%	Y
B 97.3	Bed	15.0	40	2.56%	1%	Y
B 98.1	LKD	29.8	84	6.30%	2%	Y
B 98.2	Bed	11.4	30	2.89%	1%	Y
B 98.3	Bed	16.0	40	2.35%	1%	Y

Table 12: Blocks A & B - Average Daylight Factor of all habitable rooms on Third Floor



Figure 32: Blocks A & B Fourth Floor, showing rooms assessed with false colour plan for the ADF. The scale is from 0-5%.

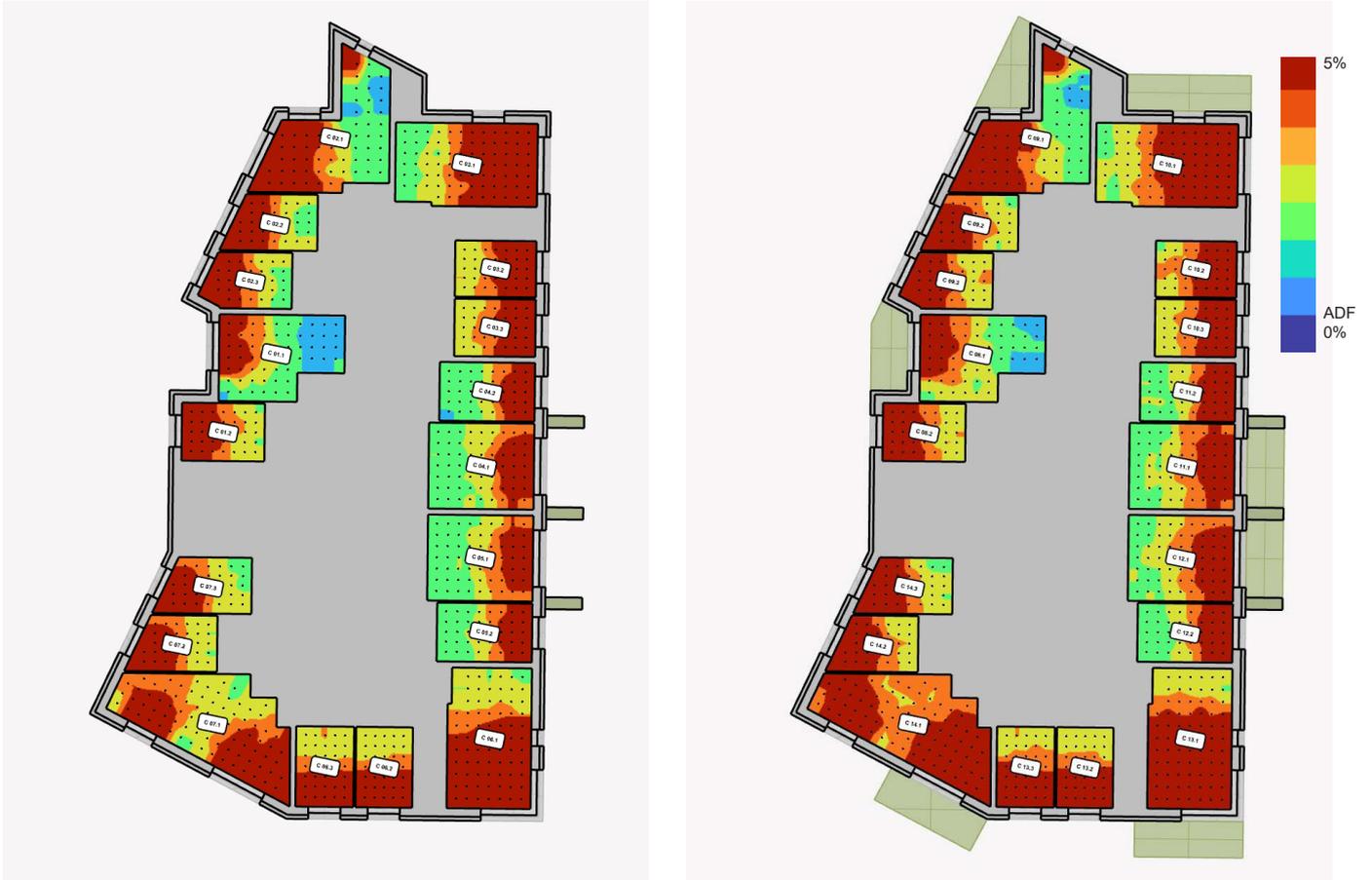
Average Daylight Factor - Blocks A & B - Fourth Floor							
Space ID	Description	Area m2	Sensor Count	ADF	Minimum Recommended ADF	Meets Criteria	
A 43.1	LKD	29.8	84	6.65%	2%	Y	
A 43.2	Bed	11.4	30	3.24%	1%	Y	
A 43.3	Bed	16.0	40	2.47%	1%	Y	
A 44.1	LKD	29.8	84	5.82%	2%	Y	
A 44.2	Bed	11.4	30	5.28%	1%	Y	
A 44.3	Bed	15.0	40	4.36%	1%	Y	
A 45.1	LKD	24.5	66	10.53%	2%	Y	
A 45.2	Bed	13.2	35	4.80%	1%	Y	
A 46.1	LKD	29.9	84	8.07%	2%	Y	
A 46.2	Bed	11.4	30	4.72%	1%	Y	
A 46.3	Bed	15.0	40	3.69%	1%	Y	
A 47.1	LKD	30.6	86	9.05%	2%	Y	
A 47.2	Bed	10.5	30	4.97%	1%	Y	
A 47.3	Bed	13.6	40	5.45%	1%	Y	
A 48.1	LKD	30.2	84	6.89%	2%	Y	
A 48.2	Bed	11.4	30	5.01%	1%	Y	
A 48.3	Bed	12.4	30	4.71%	1%	Y	

Average Daylight Factor - Blocks A & B - Fourth Floor

Space ID	Description	Area m2	Sensor Count	ADF	Minimum Recommended ADF	Meets Criteria
A 49.1	LKD	28.5	77	7.23%	2%	Y
A 49.2	Bed	13.4	35	4.85%	1%	Y
A 50.1	LKD	25.2	66	7.65%	2%	Y
A 50.2	Bed	13.9	35	4.34%	1%	Y
A 51.1	LKD	29.8	84	7.06%	2%	Y
A 51.2	Bed	11.4	30	5.22%	1%	Y
A 51.3	Bed	15.0	40	4.49%	1%	Y
A 52.1	LKD	23.4	58	12.43%	2%	Y
A 52.2	Bed	11.7	30	6.33%	1%	Y
A 53.1	LKD	33.6	91	9.13%	2%	Y
A 53.2	Bed	10.0	30	6.25%	1%	Y
A 53.3	Bed	10.6	30	5.82%	1%	Y
A 54.1	LKD	28.0	71	9.70%	2%	Y
A 54.2	Bed	11.4	30	3.26%	1%	Y
A 54.3	Bed	15.0	40	2.74%	1%	Y
B 100.1	LKD	33.6	91	7.61%	2%	Y
B 100.2	Bed	10.0	30	4.78%	1%	Y
B 100.3	Bed	10.6	30	4.84%	1%	Y
B 101.1	LKD	23.4	58	10.88%	2%	Y
B 101.2	Bed	11.7	30	5.25%	1%	Y
B 102.1	LKD	29.8	84	6.26%	2%	Y
B 102.2	Bed	11.4	30	4.23%	1%	Y
B 102.3	Bed	15.0	40	3.43%	1%	Y
B 103.1	LKD	25.2	66	6.64%	2%	Y
B 103.2	Bed	14.0	35	3.65%	1%	Y
B 104.1	LKD	28.5	77	6.23%	2%	Y
B 104.2	Bed	13.4	35	4.04%	1%	Y
B 105.1	LKD	30.2	84	6.59%	2%	Y
B 105.2	Bed	11.4	30	4.10%	1%	Y
B 105.3	Bed	12.4	30	3.88%	1%	Y
B 106.1	LKD	30.6	86	8.62%	2%	Y
B 106.2	Bed	10.5	30	4.42%	1%	Y
B 106.3	Bed	13.6	40	4.76%	1%	Y
B 107.1	LKD	29.9	84	6.80%	2%	Y
B 107.2	Bed	11.4	30	3.76%	1%	Y
B 107.3	Bed	15.0	40	3.32%	1%	Y
B 108.1	LKD	24.5	66	8.88%	2%	Y
B 108.2	Bed	13.2	35	3.80%	1%	Y
B 109.1	LKD	29.8	84	5.06%	2%	Y
B 109.2	Bed	11.4	30	4.35%	1%	Y
B 109.3	Bed	15.0	40	3.57%	1%	Y
B 110.1	LKD	29.8	84	5.39%	2%	Y
B 110.2	Bed	11.4	30	2.47%	1%	Y
B 110.3	Bed	16.0	40	2.00%	1%	Y

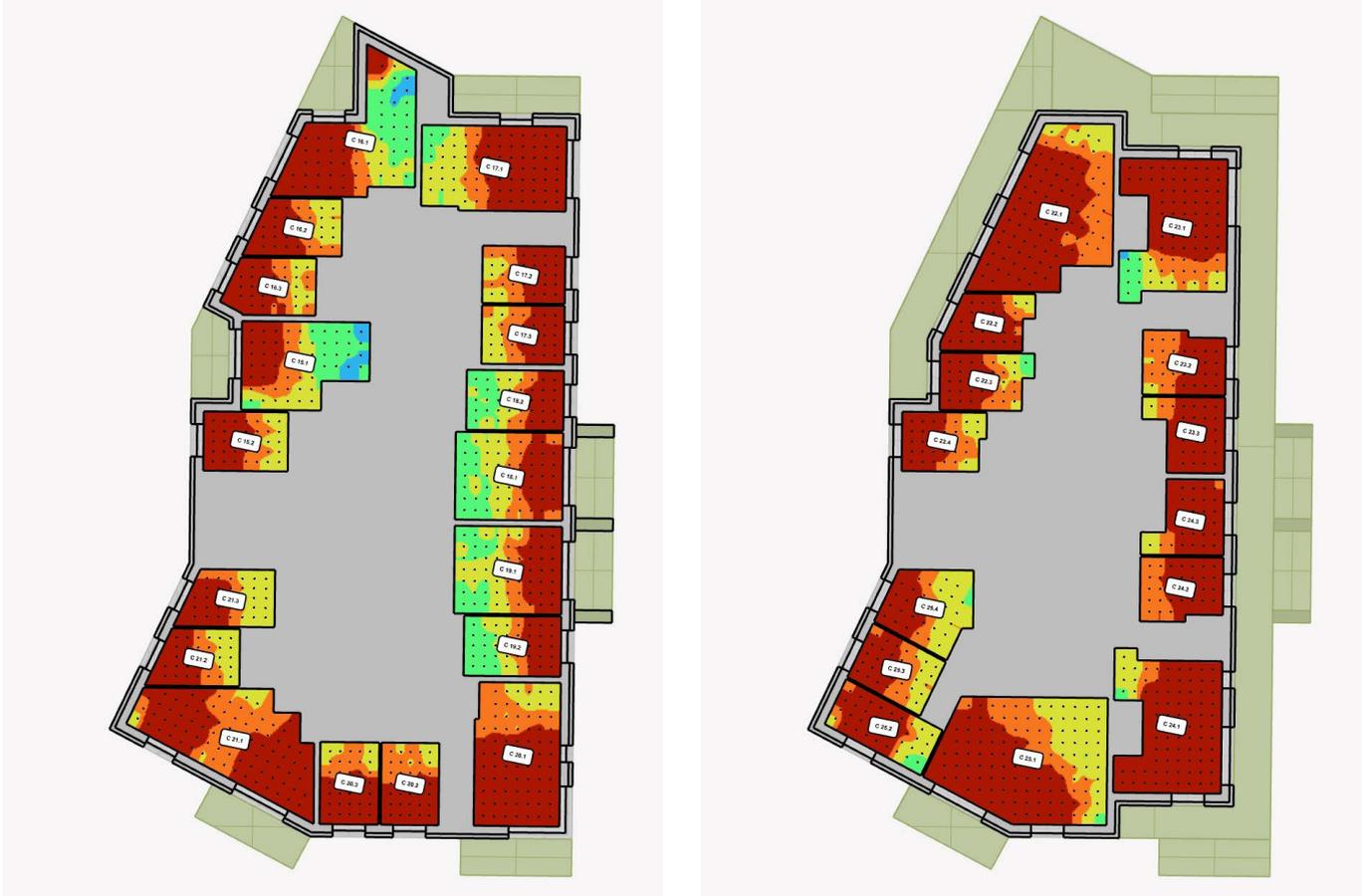
Table 13: Blocks A & B - Average Daylight Factor of all habitable rooms on Fourth Floor

Block C



Ground Floor

First Floor



Second Floor

Third Floor

Figure 33: Block C - false colour plans of ADF. Scale 0 - 5%

Average Daylight Factor - Block C

Space ID	Description	Area m2	Sensor Count	ADF	Minimum Recommended ADF	Meets Criteria
Ground Floor						
C 01.1	LKD	23.4	58	2.87%	2%	Y
C 01.2	Bed	11.8	35	4.77%	1%	Y
C 02.1	LKD	28.8	60	3.86%	2%	Y
C 02.2	Bed	11.7	33	4.50%	1%	Y
C 02.3	Bed	11.5	33	4.37%	1%	Y
C 03.1	LKD	28.7	81	5.69%	2%	Y
C 03.2	Bed	11.2	35	4.92%	1%	Y
C 03.3	Bed	11.4	35	4.94%	1%	Y
C 04.1	LKD	22.2	63	3.34%	2%	Y
C 04.2	Bed	13.7	40	3.62%	1%	Y
C 05.1	LKD	22.2	63	3.33%	2%	Y
C 05.2	Bed	13.7	40	3.82%	1%	Y
C 06.1	LKD	28.6	74	6.39%	2%	Y
C 06.2	Bed	11.2	35	4.82%	1%	Y
C 06.3	Bed	11.4	35	4.94%	1%	Y
C 07.1	LKD	33.9	82	4.39%	2%	Y
C 07.2	Bed	11.0	32	4.57%	1%	Y
C 07.3	Bed	11.9	33	4.33%	1%	Y
First Floor						
C 08.1	LKD	23.4	58	3.28%	2%	Y
C 08.2	Bed	11.8	35	4.89%	1%	Y
C 09.1	LKD	28.8	60	4.22%	2%	Y
C 09.2	Bed	11.7	33	4.74%	1%	Y
C 09.3	Bed	11.5	33	4.79%	1%	Y
C 10.1	LKD	28.7	81	6.16%	2%	Y
C 10.2	Bed	11.2	35	5.24%	1%	Y
C 10.3	Bed	11.4	35	4.98%	1%	Y
C 11.1	LKD	22.2	63	3.74%	2%	Y
C 11.2	Bed	13.7	40	4.02%	1%	Y
C 12.1	LKD	22.2	63	3.78%	2%	Y
C 12.2	Bed	13.7	40	4.01%	1%	Y
C 13.1	LKD	28.6	74	7.08%	2%	Y
C 13.2	Bed	11.2	35	5.23%	1%	Y
C 13.3	Bed	11.4	35	5.20%	1%	Y
C 14.1	LKD	33.9	82	5.18%	2%	Y
C 14.2	Bed	11.0	32	4.89%	1%	Y
C 14.3	Bed	11.9	33	4.69%	1%	Y
Second Floor						
C 15.1	LKD	23.4	58	3.62%	2%	Y
C 15.2	Bed	11.8	35	5.05%	1%	Y
C 16.1	LKD	28.8	60	4.43%	2%	Y
C 16.2	Bed	11.7	33	5.04%	1%	Y
C 16.3	Bed	11.5	33	5.07%	1%	Y
C 17.1	LKD	28.7	81	6.23%	2%	Y
C 17.2	Bed	11.2	35	5.25%	1%	Y
C 17.3	Bed	11.4	35	5.10%	1%	Y
C 18.1	LKD	22.2	63	3.81%	2%	Y
C 18.2	Bed	13.7	40	4.11%	1%	Y
C 19.1	LKD	22.2	63	3.82%	2%	Y

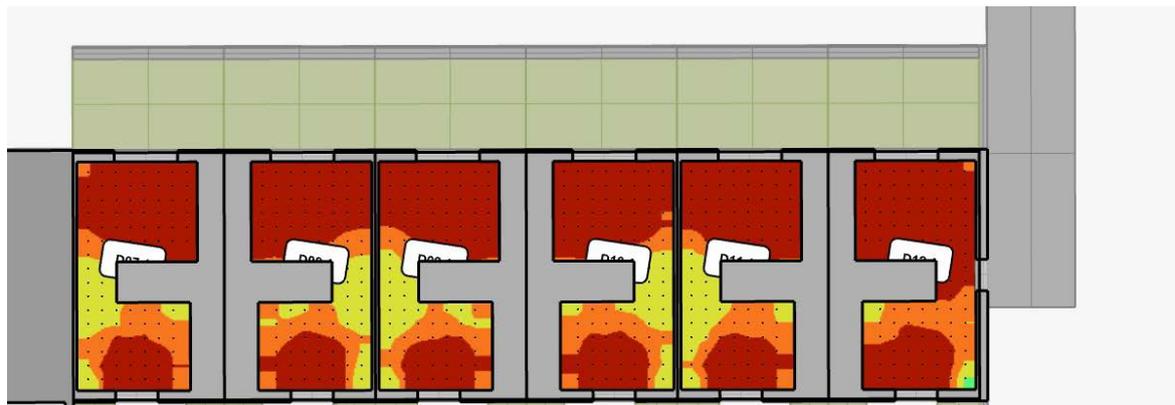
Average Daylight Factor - Block C						
Space ID	Description	Area m2	Sensor Count	ADF	Minimum Recommended ADF	Meets Criteria
C 19.2	Bed	13.7	40	4.18%	1%	Y
C 20.1	LKD	28.6	74	7.19%	2%	Y
C 20.2	LKD	11.2	35	5.38%	2%	Y
C 20.3	Bed	11.4	35	5.45%	1%	Y
C 21.1	LKD	33.9	82	5.41%	2%	Y
C 21.2	Bed	11.0	32	4.83%	1%	Y
C 21.3	Bed	11.9	33	4.72%	1%	Y
Third Floor						
C 22.1	LKD	39.9	96	5.93%	2%	Y
C 22.2	Bed	10.6	30	6.26%	1%	Y
C 22.3	Bed	11.9	36	5.37%	1%	Y
C 22.4	Bed	11.2	32	5.41%	1%	Y
C 23.1	LKD	30.5	82	7.56%	2%	Y
C 23.2	Bed	12.0	31	5.71%	1%	Y
C 23.3	Bed	11.7	27	6.52%	1%	Y
C 24.1	LKD	30.5	82	8.49%	2%	Y
C 24.2	Bed	12.0	31	6.03%	1%	Y
C 24.3	Bed	11.7	27	6.68%	1%	Y
C 25.1	LKD	46.7	122	5.19%	2%	Y
C 25.2	Bed	12.9	36	4.96%	1%	Y
C 25.3	Bed	11.6	35	5.26%	1%	Y
C 25.4	Bed	14.9	31	4.70%	1%	Y

Table 14: Block C - Average Daylight Factor of all habitable rooms.

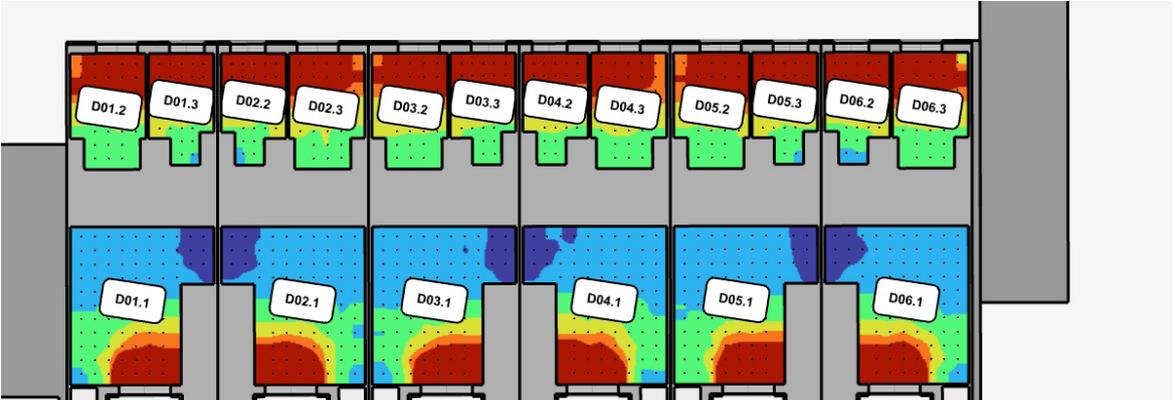
Duplex D



Second Floor



First Floor



Ground Floor

Figure 34: Duplex D - All floors false colour plans of ADF. Scale 0 - 5%

Average Daylight Factor - Duplex D						
Space ID	Description	Area m2	Sensor Count	ADF	Minimum Recommended ADF	Meets Criteria
D01.1	LKD	35.7	87	2.35%	2%	Y
D01.2	Bed	15.0	35	4.58%	1%	Y
D01.3	ADF	11.5	33	4.68%	2%	Y
D02.1	LKD	35.7	87	2.33%	2%	Y
D02.2	Bed	11.5	33	4.72%	1%	Y
D02.3	Bed	15.0	35	4.60%	1%	Y
D03.1	LKD	35.7	87	2.31%	2%	Y
D03.2	Bed	15.0	35	4.66%	1%	Y
D03.3	Bed	11.5	33	4.72%	1%	Y
D04.1	LKD	35.7	87	2.35%	2%	Y
D04.2	Bed	11.5	33	4.79%	1%	Y
D04.3	Bed	15.0	35	4.68%	1%	Y
D05.1	LKD	35.7	87	2.37%	2%	Y
D05.2	Bed	15.0	35	4.60%	1%	Y
D05.3	Bed	11.5	33	4.73%	1%	Y
D06.1	LKD	35.7	87	2.38%	2%	Y
D06.2	Bed	11.5	33	4.68%	1%	Y
D06.3	Bed	15.0	35	4.56%	1%	Y
D07.1	LKD	43.6	98	6.01%	2%	Y
D07.2	Bed	13.7	35	3.68%	1%	Y
D07.3	Bed	11.9	30	5.03%	1%	Y
D07.4	Bed	7.8	20	5.26%	1%	Y
D08.1	LKD	43.6	98	6.01%	2%	Y
D08.2	Bed	13.7	35	3.58%	1%	Y
D08.3	Bed	11.9	30	5.10%	1%	Y
D08.4	Bed	7.8	20	5.23%	1%	Y
D09.1	LKD	43.6	98	6.01%	2%	Y
D09.2	Bed	13.7	35	3.61%	1%	Y
D09.3	Bed	11.9	30	5.17%	1%	Y
D09.4	Bed	7.8	20	5.37%	1%	Y
D10.1	LKD	43.6	98	6.01%	2%	Y
D10.2	Bed	13.7	35	3.69%	1%	Y
D10.3	Bed	11.9	30	5.04%	1%	Y
D10.4	Bed	7.8	20	5.38%	1%	Y
D11.1	LKD	43.6	98	6.04%	2%	Y
D11.2	Bed	13.7	35	3.70%	1%	Y
D11.3	Bed	11.9	30	5.14%	1%	Y
D11.4	Bed	7.8	20	5.31%	1%	Y
D12.1	LKD	43.6	98	6.39%	2%	Y
D12.2	Bed	13.7	35	3.64%	1%	Y
D12.3	Bed	11.9	30	5.16%	1%	Y
D12.4	Bed	7.8	20	5.23%	1%	Y

Table 15: Duplex D - Average Daylight Factor of all habitable rooms

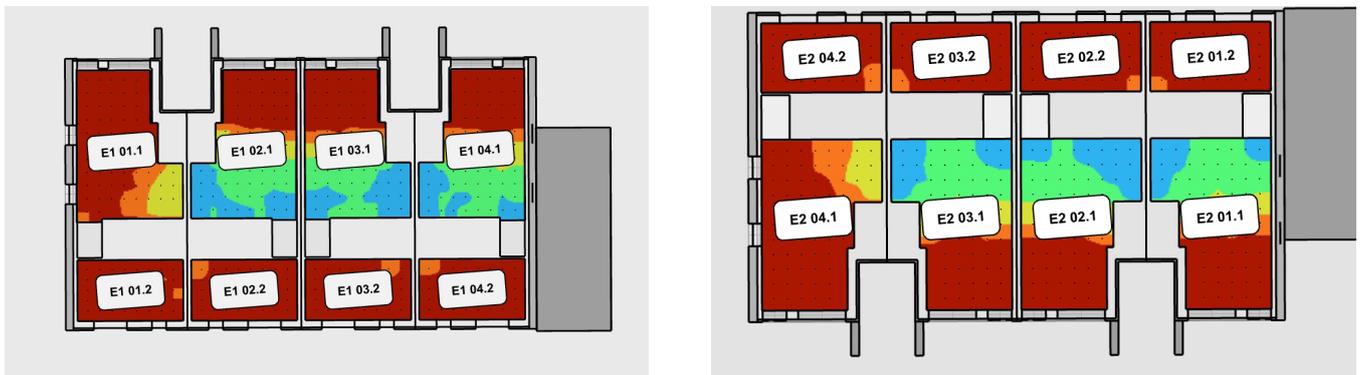
Duplex E



Second Floor



First Floor



Ground Floor

Figure 35: Duplex E1 & E2 - All floors false colour plans of ADF. Scale 0 - 5%

Average Daylight Factor - Duplex E1 & E2						
Space ID	Description	Area m2	Sensor Count	ADF	Minimum Recommended ADF	Meets Criteria
Block E1						
E1 01.1	LKD	29.4	73	4.44%	2%	Y
E1 01.2	Bed	13.5	40	6.35%	1%	Y
E1 02.1	LKD	29.4	73	2.00%	2%	Y
E1 02.2	Bed	13.5	40	6.31%	1%	Y
E1 03.1	LKD	29.4	73	2.01%	2%	Y
E1 03.2	Bed	13.5	40	6.31%	1%	Y
E1 04.1	LKD	29.4	73	2.04%	2%	Y
E1 04.2	Bed	13.5	40	6.29%	1%	Y
E1 05.1	LKD	29.5	71	10.59%	2%	Y
E1 05.2	Bed	14.0	40	12.33%	1%	Y
E1 05.3	Bed	12.0	35	5.78%	1%	Y
E1 06.1	LKD	29.5	71	6.75%	2%	Y
E1 06.2	Bed	14.0	40	5.15%	1%	Y
E1 06.3	Bed	12.0	35	5.79%	1%	Y
E1 07.1	LKD	29.5	71	6.71%	2%	Y
E1 07.2	Bed	14.0	40	5.17%	1%	Y
E1 07.3	Bed	12.0	35	5.84%	1%	Y
E1 08.1	LKD	29.5	71	11.10%	2%	Y
E1 08.2	Bed	14.0	40	12.48%	1%	Y
E1 08.3	Bed	12.0	35	5.78%	1%	Y
Block E2						
E2 01.1	LKD	27.8	68	4.56%	2%	Y
E2 01.2	Bed	13.5	40	6.30%	1%	Y
E2 02.1	LKD	27.8	68	4.46%	2%	Y
E2 02.2	Bed	13.5	40	6.35%	1%	Y
E2 03.1	LKD	27.8	68	4.47%	2%	Y
E2 03.2	Bed	13.5	40	6.29%	1%	Y
E2 04.1	LKD	27.8	68	6.89%	2%	Y
E2 04.2	Bed	13.5	40	6.28%	1%	Y
E2 05.1	LKD	29.5	71	11.17%	2%	Y
E2 05.2	Bed	12.0	35	5.76%	1%	Y
E2 05.3	Bed	14.0	40	12.39%	1%	Y
E2 06.1	LKD	29.5	71	6.78%	2%	Y
E2 06.2	Bed	12.0	35	5.76%	1%	Y
E2 06.3	Bed	14.0	40	5.11%	1%	Y
E2 07.1	LKD	29.5	71	6.73%	2%	Y
E2 07.2	Bed	12.0	35	5.79%	1%	Y
E2 07.3	Bed	14.0	40	5.21%	1%	Y
E2 08.1	LKD	29.5	71	10.55%	2%	Y
E2 08.2	Bed	12.0	35	5.75%	1%	Y
E2 08.3	Bed	14.0	40	12.20%	1%	Y

Table 16: Duplex E - Average Daylight Factor of all habitable rooms

Appendix B - EN17037:2018 Daylight Provision Room Compliance Complete Results

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

EN 17037:2018 Compliance threshold levels.

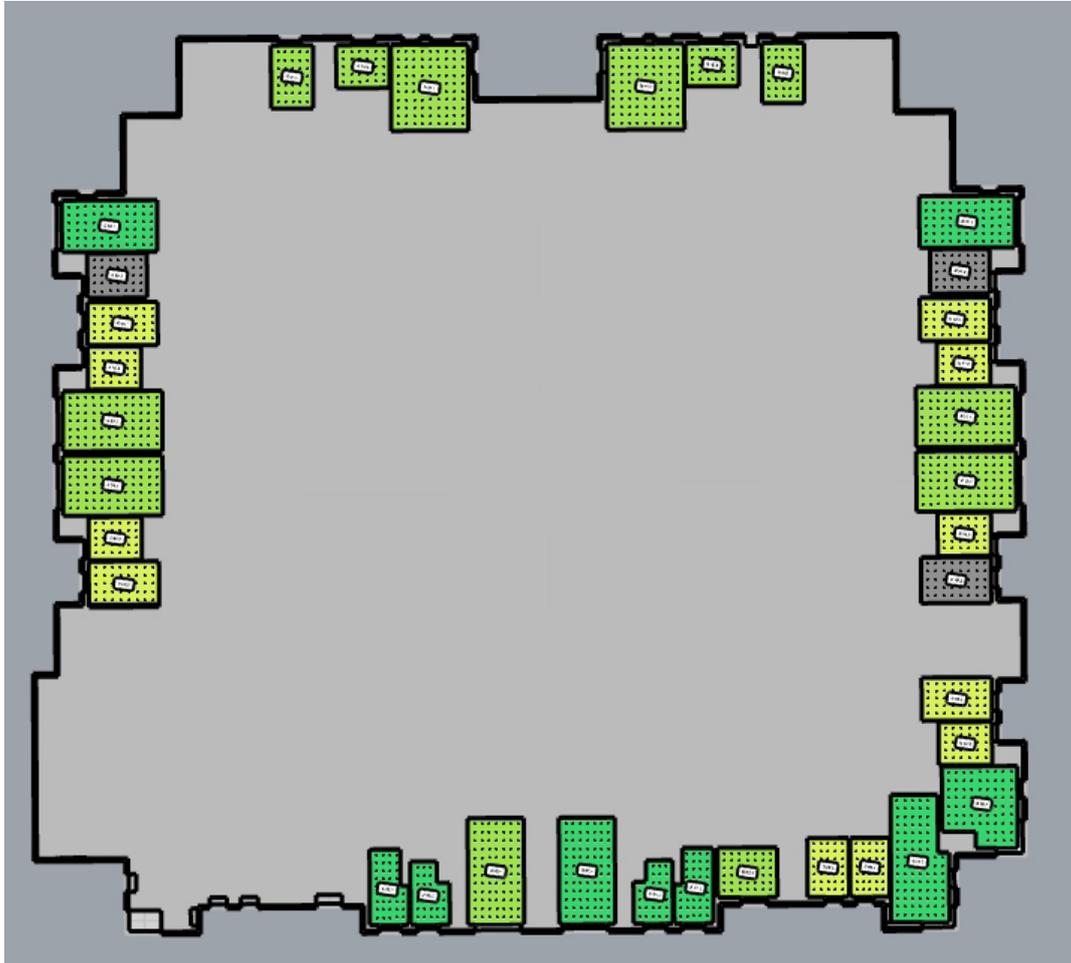


Figure 36: Blocks A & B - Ground Floor Daylight Provision

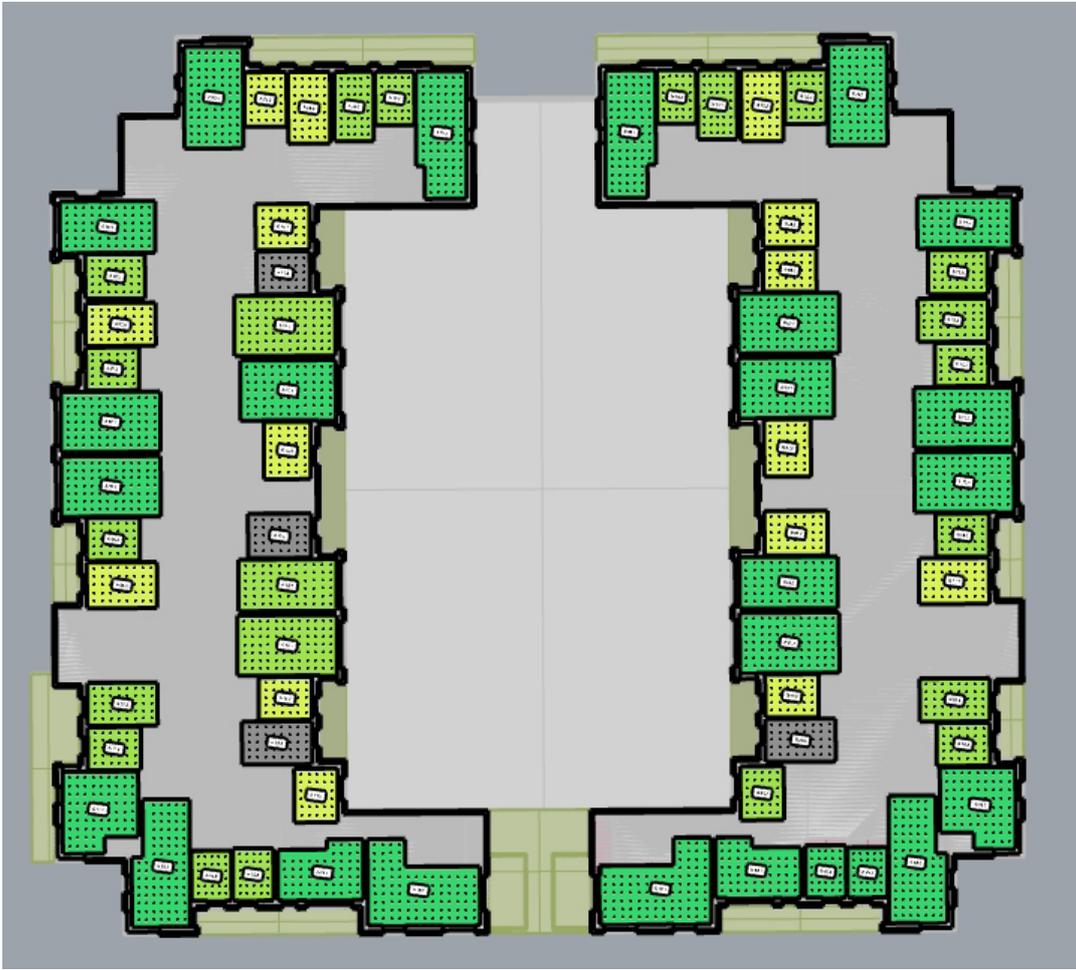


Figure 38: Blocks A & B - First Floor Daylight Provision

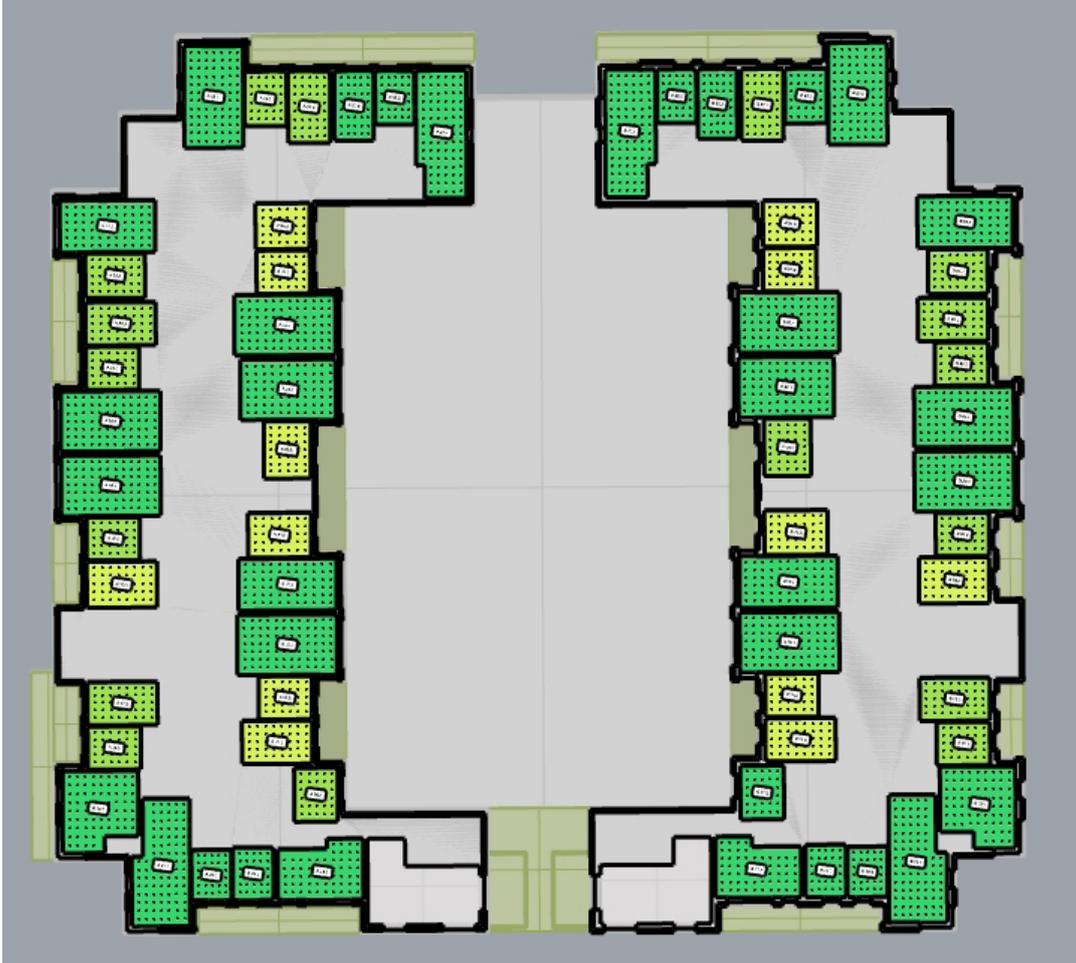


Figure 37: Blocks A & B - Second Floor Daylight Provision

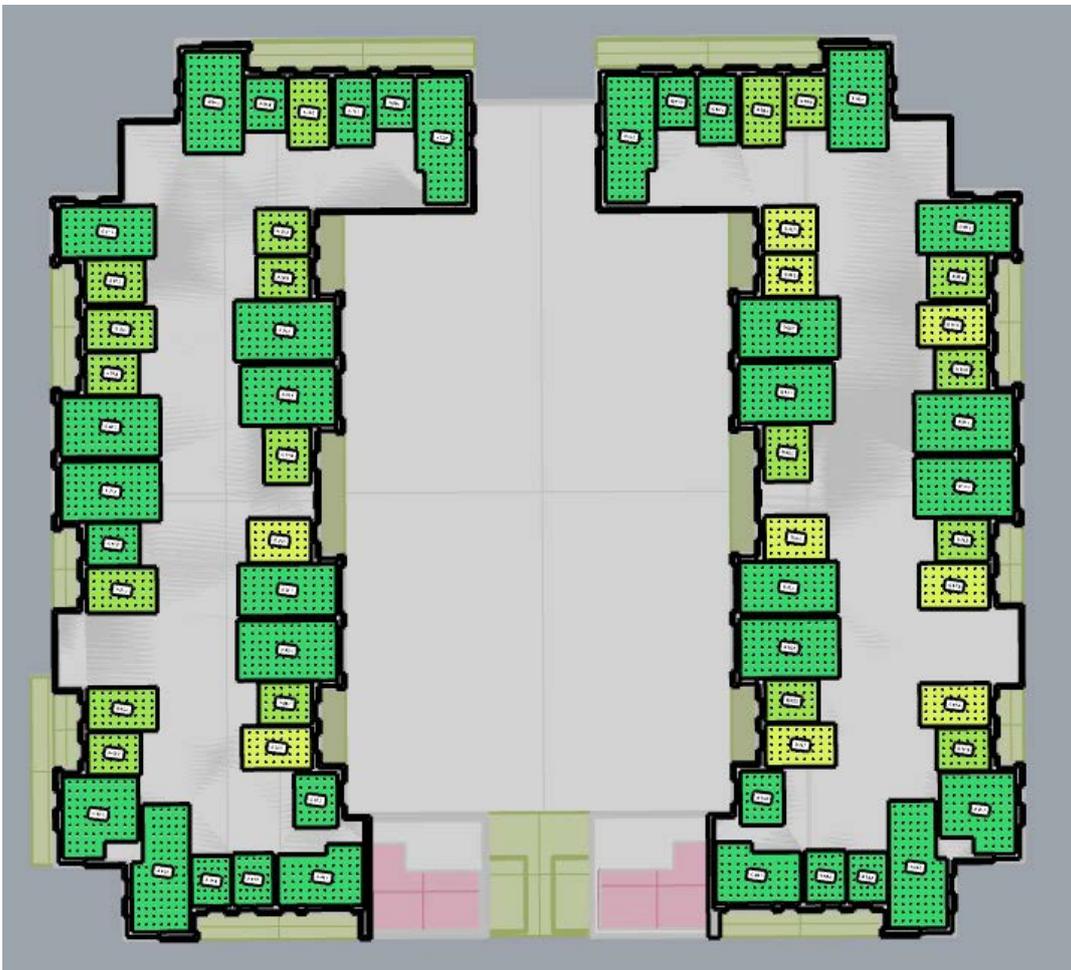


Figure 39: Blocks A & B - Third Floor Daylight Provision

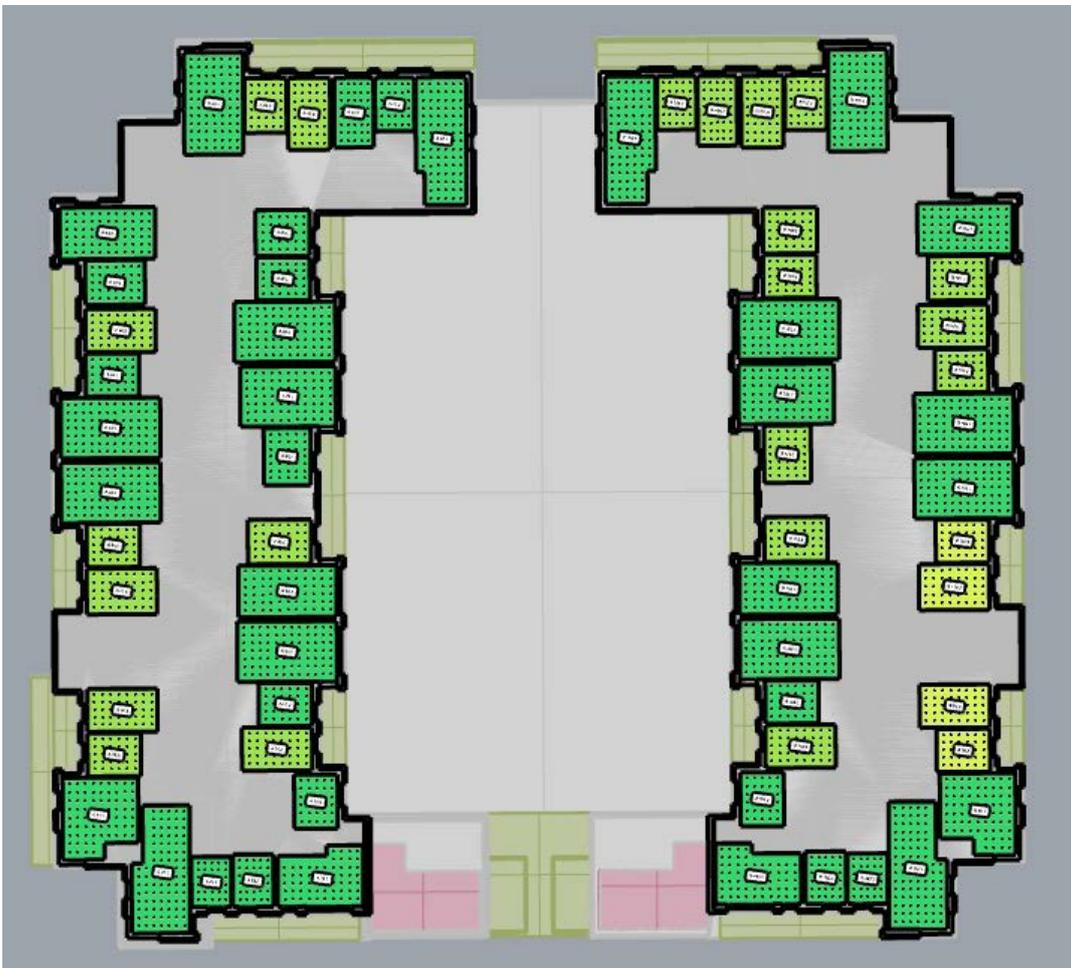


Figure 40: Blocks A & B - Fourth Floor Daylight Provision

Blocks A & 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
A 01.1	LKD	33.0	90	Medium	72.8%	56.3%	41.0%	Medium	84.2%	58.4%	38.9%
A 01.2	Bed	11.4	30	Medium	73.8%	58.0%	43.0%	Medium	87.2%	68.9%	49.8%
A 01.3	Bed	13.2	35	Medium	71.7%	53.9%	36.3%	Medium	84.4%	58.2%	37.4%
A 02.1	LKD	24.5	66	High	80.5%	71.0%	59.2%	High	86.8%	69.6%	53.1%
A 02.2	Bed	13.2	35	Fail	49.1%	27.7%	17.7%	Minimum	71.5%	32.0%	18.1%
A 03.1	LKD	29.8	84	Medium	73.4%	60.0%	45.6%	Medium	82.7%	58.1%	39.0%
A 03.2	Bed	11.4	30	Minimum	51.0%	26.8%	13.5%	Minimum	74.0%	33.2%	14.5%
A 03.3	Bed	15.0	40	Minimum	55.0%	31.8%	18.2%	Minimum	73.2%	34.6%	16.1%
A 04.1	LKD	29.8	84	Medium	72.7%	58.8%	44.6%	Medium	82.2%	56.9%	37.9%
A 04.2	Bed	11.4	30	Minimum	51.0%	30.9%	17.4%	Minimum	72.9%	36.7%	18.4%
A 04.3	Bed	16.0	40	Minimum	50.6%	28.9%	15.6%	Minimum	71.2%	30.4%	13.3%
A 05.1	LKD	29.6	84	Medium	72.5%	61.0%	49.1%	Medium	80.9%	57.3%	41.3%
A 05.2	Bed	11.0	29	High	78.4%	68.7%	58.5%	High	85.3%	66.2%	52.6%
A 05.3	Bed	13.2	40	High	74.9%	63.8%	52.5%	Medium	81.2%	57.7%	42.4%
A 06.1	LKD	29.8	84	High	81.6%	72.9%	62.6%	High	87.4%	72.4%	58.7%
A 06.2	Bed	11.4	30	Medium	69.7%	55.0%	39.9%	Medium	84.3%	63.4%	45.7%
A 06.3	Bed	16.0	40	Minimum	60.8%	41.6%	21.7%	Minimum	78.7%	48.0%	25.0%
A 07.1	LKD	29.8	84	High	79.7%	70.3%	58.9%	High	86.5%	70.0%	54.2%
A 07.2	Bed	11.4	30	Medium	69.0%	52.4%	35.0%	Medium	84.7%	63.4%	43.0%
A 07.3	Bed	15.0	40	Minimum	65.0%	48.3%	30.2%	Medium	81.1%	54.7%	31.9%
A 08.1	LKD	24.5	66	High	86.3%	79.8%	72.7%	High	90.3%	78.6%	68.2%
A 08.2	Bed	13.2	35	Medium	66.1%	50.9%	32.3%	Medium	83.4%	61.0%	41.4%
A 09.1	LKD	29.9	84	High	83.8%	75.5%	65.2%	High	88.0%	72.9%	56.2%
A 09.2	Bed	11.4	30	Minimum	66.3%	46.7%	24.2%	Medium	83.7%	57.0%	35.0%
A 09.3	Bed	15.0	40	Minimum	62.4%	42.1%	15.7%	Minimum	79.1%	47.0%	16.3%
A 10.1	LKD	30.6	86	High	81.7%	72.4%	60.8%	Medium	84.5%	61.6%	43.3%
A 10.2	Bed	10.5	30	Medium	70.4%	52.6%	35.3%	Medium	85.2%	63.7%	43.4%
A 10.3	Bed	13.6	40	Medium	72.5%	56.5%	40.3%	Medium	84.7%	61.7%	41.2%
A 11.1	LKD	30.2	84	Medium	71.6%	57.8%	44.3%	Medium	79.3%	52.8%	33.2%
A 11.2	Bed	11.4	30	Fail	48.9%	30.0%	15.1%	Minimum	72.0%	35.9%	17.1%
A 11.3	Bed	12.4	30	Minimum	50.0%	30.5%	16.7%	Minimum	72.5%	37.1%	18.2%
A 12.1	LKD	28.5	77	High	75.3%	64.0%	51.1%	Medium	83.1%	60.1%	42.6%
A 12.2	Bed	13.4	35	Minimum	54.7%	35.2%	14.8%	Minimum	75.8%	42.3%	17.3%
A 13.1	LKD	25.2	66	Medium	74.3%	61.5%	47.4%	Medium	82.2%	56.2%	37.6%
A 13.2	Bed	13.9	35	Fail	47.4%	24.7%	7.6%	Minimum	70.2%	27.0%	7.2%
A 14.1	LKD	29.8	84	Medium	73.6%	58.9%	45.4%	Medium	82.4%	55.0%	35.2%
A 14.2	Bed	11.4	30	Minimum	51.5%	29.6%	11.5%	Minimum	74.9%	36.6%	13.8%
A 14.3	Bed	15.0	40	Fail	41.4%	17.0%	4.5%	Minimum	64.2%	15.3%	2.8%
A 15.1	LKD	23.4	58	High	84.1%	77.0%	69.5%	High	91.3%	81.9%	73.3%
A 15.2	Bed	11.7	30	Minimum	66.6%	49.4%	29.3%	Medium	83.7%	56.5%	34.0%
A 16.1	LKD	33.7	91	High	82.9%	75.3%	66.5%	Medium	80.9%	58.5%	42.9%
A 16.2	Bed	10.0	30	Medium	73.4%	62.2%	49.9%	High	85.9%	68.9%	55.1%
A 16.3	Bed	10.6	30	Medium	73.2%	61.7%	49.5%	High	85.0%	66.4%	52.7%
A 17.1	LKD	28.0	71	High	85.9%	79.8%	72.9%	High	91.0%	80.6%	72.4%
A 17.2	Bed	11.4	30	Medium	70.2%	54.7%	39.0%	Medium	84.9%	63.5%	43.7%
A 17.3	Bed	15.0	40	Medium	65.6%	50.1%	32.1%	Medium	80.2%	53.2%	31.3%
A 18.1	LKD	38.0	94	High	85.6%	78.4%	71.5%	High	86.8%	72.1%	59.6%
A 19.1	LKD	29.8	84	High	82.8%	74.7%	65.0%	High	88.4%	75.0%	62.8%
A 19.2	Bed	11.4	30	Medium	72.1%	59.0%	44.8%	Medium	85.0%	65.7%	49.1%

Blocks A & B - EN17037:2018 Daylight Provision Room Compliance

Space ID	Description	Area [m²]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
A 19.3	Bed	16.0	40	Minimum	63.7%	45.0%	26.6%	Medium	80.4%	51.5%	29.5%
A 20.1	LKD	29.8	84	High	81.4%	72.9%	62.5%	High	87.7%	73.2%	59.6%
A 20.2	Bed	11.4	30	Medium	70.9%	55.5%	39.8%	Medium	84.6%	63.5%	43.6%
A 20.3	Bed	15.0	40	Medium	67.7%	52.2%	35.0%	Medium	82.9%	59.6%	37.8%
A 21.1	LKD	24.5	66	High	86.6%	80.7%	73.8%	High	90.7%	79.7%	70.2%
A 21.2	Bed	13.2	35	Medium	69.5%	54.9%	38.7%	Medium	84.5%	63.7%	45.6%
A 22.1	LKD	29.9	84	High	83.5%	75.2%	65.0%	High	87.8%	72.4%	56.3%
A 22.2	Bed	11.4	30	Medium	75.9%	61.5%	45.0%	High	88.0%	71.4%	52.9%
A 22.3	Bed	15.0	40	Medium	72.5%	55.4%	37.4%	Medium	85.3%	61.8%	39.7%
A 23.1	LKD	30.6	86	High	85.3%	77.4%	69.2%	High	86.6%	69.1%	51.6%
A 23.2	Bed	10.5	30	High	78.5%	67.6%	52.2%	High	89.1%	75.1%	59.5%
A 23.3	Bed	13.6	40	High	80.4%	70.2%	55.8%	High	88.5%	73.3%	56.1%
A 24.1	LKD	30.2	84	High	76.3%	65.7%	53.0%	Medium	83.9%	62.1%	44.8%
A 24.2	Bed	11.4	30	Minimum	58.2%	40.0%	25.4%	Minimum	76.1%	45.3%	26.0%
A 24.3	Bed	12.4	30	Minimum	59.5%	41.3%	25.5%	Minimum	76.9%	47.9%	26.5%
A 25.1	LKD	28.5	77	High	78.6%	69.2%	58.6%	High	85.7%	67.3%	51.3%
A 25.2	Bed	13.4	35	Minimum	63.4%	45.9%	27.3%	Medium	80.0%	51.6%	27.4%
A 26.1	LKD	25.2	66	High	78.9%	69.2%	57.2%	Medium	85.2%	64.9%	47.6%
A 26.2	Bed	13.9	35	Minimum	54.0%	33.7%	12.1%	Minimum	76.3%	43.2%	16.7%
A 27.1	LKD	29.8	84	High	78.2%	68.2%	56.2%	Medium	85.3%	65.3%	47.7%
A 27.2	Bed	11.4	30	Minimum	64.5%	46.0%	25.3%	Medium	81.3%	53.7%	30.7%
A 27.3	Bed	15.0	40	Minimum	53.9%	32.1%	10.5%	Minimum	72.4%	31.4%	7.5%
A 28.1	LKD	23.4	58	High	85.0%	78.2%	70.9%	High	92.1%	82.9%	74.9%
A 28.2	Bed	11.7	30	Medium	75.4%	61.4%	47.6%	High	87.1%	68.7%	50.7%
A 29.1	LKD	33.7	91	High	83.1%	75.6%	66.8%	High	84.4%	65.0%	51.8%
A 29.2	Bed	10.0	30	High	74.7%	63.7%	52.3%	High	86.4%	71.1%	58.2%
A 29.3	Bed	10.6	30	High	74.2%	62.9%	51.1%	High	86.1%	70.0%	56.5%
A 30.1	LKD	28.0	71	High	85.6%	79.4%	72.6%	High	91.5%	81.5%	74.1%
A 30.2	Bed	11.4	30	Medium	70.8%	55.8%	40.4%	Medium	85.8%	66.6%	48.7%
A 30.2	Bed	15.0	40	Medium	66.6%	51.8%	34.2%	Medium	82.1%	58.1%	37.8%
A 31.1	LKD	29.8	84	High	84.5%	77.3%	69.2%	High	89.9%	78.1%	67.7%
A 31.2	Bed	11.4	30	High	76.1%	64.8%	52.1%	High	87.4%	72.6%	58.6%
A 31.3	Bed	16.0	40	Medium	70.0%	55.1%	38.3%	Medium	84.3%	63.5%	43.8%
A 32.1	LKD	29.8	84	High	83.1%	75.5%	65.6%	High	89.3%	76.8%	65.0%
A 32.2	Bed	11.4	30	Medium	75.1%	62.1%	47.0%	High	86.2%	68.3%	51.6%
A 32.3	Bed	15.0	40	Medium	71.9%	57.9%	42.3%	Medium	83.8%	62.1%	43.7%
A 33.1	LKD	24.5	66	High	87.1%	81.8%	75.3%	High	91.1%	80.6%	71.8%
A 33.2	Bed	13.2	35	Medium	71.6%	58.0%	42.6%	Medium	85.1%	65.6%	48.6%
A 34.1	LKD	29.9	84	High	86.1%	79.0%	72.1%	High	89.6%	77.0%	65.4%
A 34.2	Bed	11.4	30	High	78.2%	67.0%	51.5%	High	88.9%	74.4%	59.2%
A 34.3	Bed	15.0	40	Medium	75.4%	61.2%	44.8%	Medium	86.0%	66.2%	45.3%
A 35.1	LKD	30.6	86	High	86.5%	80.3%	72.9%	High	88.1%	73.2%	59.1%
A 35.2	Bed	10.5	30	High	79.8%	69.8%	55.4%	High	89.7%	76.9%	64.4%
A 35.3	Bed	13.6	40	High	80.6%	71.0%	57.2%	High	88.8%	74.5%	59.6%
A 36.1	LKD	30.2	84	High	81.1%	72.0%	62.3%	High	86.6%	70.7%	56.8%
A 36.2	Bed	11.4	30	Medium	67.5%	52.8%	37.9%	Medium	83.0%	60.3%	41.4%
A 36.3	Bed	12.4	30	Medium	69.5%	55.2%	40.4%	Medium	83.6%	62.7%	44.7%
A 37.1	LKD	28.5	77	High	83.1%	74.7%	65.8%	High	88.2%	74.6%	62.8%
A 37.2	Bed	13.4	35	Medium	70.5%	56.0%	39.8%	Medium	84.1%	62.6%	42.7%
A 38.1	LKD	25.2	66	High	82.9%	74.3%	64.6%	High	87.5%	72.9%	59.0%

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Space ID	Description	Area [m ²]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
A 38.2	Bed	13.9	35	Minimum	65.8%	48.1%	29.8%	Medium	81.2%	54.8%	32.0%
A 39.1	LKD	29.8	84	High	83.2%	74.6%	65.5%	High	87.5%	73.2%	59.9%
A 39.2	Bed	11.4	30	Medium	72.2%	58.5%	42.1%	Medium	85.7%	66.6%	48.8%
A 39.3	Bed	15.0	40	Minimum	67.4%	49.3%	30.7%	Medium	80.0%	51.4%	26.4%
A 40.1	LKD	23.4	58	High	86.7%	82.2%	75.4%	High	93.4%	85.1%	78.5%
A 40.2	Bed	11.7	30	High	83.3%	74.2%	63.7%	High	90.4%	78.4%	67.7%
A 41.1	LKD	33.6	91	High	86.0%	80.5%	74.2%	High	84.0%	64.9%	52.1%
A 41.2	Bed	10.0	30	High	77.9%	68.4%	58.3%	High	88.1%	74.7%	63.5%
A 41.3	Bed	10.6	30	High	77.6%	68.0%	58.0%	High	88.0%	74.9%	63.7%
A 42.1	LKD	28.0	71	High	86.7%	81.3%	75.2%	High	92.5%	83.5%	76.0%
A 42.2	Bed	11.4	30	Medium	75.4%	63.2%	48.2%	High	87.4%	72.1%	56.6%
A 42.3	Bed	15.0	40	Medium	72.3%	59.2%	45.2%	Medium	84.8%	65.1%	47.5%
A 43.1	LKD	29.8	84	High	82.3%	74.3%	64.7%	High	88.0%	74.5%	61.9%
A 43.2	Bed	11.4	30	Medium	74.3%	62.0%	48.6%	High	86.6%	70.8%	55.9%
A 43.3	Bed	16.0	40	Medium	67.1%	51.2%	34.5%	Medium	82.1%	56.9%	35.3%
A 44.1	LKD	29.8	84	High	79.5%	70.0%	59.4%	High	86.8%	71.3%	57.1%
A 44.2	Bed	11.4	30	High	78.4%	67.6%	54.6%	High	88.4%	74.1%	59.2%
A 44.3	Bed	15.0	40	Medium	75.6%	62.9%	49.4%	Medium	85.7%	66.3%	48.8%
A 45.1	LKD	24.5	66	High	87.0%	81.7%	75.1%	High	90.6%	79.8%	70.5%
A 45.2	Bed	13.2	35	High	77.1%	65.6%	53.7%	High	87.5%	72.4%	58.2%
A 46.1	LKD	29.9	84	High	84.9%	77.5%	69.5%	High	88.5%	74.4%	60.5%
A 46.2	Bed	11.4	30	Medium	76.3%	63.5%	47.7%	High	87.6%	71.0%	53.2%
A 46.3	Bed	15.0	40	Medium	71.1%	53.9%	36.6%	Medium	84.1%	58.3%	36.4%
A 47.1	LKD	30.6	86	High	86.5%	80.5%	73.1%	High	87.5%	72.3%	57.8%
A 47.2	Bed	10.5	30	High	76.8%	65.5%	50.5%	High	88.3%	73.2%	56.8%
A 47.3	Bed	13.6	40	High	78.6%	67.9%	52.9%	High	87.3%	71.0%	53.4%
A 48.1	LKD	30.2	84	High	81.3%	72.0%	62.2%	High	86.5%	70.5%	57.0%
A 48.2	Bed	11.4	30	High	76.4%	65.3%	52.3%	High	87.7%	72.4%	58.2%
A 48.3	Bed	12.4	30	High	76.8%	66.5%	54.4%	High	87.6%	72.3%	59.1%
A 49.1	LKD	28.5	77	High	82.0%	73.1%	64.2%	High	87.4%	72.8%	61.1%
A 49.2	Bed	13.4	35	High	77.3%	67.0%	53.9%	High	87.7%	72.6%	58.1%
A 50.1	LKD	25.2	66	High	82.3%	73.2%	63.3%	High	86.6%	70.8%	55.9%
A 50.2	Bed	13.9	35	Medium	72.7%	58.1%	42.4%	Medium	86.1%	67.0%	48.1%
A 51.1	LKD	29.8	84	High	81.3%	72.3%	63.2%	High	86.9%	71.6%	58.6%
A 51.2	Bed	11.4	30	High	77.3%	66.9%	53.4%	High	88.0%	73.4%	59.0%
A 51.3	Bed	15.0	40	Medium	74.0%	60.3%	45.5%	Medium	84.8%	61.8%	42.7%
A 52.1	LKD	23.4	58	High	89.7%	85.8%	81.2%	High	95.9%	87.4%	82.9%
A 52.2	Bed	11.7	30	High	82.6%	73.6%	63.1%	High	89.9%	76.9%	65.7%
A 53.1	LKD	33.6	91	High	86.7%	82.0%	75.9%	High	85.7%	68.9%	56.8%
A 53.2	Bed	10.0	30	High	82.6%	74.0%	65.5%	High	90.7%	80.1%	71.2%
A 53.3	Bed	10.6	30	High	81.4%	72.9%	63.4%	High	89.8%	78.1%	68.5%
A 54.1	LKD	28.0	71	High	86.8%	81.6%	75.5%	High	92.9%	83.9%	76.8%
A 54.2	Bed	11.4	30	Medium	74.4%	61.1%	46.3%	High	86.6%	70.0%	53.4%
A 54.3	Bed	15.0	40	Medium	71.0%	57.2%	42.4%	Medium	83.1%	60.9%	41.7%
B 55.1	LKD	33.0	90	Medium	72.4%	55.9%	41.2%	Medium	84.0%	57.9%	38.8%
B 55.2	Bed	11.4	30	Medium	73.5%	57.8%	42.5%	Medium	86.8%	67.7%	48.3%
B 55.3	Bed	12.6	35	Medium	71.4%	53.7%	37.6%	Medium	83.7%	56.4%	37.2%
B 56.1	LKD	24.5	66	High	81.0%	71.1%	58.8%	High	87.1%	70.6%	54.2%
B 56.2	Bed	13.2	35	Fail	49.1%	24.5%	14.9%	Minimum	75.0%	36.1%	17.7%
B 57.1	LKD	29.8	84	Medium	74.5%	60.8%	42.5%	Medium	85.0%	63.7%	41.1%

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Space ID	Description	Area [m²]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
B 57.2	Bed	11.4	30	Minimum	50.1%	21.9%	8.8%	Minimum	74.6%	31.6%	11.7%
B 57.3	Bed	15.0	40	Minimum	54.8%	28.3%	15.0%	Minimum	76.4%	38.4%	16.3%
B 58.1	LKD	29.8	84	Medium	75.1%	62.2%	44.5%	Medium	85.4%	64.5%	42.6%
B 58.2	Bed	11.4	30	Minimum	56.2%	28.9%	17.2%	Minimum	75.7%	37.8%	19.7%
B 58.3	Bed	16.0	40	Fail	47.5%	21.1%	10.3%	Minimum	74.9%	33.1%	12.6%
B 59.1	LKD	28.0	71	High	81.0%	71.9%	62.3%	High	88.6%	74.7%	63.1%
B 59.2	Bed	11.4	30	Minimum	52.0%	24.2%	9.8%	Minimum	75.5%	35.3%	12.7%
B 59.3	Bed	15.0	40	Minimum	52.9%	26.4%	14.6%	Minimum	75.7%	36.3%	15.7%
B 60.1	LKD	33.6	91	High	77.2%	67.7%	56.7%	Medium	78.6%	53.6%	35.6%
B 60.2	Bed	11.5	35	Minimum	63.0%	48.0%	36.4%	Medium	78.1%	52.1%	35.9%
B 60.3	Bed	12.1	35	Minimum	63.9%	49.2%	36.6%	Medium	80.8%	56.5%	39.8%
B 60.4	Bed	14.7	42	Medium	71.9%	60.2%	48.0%	High	84.1%	63.9%	50.1%
B 61.1	LKD	29.6	84	High	73.0%	61.8%	50.2%	Medium	80.9%	57.4%	41.4%
B 61.2	Bed	11.0	29	High	79.5%	70.2%	60.0%	High	85.1%	66.1%	52.2%
B 61.3	Bed	13.2	40	High	75.3%	64.4%	53.2%	Medium	80.6%	56.7%	41.2%
B 62.1	LKD	28.0	71	High	86.0%	79.3%	72.0%	High	91.7%	81.6%	72.5%
B 62.2	Bed	11.4	30	Medium	72.6%	57.9%	39.5%	Medium	86.4%	67.9%	48.7%
B 62.3	Bed	15.0	40	Medium	68.7%	51.3%	31.1%	Medium	82.1%	55.5%	30.7%
B 63.1	LKD	33.6	91	High	85.2%	78.0%	71.3%	High	85.5%	68.2%	54.5%
B 63.2	Bed	10.0	30	High	75.8%	64.8%	53.8%	High	86.5%	71.9%	59.2%
B 63.3	Bed	10.6	30	High	74.9%	64.2%	53.2%	High	86.6%	71.8%	59.2%
B 64.1	LKD	23.4	58	High	85.2%	78.3%	71.3%	High	91.9%	82.7%	74.0%
B 64.2	Bed	11.7	30	Medium	75.4%	59.4%	44.5%	Medium	85.9%	64.3%	45.8%
B 65.1	LKD	29.8	84	High	76.4%	64.2%	51.9%	Medium	84.2%	61.0%	43.8%
B 65.2	Bed	11.4	30	Minimum	55.2%	37.8%	19.3%	Minimum	77.5%	44.8%	22.4%
B 65.3	Bed	15.0	40	Fail	48.6%	26.4%	13.2%	Minimum	68.6%	25.7%	10.4%
B 66.1	LKD	25.2	66	High	77.2%	66.1%	54.3%	Medium	84.2%	61.4%	44.2%
B 66.2	Bed	13.9	35	Minimum	54.5%	35.4%	18.8%	Minimum	75.0%	41.8%	18.8%
B 67.1	LKD	28.5	77	High	77.6%	67.1%	56.3%	Medium	84.9%	64.2%	48.9%
B 67.2	Bed	13.4	35	Minimum	60.5%	44.9%	27.6%	Medium	79.1%	52.1%	29.5%
B 68.1	LKD	30.2	84	High	74.7%	62.6%	51.2%	Medium	81.5%	56.9%	40.1%
B 68.2	Bed	11.4	30	Minimum	56.4%	39.1%	27.3%	Minimum	75.7%	46.9%	27.7%
B 68.3	Bed	12.4	30	Minimum	57.6%	40.8%	27.1%	Minimum	75.8%	46.4%	28.1%
B 69.1	LKD	30.6	86	High	83.0%	74.3%	64.1%	Medium	85.3%	64.9%	47.7%
B 69.2	Bed	10.5	30	Medium	72.0%	55.7%	40.4%	Medium	86.3%	67.5%	48.3%
B 69.3	Bed	13.6	40	Medium	75.1%	60.6%	45.3%	Medium	85.2%	64.0%	44.3%
B 70.1	LKD	29.9	84	High	85.7%	78.3%	70.1%	High	89.1%	75.4%	61.9%
B 70.2	Bed	11.4	30	Medium	69.7%	52.1%	35.9%	Medium	85.5%	63.5%	43.8%
B 70.3	Bed	15.0	40	Minimum	65.2%	46.1%	23.9%	Medium	81.4%	51.9%	26.7%
B 71.1	LKD	24.5	66	High	87.1%	81.8%	74.5%	High	91.2%	80.7%	70.9%
B 71.2	Bed	13.2	35	Medium	69.7%	53.7%	33.7%	Medium	85.5%	65.4%	44.9%
B 72.1	LKD	29.8	84	High	81.2%	71.1%	59.3%	High	87.0%	70.7%	54.9%
B 72.2	Bed	11.4	30	Medium	72.1%	56.5%	38.2%	Medium	86.3%	67.2%	47.6%
B 72.3	Bed	15.0	40	Medium	69.2%	52.4%	32.5%	Medium	83.7%	58.9%	35.3%
B 73.1	LKD	29.8	84	High	83.7%	74.8%	65.5%	High	88.8%	74.8%	62.4%
B 73.2	Bed	11.4	30	Medium	72.5%	58.8%	40.2%	High	86.2%	68.1%	50.0%
B 73.3	Bed	16.0	40	Minimum	66.5%	46.6%	25.6%	Medium	82.7%	54.6%	29.5%
B 74.1	LKD	38.0	94	High	86.3%	81.4%	74.1%	High	88.2%	74.8%	63.2%
B 75.1	LKD	28.0	71	High	86.1%	79.5%	72.2%	High	91.9%	82.5%	73.7%
B 75.2	Bed	11.4	30	Medium	72.0%	57.1%	39.6%	Medium	86.5%	68.3%	49.8%

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Space ID	Description	Area [m²]	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
B 75.3	Bed	15.0	40	Medium	67.9%	51.6%	31.3%	Medium	82.1%	56.0%	31.3%
B 76.1	LKD	33.6	91	High	85.5%	78.5%	72.1%	High	85.8%	69.1%	56.1%
B 76.2	Bed	10.0	30	High	76.5%	66.0%	55.3%	High	87.1%	73.1%	60.9%
B 76.3	Bed	10.6	30	High	76.8%	66.6%	56.2%	High	87.5%	73.8%	62.1%
B 77.1	LKD	23.4	58	High	85.8%	79.7%	72.6%	High	92.5%	83.4%	75.5%
B 77.2	Bed	11.7	30	High	79.6%	69.5%	55.9%	High	88.8%	74.8%	58.6%
B 78.1	LKD	29.8	84	High	81.1%	72.7%	61.9%	High	85.9%	67.8%	52.3%
B 78.2	Bed	11.4	30	Minimum	65.2%	49.4%	30.8%	Medium	82.6%	58.3%	38.3%
B 78.3	Bed	15.0	40	Minimum	60.8%	42.5%	23.2%	Minimum	76.4%	42.6%	18.2%
B 79.1	LKD	25.2	66	High	81.3%	72.7%	62.0%	High	86.0%	67.9%	52.0%
B 79.2	Bed	14.0	35	Minimum	62.6%	44.9%	27.4%	Minimum	78.4%	48.4%	26.6%
B 80.1	LKD	28.5	77	High	81.0%	72.7%	62.5%	High	86.4%	69.7%	55.4%
B 80.2	Bed	13.4	35	Medium	66.0%	51.2%	35.1%	Medium	82.1%	57.3%	38.2%
B 81.1	LKD	30.2	84	High	77.1%	66.3%	55.5%	Medium	83.4%	61.7%	46.1%
B 81.2	Bed	11.4	30	Minimum	62.2%	48.1%	34.0%	Medium	80.4%	56.0%	37.3%
B 81.3	Bed	12.4	30	Minimum	63.1%	48.6%	34.5%	Medium	80.1%	54.4%	36.6%
B 82.1	LKD	30.6	86	High	86.1%	79.2%	72.1%	High	87.5%	71.8%	56.4%
B 82.2	Bed	10.5	30	High	80.9%	70.9%	57.2%	High	90.0%	77.2%	64.7%
B 82.3	Bed	13.6	40	High	82.8%	73.1%	60.5%	High	89.0%	74.9%	60.1%
B 83.1	LKD	15.0	40	Medium	76.1%	61.5%	46.1%	Medium	85.9%	65.1%	44.3%
B 83.2	Bed	11.4	30	High	78.4%	67.4%	52.3%	High	89.0%	74.9%	59.1%
B 83.3	Bed	29.9	84	High	86.2%	79.7%	71.8%	High	89.9%	77.5%	66.4%
B 84.1	LKD	24.5	66	High	87.5%	82.6%	75.2%	High	91.3%	80.8%	71.3%
B 84.2	Bed	13.2	35	Medium	70.4%	55.3%	35.8%	Medium	85.8%	66.1%	46.4%
B 85.1	LKD	29.8	84	High	79.4%	69.2%	56.4%	High	86.4%	68.8%	51.5%
B 85.2	Bed	11.4	30	Medium	72.3%	57.1%	39.2%	Medium	86.3%	67.4%	47.9%
B 85.3	Bed	15.0	40	Medium	70.6%	54.2%	35.2%	Medium	83.5%	58.9%	36.0%
B 86.1	LKD	29.8	84	High	83.9%	75.1%	66.1%	High	88.6%	74.5%	62.5%
B 86.2	Bed	11.4	30	Medium	73.9%	61.2%	44.5%	High	86.5%	69.3%	52.8%
B 86.3	Bed	16.0	40	Minimum	66.7%	47.6%	26.8%	Medium	83.2%	56.3%	32.5%
B 87.1	LKD	28.0	71	High	85.4%	78.1%	70.9%	High	91.4%	81.5%	72.5%
B 87.2	Bed	11.4	30	Medium	69.2%	52.0%	32.9%	Medium	85.8%	65.0%	44.9%
B 87.3	Bed	15.0	40	Minimum	64.5%	44.3%	24.2%	Minimum	79.6%	49.8%	24.5%
B 88.1	LKD	33.6	91	High	84.7%	77.5%	70.6%	High	85.2%	67.4%	53.8%
B 88.2	Bed	10.0	30	High	74.2%	62.9%	50.3%	High	86.3%	70.7%	57.0%
B 88.3	Bed	10.6	30	High	75.8%	64.9%	54.3%	High	86.9%	72.8%	60.7%
B 89.1	LKD	23.4	58	High	85.0%	78.0%	70.9%	High	91.9%	82.8%	74.5%
B 89.2	Bed	11.7	30	High	81.6%	72.9%	61.1%	High	89.2%	76.4%	63.4%
B 90.1	LKD	29.8	84	High	80.4%	72.1%	61.7%	High	86.2%	69.3%	54.7%
B 90.2	Bed	11.4	30	Medium	70.0%	55.4%	39.5%	Medium	84.7%	64.2%	46.1%
B 90.3	Bed	15.0	40	Minimum	61.4%	43.2%	22.3%	Minimum	77.4%	44.8%	20.1%
B 91.1	LKD	25.2	66	High	80.8%	72.6%	62.3%	High	86.9%	71.8%	57.4%
B 91.2	Bed	14.0	35	Minimum	64.8%	47.3%	29.2%	Medium	80.4%	53.6%	29.4%
B 92.1	LKD	28.5	77	High	81.2%	73.3%	63.4%	High	87.5%	73.5%	60.5%
B 92.2	Bed	13.4	35	Medium	67.7%	53.2%	36.3%	Medium	82.2%	59.2%	38.8%
B 93.1	LKD	30.2	84	High	80.0%	71.1%	61.0%	High	86.2%	69.5%	55.3%
B 93.2	Bed	11.4	30	Minimum	64.2%	49.1%	35.0%	Medium	80.9%	56.9%	39.2%
B 93.3	Bed	12.4	30	Minimum	64.2%	49.5%	34.6%	Medium	80.7%	57.9%	37.9%
B 94.1	LKD	30.6	86	High	85.7%	78.4%	71.5%	High	87.7%	72.6%	57.8%
B 94.2	Bed	10.5	30	High	77.9%	67.0%	51.6%	High	88.6%	74.2%	58.3%

Blocks A & 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
B 94.3	Bed	13.6	40	High	80.8%	70.8%	57.0%	High	88.2%	73.2%	56.8%
B 95.1	LKD	29.9	84	High	85.6%	78.0%	69.8%	High	89.6%	76.8%	65.2%
B 95.2	Bed	11.4	30	Medium	75.6%	62.3%	46.7%	High	88.0%	72.2%	55.1%
B 95.3	Bed	15.0	40	Medium	71.6%	54.5%	37.5%	Medium	84.8%	61.3%	40.1%
B 96.1	LKD	24.5	66	High	86.8%	81.4%	74.2%	High	91.1%	80.3%	70.5%
B 96.2	Bed	13.2	35	Medium	67.5%	50.7%	30.0%	Medium	84.1%	61.7%	40.4%
B 97.1	LKD	29.8	84	High	82.1%	72.6%	62.0%	High	87.9%	72.6%	58.6%
B 97.2	Bed	11.4	30	Medium	68.9%	51.8%	32.1%	Medium	85.0%	62.8%	41.9%
B 97.3	Bed	15.0	40	Minimum	66.5%	48.2%	27.2%	Medium	83.1%	57.9%	33.7%
B 98.1	LKD	29.8	84	High	82.3%	72.9%	62.7%	High	87.7%	72.1%	58.2%
B 98.2	Bed	11.4	30	Medium	70.8%	55.8%	36.7%	Medium	86.1%	67.6%	48.7%
B 98.3	Bed	16.0	40	Minimum	62.8%	41.9%	20.0%	Medium	81.3%	52.3%	25.1%
B 99.1	LKD	28.0	71	High	85.7%	78.7%	71.5%	High	91.2%	81.1%	72.1%
B 99.2	Bed	11.4	30	Minimum	66.3%	47.1%	26.1%	Medium	83.5%	57.4%	34.4%
B 99.3	Bed	15.0	40	Minimum	60.7%	38.7%	20.2%	Minimum	78.8%	47.4%	22.8%
B 100.1	LKD	33.6	91	High	85.5%	78.4%	72.1%	High	85.8%	69.2%	56.4%
B 100.2	Bed	10.0	30	High	78.7%	69.0%	58.3%	High	88.4%	74.9%	63.2%
B 100.3	Bed	10.6	30	High	79.6%	70.3%	60.1%	High	88.6%	75.4%	64.2%
B 101.1	LKD	23.4	58	High	88.8%	84.7%	79.4%	High	94.5%	86.2%	80.8%
B 101.2	Bed	11.7	30	High	81.1%	72.8%	61.5%	High	88.9%	75.8%	62.7%
B 102.1	LKD	29.8	84	High	80.1%	71.6%	61.8%	High	86.7%	71.7%	58.1%
B 102.2	Bed	11.4	30	High	75.9%	64.1%	51.0%	High	87.0%	71.4%	55.8%
B 102.3	Bed	15.0	40	Medium	70.8%	54.9%	39.0%	Medium	83.3%	59.1%	38.7%
B 103.1	LKD	25.2	66	High	81.6%	73.4%	63.6%	High	87.0%	71.9%	57.3%
B 103.2	Bed	14.0	35	Medium	71.6%	56.1%	40.1%	Medium	84.3%	61.9%	42.5%
B 104.1	LKD	28.5	77	High	80.5%	72.5%	62.7%	High	87.0%	72.7%	59.7%
B 104.2	Bed	13.4	35	Medium	74.9%	62.9%	49.3%	High	85.9%	68.2%	52.1%
B 105.1	LKD	30.2	84	High	82.1%	73.8%	64.3%	High	86.7%	71.8%	58.7%
B 105.2	Bed	11.4	30	Medium	74.2%	62.0%	47.9%	High	86.4%	68.8%	52.5%
B 105.3	Bed	12.4	30	Medium	74.2%	62.0%	48.8%	High	86.3%	69.2%	54.2%
B 106.1	LKD	30.6	86	High	86.5%	80.7%	73.9%	High	88.2%	74.0%	60.8%
B 106.2	Bed	10.5	30	Medium	75.5%	62.9%	47.5%	High	87.1%	70.5%	52.6%
B 106.3	Bed	13.6	40	Medium	77.1%	65.1%	49.9%	High	86.9%	69.8%	51.6%
B 107.1	LKD	29.9	84	High	83.4%	74.7%	64.7%	High	87.6%	72.4%	56.5%
B 107.2	Bed	11.4	30	Medium	73.2%	58.3%	42.5%	Medium	86.4%	67.9%	49.5%
B 107.3	Bed	15.0	40	Medium	68.3%	50.2%	31.8%	Medium	83.1%	55.7%	33.3%
B 108.1	LKD	24.5	66	High	85.7%	78.5%	70.4%	High	89.4%	76.1%	64.8%
B 108.2	Bed	13.2	35	Medium	71.5%	57.6%	40.3%	Medium	85.6%	64.9%	43.9%
B 109.1	LKD	29.8	84	High	77.9%	67.1%	53.2%	Medium	85.8%	66.6%	48.0%
B 109.2	Bed	11.4	30	Medium	73.9%	58.2%	42.0%	Medium	86.6%	68.4%	48.7%
B 109.3	Bed	15.0	40	Medium	70.4%	54.1%	35.5%	Medium	83.8%	58.5%	36.1%
B 110.1	LKD	29.8	84	High	78.7%	68.4%	55.9%	High	86.3%	68.6%	51.6%
B 110.2	Bed	11.4	30	Minimum	66.7%	49.1%	28.6%	Medium	84.2%	62.0%	39.6%
B 110.3	Bed	16.0	40	Minimum	56.6%	34.5%	15.0%	Minimum	76.5%	42.1%	15.3%

Table 17: Blocks A & B - EN17037:2018 Daylight Provision individual room compliance values.

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

EN 17037:2018 Compliance threshold levels.

Block C



Figure 41: Block C - Daylight Provision

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
C 01.1	LKD	23.4	58	Medium	68.0%	52.6%	34.4%	Minimum	78.8%	48.3%	26.2%
C 01.2	Bed	11.8	35	High	78.2%	67.2%	54.6%	High	87.2%	71.4%	55.4%
C 02.1	LKD	28.8	60	Medium	73.0%	57.7%	42.6%	Minimum	76.9%	42.2%	13.4%
C 02.2	Bed	11.7	33	Medium	74.7%	61.6%	46.4%	Medium	85.4%	63.6%	44.2%
C 02.3	Bed	11.5	33	High	77.6%	65.9%	51.9%	Medium	85.8%	65.6%	46.8%
C 03.1	LKD	28.7	81	High	80.8%	70.9%	58.5%	Medium	85.7%	65.3%	43.6%
C 03.2	Bed	11.2	35	High	78.0%	66.3%	51.5%	High	87.6%	71.5%	54.6%
C 03.3	Bed	11.4	35	High	80.0%	69.5%	55.0%	High	86.7%	69.8%	51.2%
C 04.1	LKD	22.2	63	Medium	72.3%	58.1%	39.1%	Medium	84.9%	62.7%	40.1%
C 04.2	Bed	13.7	40	Medium	71.6%	54.1%	33.2%	Medium	83.2%	54.3%	28.1%
C 05.1	LKD	22.2	63	Medium	71.4%	56.5%	37.5%	Medium	84.7%	61.9%	38.5%
C 05.2	Bed	13.7	40	Medium	73.5%	59.9%	41.6%	Medium	82.4%	56.3%	31.8%
C 06.1	LKD	28.6	74	High	84.2%	75.8%	68.1%	High	86.4%	70.3%	56.6%
C 06.2	Bed	11.2	35	High	78.4%	69.3%	59.1%	High	86.3%	70.4%	57.2%
C 06.3	Bed	11.4	35	High	78.2%	68.9%	59.1%	High	86.1%	69.1%	55.6%
C 07.1	LKD	33.9	82	High	77.9%	68.0%	57.9%	High	86.5%	71.1%	58.2%
C 07.2	Bed	11.0	32	High	77.8%	66.2%	52.4%	High	87.1%	70.1%	52.6%
C 07.3	Bed	11.9	33	Medium	75.9%	62.9%	47.6%	Medium	85.9%	66.6%	47.1%
C 08.1	LKD	23.4	58	Medium	73.9%	60.1%	44.5%	Medium	81.6%	57.1%	33.5%
C 08.2	Bed	11.8	35	High	79.1%	69.5%	57.7%	High	87.3%	72.2%	57.4%
C 09.1	LKD	28.8	60	Medium	74.7%	61.8%	47.0%	Medium	80.5%	50.8%	25.1%
C 09.2	Bed	11.7	33	High	77.1%	65.6%	51.9%	High	86.5%	69.3%	51.9%
C 09.3	Bed	11.5	33	High	77.3%	66.1%	52.7%	High	86.9%	70.1%	52.7%
C 10.1	LKD	28.7	81	High	81.7%	72.4%	60.9%	Medium	86.3%	68.5%	49.8%
C 10.2	Bed	11.2	35	High	80.9%	70.6%	57.8%	High	87.4%	71.1%	54.9%
C 10.3	Bed	11.4	35	High	79.5%	68.9%	54.7%	High	88.0%	72.6%	56.6%
C 11.1	LKD	22.2	63	Medium	75.1%	62.3%	45.4%	Medium	85.9%	66.4%	46.0%
C 11.2	Bed	13.7	40	Medium	74.3%	58.9%	41.9%	Medium	84.0%	58.9%	35.7%
C 12.1	LKD	22.2	63	Medium	74.7%	62.1%	45.2%	Medium	85.9%	66.0%	46.4%
C 12.2	Bed	13.7	40	Medium	73.6%	60.8%	44.4%	Medium	83.0%	57.5%	35.6%
C 13.1	LKD	28.6	74	High	84.9%	77.3%	70.2%	High	88.0%	73.9%	62.3%
C 13.2	Bed	11.2	35	High	80.2%	71.3%	62.4%	High	87.2%	72.8%	60.4%
C 13.3	Bed	11.4	35	High	81.1%	72.5%	63.4%	High	87.7%	73.2%	60.9%
C 14.1	LKD	33.9	82	High	81.6%	73.1%	63.7%	High	88.4%	75.4%	64.1%
C 14.2	Bed	11.0	32	High	77.7%	66.5%	53.6%	High	88.2%	73.5%	58.0%
C 14.3	Bed	11.9	33	High	77.1%	65.1%	51.0%	High	86.6%	68.9%	50.3%
C 15.1	LKD	23.4	58	Medium	74.9%	62.0%	47.1%	Medium	83.1%	59.9%	38.0%
C 15.2	Bed	11.8	35	High	80.1%	71.2%	60.4%	High	88.2%	73.9%	60.0%
C 16.1	LKD	28.8	60	Medium	75.9%	63.9%	50.0%	Medium	81.5%	52.6%	28.1%
C 16.2	Bed	11.7	33	High	78.9%	69.1%	57.0%	High	86.4%	68.8%	51.6%
C 16.3	Bed	11.5	33	High	80.0%	70.5%	58.4%	High	87.3%	71.7%	55.8%
C 17.1	LKD	28.7	81	High	83.4%	74.5%	63.8%	High	86.9%	70.8%	54.4%
C 17.2	Bed	11.2	35	High	79.0%	68.6%	55.8%	High	87.9%	73.1%	58.0%
C 17.3	Bed	11.4	35	High	79.2%	68.7%	55.4%	High	88.3%	73.5%	58.4%
C 18.1	LKD	22.2	63	Medium	75.3%	63.0%	46.8%	Medium	86.4%	68.3%	48.9%
C 18.2	Bed	13.7	40	Medium	74.6%	60.1%	43.7%	Medium	85.3%	62.6%	41.4%
C 19.1	LKD	22.2	63	Medium	75.0%	62.8%	46.6%	Medium	86.3%	67.8%	48.7%
C 19.2	Bed	13.7	40	Medium	75.5%	63.9%	49.2%	Medium	85.4%	65.2%	45.8%
C 20.1	LKD	28.6	74	High	84.8%	77.1%	70.0%	High	88.4%	74.9%	64.0%
C 20.2	LKD	11.2	35	High	81.5%	72.9%	63.7%	High	89.3%	77.1%	66.7%

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
C 20.3	Bed	11.4	35	High	81.7%	73.3%	63.9%	High	88.7%	75.6%	64.4%
C 21.1	LKD	33.9	82	High	82.1%	74.0%	64.8%	High	88.9%	76.5%	65.4%
C 21.2	Bed	11.0	32	High	78.7%	68.1%	55.5%	High	88.2%	73.5%	58.1%
C 21.3	Bed	11.9	33	High	78.1%	67.1%	54.2%	High	87.0%	70.0%	53.2%
C 22.1	LKD	39.9	96	High	81.9%	73.2%	62.1%	High	88.7%	74.8%	61.0%
C 22.2	Bed	10.6	30	High	83.8%	76.0%	66.2%	High	89.5%	76.8%	63.8%
C 22.3	Bed	11.9	36	High	80.6%	71.3%	59.0%	High	87.8%	72.1%	54.9%
C 22.4	Bed	11.2	32	High	81.4%	73.3%	63.1%	High	88.2%	74.3%	60.8%
C 23.1	LKD	30.5	82	High	84.1%	75.6%	66.1%	Medium	85.0%	62.9%	43.0%
C 23.2	Bed	12.0	31	High	81.7%	72.1%	59.6%	High	88.9%	74.8%	60.3%
C 23.3	Bed	11.7	27	High	84.0%	75.3%	65.6%	High	88.8%	74.4%	60.5%
C 24.1	LKD	30.5	82	High	86.1%	79.7%	72.6%	High	88.2%	74.1%	62.7%
C 24.2	Bed	12.0	31	High	80.9%	70.9%	59.3%	High	89.1%	75.1%	61.9%
C 24.3	Bed	11.7	27	High	83.6%	74.7%	65.0%	High	88.4%	73.3%	58.4%
C 25.1	LKD	46.7	122	High	80.7%	72.0%	62.7%	High	87.3%	73.4%	61.1%
C 25.2	Bed	12.9	36	High	81.6%	73.3%	63.5%	High	85.3%	67.5%	54.1%
C 25.3	Bed	11.6	35	High	79.5%	70.0%	57.9%	High	88.6%	75.2%	61.8%
C 25.4	Bed	14.9	31	High	77.9%	66.9%	53.4%	High	86.9%	70.1%	53.2%

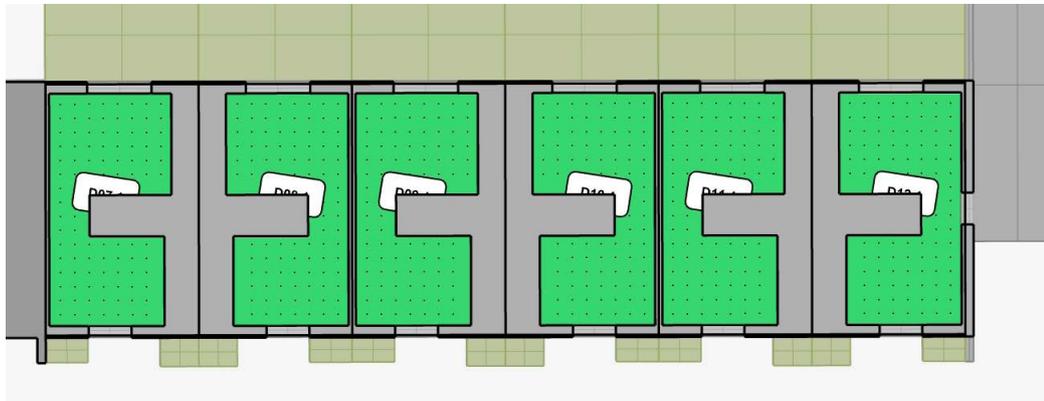
Table 18: Block C - EN17037:2018 Daylight Provision individual room compliance values.

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

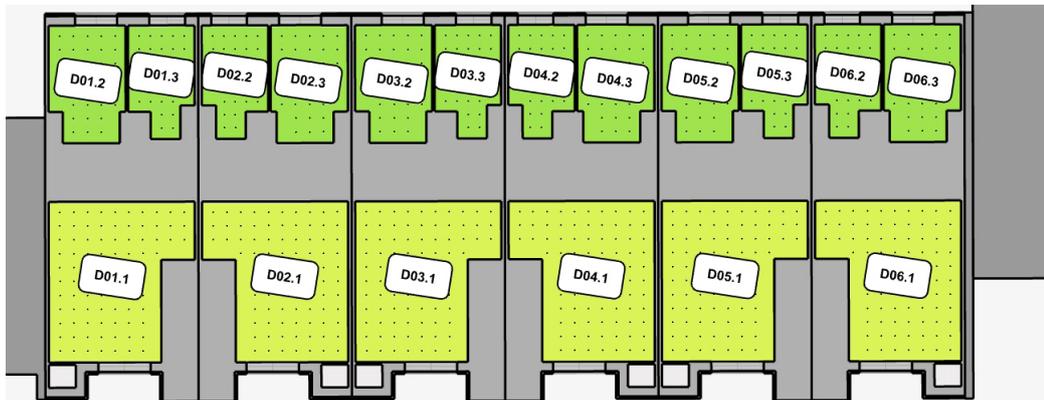
EN 17037:2018 Compliance threshold levels.



Second Floor



First Floor



Ground Floor

Figure 42: Duplex D - Daylight Provision on all floors

Duplex 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
D01.1	LKD	35.7	87	Minimum	54.2%	37.4%	26.7%	Minimum	62.9%	29.8%	12.2%
D01.2	Bed	15.0	35	Medium	73.9%	59.4%	43.7%	Medium	83.6%	59.2%	39.2%
D01.3	ADF	11.5	33	Medium	75.2%	61.9%	46.5%	Medium	81.8%	56.4%	34.7%
D02.1	LKD	35.7	87	Minimum	54.7%	38.3%	27.5%	Minimum	65.6%	31.9%	15.6%
D02.2	Bed	11.5	33	Medium	75.3%	62.3%	46.9%	Medium	80.6%	54.1%	31.9%
D02.3	Bed	15.0	35	Medium	73.9%	59.7%	44.6%	Medium	83.4%	58.7%	38.0%
D03.1	LKD	35.7	87	Minimum	55.8%	40.0%	28.5%	Minimum	63.0%	30.3%	11.9%
D03.2	Bed	15.0	35	Medium	73.7%	59.4%	43.7%	Medium	84.1%	60.4%	39.7%
D03.3	Bed	11.5	33	Medium	75.0%	61.5%	45.8%	Medium	82.4%	56.1%	34.5%
D04.1	LKD	35.7	87	Minimum	55.0%	38.7%	27.5%	Minimum	63.2%	29.3%	11.1%
D04.2	Bed	11.5	33	Medium	75.0%	61.7%	46.1%	Medium	82.9%	57.6%	36.6%
D04.3	Bed	15.0	35	Medium	74.2%	60.5%	44.5%	Medium	83.6%	58.7%	38.4%
D05.1	LKD	35.7	87	Minimum	56.1%	40.3%	28.7%	Minimum	64.6%	30.8%	13.2%
D05.2	Bed	15.0	35	Medium	74.7%	60.9%	45.3%	Medium	83.0%	57.5%	36.4%
D05.3	Bed	11.5	33	Medium	75.0%	61.3%	46.0%	Medium	81.9%	56.1%	33.9%
D06.1	LKD	35.7	87	Minimum	56.6%	40.8%	29.2%	Minimum	64.2%	30.5%	12.7%
D06.2	LKD	11.5	33	Medium	75.1%	61.8%	46.1%	Medium	81.2%	54.9%	31.2%
D06.3	Bed	15.0	35	Medium	73.0%	58.1%	42.9%	Medium	82.4%	56.7%	35.5%
D07.1	LKD	43.6	98	High	80.6%	71.6%	60.5%	High	86.7%	71.0%	57.1%
D07.2	Bed	13.7	35	Medium	72.5%	61.0%	49.2%	High	85.0%	65.8%	51.4%
D07.3	Bed	11.9	30	High	77.2%	66.1%	51.2%	High	88.1%	72.5%	56.6%
D07.4	Bed	7.8	20	High	79.5%	70.5%	60.9%	High	87.0%	73.0%	61.1%
D08.1	LKD	43.6	98	High	80.5%	72.0%	60.5%	High	86.5%	70.9%	56.7%
D08.2	Bed	13.7	35	Medium	72.8%	61.0%	49.2%	High	84.6%	65.2%	51.1%
D08.3	Bed	11.9	30	High	77.8%	67.2%	52.4%	High	88.3%	73.1%	57.1%
D08.4	Bed	7.8	20	High	80.1%	70.8%	61.7%	High	87.2%	73.2%	61.8%
D09.1	LKD	43.6	98	High	80.6%	71.8%	60.6%	High	86.9%	71.8%	57.9%
D09.2	Bed	13.7	35	Medium	72.4%	60.9%	48.7%	High	84.9%	65.5%	51.4%
D09.3	Bed	11.9	30	High	77.6%	66.5%	51.8%	High	88.3%	73.2%	57.9%
D09.4	Bed	7.8	20	High	80.1%	71.0%	62.2%	High	86.9%	73.0%	61.1%
D10.1	LKD	43.6	98	High	80.6%	72.0%	60.8%	High	86.7%	71.3%	57.1%
D10.2	Bed	13.7	35	Medium	73.0%	61.5%	49.4%	High	84.7%	65.2%	50.8%
D10.3	Bed	11.9	30	High	77.3%	66.1%	51.5%	High	88.4%	73.3%	58.2%
D10.4	Bed	7.8	20	High	80.8%	71.7%	62.3%	High	86.7%	72.0%	60.1%
D11.1	LKD	43.6	98	High	80.5%	71.8%	60.7%	High	86.9%	71.8%	58.3%
D11.2	Bed	13.7	35	High	73.6%	62.1%	50.0%	High	84.8%	65.4%	51.2%
D11.3	Bed	11.9	30	High	77.1%	65.4%	50.7%	High	88.2%	72.8%	57.1%
D11.4	Bed	7.8	20	High	80.1%	71.0%	61.8%	High	86.8%	72.6%	60.0%
D12.1	LKD	43.6	98	High	82.1%	73.3%	63.7%	High	89.0%	75.7%	63.6%
D12.2	Bed	13.7	35	Medium	73.6%	61.9%	49.7%	High	85.0%	65.5%	51.2%
D12.3	Bed	11.9	30	High	77.2%	65.8%	51.7%	High	88.6%	74.2%	58.8%
D12.4	Bed	7.8	20	High	81.1%	72.4%	62.9%	High	87.9%	74.4%	62.9%

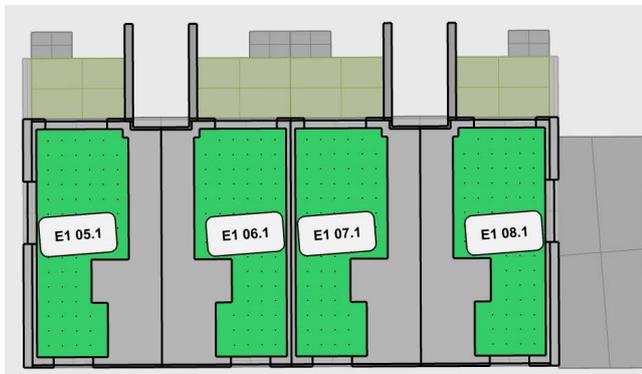
Table 19: Duplex D - EN17037:2018 Daylight provision, individual room compliance values.

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

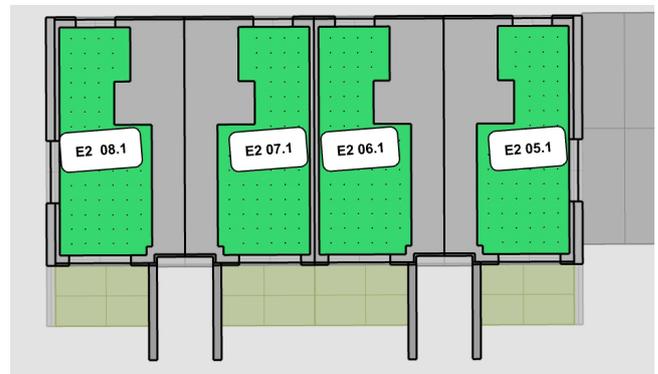
EN 17037:2018 Compliance threshold levels.



Second Floor



First Floor



Ground Floor



Figure 43: Duplex E - Daylight Provision on all floors

Duplex 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
E01.1	LKD	27.8	68	Medium	75.3%	62.0%	46.7%	Medium	80.4%	54.5%	31.9%
E01.2	Bed	13.5	40	High	80.4%	71.5%	62.3%	High	88.1%	75.1%	63.9%
E02.1	LKD	27.8	68	Fail	41.7%	11.8%	0.0%	Minimum	52.5%	0.3%	0.0%
E02.2	Bed	13.5	40	High	81.1%	72.5%	63.2%	High	88.4%	75.1%	64.3%
E03.1	LKD	27.8	68	Fail	41.7%	8.3%	0.0%	Minimum	51.0%	0.1%	0.0%
E03.2	Bed	13.5	40	High	80.5%	71.7%	62.3%	High	88.6%	76.1%	64.8%
E04.1	LKD	27.8	68	Fail	44.1%	13.9%	0.4%	Minimum	57.1%	0.4%	0.0%
E04.2	Bed	13.5	40	High	80.7%	72.0%	62.8%	High	88.0%	74.8%	64.0%
E05.1	LKD	29.5	71	High	88.2%	83.6%	77.4%	High	93.0%	84.0%	76.6%
E05.2	Bed	14.0	40	High	89.5%	85.3%	80.1%	High	95.9%	87.5%	82.4%
E05.3	Bed	12.0	35	High	81.7%	73.2%	64.2%	High	88.4%	75.4%	64.1%
E06.1	LKD	29.5	71	High	82.4%	73.0%	62.6%	High	89.0%	75.3%	63.2%
E06.2	Bed	14.0	40	Medium	76.8%	64.3%	48.5%	Medium	85.7%	65.6%	45.4%
E06.3	Bed	12.0	35	High	81.7%	73.1%	63.8%	High	88.2%	75.3%	64.1%
E07.1	LKD	29.5	71	High	82.1%	73.1%	62.1%	High	88.4%	74.3%	61.4%
E07.2	Bed	14.0	40	High	77.6%	65.4%	50.0%	Medium	85.7%	65.7%	45.5%
E07.3	Bed	12.0	35	High	81.8%	73.4%	64.2%	High	88.2%	74.8%	63.4%
E08.1	LKD	29.5	71	High	88.7%	84.4%	78.0%	High	93.6%	85.1%	77.4%
E08.2	Bed	14.0	40	High	89.8%	85.6%	80.2%	High	96.0%	87.2%	82.0%
E08.3	Bed	12.0	35	High	81.1%	72.4%	63.1%	High	88.4%	75.5%	64.3%

Table 20: Duplex E - EN17037:2018 Daylight provision, individual room compliance values.

Appendix C - Annual Probable Sunlight Hours for Apartment Blocks

Blocks A&B : Annual Probable Sunlight Hours					
Location ID	Within 90° South	% of APSH	% of PSH Sept 21 - Mar 21	Meets Criteria APSH	Meets Criteria WPSH
A 01	No	8.2%	0.0%	N	N
A 02	Yes	43.5%	11.1%	Y	Y
A 03	Yes	40.9%	10.5%	Y	Y
A 04	Yes	40.4%	10.4%	Y	Y
A 05	Yes	73.4%	26.8%	Y	Y
A 06	Yes	44.4%	12.5%	Y	Y
A 07	Yes	44.8%	12.5%	Y	Y
A 08	Yes	46.5%	13.3%	Y	Y
A 09	Yes	29.6%	5.3%	Y	Y
A 10	No	9.4%	0.0%	N	N
A 11	No	26.4%	7.7%	Y	Y
A 12	No	26.2%	7.7%	Y	Y
A 13	No	22.8%	4.8%	N	N
A 14	No	21.2%	3.5%	N	N
A 15	Yes	30.3%	24.5%	Y	Y
A 16	Yes	73.9%	27.4%	Y	Y
A 17	Yes	30.3%	24.5%	Y	Y
A 18	Yes	55.5%	23.2%	Y	Y
A 19	Yes	49.5%	15.8%	Y	Y
A 20	Yes	49.4%	15.6%	Y	Y
A 21	Yes	50.0%	16.1%	Y	Y
A 22	Yes	31.1%	6.4%	Y	Y
A 23	No	9.6%	0.0%	N	N
A 24	No	29.5%	8.4%	Y	Y
A 25	No	29.3%	8.3%	Y	Y
A 26	No	30.9%	9.6%	Y	Y
A 27	No	30.2%	9.1%	Y	Y
A 28	Yes	33.8%	27.0%	Y	Y
A 29	Yes	78.3%	29.9%	Y	Y
A 30	Yes	57.6%	25.0%	Y	Y
A 31	Yes	49.5%	15.7%	Y	Y
A 32	Yes	49.5%	15.7%	Y	Y
A 33	Yes	49.5%	15.7%	Y	Y
A 34	Yes	36.4%	6.9%	Y	Y
A 35	No	9.6%	0.0%	N	N
A 36	No	34.1%	9.6%	Y	Y
A 37	No	34.0%	9.6%	Y	Y
A 38	No	35.9%	11.1%	Y	Y
A 39	No	36.1%	11.4%	Y	Y
A 40	Yes	33.2%	26.8%	Y	Y
A 41	Yes	79.2%	31.8%	Y	Y
A 42	Yes	61.9%	26.6%	Y	Y
A 43	Yes	49.6%	15.7%	Y	Y
A 44	Yes	49.6%	15.7%	Y	Y
A 45	Yes	49.6%	15.7%	Y	Y
A 46	Yes	43.4%	10.5%	Y	Y
A 47	No	14.9%	0.0%	N	N

Blocks A&B : Annual Probable Sunlight Hours					
Location ID	Within 90° South	% of APSH	% of PSH Sept 21 - Mar 21	Meets Criteria APSH	Meets Criteria WPSH
A 48	No	39.5%	11.6%	Y	Y
A 49	No	39.7%	11.6%	Y	Y
A 50	No	40.4%	12.2%	Y	Y
A 51	No	40.6%	12.3%	Y	Y
A 52	Yes	76.3%	31.1%	Y	Y
A 53	Yes	79.2%	31.8%	Y	Y
A 54	Yes	71.2%	27.3%	Y	Y
B 55	Yes	7.5%	0.0%	N	N
B 56	No	41.0%	11.7%	Y	Y
B 57	No	40.5%	11.3%	Y	Y
B 58	No	40.5%	11.3%	Y	Y
B 59	Yes	53.5%	20.6%	Y	Y
B 60	Yes	73.3%	26.5%	Y	Y
B 61	Yes	71.7%	27.5%	Y	Y
B 62	Yes	54.4%	21.3%	Y	Y
B 63	Yes	76.0%	28.9%	Y	Y
B 64	Yes	30.8%	23.7%	Y	Y
B 65	Yes	27.1%	5.1%	Y	Y
B 66	Yes	28.8%	6.5%	Y	Y
B 67	Yes	30.9%	8.4%	Y	Y
B 68	Yes	30.3%	8.2%	Y	Y
B 69	Yes	21.8%	5.2%	N	Y
B 70	No	13.4%	0.0%	N	N
B 71	No	41.5%	12.1%	Y	Y
B 72	No	41.2%	11.9%	Y	Y
B 73	No	41.1%	11.8%	Y	Y
B 74	Yes	74.4%	29.4%	Y	Y
B 75	Yes	55.7%	22.4%	Y	Y
B 76	Yes	78.1%	30.6%	Y	Y
B 77	Yes	32.1%	24.8%	Y	Y
B 78	Yes	36.6%	11.1%	Y	Y
B 79	Yes	36.1%	10.9%	Y	Y
B 80	Yes	34.5%	9.6%	Y	Y
B 81	Yes	34.6%	9.6%	Y	Y
B 82	Yes	26.2%	6.3%	Y	Y
B 83	No	14.6%	0.0%	N	N
B 84	No	42.4%	12.9%	Y	Y
B 85	No	42.2%	12.7%	Y	Y
B 86	No	42.2%	12.7%	Y	Y
B 87	Yes	59.4%	22.6%	Y	Y
B 88	Yes	79.2%	31.5%	Y	Y
B 89	Yes	32.4%	25.0%	Y	Y
B 90	Yes	41.1%	12.2%	Y	Y
B 91	Yes	41.1%	12.3%	Y	Y
B 92	Yes	40.2%	11.7%	Y	Y
B 93	Yes	39.4%	11.8%	Y	Y
B 94	Yes	35.9%	8.3%	Y	Y

Blocks A&B : Annual Probable Sunlight Hours					
Location ID	Within 90° South	% of APSH	% of PSH Sept 21 - Mar 21	Meets Criteria APSH	Meets Criteria WPSH
B 95	No	14.8%	0.0%	N	N
B 96	No	42.5%	12.9%	Y	Y
B 97	No	42.5%	12.9%	Y	Y
B 98	No	42.5%	12.9%	Y	Y
B 99	Yes	69.4%	24.5%	Y	Y
B 100	Yes	79.2%	31.5%	Y	Y
B 101	Yes	76.5%	31.5%	Y	Y
B 102	Yes	46.5%	14.0%	Y	Y

Blocks A&B : Annual Probable Sunlight Hours					
Location ID	Within 90° South	% of APSH	% of PSH Sept 21 - Mar 21	Meets Criteria APSH	Meets Criteria WPSH
B 103	Yes	46.6%	14.0%	Y	Y
B 104	Yes	46.3%	14.0%	Y	Y
B 105	Yes	46.1%	14.0%	Y	Y
B 106	Yes	44.2%	12.0%	Y	Y
B 107	No	14.8%	0.0%	N	N
B 108	No	42.5%	12.9%	Y	Y
B 109	No	42.5%	12.9%	Y	Y
B 110	No	42.5%	12.9%	Y	Y

Table 21: Blocks A&B - Annual Probable Sunlight Hours

Block C : Annual Probable Sunlight Hours					
Location ID	Within 90° South	% of APSH	% of PSH Sept 21 - Mar 21	Meets Criteria APSH	Meets Criteria WPSH
C 01	Yes	23.4%	7.7%	N	Y
C 02	Yes	30.0%	8.5%	Y	Y
C 03	No	38.4%	10.3%	Y	Y
C 04	No	19.3%	2.0%	N	N
C 05	No	18.8%	2.0%	N	N
C 06	Yes	48.3%	25.1%	Y	Y
C 07	Yes	41.9%	23.0%	Y	Y
C 08	Yes	26.2%	8.2%	Y	Y
C 09	Yes	33.2%	9.2%	Y	Y
C 10	No	39.7%	11.0%	Y	Y
C 11	No	19.2%	2.5%	N	N
C 12	No	18.9%	2.3%	N	N
C 13	Yes	51.5%	28.8%	Y	Y
C 14	Yes	47.8%	28.4%	Y	Y
C 15	Yes	29.6%	8.7%	Y	Y
C 16	Yes	37.6%	10.4%	Y	Y
C 17	No	40.8%	11.6%	Y	Y
C 18	No	20.5%	2.9%	N	N
C 19	No	20.0%	2.6%	N	N
C 20	Yes	53.6%	30.3%	Y	Y
C 21	Yes	49.5%	29.9%	Y	Y
C 22	Yes	41.2%	12.2%	Y	Y
C 23	No	42.5%	12.9%	Y	Y
C 24	Yes	71.6%	28.2%	Y	Y
C 25	Yes	77.7%	30.9%	Y	Y

Table 22: Block C - Annual Probable Sunlight Hours

Duplex D : Annual Probable Sunlight Hours					
Location ID	Within 90° South	% of APSH	% of PSH Sept 21 - Mar 21	Meets Criteria APSH	Meets Criteria WPSH
D 01	Yes	40.2%	15.6%	Y	Y
D 02	Yes	39.4%	14.2%	Y	Y
D 03	Yes	39.7%	15.2%	Y	Y
D 04	Yes	40.5%	15.2%	Y	Y
D 05	Yes	41.1%	16.4%	Y	Y
D 06	Yes	42.1%	16.5%	Y	Y
D 07	Yes	70.3%	25.4%	Y	Y
D 08	Yes	75.3%	26.4%	Y	Y
D 09	Yes	76.1%	27.1%	Y	Y
D 10	Yes	76.4%	27.4%	Y	Y
D 11	Yes	76.8%	27.6%	Y	Y
D 12	Yes	78.0%	28.7%	Y	Y

Table 23: Duplex D - Annual Probable Sunlight Hours

Duplex E South : Annual Probable Sunlight Hours					
Location ID	Within 90° South	% of APSH	% of PSH Sept 21 - Mar 21	Meets Criteria APSH	Meets Criteria WPSH
E1 01	No	2.2%	0.0%	N	N
E1 02	No	6.4%	0.0%	N	N
E1 03	No	1.6%	0.0%	N	N
E1 04	No	10.5%	0.0%	N	N
E1 05	Yes	81.9%	32.0%	Y	Y
E1 06	Yes	81.9%	32.0%	Y	Y
E1 07	Yes	81.9%	32.0%	Y	Y
E1 08	Yes	81.9%	32.0%	Y	Y
E2 01	Yes	56.6%	23.0%	Y	Y
E2 02	Yes	46.7%	17.4%	Y	Y
E2 03	Yes	51.5%	21.6%	Y	Y
E2 04	Yes	49.4%	16.2%	Y	Y
E2 05	Yes	67.1%	24.3%	Y	Y
E2 06	Yes	62.9%	20.2%	Y	Y
E2 07	Yes	63.6%	21.8%	Y	Y
E2 08	Yes	64.6%	20.8%	Y	Y

Table 24: Duplex E South - Annual Probable Sunlight Hours

Appendix D - Reference Documents

- Site Layout Planning for Daylight and Sunlight. A guide to good practice. Second Edition (2011) BRE Trust
- BS 8206-2: 2008 Lighting for Buildings – Part 2: Code of Practice for Daylighting
- IS EN 17037:2018 Daylight in Buildings
- Planning Guidelines 28 Sustainable urban housing: design standards for new apartments. Guidelines for Planning Authorities issued under Section 28 of the Planning and Development Act, 2000 (as amended) Department of Housing, Planning, and Local Government (2020)
- Urban Development and Building Heights: Guidelines for Planning Authorities (2018) Department of Housing, Local Government & Heritage