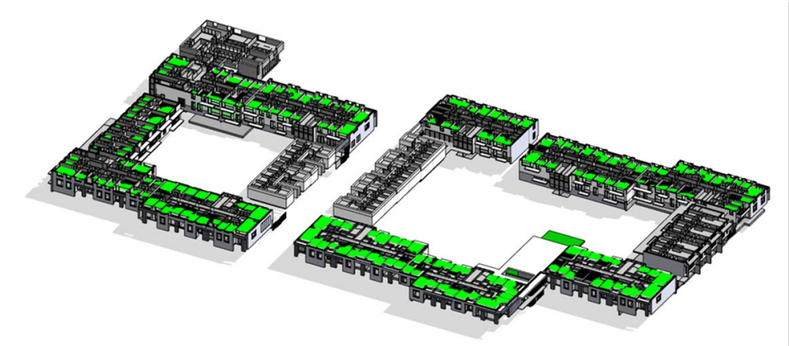
Proposed Mixed Use Development
Emmet Road,
Inchicore,
Dublin 8



Sunlight and Daylight Analysis

IN2 Project No. D2030

26/09/2022

Revision History

Date	Revision	Description
23/09/2022	00	Issue for review
26/09/2022	01	Updated for comments

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1.0 Executive Summary

This report compiles the daylight and sunlight analysis as undertaken by IN2 Engineering Design Partnership for the Proposed development at Emmet Road, Inchicore, Dublin 8.

The report has been prepared as a desktop exercise with 3D massing and survey information provided by others. No site visits took place as information provided included all relevant required information and our understanding is that any survey information or 3D models provided were carried out by relevant suitably qualified professionals.

Various software programs were utilised in the analysis of the proposed development. These included:

- Radiance Lighting Software
- TAS by EDSL

Section 2.0 introduces the various Guidelines and Standards utilised throughout the Daylight / Sunlight analysis undertaken. Section 3.0 is a glossary of common terms found in the report. The specific methodology for each topic (as relevant) is detailed in the relevant section in the body of this report as identified below.

Analysis Type	**Relevance**	**Assessment Methodology**	**Compliance Guidelines Targets**	**Reference section of this report**
Daylight	Proposed Development	Spatial Daylight Autonomy	BR 209 (2022 Edition)	Section 6.0 – Internal Spatial Daylight Autonomy
Daylight	Existing Neighbouring Buildings	Vertical Sky Component	BR 209 (2022 Edition)	Section 5.0 – Impact on Neighbouring Buildings
Sunlight	Proposed Development	Sunlight Exposure	BR 209 (2022 Edition)	Section 7.0 – Exposure to Sunlight
Sunlight	Proposed Development Amenity Spaces	Sunlight Hours	BR 209 (2022 Edition)	Section 4.0 – Site Sunlighting and Shading
Sunlight	Existing Neighbouring Buildings	Annual Probable Sunlight Hours	BR 209 (2022 Edition)	Section 5.0 – Impact on Neighbouring Buildings
Sunlight	Existing Neighbouring Amenity Spaces (Gardens)	Sunlight Hours	BR 209 (2022 Edition)	Section 5.0 – Impact on Neighbouring Buildings

Section 4.0 illustrates the results from the amenity sunlight analysis as undertaken based on the BRE BR209 2022 edition best practice for the proposed amenities areas. The proposed amenity space was found to receive excellent overall sunlight availability. The results demonstrate each of the amenity spaces easily achieve compliance with the BRE guidance of over 50% of amenity space across the site receiving two hours or more of sunlight on 21st March.

The impact of the proposed development on neighbouring buildings was assessed in Section 5.0. The neighbouring buildings were assessed for both VSC, a measure of potential daylight, and Annual Probable Sunlight Hours, a measure of direct sunlight. The BRE Guide recommends the utilisation of an alternative baseline for reasonable assessment of underdeveloped sites such as this. The VSC assessment determined that there would be no negative impact as a result of the proposed development. The Annual Probable Sunlight hours and Winter Sunlight Hours assessments determine the annual sunlight impact on a window and the winter sunlight impact through a quantitative assessment. The APSH assessment determined that there would be no negative impact to neighbouring dwellings as a result of the proposed development. Additionally, an assessment has been undertaken on Richmond Barracks to ensure that no negative impact would be experienced as a result of the proposed development. The assessment determined that Richmond Barracks would not be impacted as a result of the proposed development for daylight or sunlight as per the BRE guidance. In addition to the quantitative assessment carried out as per the BRE guide, shadow diagrams have also been provided in Appendix B. These images are provided for information as they are subjective, please refer to quantifiable metrics contained in Section 5.0 for determination of impact on neighbours.

The internal daylight analysis, as detailed in section 6.0, has been undertaken for all KLD and bedroom spaces in the proposed development for Spatial Daylight Autonomy (SDA) – a climate-based means of assessing natural light performance accounting for both direct (sunlit) and diffuse light. The analysis determined a high compliance rate of **99%** of rooms on the first floor achieved prescribed SDA targets.

The Design Standards for New Apartments Guidelines (see Section 2.0 Standards and Guidelines) advise that "*Where an applicant cannot fully meet all of the requirements of the daylight provisions above(...BR 209…), this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, which planning authorities should apply their discretion in accepting taking account of its assessment",* therefore Section 6.3 identifies compensatory measures related to daylight and sunlight applicable to the three isolated rooms found non-compliant.

Section 7.0 includes the results for exposure to sunlight. Exposure to sunlight is the new metric, as defined in BR 209 2022 edition, for assessing sunlight availability to a dwelling. The guide notes that "*Where groups of dwellings are planned, site layout design should aim to maximise the number of dwellings with a main living room that meets the … recommendations."* The proposed development achieves a high compliance rate with **97%** of units meeting or exceeding the minimum recommendations.

The extent of compliance for daylight and sunlight metrics was achieved through undertaking an iterative design process, in both reducing massing so as to not impact on neighbouring dwellings, through to reconfiguring facades and apartment layouts to maximise internal daylight availability. In summary, this report confirms that best practice Sunlight and Daylight availability have been ensured for the proposed Emmett Road development, with minimal impact on the existing neighbouring environment.

2.0 Standards and Guidelines

The following standards and guidance documents have been consulted when compiling this report to ensure compliance with the various Daylight and Sunlight requirements as applicable and relevant:

a) Sustainable Urban Housing: Design Standards for New Apartments (December 2020) (the **"2020 Apartment Guidelines").** These are guidelines issued under section 28 of the 2000 Planning and Development Act (as amended).

b) The Building Research Establishment's (BRE) Site Layout Planning for Daylight and Sunlight: A guide to good practice (BRE 209) (2nd edition) (the "**BRE Guide 2nd Edition**").

c) British Standard BS 8206-2:2008 – "Lighting for Buildings – Part 2: Code of Practice for Daylighting" (the "**2008 British Standard**").

d) The Building Research Establishment's (BRE) Site Layout Planning for Daylight and Sunlight: A guide to good practice (BRE 209) 3rd edition/ 2022 edition, (the **"BRE Guide").**

e) British Standard BS EN 17037:2018 – Daylight in Buildings (the "**2018 British EN Standard**").

f) Irish Standard IS EN 17037:2018 (the "**2018 Irish EN Standard**").

It should be noted at the outset that the 2008 British Standard has been superseded by the 2018 British Standard, and BRE Guide 2nd Edition has been superseded by BRE Guide 2022 edition. Both previous revisions have now been withdrawn.

EN 17037:2018, which was approved by the CEN on 29 July 2018 has been adopted in the UK as BS EN 17037:2018, and in Ireland as IS EN 17037:2018. The texts of the 2018 British Standard and the 2018 Irish Standard are the same, with one exception. The exception is that the 2018 British Standard contains an additional "National Annex" which specifically sets out requirements within dwellings, to ensure some similarity to the now superseded 2008 British Standard.

The 2020 Apartment Guidelines state:

> *"[6.5] The provision of acceptable levels of natural light in new apartment developments is an important planning consideration as it contributes to the liveability and amenity enjoyed by apartment residents. In assessing development proposals, planning authorities must however weigh up the overall quality of the design and layout of the scheme and the measures proposed to maximise daylight provision with the location of the site and the need to ensure an appropriate scale of urban residential development.*
>
> *[6.6] Planning authorities should have regard to quantitative performance approaches to daylight provision outlined in guides like the BRE guide 'Site Layout Planning for Daylight and Sunlight' (2nd edition) or BS 8206-2:2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting' when undertaken by development proposers which offer the capability to satisfy minimum standards of daylight provision.*
>
> *[6.7] Where an applicant cannot fully meet all of the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, which planning authorities should apply their discretion in accepting taking account of its assessment of specific (sic). This may arise due to a design constraints associated with the site or location and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

The 2020 Apartment Guidelines state that "*Planning Authorities should have regard to quantitative performance approaches to daylight provision outlined in guides like the BRE guide 'Site Layout Planning for Daylight and Sunlight' (2nd edition)."* However, subsequent to release of 2020 Apartment Guidelines, this BRE Guide has been comprehensively updated (BR.209 3rd Edition, 2022) with regards to daylight assessments for new buildings, in particular to incorporate the European Standard EN.17037: 2018 (which stipulated that all "conflicting national standards should be withdrawn at the latest by June 2019". The 2022 BRE Guide (and associated EN Standard) enables a more accurate and sophisticated calculation methodology (Spatial Daylight Autonomy or SDA) as this accounts for the following factors that had not been accounted for within the (now superseded) metric of Average Daylight Factor (ADF):

- Site Location
- Climate
- Window Orientation
- Uniformity of light within room

The rationale for utilisation of the BRE Guide 2022 edition over the BRE Guide 2nd edition as specifically referred to in the National Guidelines follows:

a. Rationale for Utilisation of BRE Guide 3rd Edition Methodology

Whilst National Guidelines for Apartments specifically state that internal daylight analysis should be undertaken utilising Standards Guides "like… BRE Guide 2nd Edition", this report has been prepared in accordance with that document's superseding 3rd Edition, released in May 2022.

The rationale for utilising the 3rd Edition was to allow for the more sophisticated and accurate Spatial Daylight Autonomy (SDA) methodology included within the 3rd Edition, which replaces the now obsolete Average Daylight Factor (ADF) calculations included in previous, now withdrawn, 2nd Edition.

It may be noted that whilst this 3rd / 2022 Edition is the first time SDA methodology has been included within the BRE Guide, it has been done so to incorporate the requirements of European Standard which has been in place since 2018: Section 1.1 below details the differentiation between 2nd and 3rd Editions of the BRE Guide and their inferred Standards.

The SDA methodology differs significantly in being *climate-based*; accounting for a city or location's site latitude and extent of cloudiness experienced, and Section 1.2 outlines how use of measured sky brightness enables more accurate representation of daylight conditions in contrast to the theoretical sky model previously utilised in the now obsolete ADF calculations.

The accuracy and sophistication of the SDA methodology means that many aspects of daylighting analysis that the ADF methodology was not equipped to take account of are now addressed, including Room Orientation, Sky View/ Balconies and Room Layout/ Daylight Uniformity, which are detailed in Sections c-e respectively below, utilising examples of room layouts (Note that no rooms analysed, nor results indicated in these sections relate to the proposed development and are included for illustrative purposes only).

The building *design* itself has been progressed on the basis of being informed by the SDA methodology for daylight, The SDA methodology set out in the 3rd edition of the BRE Guide represents best industry practice, enabling a more sophisticated and accurate daylight analysis compared to older guidlines. For this reason, it has been adopted in preference to the ADF methodology for the purpose of the daylight and sunlight analysis for this project and the building design has been developed on the basis of being informed by the SDA methodology which has ensured that aspects that could not be accounted for within the ADF calculation technique have been correctly addressed- particularly with regard to room orientation and layout configuration.

The design has been developed in an iterative process whereby orientation to the sun-path was considered a determining factor in the design of the project from a daylight perspective. As the design developed, several options were tested utilising the SDA methodology in order that the design could obtain an optimal balance of SDA results across the entire project. These options included changes to window size, layout changes within units, and the location of typologies within the overall block, all done as a consequence of employing the SDA methodology as a design tool to improve the performance of the design for actual daylight on this site. The qualitative impact of the SDA methodology resulted in several block design developments such as the increase in window sizes on the north elevation of dual aspect units, and modification to the placement and orientation of bedrooms and living spaces according to the SDA analysis. With regard to the East and West facing balconies and living spaces, the overall environmental performance was considered carefully and in parallel with the SDA methodology to ensure that competing demands for daylight and large windows with slightly higher U-values did not cause either overheating or underheating of units. Across the site, the use of the SDA methodology was integral to the development of an environmentally responsive design offering qualitative benefits inclusive of energy efficiency, for the mixed tenure residential units.

Had the ADF methodology been employed, the current design would differ significantly in terms of unit position, facade design, window size, massing, and balcony position. The employment of the ADF methodology would have resulted in a materially different design. The more sophisticated SDA method results in a more optimal design from a daylight provision perspective.

For the purpose of this report the analysis is solely based on the SDA methodology set out in the 3rd edition of the BRE Guide, and where the proposed design cannot fully meet the requirements of the 3rd edition this has been clearly identified and alternative compensatory design solutions to overcome or mitigate any such non-compliance has been presented. This approach represents best practice as being more accurate and therefore better satisfies the objectives of the 2020 Apartment Guidelines with respect to the assessment of daylight provision.

b. Overview of BR.209 Editions

National Guidelines for Design Standards for New Apartments (2020) states that *Planning authorities should have regard to quantitative performance approaches to daylight provision outlined in guides like the BRE guide 'Site Layout Planning for Daylight and Sunlight' (2nd edition) or BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting' when undertaken by development proposers which offer the capability to satisfy minimum standards of daylight provision.*

The BRE Guide 2nd Edition was released in 2011 and in terms of internal daylight provision referenced the BS.8206-2 Standard referred to also in the National Guidelines. This Standard utilised Average Daylight Factor (ADF) Methodology as described below.

However, subsequent to release of the 2020 National Guidelines, the BRE Guide 3rd Edition was released in May 2022, primarily to incorporate the prevailing best practice as reflected in European Standard EN.17037:2018 in terms of internal daylight and sunlight analysis for new developments.

The European Standard provides updated metrics in terms of *climate-based* daylight assessment, including Spatial Daylight Autonomy (SDA) which was utilised for this analysis.

The BRE 3rd Edition has completely superseded its previous 2nd Edition, which is now withdrawn along with its accompanying BS.8206-2, in accordance with EN.17037's requirement that all "conflicting National Standards be withdrawn". Therefore, the underlining methodology for daylight assessment utilised within BRE 2nd Edition and BS.8206-2- Average Daylight Factor (ADF) is now effectively obsolete as it is no longer best practice and has been replaced by the mores sophisticated and accurate SDA methodology.

Fig b.1– BR.209 2nd (2011) and 3rd (2022) Editions

c. Climate/ Site Location

A critical aspect of the new European Standard for daylighting EN.17037 that has been incorporated into BRE 3rd Edition is the utilisation of *climate-based* analysis, in contrast to the now obsolete Average Daylight Factor (ADF) methodology which was independent of both climate and site location.

The ADF methodology utilised a mathematical model of sky brightness, defined by the *Commission Internationale de l'Eclairage* (CIE) as an Overcast Sky. Figure c.1 illustrates example of CIE overcast sky, as viewed as a hemispherical dome from ground level. It can be seen how this theoretical sky model's brightness is highest at the zenith (i.e. straight upwards in sky), reducing to the horizon, but is also unidirectional (with no distinction between North, South, East or West).

As the ADF methodology utilised this identical sky model for analysis, a room would be determined to have the same daylight availability irrespective of site location throughout the world or its actual climate, in terms of extent of cloudiness and associated availability of natural light. Furthermore, as the sky is assumed to be brightest at the zenith, it is not representative of real skies, excepting equatorial locations at midday (when sun would be directly above on an overcast day), as a result daylight availability calculated using the ADF methodology is distorted and does not accurately reflect the actual conditions for Ireland.

In contrast to ADF, the Spatial Daylight Autonomy (SDA) metric is based on real climate data (i.e., IWEC 039690 for Dublin etc.), from which sky brightness is utilised on an hour-by-hour basis throughout a year for calculation. Consequently daylight analysis in accordance with the SDA methodology is representative of the actual sunlight conditions at a given location unlike an analysis based on the ADF methodology which is much more crude and unrepresentative of actual sunlight conditions.

Figure c.2 illustrates sky brightness distribution as utilised within SDA calculation, for Dublin location on 21st March (Equinox) Noon. In contrast to the mathematical CIE sky model utilised for ADF calculations, the SDA sky correctly accounts for that sky brightness is highest (at this point of time) towards South. Conversely, the sky towards North has less brightness than that assumed in the ADF/ CIE theoretical model.

SDA calculations create a similar sky to that illustrated in Fig c.2 for each daylit hour of the year (4,380 hours), based on sun position for the time of year/ day, as well as extent of cloudiness from the recorded climate data. Hence SDA calculated Daylight *Autonomy*- that is the extent of the year for which sufficient natural light can be received in a room.

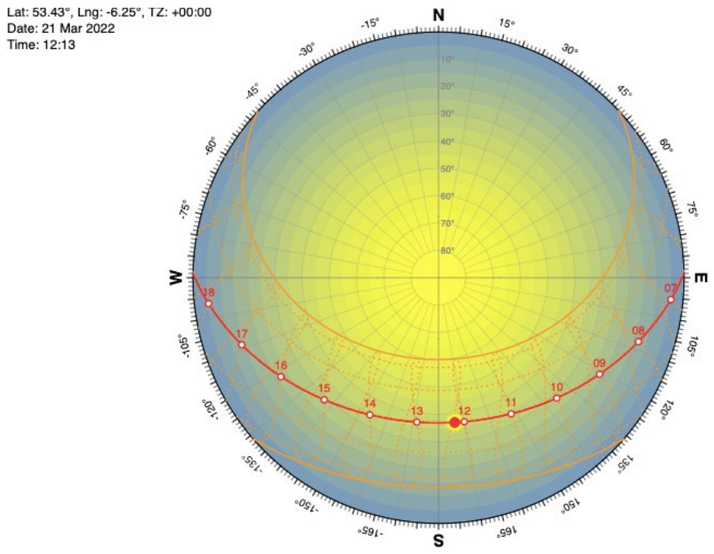


Fig c.1– ADF Sky (CIE Overcast Model)

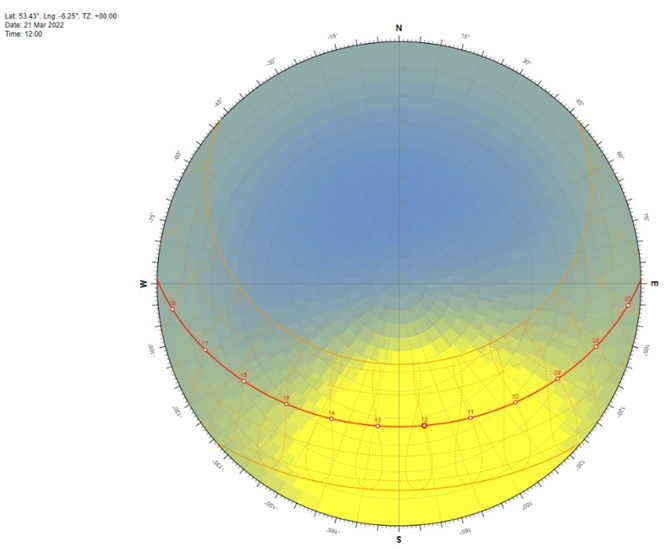


Fig c.2– SDA Sky (Dublin IWEC Climate)

d. Orientation

As noted above in Section b, the ADF calculation methodology was based on a theoretical sky model that was unidirectional. This resulted in a room's orientation not being accounted for, so that identical rooms facing North and South would be incorrectly deemed to receive the same extent of daylight.

Fig. d.1 illustrates results of an ADF calculation, highlighting two identical rooms facing Northeast (encircled in cyan) and Southwest (encircled in yellow) respectively. As can be seen from the contour results, the predicted daylight from the calculation utilising the ADF sky model (CIE Overcast Sky) determined identical daylighting (and hence ADF value) for the rooms irrespective of their orientation. This therefore repersents a theoretical scenario and does not relfect realistic daylight avaialbility.

This can be assessed in contrast to SDA calculation results for the same spaces presented in Fig. d.2, where the difference in predicted natural light is apparent in the contours displayed for the NE (blue to rear of room) and SW rooms.

The green/ black contour diagram then illustrates the regions of the rooms for which requisite SDA was achieved, with a clear differentiation between the NE room (70% approx.) and SW (100% approx.) being apparent.

Therefore, this is an illustration of how the now obsolete ADF methodology underestimated natural light availability for rooms with Southern aspects, due to the unrepresentative theoretical sky model utilised. Conversely, daylighting performance to North facing rooms could be *overestimated* within ADF calculations due to the same misrepresentation of real sky brightness conditions.

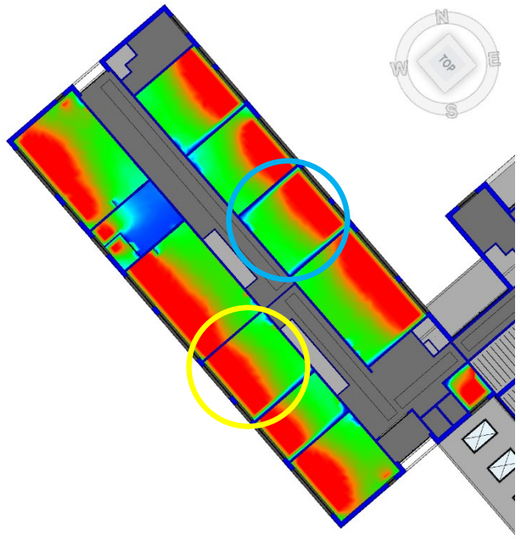


Fig d.1–Orientation – ADF Contours

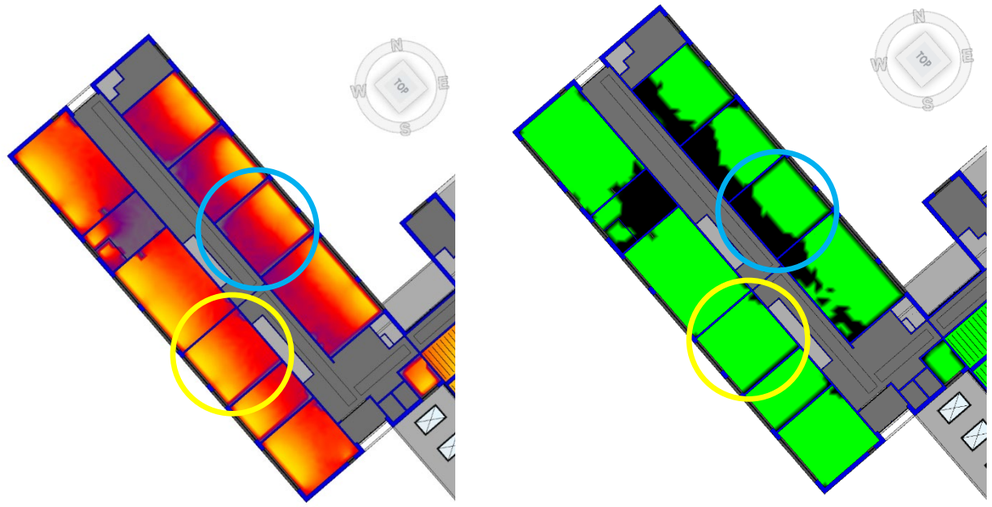


Fig d.2– Orientation - SDA Contours and Compliance

e. Sky View/ Balconies

A perhaps unintended consequence in the utilisation of ADF calculations was how balconies impact on daylight performance within its methodology.

As illustrated in Section b above, the theoretical sky model used within ADF calculations assumed that the zenith was the brightest proportion of the sky, as opposed to SDA correctly determining brightness from climate data, with the maximum generally orientated towards the South.

This overestimation of natural light directly upwards in the sky resulted in the effect of balconies or other overhead structures being in turn incorrectly overestimated in terms of how much daylight reduction they would incur on a room below.

Fig. e.1 illustrates an ADF calculation for south facing bedroom with inset balcony structure above. The room was found to be deficient in terms of daylight performance (ADF = 0.7%, below requisite 1.0%) utilising this methodology.

However, in reality the south facing bedroom will receive plentiful natural light from the brightest part of the sky and this is correctly incorporated within the SDA calculations allowing that accurate climate data (for sun position, cloudiness etc.) is utilised. Fig. e.2 illustrates how the bedroom was deemed to be compliant under the SDA methodology, with more than half (59%) the requisite amount of natural light having been determined to be received throughout the year.

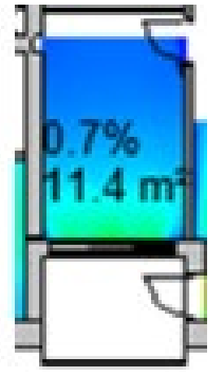


Fig e.1–Balcony – ADF Contours

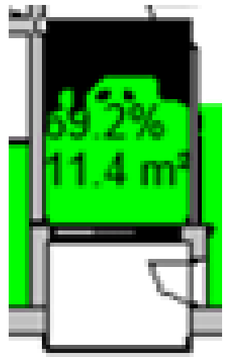


Fig e.2– Balcony - SDA Compliance

f. Room Layout/ Daylight Uniformity

A further shortcoming within the ADF methodology was that the *uniformity* of daylight within a room was not accounted for, because the calculation was based on determining the *average* daylight within a room.

Fig. f.1 illustrates an ADF calculation for an l-shaped bedroom, with a large window located at the façade. This window would ensure that a high degree of daylight would be received immediately adjacent to the façade (red contours), but with little being received to the rear which would remain dark with no natural light.

However, despite this room having poor daylight at its rear, should sufficient light be received to the front of the room so as the overall requisite *Average* could be achieved, this would have been deemed compliant in terms of ADF (in this case, comfortably so: with ADF=1.7% in comparison to minimum 1.0% required).

In contrast, this room layout configuration is penalised under the SDA methodology, as the *Spatial* basis of the calculation requires that at least 50% of the room can receive sufficient daylight. As can be seen in Fig. f.2, in the case of this bedroom, it would be deemed non-compliant for SDA as only 43% of the space was found to receive the required natural light.

The above is an example of how the SDA methodology correctly penalises room layout configurations where *uniformity* of daylight would be inadequate, whereas in contrast, ADF compliance would have been determined where in reality, natural light availability would have been substandard.

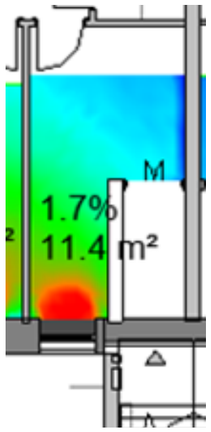


Fig f.1–Room Layout – ADF Contours

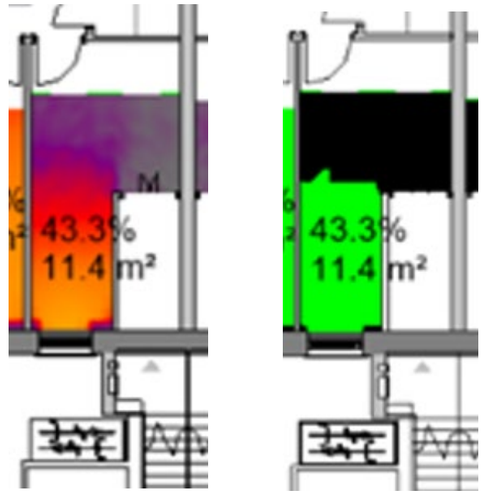


Fig f.2– Room Layout - SDA Contours and Compliance

The BRE Guide (2022 Edition)

The BRE Guide describes its purpose in the following terms in the "Summary" section (v):

> *"This guide gives advice on site layout planning to achieve good sunlighting and daylighting, both within buildings and in the open spaces between them. It is intended to be used in conjunction with the interior daylight recommendations for new buildings in the British Standard Daylight in buildings, BS EN 17037. It contains guidance on site layout to provide good natural lighting within a new development; safeguarding of daylight and sunlight within existing buildings nearby; and the protection of daylighting of adjoining land for future development."*

The BRE Guide also notes that:

> *"1.6 The guide is intended for building designers and their clients, consultants, and planning officials. The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design (see Section 5). In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings. Alternatively, where natural light is of special importance, less obstruction and hence more sunlight and daylight may be deemed necessary. The calculation methods in Appendices A and B are entirely flexible in this respect. Appendix F gives advice on how to develop a consistent set of target values for skylight under such circumstances."*

> *"1.7 The guidance here is intended for use in the United Kingdom and in the Republic of Ireland, though recommendations in the Irish Standard IS EN 17037 may vary from those in BS EN 17037. Many of the principles outlined will apply to other temperate climates. More specific guidance for other locations and climate types is given in BRE Report Environmental site layout planning."*

Therefore, if the situation arises where the targets identified within the Guide are not achieved, these should be highlighted and either justified in the context of the development / site or where relevant and applicable, compensatory measures will be proposed. However, the Guide does not impose absolute standards that must be achieved under all circumstances. In the context of this report, any deviations from the Guide's recommendations have therefore been identified, with an approach throughout to ensure that good quality daylight/sunlight in achieved through analysis and design improvements as far as practicable and viable as detailed in the report as relevant.

The main sections in the guide that the assessments within this report will reference (as applicable) are:

1. Light from the Sky (Daylight).

    1.1. New Development – Within Appendix C of the BRE Guide, the targets for internal daylight are provided for both optional methodologies, Climate Based Daylight Modelling (CBDM) with targets provided for Lux levels as determined through Spatial Daylight Autonomy (SDA), and Daylight Sky analysis with targets provided for Medium Daylight Factor (MDF), please refer to methodology section for detailed explanation of the methods utilised in this report.

    1.2. Existing Buildings – The guide sets a quantitative assessment method for determining the impact of new developments on light from the sky (VSC) on existing neighbouring buildings.

2. Sunlighting – *Based on site location, longitude and latitude, and solar azimuths. i.e. buildings south of a site will not be impacted for sunlight in the northern hemisphere.*

    2.1. New Development – The guide sets a quantitative method for determining sunlight to a habitable room within a dwelling.

    2.2. Existing Buildings – The guide sets a quantitative assessment method for determining the impact of new developments on sunlight, annual probable sunlight hours (APSH) and winter probable sunlight hours (WPSH), on existing neighbouring buildings.

    2.3. Gardens and open spaces – The amenity criteria set out is used for both proposed new amenity and the impact on existing neighbouring amenities.

The specific methodology for each topic (as relevant) is detailed in the relevant section in the body of this report.

The 2018 British and Irish Versions of the EN Standards

The EN 17037:2018 standard—which is the basis of both the 2018 British EN Standard and the 2018 Irish EN Standard considers a metric based on **median** daylight, in order to ensure both extent and a degree of uniformity of daylight.

> *"A space is considered to provide adequate daylight if a target illuminance level is achieved across a fraction of the reference plane within a space for at least half of the daylight hours."*

The National Annex

As is noted above, the 2018 British Standard includes a "National Annex", containing "Further recommendations and data for daylight provision in the UK and Channel Islands". This is referenced further in the appendix of this report. As there is no equivalent in the 2018 Irish Standard, the 2018 British Standard National Annex will be referenced, which states:

> *"NA.1 Introduction: The UK committee supports the recommendations for daylight in buildings given in BS EN 17037:2018; however, it is the opinion of the UK committee that the recommendations for daylight provision in a space (see Clause A.2) may not be achievable for some buildings, particularly dwellings. The UK committee believes this could be the case for dwellings with basement rooms or those with significant external obstructions (for example, dwellings situated in a dense urban area or with tall trees outside), or for existing buildings being refurbished or converted into dwellings. This National Annex therefore provides the UK committee's guidance on minimum daylight provision in all UK dwellings."*

NA.2 addresses minimum daylight provision in UK dwellings. It contains a table, in which target illuminance, ET (lx), levels are recommended for different room types. These are: bedroom at 100 lx; living room at 150 lx; and kitchen at 200 lx, which may be compared to EN 17037's recommendation of 300 lux (irrespective of room application). The commentary is as follows:

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

3.0 Glossary

Working Plane

The working plane is the notional plane where visual tasks, and on which predicted light levels would normally be undertaken. For a residential assessment, the working plane is defined by BR209 at 850mm above floor level.

Daylight Factor

The Daylight Factor (DF) is the ratio of the illuminance at a point on a working plane in a room, due to the combination of light received directly and indirectly from a sky, over the illuminance on an external horizontal plane based on an unobstructed sky. Daylight factor, as defined here, excludes the contribution of direct sunlight. The sky utilised for ADF and MDF assessments, as defined below, is the (theoretical) CIE Overcast Sky, which is unidirectional, therefore a north facing window is assumed to receive the same light as south etc.

Average Daylight Factor

Average Daylight Factor, also referred to as ADF, is a measure of daylight availability to a room based on the average values of multiple calculation points at the working plane within a space. ADF was utilised in BS.8206-2 standard, inferred also in BR.209, where it is used for daylight assessment of proposed developments (with impact on existing utilising VSC/ NSL as defined below).

Median Daylight Factor

Median Daylight Factor, also referred to as MDF, is a measure of daylight availability to a room based on the median daylight value, i.e., the value that is achieved for at least 50% of the space (50% of the calculation points on the working plane). MDF is calculated for compliance with EN 17037 Method 1.

Climate Based Daylight Modelling –

Spatial Daylight Autonomy

Climate based daylight modelling, also referred to as CBDM, involves the use of a detailed daylight calculation methods where hourly (or sub-hourly) internal daylight illuminance values for a typical year are computed using hourly (or sub-hourly) sky and sun conditions derived from climate data appropriate to the site. Unlike the DF methodology, CBDM assessments are therefore orientation dependent: i.e. a south facing window would be expected to receive more daylight than north facing etc.

This calculation method determines daylight provision directly from simulated illuminance values on the working plane with results determined in lux (a measure of light). CBDM is utilised for compliance with EN 17037 method 2 Spatial Daylight Autonomy (SDA).

Sunlight Exposure

Sunlight exposure is assessed on a window of at least one habitable room per dwelling (preferably a living room) for the number of hours of direct sunlight exposure on the 21st March.

Probable Sunlight Hours

Annual probable sunlight hours and winter probable sunlight hours, also referred to as APSH and WPSH, are used for the assessment of impact on neighbouring buildings by a proposed development. APSH and WPSH are a measure of probable direct sunlight to a window or surface and therefore are only relevant to windows within 90 degrees of south for buildings in the northern hemisphere. Therefore, any window with a northerly aspect (i.e. orientated between North and East and North and West) is therefore not assessed within the methodology.

Vertical Sky Component

Vertical Sky Component, also referred to as VSC, is used for the assessment of impact on neighbouring buildings by a proposed development with respect to daylight availability. VSC is a measure of the percentage of illuminance that a point can receive from the CIE Overcast Sky as a percentage of that received at unobstructed horizontal locations. In simple terms, how much of the sky that can be seen for a given point. VSC assessments do not included reflected light. VSC is calculated for compliance with BR209 as detailed below.

Amenity Sunlight

Amenity sunlight is a measure of direct daylight received on an area over the duration of 21st March based on the sun's solar position for a geographical location. As the 21st March is the solar equinox, the sun is at its mid-point of travel position through the year, therefore representing an average condition throughout the year of how well sunlit an amenity space will be. It may be noted that in the Northern Hemisphere, the sun rises due east and sets due west. Amenity sunlight is calculated for compliance with BR209 as detailed below.

4.0 Amenity Area Sunlight Availability

4.1 Methodology

The BRE Site Layout Planning for Daylight and Sunlight Design Guide 209 provides guidance with regards to sunlighting and shading to external amenity spaces within proposed developments.

The guidance recommends:

> *That for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21st March".*

And,

> *"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".*

The methodology assesses sunlight performance at the Equinox, as this is the mid solar position throughout the year (as illustrated in Figure 4.1.1), with compliance indicative of spaces that will receive adequate sunlight and appealing useful spaces, including that the following attributes will be achieved as identified in BRE.209:

- Provide attractive sunlit views (all year)
- Make Outdoor Activities like sitting out and children's play more pleasant (mainly warmer months).
- Encourage plant growth (mainly spring and summer).
- Dry out the ground, reducing moss and slime (mainly in colder months).

Amenity sunlight assessments are not generally carried out during the winter months, as the angle of the sun is very low and as a result there is already considerable shading from other buildings/structures/vegetation – so such an approach does not provide a useful assessment of the actual shading generated by the development.

Analysis was undertaken utilising drawing information as prepared by BMCEA Architects. Lighting Simulations were then undertaken by IN2 Engineering utilising Radiance software.

An example analysis of Amenity Spaces is indicated in Figure 4.1.1. In this sample development, the main amenity space is located to the North of a building block which provides some degree of overshadowing (dark green contours).

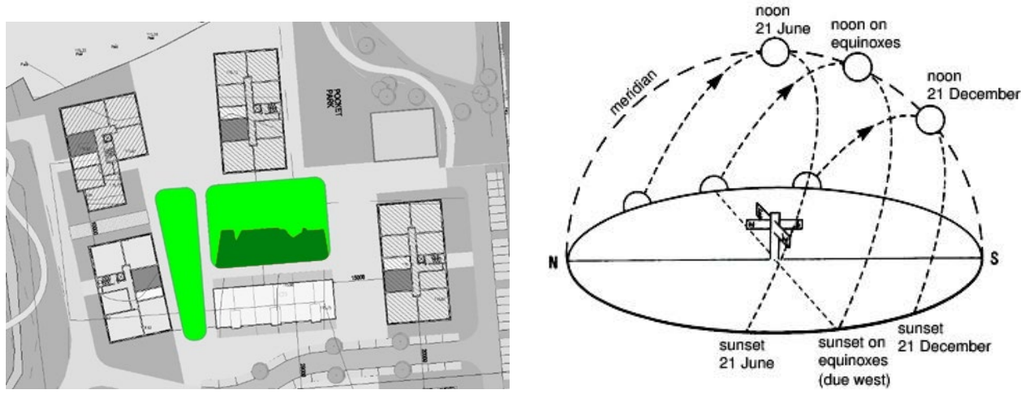


Fig 4.1.1 – Example Amenity Spaces

4.1 Results

Results for the proposed development are detailed in Figure 4.2.1, demonstrating each of the amenity spaces easily achieve compliance with the BRE guidance of over 50% of amenity receiving two hours or more of sunlight on 21st March.

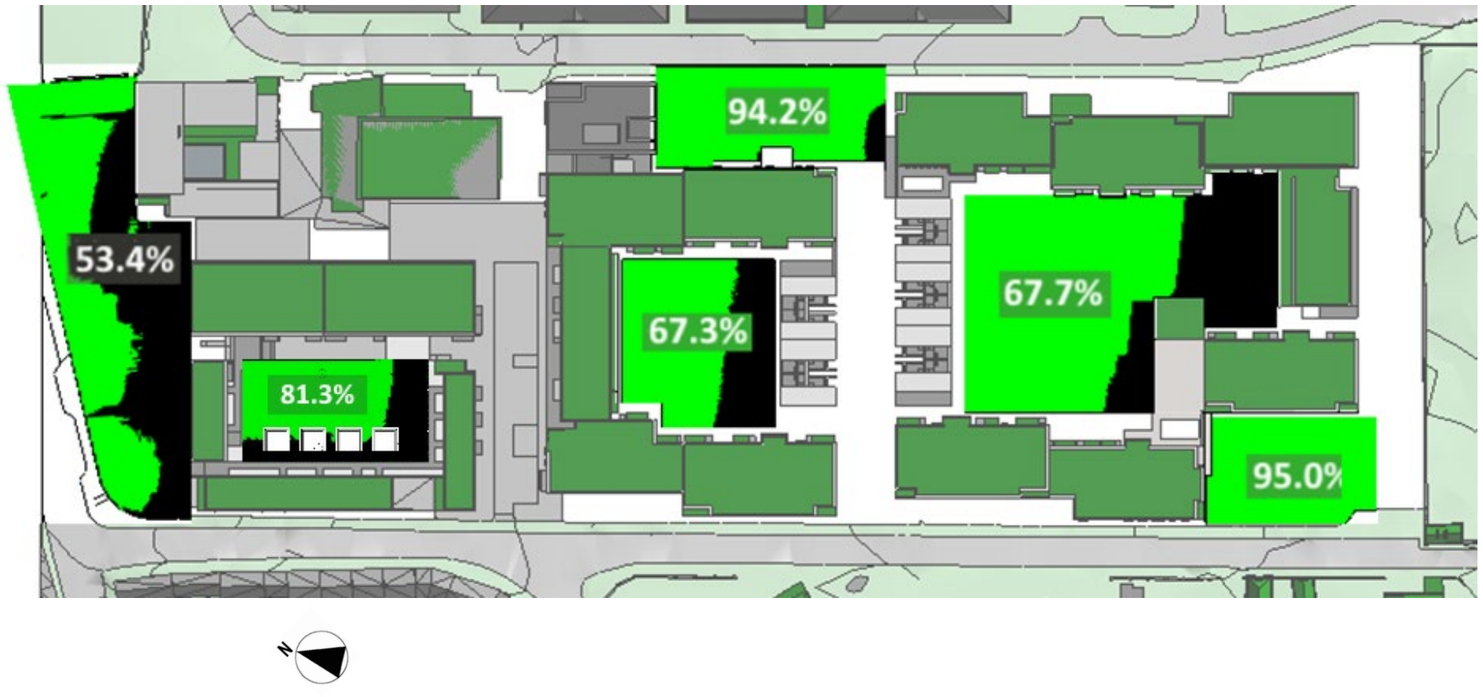


Fig 4.2.1 –Sunlight Availity to Amenity Spaces for Proposed Development

5.0 Impact on Neighbouring Buildings

5.1 Guidance

As set out within the introduction, the impact on existing buildings has been assessed utilising quantitative assessment method as detailed in the BRE publication "Site Layout Planning for Daylight and Sunlight – A guide to good Practice (2022 Edition)"

BRE Guidelines state:

Light from the Sky

> *"If any part of a new building or extension, measured in a vertical section perpendicular to a 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 daylighting of the existing building may be adversely affected. This will be the case if either:*
>
> - *The VSC (Vertical Sky Component) measured at the centre of an existing main window is less than 27%, and less than 0.8 times its former value."*

The analysis is based on measuring the VSC at the existing main windows. As per the BRE Guide, main windows included, living rooms, kitchens, and bedrooms. Existing windows with VSC above 27% after proposed development are considered to still receive good daylight availability and therefore not adversely affected.

Sunlighting

> *"If a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely affected. This will be the case if the centre of the window:*
>
> - *receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March and*
> - *receives less than 0.8 times its former sunlight hours during either period and*
> - *has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.*

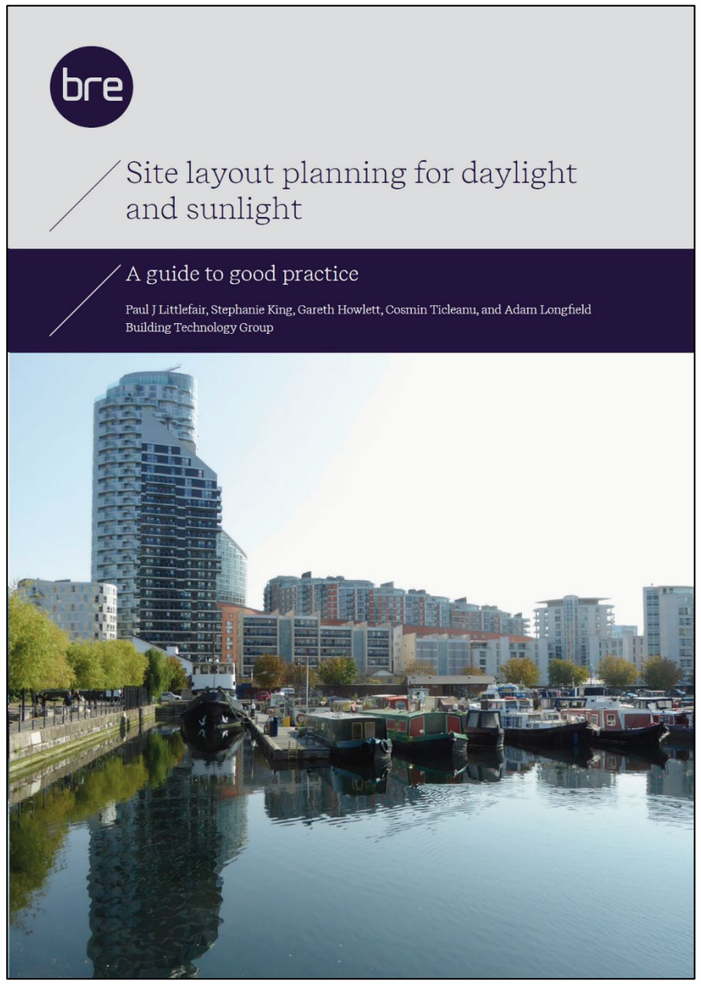
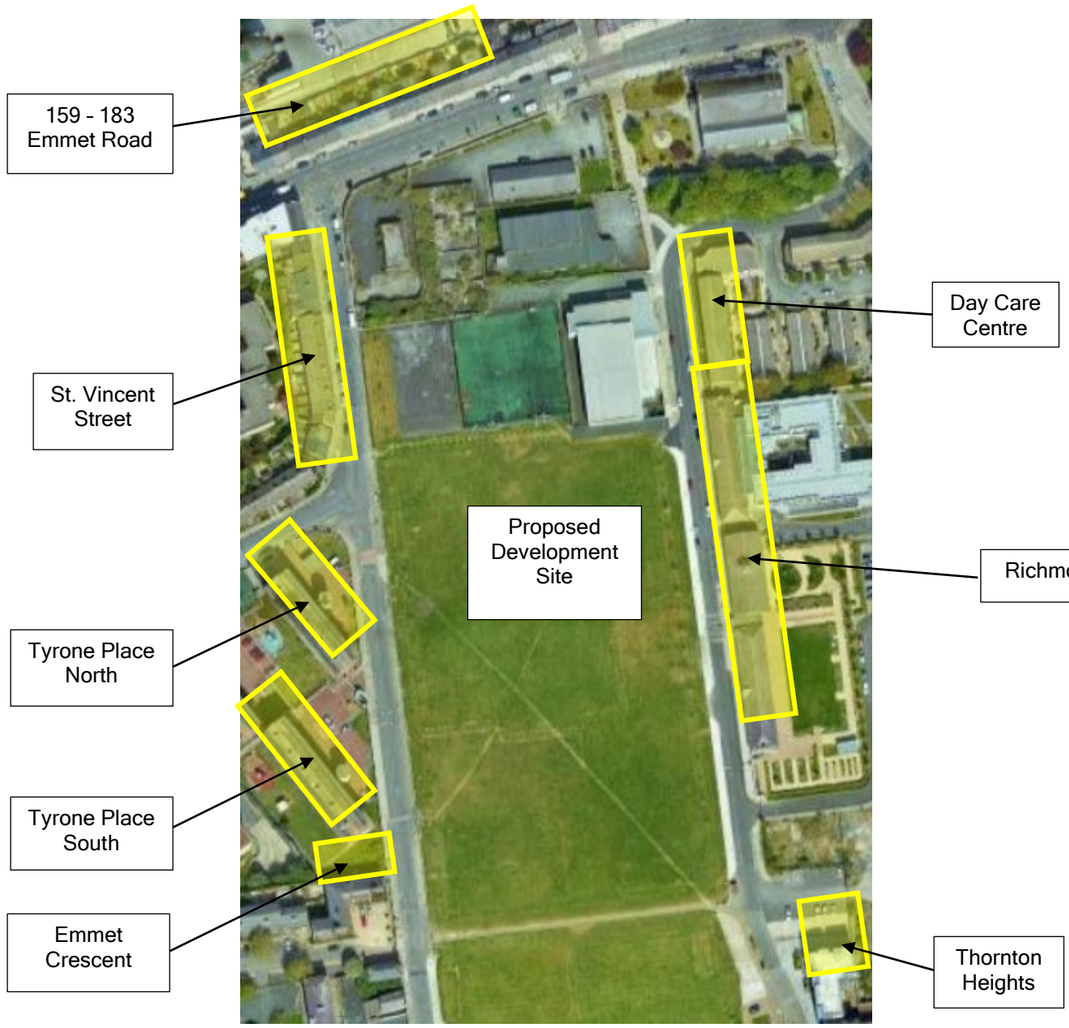


Fig 5.1.1 – BRE publication "Site Layout Planning for Daylight and Sunlight – A guide to good practice (Third Edition)

5.2 Methodology

Analysis was undertaken by calculating daylight and sunlight availability for the permitted vs. proposed development for indicative window locations on the façade of each neighbouring building which has the potential to be impacted as indicated in Figure 5.2.1 below.

The analysis assesses main windows, main living rooms and conservatories. The analysis was carried out on existing neighbouring residential buildings that could be impacted by the proposed development. Analysis was undertaken by calculating daylight and sunlight availability for permitted vs proposed scheme for indicative window locations on the façade of each dwelling. It may be noted that Daylight availability (VSC) is applicable to all windows, regardless of orientation. Sunlight availability (APSH) is only applicable to windows facing within 90° of due south.

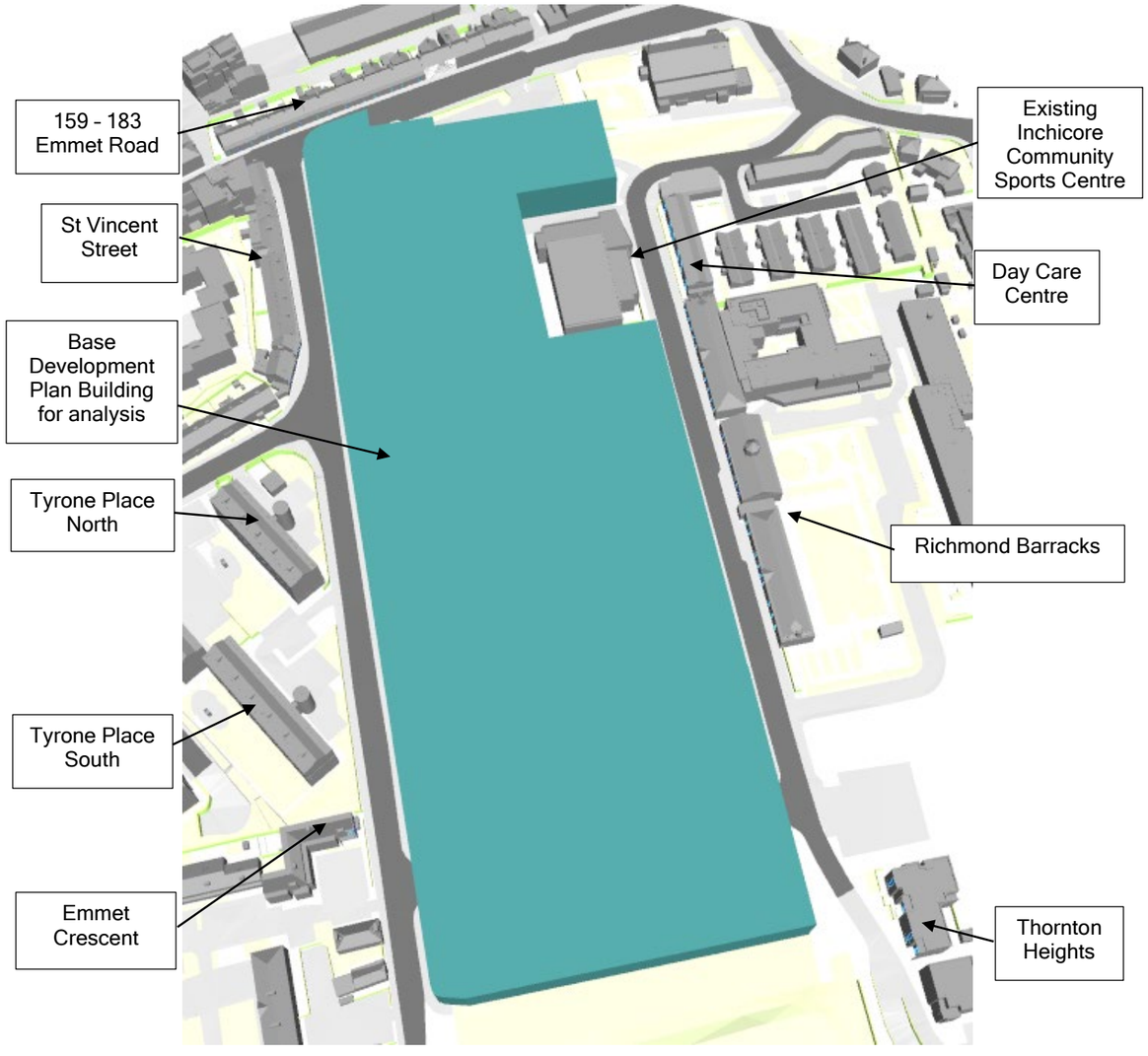


5.2.1 – Google Maps Image of Neighboring Dwellings Adjacent to Proposed Development

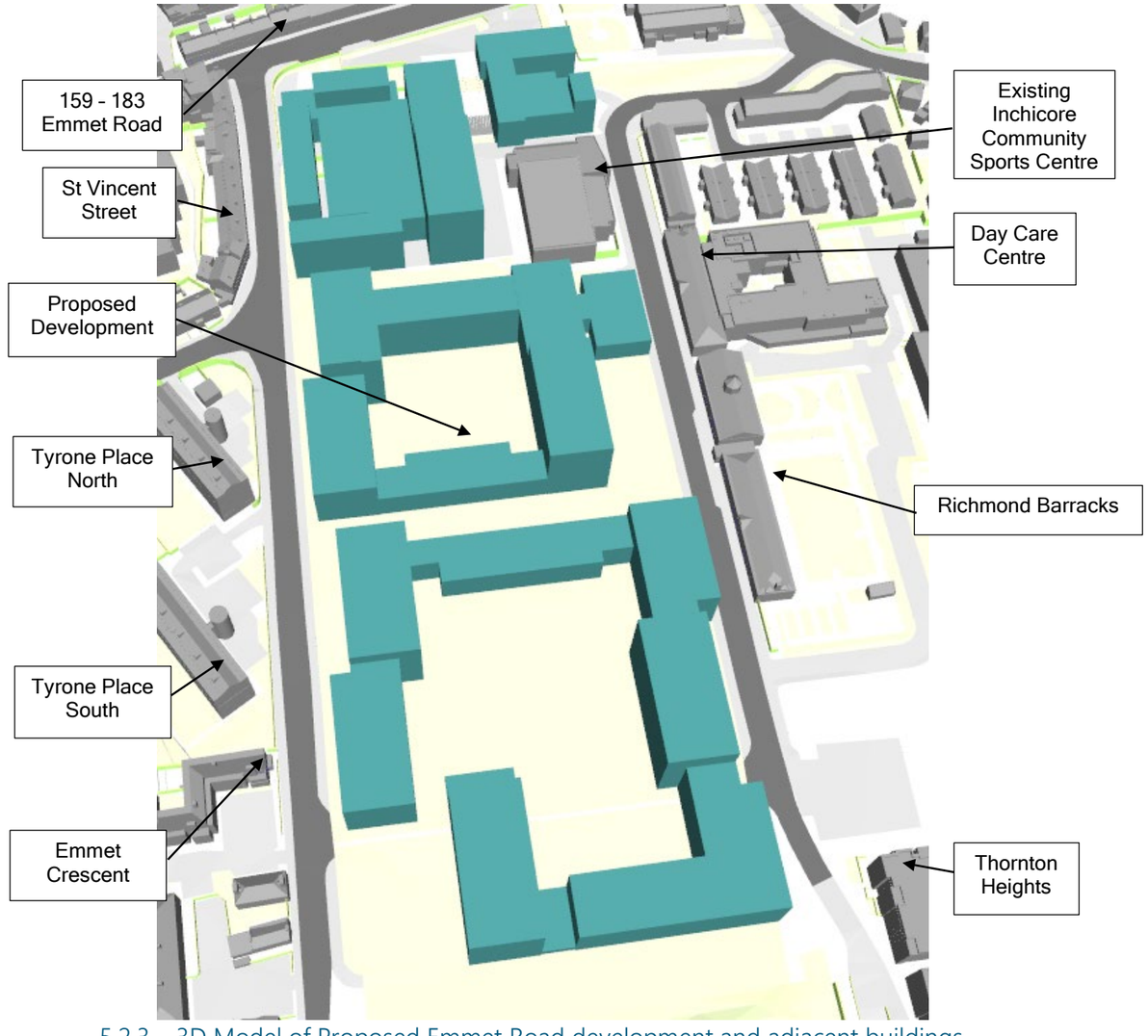
5.2 Methodology (Cont'd)

3D models of both the baseline and proposed developments at Emmet Road were produced for VSC and APSH assessment. These models also include adjacent neighbouring buildings, and the windows to be analysed. As per BRE guidance, where a development is proposed on an under developed site, an alternative baseline should be used. In this case the local development plan allows for a 16m tall development on the site so for the purpose of this analysis this alternative baseline has been utilised.

Fig 5.2.2 is a 3D model of the baseline scheme at the site. The local development plan allows for a 16m tall residential development at this particular site, which has been used as a baseline scheme for comparison against the proposed. Fig 5.2.3 is a model of the proposed development, based on 3D modelling information as received from BMCEA Architects.



5.2.2 – 3D Model of 16m Tall Baseline Scheme and adjacent buildings



5.2.3 – 3D Model of Proposed Emmet Road development and adjacent buildings

5.2 Methodology (Cont'd)

The following relevant neighbouring buildings were assessed. All other buildings were determined to be either further away (and therefore would receive negligible impact) or have no windows facing the development.

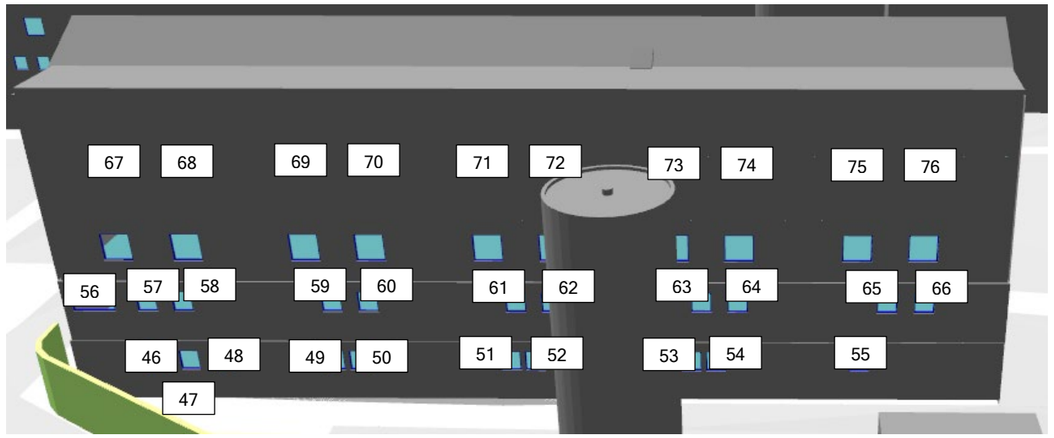
- Day Care Centre
- No's. 159 – 183 Emmet Road
- No's. 2 - 15 St Vincent Street
- Tyrone Place
- Emmet Crescent
- Thornton Heights

Analysis was undertaken by calculating sunlight availability pre and post-development for indicative window locations on the façade of each dwelling as illustrated in Figures 5.2.4 to 5.2.8 below.

Fig 5.2.4 – Day Care Centre with Window Reference No.'s Indicated

Fig 5.2.5 – No's. 159 – 183 Emmet Road with Window Reference No.'s Indicated

Fig 5.2.6 – No's. 2 - 15 St Vincent Street with Window Reference No.'s Indicated



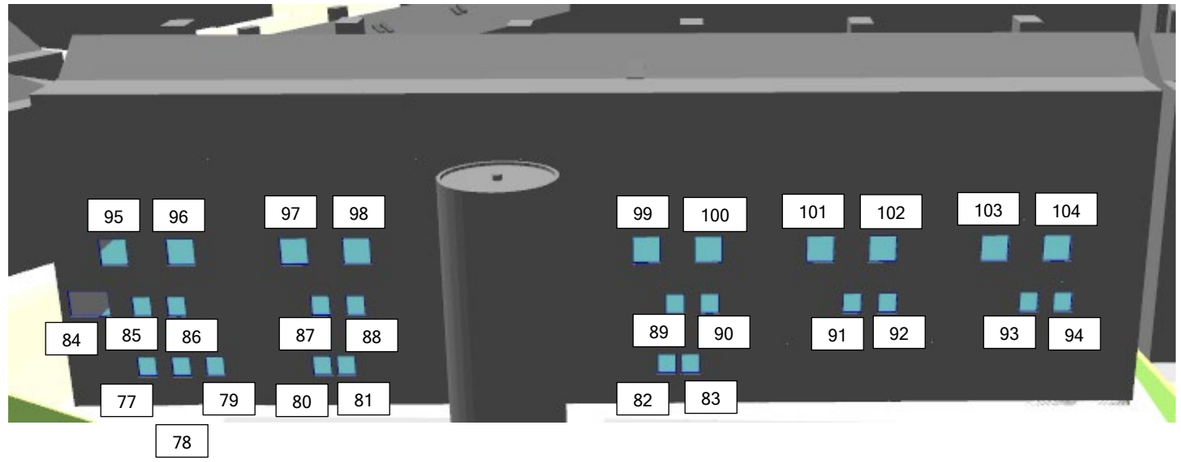
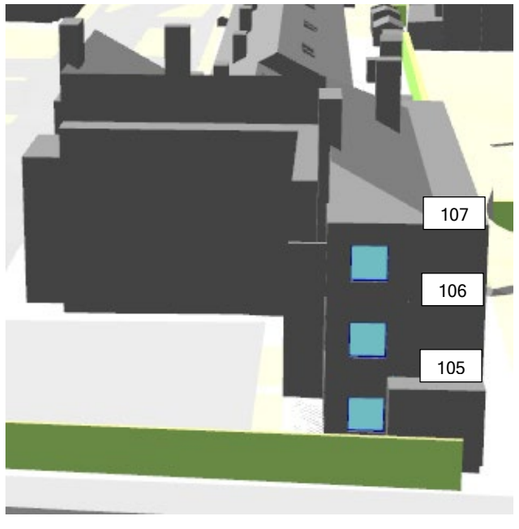


Fig 5.2.7 – Tyrone Place (North) with Window Reference No.'s Indicated

Fig 5.2.8 – Tyrone Place (South) with Window Reference No.'s Indicated



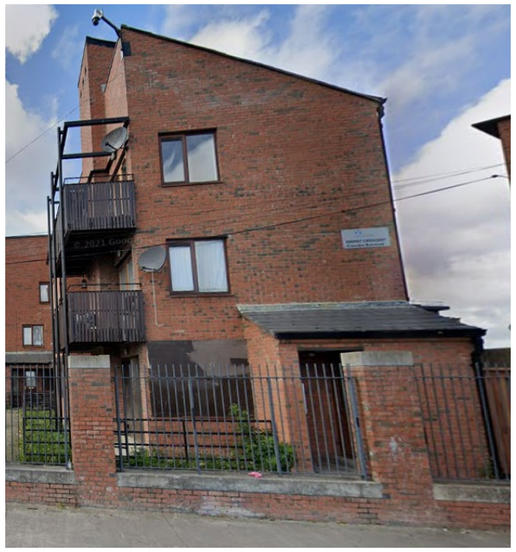


Fig 5.2.9 – Emmet Crescent with Window Reference No.'s Indicated

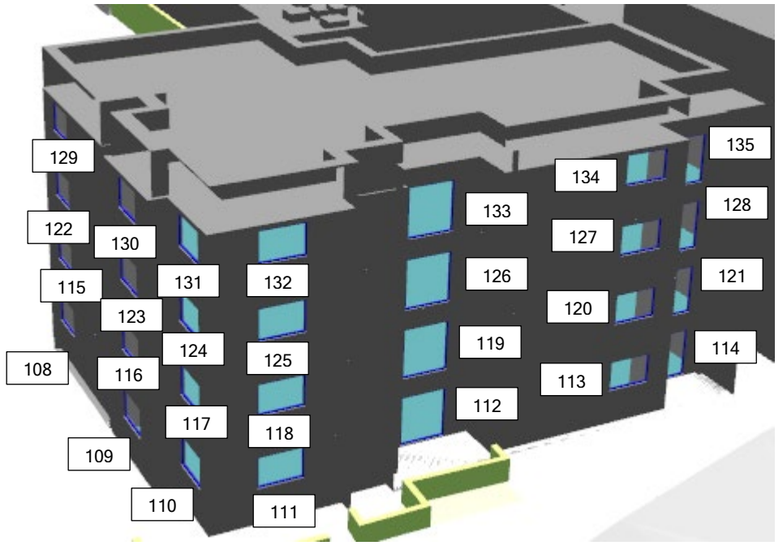


Fig 5.2.10 – Thornton Heights with Window Reference No.'s Indicated

5.3 Results – VSC Daylight

The below tables present the VSC results for all 135 neighbouring windows analysed. All windows are determined to be compliant with BR 209 guidelines. In the majority of instances, VSC under the proposed condition improves on those in the baseline condition. The results confirm that the proposed development is determined to not adversely affect neighbouring buildings in terms of receipt of natural light, when assessed against the baseline scheme.

Room Ref	Window Ref	VSC Baseline (%)	VSC Proposed (%)	Proposed/ Baseline		Compliant with Criterion 1 VSC Proposed < 27%	Compliant with Criterion 2 Ann or Win <80% of Baseline	OVERALL COMPLIANCE
Day Centre Grd	1	25.7	25.9	1.01		No	Yes	Pass
Day Centre Grd	2	26.7	26.7	1.00		No	Yes	Pass
Day Centre Grd	3	26.8	27.3	1.02		Yes	Yes	Pass
Day Centre Grd	4	27.3	28.0	1.03		Yes	Yes	Pass
Day Centre Grd	5	27.3	28.0	1.03		Yes	Yes	Pass
Day Centre Grd	6	27.0	28.1	1.05		Yes	Yes	Pass
Day Centre 1st	7	30.1	29.2	0.98		Yes	Yes	Pass
Day Centre 1st	8	30.9	30.3	0.99		Yes	Yes	Pass
Day Centre 1st	9	31.5	31.0	0.99		Yes	Yes	Pass
Day Centre 1st	10	31.9	31.4	0.99		Yes	Yes	Pass
Day Centre 1st	11	32.0	31.3	0.98		Yes	Yes	Pass
Day Centre 1st	12	31.5	31.3	1.00		Yes	Yes	Pass
Emmet Rd 159	13	26.9	30.4	1.14		Yes	Yes	Pass
Emmet Rd 161	14	25.8	29.9	1.17		Yes	Yes	Pass
Emmet Rd 163	15	25.2	29.8	1.19		Yes	Yes	Pass
Emmet Rd 165	16	23.8	29.8	1.26		Yes	Yes	Pass
Emmet Rd 167	17	23.1	29.5	1.28		Yes	Yes	Pass
Emmet Rd 169	18	21.3	29.6	1.40		Yes	Yes	Pass
Emmet Rd 171	19	21.2	30.2	1.43		Yes	Yes	Pass
Emmet Rd 173	20	21.6	30.0	1.39		Yes	Yes	Pass
Emmet Rd 175	21	23.2	30.0	1.30		Yes	Yes	Pass
Emmet Rd 177	22	24.0	29.6	1.24		Yes	Yes	Pass
Emmet Rd 179	23	24.4	28.1	1.16		Yes	Yes	Pass
Emmet Rd 181	24	22.7	25.2	1.12		No	Yes	Pass
Emmet Rd 183	25	20.2	21.3	1.06		No	Yes	Pass
Emmet Rd 183	26	20.5	22.5	1.10		No	Yes	Pass
St Vincent St W 2	27	15.5	28.0	1.81		Yes	Yes	Pass
St Vincent St W 3	28	14.4	25.1	1.76		No	Yes	Pass
St Vincent St W 4	29	13.6	20.7	1.52		No	Yes	Pass
St Vincent St W 4	30	13.8	21.3	1.55		No	Yes	Pass
St Vincent St W 5	31	13.5	19.4	1.45		No	Yes	Pass
St Vincent St W 6	32	13.1	16.6	1.27		No	Yes	Pass
St Vincent St W 7	33	13.4	14.4	1.08		No	Yes	Pass
St Vincent St W 7	34	13.5	14.7	1.10		No	Yes	Pass
St Vincent St W 8	35	13.3	13.9	1.05		No	Yes	Pass
St Vincent St W 8	36	13.4	14.1	1.06		No	Yes	Pass
St Vincent St W 9	37	13.2	14.0	1.06		No	Yes	Pass
St Vincent St W 9	38	13.3	14.0	1.06		No	Yes	Pass
St Vincent St W 10	39	13.2	14.7	1.12		No	Yes	Pass
St Vincent St W 11	40	13.2	15.1	1.15		No	Yes	Pass
St Vincent St W 12	41	13.0	16.2	1.26		No	Yes	Pass
St Vincent St W 13	42	14.5	18.0	1.24		No	Yes	Pass
St Vincent St W 13	43	15.0	19.0	1.27		No	Yes	Pass
St Vincent St W 14	44	17.1	21.1	1.24		No	Yes	Pass
St Vincent St W 15	45	18.7	23.4	1.25		No	Yes	Pass

Room Ref	Window Ref	VSC Baseline (%)	VSC Proposed (%)	Proposed/ Baseline		Compliant with Criterion 1 VSC Proposed < 27%	Compliant with Criterion 2 Ann or Win <80% of Baseline	OVERALL COMPLIANCE
Tyrone Place North Grd	46	19.9	21.3	1.07		No	Yes	Pass
Tyrone Place North Grd	47	20.1	21.9	1.09		No	Yes	Pass
Tyrone Place North Grd	48	20.9	22.1	1.06		No	Yes	Pass
Tyrone Place North Grd	49	21.7	22.7	1.05		No	Yes	Pass
Tyrone Place North Grd	50	22.0	22.7	1.04		No	Yes	Pass
Tyrone Place North Grd	51	17.4	17.4	1.00		No	Yes	Pass
Tyrone Place North Grd	52	15.5	15.4	1.00		No	Yes	Pass
Tyrone Place North Grd	53	16.0	15.5	0.97		No	Yes	Pass
Tyrone Place North Grd	54	19.0	18.0	0.95		No	Yes	Pass
Tyrone Place North Grd	55	26.7	25.1	0.95		No	Yes	Pass
Tyrone Place North 1st	56	23.1	24.8	1.08		No	Yes	Pass
Tyrone Place North 1st	57	23.4	24.5	1.05		No	Yes	Pass
Tyrone Place North 1st	58	24.1	24.9	1.04		No	Yes	Pass
Tyrone Place North 1st	59	25.4	25.5	1.01		No	Yes	Pass
Tyrone Place North 1st	60	25.6	25.5	1.00		No	Yes	Pass
Tyrone Place North 1st	61	19.9	19.0	0.96		No	Yes	Pass
Tyrone Place North 1st	62	15.7	15.0	0.96		No	Yes	Pass
Tyrone Place North 1st	63	19.5	18.8	0.97		No	Yes	Pass
Tyrone Place North 1st	64	23.5	22.3	0.96		No	Yes	Pass
Tyrone Place North 1st	65	30.2	29.0	0.97		Yes	Yes	Pass
Tyrone Place North 1st	66	31.0	29.5	0.96		Yes	Yes	Pass
Tyrone Place North 2nd	67	27.4	27.5	1.01		Yes	Yes	Pass
Tyrone Place North 2nd	68	28.1	28.3	1.01		Yes	Yes	Pass
Tyrone Place North 2nd	69	29.3	28.6	0.98		Yes	Yes	Pass
Tyrone Place North 2nd	70	29.2	28.8	0.99		Yes	Yes	Pass
Tyrone Place North 2nd	71	26.2	24.9	0.95		No	Yes	Pass
Tyrone Place North 2nd	72	19.4	17.8	0.93		No	Yes	Pass
Tyrone Place North 2nd	73	17.8	17.0	0.96		No	Yes	Pass
Tyrone Place North 2nd	74	27.2	25.6	0.95		No	Yes	Pass
Tyrone Place North 2nd	75	32.6	31.0	0.96		Yes	Yes	Pass
Tyrone Place North 2nd	76	33.4	31.9	0.96		Yes	Yes	Pass
Tyrone Place South Grd	77	21.4	22.3	1.05		No	Yes	Pass
Tyrone Place South Grd	78	21.8	22.5	1.04		No	Yes	Pass
Tyrone Place South Grd	79	22.2	22.5	1.02		No	Yes	Pass
Tyrone Place South Grd	80	21.9	22.1	1.01		No	Yes	Pass
Tyrone Place South Grd	81	21.0	21.3	1.02		No	Yes	Pass
Tyrone Place South Grd	82	23.3	23.3	1.01		No	Yes	Pass
Tyrone Place South Grd	83	24.2	24.3	1.01		No	Yes	Pass
Tyrone Place South 1st	84	25.1	25.1	1.00		No	Yes	Pass
Tyrone Place South 1st	85	25.1	24.9	1.00		No	Yes	Pass
Tyrone Place South 1st	86	25.5	25.3	1.00		No	Yes	Pass
Tyrone Place South 1st	87	25.3	24.6	0.98		No	Yes	Pass
Tyrone Place South 1st	88	24.1	22.9	0.96		No	Yes	Pass
Tyrone Place South 1st	89	26.5	26.0	0.99		No	Yes	Pass
Tyrone Place South 1st	90	27.9	27.6	0.99		Yes	Yes	Pass
Tyrone Place South 1st	91	29.8	29.3	0.99		Yes	Yes	Pass
Tyrone Place South 1st	92	29.7	29.1	0.99		Yes	Yes	Pass
Tyrone Place South 1st	93	29.7	29.5	1.00		Yes	Yes	Pass
Tyrone Place South 1st	94	29.5	29.6	1.01		Yes	Yes	Pass

5.3 Results – VSC Daylight (Cont'd)

Room Ref	Window Ref	VSC Baseline (%)	VSC Proposed (%)	Proposed/ Baseline		Compliant with Criterion 1 VSC Proposed < 27%	Compliant with Criterion 2 Ann or Win <80% of Baseline	**OVERALL COMPLIANCE**
Tyrone Place South 2nd	95	28.7	27.3	0.96		Yes	Yes	**Pass**
Tyrone Place South 2nd	96	29.2	27.9	0.96		Yes	Yes	**Pass**
Tyrone Place South 2nd	97	29.5	27.7	0.95		Yes	Yes	**Pass**
Tyrone Place South 2nd	98	27.7	25.9	0.94		No	Yes	**Pass**
Tyrone Place South 2nd	99	28.9	27.4	0.95		Yes	Yes	**Pass**
Tyrone Place South 2nd	100	31.2	30.1	0.97		Yes	Yes	**Pass**
Tyrone Place South 2nd	101	32.2	31.3	0.98		Yes	Yes	**Pass**
Tyrone Place South 2nd	102	32.7	31.7	0.97		Yes	Yes	**Pass**
Tyrone Place South 2nd	103	32.5	32.0	0.99		Yes	Yes	**Pass**
Tyrone Place South 2nd	104	32.5	32.1	0.99		Yes	Yes	**Pass**
Emmet Crescent Grd	105	12.2	15.6	1.28		No	Yes	**Pass**
Emmet Crescent 1st	106	20.2	22.7	1.13		No	Yes	**Pass**
Emmet Crescent 2nd	107	24.8	26.4	1.07		No	Yes	**Pass**
Emmet Crescent 2nd	110	30.6	30.0	0.98		Yes	Yes	**Pass**
Thornton Heights Grd	108	28.3	27.9	0.99		Yes	Yes	**Pass**
Thornton Heights Grd	109	32.3	31.8	0.99		Yes	Yes	**Pass**
Thornton Heights Grd	110	34.6	34.1	0.99		Yes	Yes	**Pass**
Thornton Heights Grd	111	35.5	34.9	0.99		Yes	Yes	**Pass**
Thornton Heights Grd	112	22.0	21.9	1.00		No	Yes	**Pass**
Thornton Heights Grd	113	32.2	31.9	1.00		Yes	Yes	**Pass**
Thornton Heights Grd	114	21.9	21.7	1.00		No	Yes	**Pass**
Thornton Heights 1st	115	30.7	29.7	0.97		Yes	Yes	**Pass**
Thornton Heights 1st	116	33.7	32.9	0.98		Yes	Yes	**Pass**
Thornton Heights 1st	117	35.8	35.1	0.99		Yes	Yes	**Pass**
Thornton Heights 1st	118	36.4	35.8	0.99		Yes	Yes	**Pass**
Thornton Heights 1st	119	23.0	22.9	1.00		No	Yes	**Pass**
Thornton Heights 1st	120	33.8	33.4	0.99		Yes	Yes	**Pass**
Thornton Heights 1st	121	23.2	22.8	0.99		No	Yes	**Pass**
Thornton Heights 2nd	122	32.7	31.9	0.98		Yes	Yes	**Pass**
Thornton Heights 2nd	123	34.7	34.1	0.99		Yes	Yes	**Pass**
Thornton Heights 2nd	124	36.6	35.8	0.98		Yes	Yes	**Pass**
Thornton Heights 2nd	125	37.0	36.5	0.99		Yes	Yes	**Pass**
Thornton Heights 2nd	126	23.3	23.3	1.01		No	Yes	**Pass**
Thornton Heights 2nd	127	35.1	34.6	0.99		Yes	Yes	**Pass**
Thornton Heights 2nd	128	23.8	23.6	1.00		No	Yes	**Pass**
Thornton Heights 3rd	129	35.0	33.9	0.97		Yes	Yes	**Pass**
Thornton Heights 3rd	130	36.2	35.5	0.99		Yes	Yes	**Pass**
Thornton Heights 3rd	131	37.3	36.6	0.99		Yes	Yes	**Pass**
Thornton Heights 3rd	132	37.6	37.1	0.99		Yes	Yes	**Pass**
Thornton Heights 3rd	133	20.8	22.3	1.08		No	Yes	**Pass**
Thornton Heights 3rd	134	36.5	36.0	0.99		Yes	Yes	**Pass**
Thornton Heights 3rd	135	20.7	22.0	1.07		No	Yes	**Pass**

5.4 Results – Annual Probable Sunlight Hours

Similarly, analysis undertaken for sunlight availability of baseline vs. proposed conditions determined minor or no reduction in sunlight availability with regards to all existing dwellings assessed. In all instances, baseline Annual Probable Sunlight Hours are predicted to be the same or improved in the proposed condition. Therefore, the below results confirm their currently permitted sunlight would not be adversely affected by the proposed new development.

Room Ref	Window Ref Ex		Annual Ex (%)	Annual Pr (%)	Pr/Ex	Winter Ex (%)	Winter Pr (%)	Winter Pr/Ex	Total Potential Annual Sunny Hours	Max Allowable Ann Reduction	Actual Ann Reduction		Compliant with Criterion 1 Ann < 25% or Win <5%	Compliant with Criterion 2 Ann or Win <80% of Ex	Compliant with Criterion 3 Ann reduction > 4%	OVERALL COMPLIANCE
Day Centre Grd	1		40	43	1.07	10	11	1.12	1277	51	-38		Yes	Yes	Yes	Pass
Day Centre Grd	2		41	42	1.02	10	12	1.13	1277	51	-13		Yes	Yes	Yes	Pass
Day Centre Grd	3		40	41	1.01	10	11	1.14	1277	51	-13		Yes	Yes	Yes	Pass
Day Centre Grd	4		38	40	1.05	8	10	1.29	1277	51	-26		Yes	Yes	Yes	Pass
Day Centre Grd	5		39	41	1.06	7	9	1.38	1277	51	-26		Yes	Yes	Yes	Pass
Day Centre Grd	6		35	38	1.08	3	6	2.24	1277	51	-38		Yes	Yes	Yes	Pass
Day Centre 1st	7		46	47	1.01	13	14	1.02	1277	51	-13		Yes	Yes	Yes	Pass
Day Centre 1st	8		46	47	1.01	13	14	1.09	1277	51	-13		Yes	Yes	Yes	Pass
Day Centre 1st	9		46	47	1.02	12	13	1.1	1277	51	-13		Yes	Yes	Yes	Pass
Day Centre 1st	10		45	46	1.01	12	13	1.12	1277	51	-13		Yes	Yes	Yes	Pass
Day Centre 1st	11		44	45	1.02	10	12	1.18	1277	51	-13		Yes	Yes	Yes	Pass
Day Centre 1st	12		42	44	1.05	8	11	1.35	1277	51	-26		Yes	Yes	Yes	Pass
Emmet Rd 159	13		65	73	1.13	10	18	1.9	1277	51	-102		Yes	Yes	Yes	Pass
Emmet Rd 161	14		62	72	1.16	7	17	2.43	1277	51	-128		Yes	Yes	Yes	Pass
Emmet Rd 163	15		61	72	1.18	6	17	2.77	1277	51	-140		Yes	Yes	Yes	Pass
Emmet Rd 165	16		59	72	1.21	4	17	3.77	1277	51	-166		Yes	Yes	Yes	Pass
Emmet Rd 167	17		58	71	1.22	4	16	4.06	1277	51	-166		Yes	Yes	Yes	Pass
Emmet Rd 169	18		57	71	1.23	5	16	2.97	1277	51	-179		Yes	Yes	Yes	Pass
Emmet Rd 171	19		58	72	1.23	7	17	2.4	1277	51	-179		Yes	Yes	Yes	Pass
Emmet Rd 173	20		61	72	1.19	10	17	1.63	1277	51	-140		Yes	Yes	Yes	Pass
Emmet Rd 175	21		61	71	1.16	12	16	1.41	1277	51	-128		Yes	Yes	Yes	Pass
Emmet Rd 177	22		60	69	1.14	12	15	1.21	1277	51	-115		Yes	Yes	Yes	Pass
Emmet Rd 179	23		60	66	1.1	11	12	1.08	1277	51	-77		Yes	Yes	Yes	Pass
Emmet Rd 181	24		56	61	1.08	7	7	0.98	1277	51	-64		Yes	No	Yes	Pass
Emmet Rd 183	25		53	56	1.06	5	5	0.96	1277	51	-38		Yes	No	Yes	Pass
Emmet Rd 183	26		53	58	1.09	5	6	1.03	1277	51	-64		Yes	Yes	Yes	Pass
St Vincent St W 13	42		26	29	1.11	10	11	1.11	1277	51	-38		Yes	Yes	Yes	Pass
St Vincent St W 13	43		26	29	1.12	10	11	1.09	1277	51	-38		Yes	Yes	Yes	Pass
St Vincent St W 14	44		28	36	1.26	10	11	1.1	1277	51	-102		Yes	Yes	Yes	Pass
St Vincent St W 15	45		31	37	1.22	12	12	1.03	1277	51	-77		Yes	Yes	Yes	Pass
Thornton Heights Grd	111		41	40	0.98	14	14	1	1277	51	13		Yes	No	Yes	Pass
Thornton Heights Grd	112		25	26	1.02	3	3	1	1277	51	-13		No	Yes	Yes	Pass
Thornton Heights Grd	113		44	44	1	13	13	1	1277	51	0		Yes	Yes	Yes	Pass
Thornton Heights Grd	114		23	23	1.01	3	3	1	1277	51	0		No	Yes	Yes	Pass
Thornton Heights 1st	118		43	42	0.99	14	14	0.98	1277	51	13		Yes	No	Yes	Pass
Thornton Heights 1st	119		27	27	1	3	3	1	1277	51	0		No	Yes	Yes	Pass
Thornton Heights 1st	120		45	45	1.02	13	13	1	1277	51	0		Yes	Yes	Yes	Pass
Thornton Heights 1st	121		24	25	1.01	3	3	1	1277	51	-13		No	Yes	Yes	Pass
Thornton Heights 2nd	125		46	46	0.99	14	14	1	1277	51	0		Yes	No	Yes	Pass
Thornton Heights 2nd	126		27	27	1	3	3	1	1277	51	0		No	Yes	Yes	Pass
Thornton Heights 2nd	127		48	48	1	14	14	0.99	1277	51	0		Yes	No	Yes	Pass
Thornton Heights 2nd	128		27	26	0.99	3	3	1	1277	51	13		No	No	Yes	Pass
Thornton Heights 3rd	132		48	47	1	14	14	1	1277	51	13		Yes	Yes	Yes	Pass
Thornton Heights 3rd	133		23	24	1.04	3	3	1	1277	51	-13		No	Yes	Yes	Pass
Thornton Heights 3rd	134		49	49	1	15	15	1	1277	51	0		Yes	Yes	Yes	Pass
Thornton Heights 3rd	135		24	24	1.02	3	3	1	1277	51	0		No	Yes	Yes	Pass

5.5 Non-Domestic Special Area of Interest - Richmond Barracks

As set out within the introduction, the impact on existing buildings may be assessed utilising quantitative assessment method as detailed in the BRE publication "Site Layout Planning for Daylight and Sunlight – A guide to good Practice (2022 Edition)".

BRE Guidelines state:

Light from the Sky (Daylight)

> *"If any part of a new building or extension, measured in a vertical section perpendicular to a 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 daylighting of the existing building may be adversely affected. This will be the case if either:*
>
> - *The VSC (Vertical Sky Component) measured at the centre of an existing main window* is less than 27%, and less than 0.8 times its former value*
> - *The area of the working plane in a room which can receive direct skylight is reduced to less than 0.8 times its former value.* (the No-Sky-Line requirement)

* including living rooms, kitchens and bedrooms.

The guide clarifies that:

> *"Where room layouts are known, the impact on the daylighting distribution in the existing building can be found by plotting the 'no sky line' in each of the main rooms… The no sky line divides points on the working plane which can and cannot see the sky. Areas beyond the no sky line, since they receive no direct daylight, usually look dark and gloomy compared with the rest of the room, however bright it is outside.*
>
> *If, following construction of a new development, the no sky line moves so that the area of the existing room, which does receive direct sunlight, is reduced to less than 0.8 times its former value this will be noticeable to the occupants, and more of the room will appear to be poorly lit."*

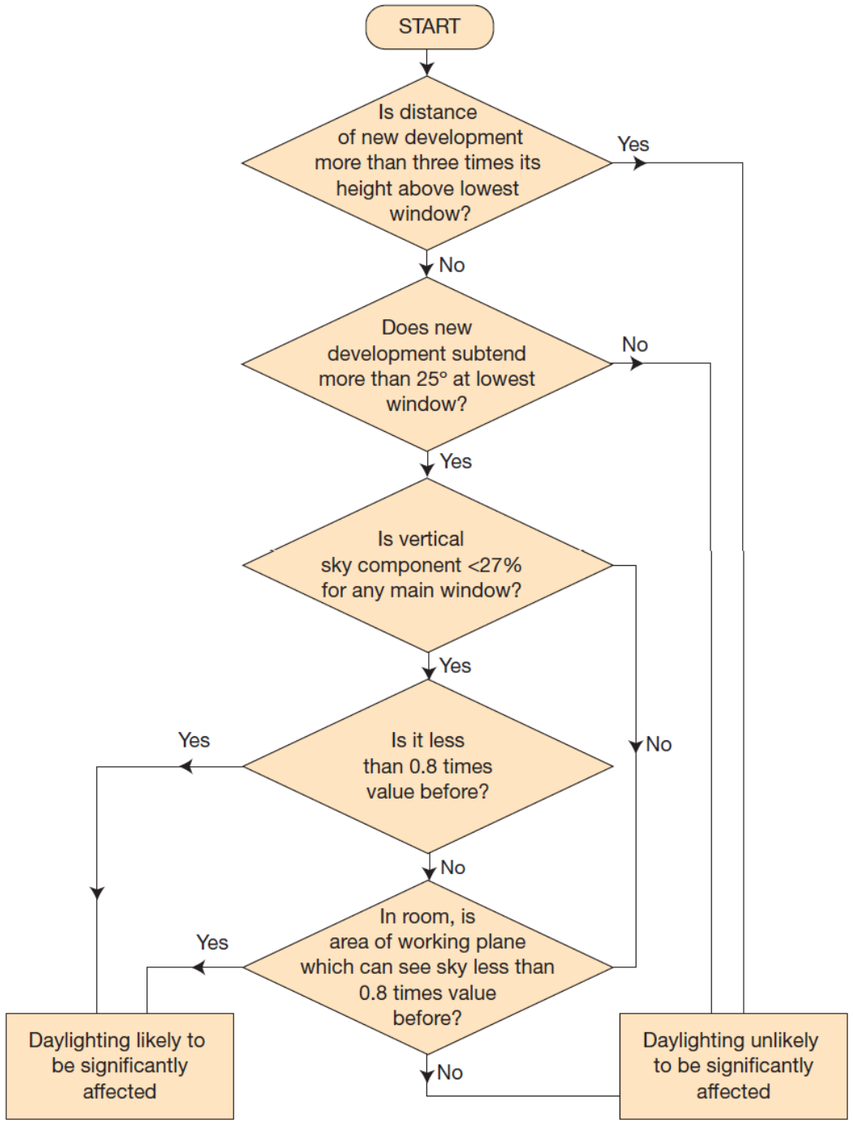


Fig 5.5.1 – BRE publication "Site Layout Planning for Daylight and Sunlight – A guide to good practice (2022 Edition) Figure 20: Decision chart:

5.6 Analysis

The proposed development site and its surroundings is highlighted in Fig 5.6.1 below.

It should be noted that the BRE Guide recommends the following for Daylight (VSC):

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

However, this analysis has been carried out as the identified neighbouring building of Richmond Barracks is recognised as important to the area.

The Guide does not include the same caveat for Sunlight, and refers to living rooms, and therefore this has not been assessed for these buildings.

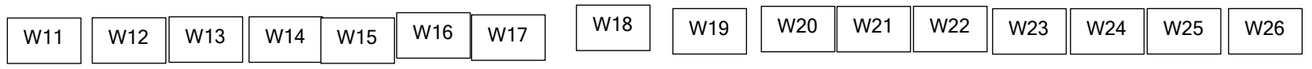
An analysis of the residential buildings will be undertaken for both daylight and sunlight as part of the massing check.

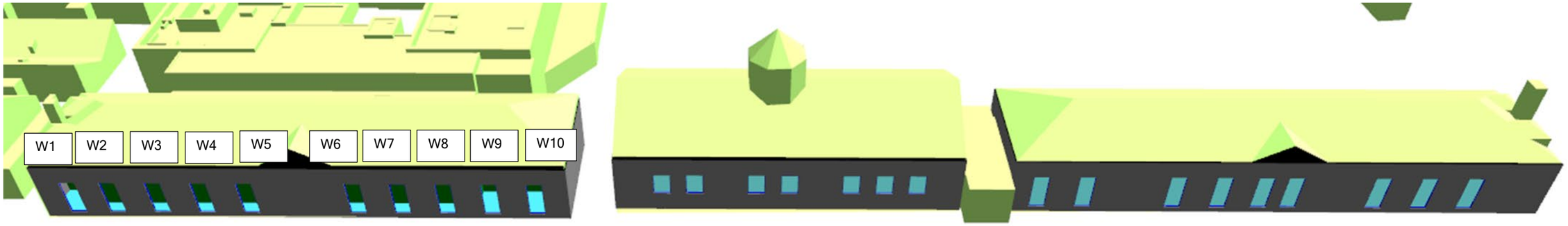
Fig 5.6.1 – Proposed Site and Surroundings

5.7 Results

The results demonstrate that although the VSC was found to be below 27% and less than 0.8 times the previous values for the windows, the No-Sky-Line results determined compliance for the 3 buildings.

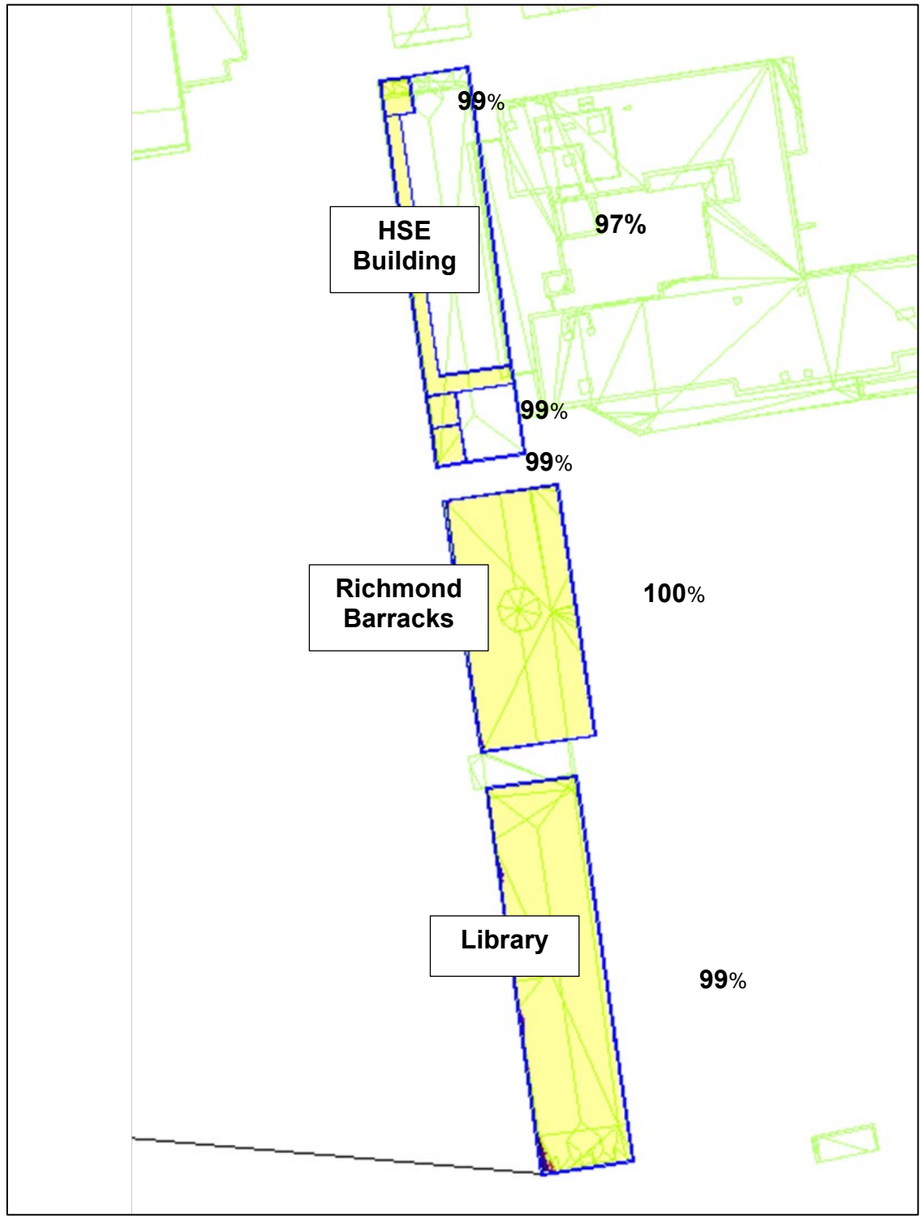
		Vertical Sky Component (VSC)				No Sky Line (NSL)				
Room Reference	Window Ref	VSC Existing (%)	VSC Proposed (%)	Proposed/Existing	VSC Compliance	NSL Existing	NSL Proposed	Proposed/Existing	NSL Compliance	Overall Compliance
HSE Waiting	W1	33.79	29.58	0.88	Pass	99	99	1.00	Pass	**Pass**
HSE Corridor	W2	34.41	29.87	0.87	Pass	97	85	0.88	Pass	**Pass**
HSE Corridor	W3	34.86	29.59	0.85	Pass	97	85	0.88	Pass	**Pass**
HSE Corridor	W4	35.38	29.33	0.83	Pass	97	85	0.88	Pass	**Pass**
HSE Corridor	W5	35.88	28.64	0.80	Pass	97	85	0.88	Pass	**Pass**
HSE Corridor	W6	36.61	27.12	0.74	Pass	97	85	0.88	Pass	**Pass**
HSE Corridor	W7	36.75	26.70	0.73	Fail	97	85	0.88	Pass	**Pass**
HSE Corridor	W8	36.92	26.55	0.72	Fail	97	85	0.88	Pass	**Pass**
HSE Wound Dressing	W9	36.97	26.19	0.71	Fail	99	99	1.00	Pass	**Pass**
HSE Clinic Room 2	W10	37.08	25.95	0.70	Fail	99	99	1.00	Pass	**Pass**
Richmond Barracks	W11	37.41	26.47	0.71	Fail	100	99	0.99	Pass	**Pass**
Richmond Barracks	W12	37.38	26.20	0.70	Fail	100	99	0.99	Pass	**Pass**
Richmond Barracks	W13	37.44	26.02	0.69	Fail	100	99	0.99	Pass	**Pass**
Richmond Barracks	W14	37.38	25.87	0.69	Fail	100	99	0.99	Pass	**Pass**
Richmond Barracks	W15	37.40	26.11	0.70	Fail	100	99	0.99	Pass	**Pass**
Richmond Barracks	W16	37.35	25.75	0.69	Fail	100	99	0.99	Pass	**Pass**
Richmond Barracks	W17	37.28	25.70	0.69	Fail	100	99	0.99	Pass	**Pass**
Library	W18	36.49	24.46	0.67	Fail	99	99	1.00	Pass	**Pass**
Library	W19	37.44	24.77	0.66	Fail	99	99	1.00	Pass	**Pass**
Library	W20	37.40	22.46	0.60	Fail	99	99	1.00	Pass	**Pass**
Library	W21	37.50	21.08	0.56	Fail	99	99	1.00	Pass	**Pass**
Library	W22	37.45	18.36	0.49	Fail	99	99	1.00	Pass	**Pass**
Library	W23	37.44	16.61	0.44	Fail	99	99	1.00	Pass	**Pass**
Library	W24	37.52	14.74	0.39	Fail	99	99	1.00	Pass	**Pass**
Library	W25	37.61	14.19	0.38	Fail	99	99	1.00	Pass	**Pass**
Library	W26	37.51	14.28	0.38	Fail	99	99	1.00	Pass	**Pass**



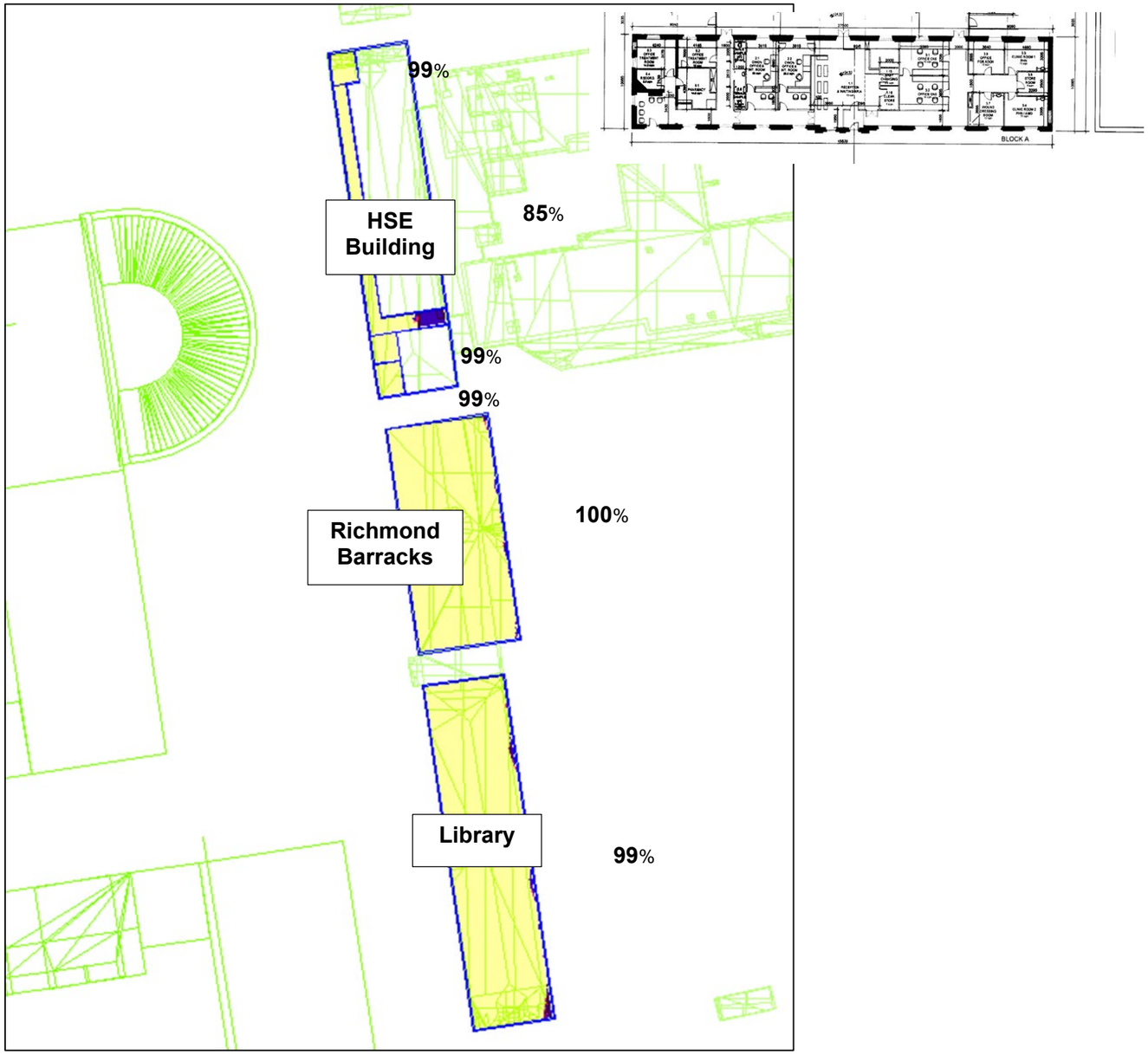


5.8 Results

The images below illustrate the No-Sky-Line results for the buildings of interest for Existing and Proposed conditions.



Existing



Proposed

5.9 Impact on Neighbouring Amenity

The BRE guide notes that for Amenity Sunlighting:

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

BR 209 therefore utilises a similar methodology in assessing sunlight availability to existing gardens/ amenity areas as that applied for new developments, in that at least 50% of the space should be potentially sunlit for two hours during the Equinox; with the additional caveat that a proposed development cannot impact on the extent of sunlight to an existing garden/ amenity area to reduce it to less than 80% of what was previously available, in a similar manner to sunlight/ daylight to windows.

As with new development analysis, the Equinox is used as the basis of assessment as this is the solar mid-position in the year, whereas analysis during winter months would not generally be useful in establishing the impacts of a proposed development, because of existing shading from other objects/structures/vegetation.

The shadow diagrams over, Fig 5.9.1: Sunlight and Site Shading Diagrams - Equinox (March 21st): 08:00-17:00 hrs, illustrate how all neighbouring amenity still achieves at least 2 hours of sunlight over 50% of the spaces with the addition of the proposed development showing compliance with the BRE criteria.

Additionally, shadow diagrams have been included in Appendix C, including Summer and Winter Solstice.

Equinox March 21st

The shadow diagrams below show the potential overshadowing of the proposed Emmet Road development on neighbouring buildings and amenities. The diagrams indicate no predicted impact on neighbouring buildings and their amenity spaces as all neighbouring amenity spaces can be seen to have at least 2 hours of sunlight over at least 50% of their areas on the 21st March as per the BRE guidance. The height and scale of massing of the proposed residential development has been designed to minimise any potential overshadowing to neighbouring residences.

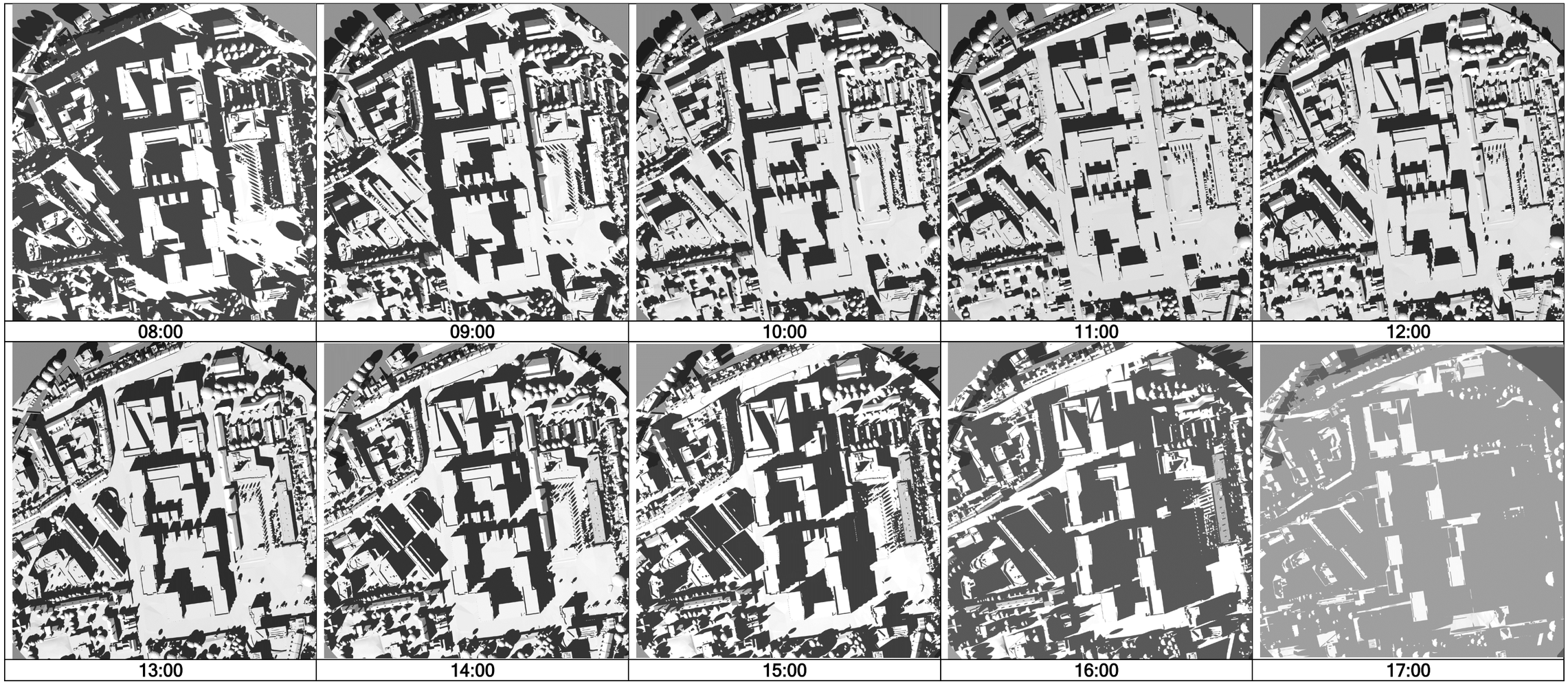


Fig 5.9.1 Sunlight and Site Shading Diagrams - Equinox (March 21st): 08:00-17:00 hrs

6.0 Internal Daylight Analysis

6.1 Spatial Daylight Autonomy Methodology

Spatial Daylight Autonomy (SDA) is a climate-based daylight assessment methodology utilised in the BRE Guide. These guidelines and standards have been outlined in section 2.0.

The methodology utilises historic climate data (Dublin IWEC file 039690 was used for this assessment) predicting internal illumination due to natural light on an hour-by-hour basis, accounting for not only diffuse skylight (as solely assessed in ADF) but also the direct sunlight element. SDA results will differ for façade orientation, with those elevations with southerly aspect (correctly) being deemed to receive more daylight.

Fig 6.1.1 indicates overall compliance comparison, with green contours illustrating where daylight was predicted to achieve 100 Lux for bedrooms and 200 Lux for KLD's. These are the illuminance recommendations for dwellings included in Section C16 of the BR 209 2022 edition, based on BS.EN.17037:2018. Compliance for a room is then defined in the BRE Guide if at least 50% of the room achieves this target.

The daylighting models were calculated based on the following assumptions regarding transmittance and reflectance (as prescribed in the BRE Guide):

- Glazing Transmission = 68% with maintenance factor of 96%
- Ceilings: 80% reflectance
- Walls: 70% reflectance
- Floors: 40% reflectance

The daylight analysis accounted for all aspects that can potentially restrict natural light availability including any adjacent / opposing buildings, along with explicitly modelling Building Details as illustrated in Figure 6.1.2 such as balcony structures, window frames, reveal and cill depth etc. in accordance with the architectural design. As the window frames have been explicitly modelled there is no requirement to include framing factors as prescribed in the BRE Guide.

Daylight Factors for each space were then calculated for a working plane height of 0.85m on a 0.25 x 0.25m grid basis and a wall offset of 0.3m (as defined in BR 209 2022 edition) to enable a detailed calculation within each room, the medium of which was then determined the space compliance.

Fig 6.1.1 –Daylight Analysis Results

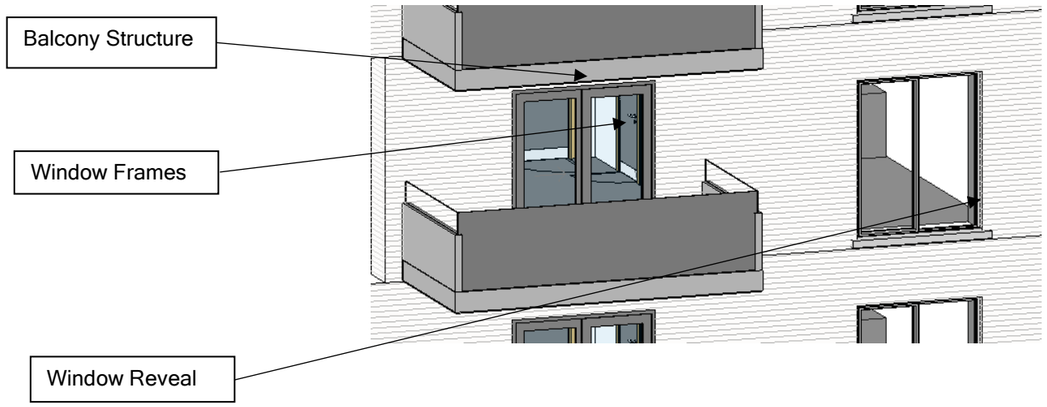


Fig 6.1.2 – Building Details included within Daylight Analysis (Sample)

6.1 Spatial Daylight Autonomy Methodology (Cont'd)

The rooms have been assessed to the minimum areas as prescribed in the 2020 Apartment Guidelines, Fig 6.1.3 taking consideration for the notes in the BRE Guide which stipulate:

> *"Where a room has a shared use, the highest target should apply. For example in a bed sitting room in student accommodation, the value for a living room should be used if students would often spend time in their rooms during the day. Local authorities could use discretion here. For example, the target for a living room could be used for a combined living/dining/kitchen area if the kitchens are not treated as habitable spaces, as it may avoid small separate kitchens in a design.* ***The kitchen space would still need to be included in the assessment area****"* (***Emphasis added***)

BR 209 2022 provides additional guidance on room definitions, identifying that corridors/ annexed entrances can be excluded from the assessment area as illustrated in Fig. 6.1.4.

Fig 6.1.5 illustrates an example of how the above has been interpreted to define areas of assessment (highlighted green) ensuring:

- Minimum required room area as defined in Apartment Guidelines (i.e., min. 30m^2 in this instance for 2 Bed Apartment KLD).
- Inclusion of kitchen area within KLD (i.e. assessment to rear of room).
- Exclusion of circulation/ annexed entrances (i.e., adjacent to doors illustrated).

Minimum aggregate floor areas for living/dining/kitchen rooms, and minimum widths for the main living/dining rooms

Apartment type ***	Width of living/dining room	Aggregate floor area of living / dining / kitchen area*
Studio	4m**	30 sq m**
One bedroom	3.3 m	23 sq m
Two bedrooms (3 person)	3.6m	28 sq m
Two bedrooms (4 person)	3.6 m	30 sq m
Three bedrooms	3.8 m	34 sq m

** Note: An enclosed (separate) kitchen should have a minimum floor area of 6.5 sq. metres*
***Note: Combined living/dining/bedspace, also includes circulation*
**** Note: Variation of up to 5% can be applied to room areas and widths subject to overall compliance with required minimum overall apartment floor areas.*

Fig 6.1.3 – Apartment Guidelines – Minimum Room Sizes

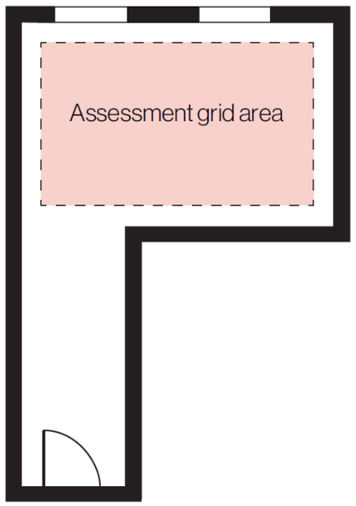


Fig 6.1.4 – BR 209 Figure C3 – Assessment Area excluding Corridor

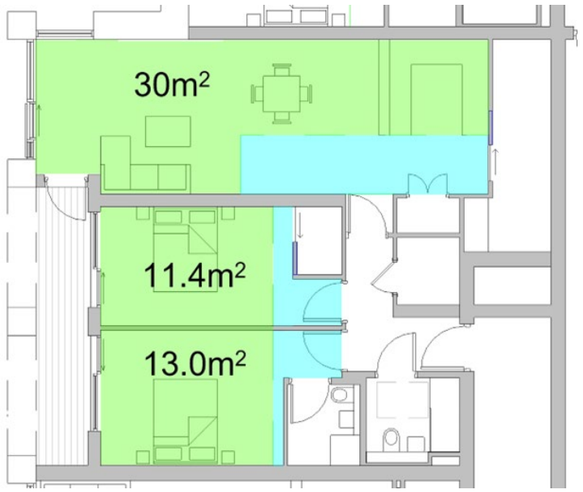


Fig 6.1.5 – Assessment Space Delineation

6.2 Spatial Daylight Autonomy – Results Summary

The assessment has been carried out for all rooms. Appendix B provides full detailed results for all rooms assessed. The analysis determined that 99% of KLD and Bedrooms – 1386 of 1404 rooms- throughout the proposed development would achieve the SDA targets in terms of SDA compliance.

In the case of the two rooms which were found to be non-compliant to SDA requirements, there are Compensatory Measures for Sunlight/ Daylight as described in Section 6.3 below.

Furthermore, as demonstrated in Fig. 6.2.1, the overall categorisation for the proposed development determined a high degree of overall daylighting performance with 73% of units assessed determined to receive 100% SDA, while a further 19% receive between 75-99% SDA, and 6% between 50-75% SDA, all of which are in accordance with the BR.209 guidance.

Overall	Pass	Fail	Total
Block C	210	7	217
Block B1	54	1	55
Block B2	114	0	114
Block B3	28	0	28
Block B4	80	0	80
Block B5	96	0	96
Block B6	102	1	103
Block A1	71	0	71
Block A2	112	4	116
Block A3	77	2	79
Block A4	80	0	80
Block A5	113	1	114
Block A6	75	2	77
Block A7	114	0	114
Block A8	54	0	54
Total	**1380**	**18**	**1398**
	99%	**1%**	

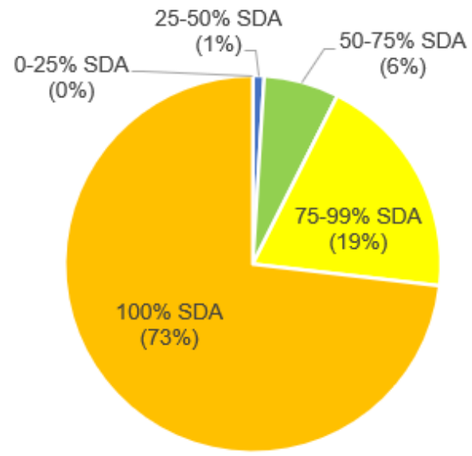


Fig 6.2.1 – SDA Categorisation

Block C	Pass	Fail	Total
First Floor	16	2	18
Second Floor	45	4	49
Third Floor	57	1	58
Fourth Floor	58	0	58
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**210**	**7**	**217**
	97%	**3%**	

Block B1	Pass	Fail	Total
Ground Floor	3	0	3
First Floor	12	1	13
Second Floor	15	0	15
Third Floor	15	0	15
Fourth Floor	15	0	15
Total	**60**	**1**	**61**
	98%	**2%**	

Block B2	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

Block B3	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	12	0	12
Second Floor	4	0	4
Total	**28**	**0**	**28**
	100%	**0%**	

Block B4	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**80**	**0**	**80**
	100%	**0%**	

Block B5	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	14	0	14
Second Floor	14	0	14
Third Floor	14	0	14
Fourth Floor	14	0	14
Fifth Floor	14	0	14
Sixth Floor	14	0	14
Total	**96**	**0**	**96**
	100%	**0%**	

Block B6	Pass	Fail	Total
Ground Floor	12	1	13
First Floor	18	0	18
Second Floor	24	0	24
Third Floor	24	0	24
Fourth Floor	24	0	24
Total	**102**	**1**	**103**
	99%	**1%**	

Block A1	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	14	0	14
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**71**	**0**	**71**
	100%	**0%**	

Block A2	Pass	Fail	Total
Ground Floor	14	0	14
First Floor	16	1	17
Second Floor	16	1	17
Third Floor	16	1	17
Fourth Floor	16	1	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**112**	**4**	**116**
	97%	**3%**	

Block A3	Pass	Fail	Total
Ground Floor	14	1	15
First Floor	15	1	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**77**	**2**	**79**
	97%	**3%**	

Block A4	Pass	Fail	Total
Ground Floor	16	0	16
First Floor	16	0	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**80**	**0**	**80**
	100%	**0%**	

Block A5	Pass	Fail	Total
Ground Floor	11	1	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**113**	**1**	**114**
	99%	**1%**	

Block A6	Pass	Fail	Total
Ground Floor	7	2	9
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**75**	**2**	**77**
	97%	**3%**	

Block A7	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

Block A8	Pass	Fail	Total
Ground Floor	24	0	24
First Floor	18	0	18
Second Floor	12	0	12
Total	**54**	**0**	**54**
	100%	**0%**	

6.3 Compensatory Measures

The proposed development has been designed to maximise daylighting performance as far as practical, which was achieved through reconfiguration of apartment massing, glazing, balcony location and room layout throughout the design process.

However, it was not feasible to demonstrate full compliance for daylight for the entire proposed development, with three rooms being slightly below target Spatial Daylight Autonomy (SDA) requirements of 50%. Where rooms are deemed to be non-compliant, the 2020 Apartment Guidelines state the following:

> *"[6.7] Where an applicant cannot fully meet all of the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, which planning authorities should apply their discretion in accepting taking account of its assessment of specific. This may arise due to a design constraint associated with the site or location and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

Compensatory Design Solutions

Any space which does not achieve the 50% SDA for shared Kitchen/Living/Dining (KLD) or for bedrooms, includes compensatory measures in accordance with the requirements of the Sustainable Urban Housing – Design Standards for New Apartments 2020.

The compensatory measures look to determine a balance between the spaces with reduced daylight by identifying how other metrics for sunlight and/or the unit's aspects can compensate for this reduction and for each unit are illustrated below and summarised as follows: -

1. Sunlight

   The bedrooms with below target Spatial Daylight Autonomy have KLD's with high direct sunlight (>5 hours). Therefore, whilst the rooms were found to be non-compliant for daylight, their apartment units achieve the requisite sunlight availability for compliance.

2. Daylight Adjacency

   In the cases where a room is below target, there are adjacent room/rooms with the apartment which were found to be comfortably compliant. Therefore, these units each have rooms that are well daylit, despite the room being slightly below target.

3. Dual Aspect

   In the case of units where the bedroom was found to be below target, the room is within unit that has the added benefit of dual aspect ensuring multiple options for aspect and sunlight / daylight availability.

4. Aspect

   Some units with lower SDA results have the benefit of positive aspects into the landscaped sunlit courtyards.

7.0 Exposure to Sunlight

The BRE Guide outlines that:

> *"3.1.15 In general a dwelling, or non-domestic building that has a particular requirement for sunlight, will appear reasonably sunlit provided:*
> - *at least one main window wall faces within 90° of due south and*
> - *a habitable room, preferably a main living room, can receive a total of at least 1.5 hours of sunlight on 21 March. This is assessed at the inside centre of the window(s); sunlight received by different windows can be added provided they occur at different times and sunlight hours are not double counted.*

As with Sunlight Amenity, the BRE methodology therefore utilises the Equinox as being representative of the solar mid-position throughout the year, with the calculation of potential received sunlight during that day enabling a quantitative assessment in addition to idealised configuration of ensuring southerly aspect – preferably for living areas as described below:

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

The guide further notes that:

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

An analysis was undertaken for each unit in the proposed development to assess the exposure to sunlight that each unit can receive, assessing initially KLD's and where these were found to be non-compliant, a check was undertaken to determine whether a Bedroom could achieve adequate sunlight in accordance with the methodology. It may be noted therefore that the tables and diagrams below indicate compliance for Exposure to Sunlight based on assessment of Apartment and Duplex Units (i.e. 114 total no.) as opposed to individual rooms, as is the case for Daylight analysis.

Figure 7.1.1 below illustrates how the results as presented within the report to indicate their Exposure to Sunlight classification in accordance with BR.209/ EN.17037 may be interpreted as follows:

- Orange – High (4.0 hrs+)
- Yellow – Medium (3.0 - 4.0 hrs)
- Green – Minimum (1.5 - 3.0 hrs)
- Blue – Low/ Non-Compliant (<1.5 hrs)

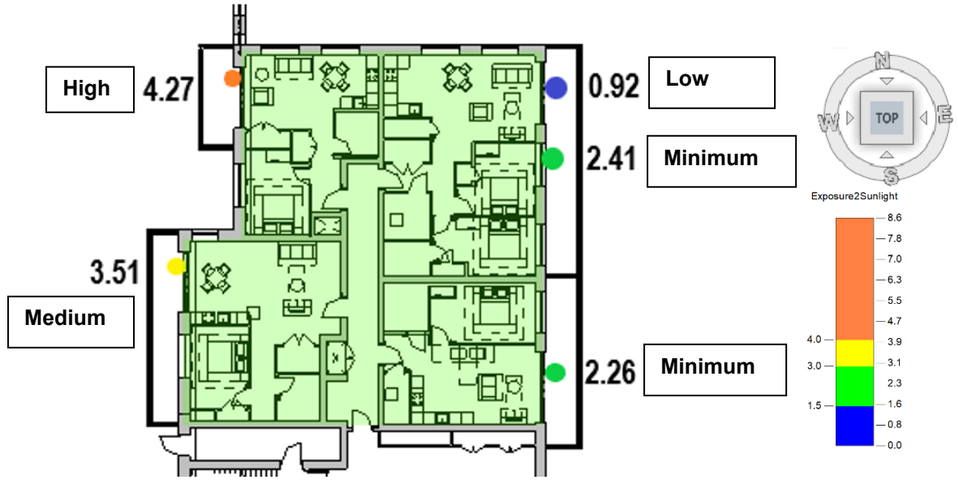


Fig 7.1.1 – Exposure to Sunlight Results – Example

In the example above, the KLD was determined to receive High Exposure to Sunlight, the SW Medium, SE Minimum and NE Low. However, in the case of the latter apartment, both of its Bedrooms were determined to receive sufficient (minimum) sunlight, rendering this apartment also being compliant.

This overall apartment compliance has been illustrated in the detailed results below by highlighting compliant units in green (as above) and non-compliant in blue.

7.0 Results Summary

The results tables below (Fig 7.1.1) confirm how a high level of compliance for Exposure to Sunlight. 97% of the units assessed were determined to be compliant as 560 out of 577 apartments or duplexes were compliant. Appendix C provides full detailed results for all units as assessed.

Furthermore, as demonstrated in Fig. 7.1.2, the overall categorisation for the proposed development determined a high degree of overall sunlighting performance, with 65% of apartments predicted to enjoy a “High” degree of Exposure to Sunlight and a further 18% being in the “Medium” Category, and 14% above the minimum threshold, all of which are in accordance with the BR.209 classification.

Overall	Pass	Fail	Total
Block C	85	1	86
Block B1	22	2	24
Block B2	54	0	54
Block B3	12	0	12
Block B4	36	2	38
Block B5	34	0	34
Block B6	26	0	26
Block A1	35	0	35
Block A2	55	0	55
Block A3	33	6	39
Block A4	20	0	20
Block A5	48	6	54
Block A6	36	1	37
Block A7	54	0	54
Block A8	18	0	18
Total	**568**	**18**	**586**
	97%	**3%**	

Fig 7.1.1 –Exposure to Sunlight – Overall Compliance

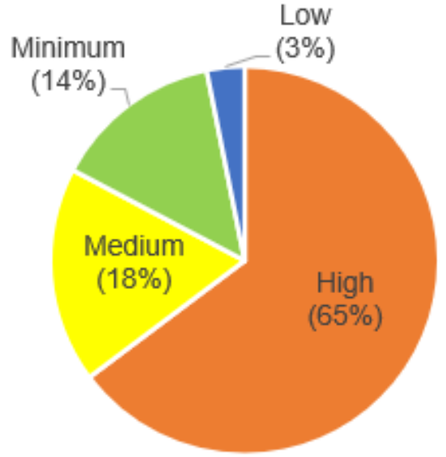


Fig 7.1.2 –Exposure to Sunlight – Overall Categorisation

Appendix A

Site Shading Diagrams

Appendix A: Site Shading Diagrams

Equinox March 21st

Fig A.1: Sunlight and Site Shading Diagrams - Equinox (March 21st): 08:00-17:00 hrs

The Site Shading diagrams in Fig A.1 illustrate that the proposed housing development is not predicted to cause overshadowing on neighbouring developments

Summer Solstice June 21st

Fig A.2: Sunlight and Site Shading Diagrams - Summer Solstice (June 21st): 08:00-17:00 hrs

Whilst both winter and summer solstices have been included, it should be noted that the statistics of Met Eireann, the Irish Meteorological Service, indicate that the sunniest months in Ireland are May and June. During December, Dublin receives a mean daily duration of 1.7 hours of sunlight out of a potential 7.4 hours sunlight each day (i.e. only 22% of potential sunlight hours). This can be compared with a mean daily duration of 6.4 hours of sunlight our of a potential 16.7 hours each day received by Dublin during June (i.e. 38% of potential sunlight hours). Therefore, impacts caused by overshadowing are generally most noticeable during the summer months and least noticeable during the winter months. Due to the low angle of the sun in mid-winter, the shadow environment in all urban and suburban areas are generally dense tending to make the images confusing and superfluous.

Winter Solstice December 21st

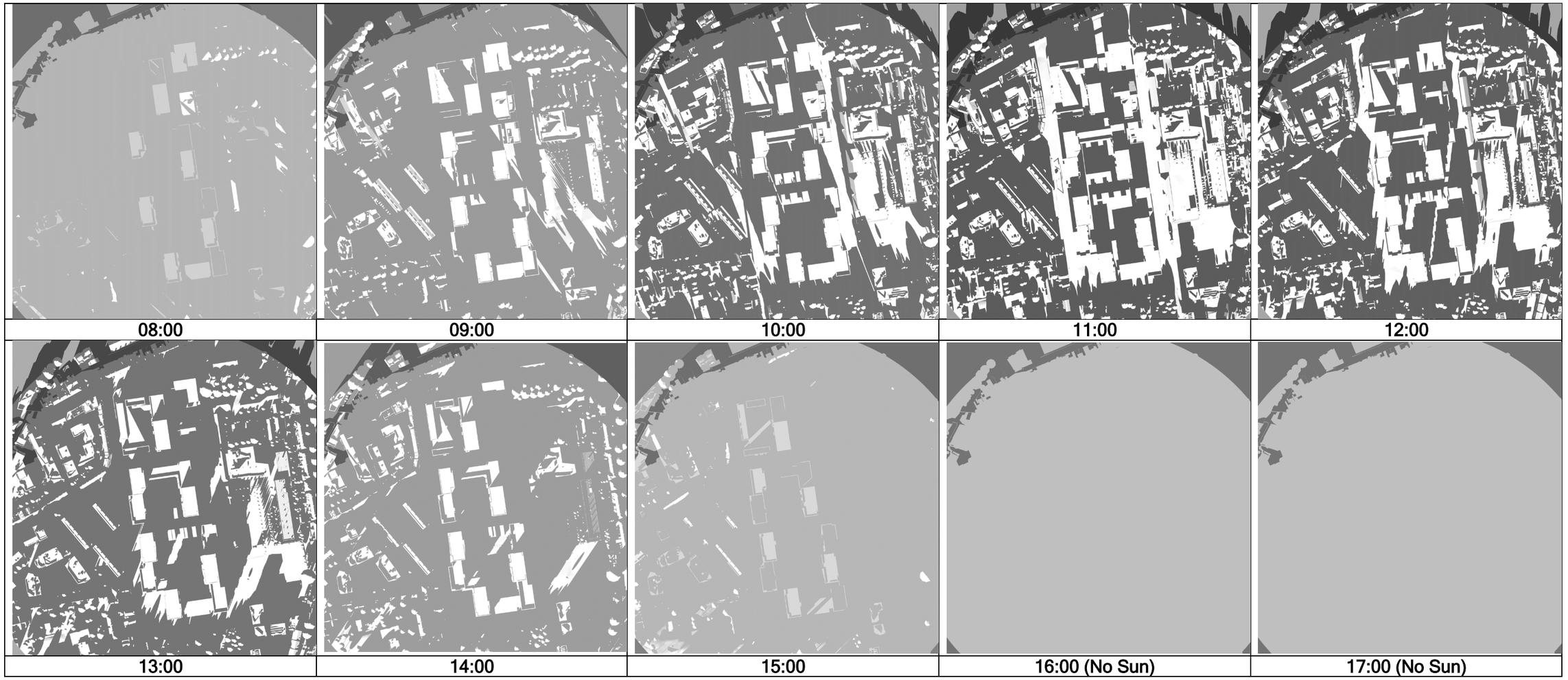


Fig A.3: Sunlight and Site Shading Diagrams - Winter Solstice (December 21st): 08:00-17:00 hrs

Whilst both winter and summer solstices have been included, it should be noted that the statistics of Met Eireann, the Irish Meteorological Service, indicate that the sunniest months in Ireland are May and June. During December, Dublin receives a mean daily duration of 1.7 hours of sunlight out of a potential 7.4 hours sunlight each day (i.e. only 22% of potential sunlight hours). This can be compared with a mean daily duration of 6.4 hours of sunlight our of a potential 16.7 hours each day received by Dublin during June (i.e. 38% of potential sunlight hours). Therefore, impacts caused by overshadowing are generally most noticeable during the summer months and least noticeable during the winter months. Due to the low angle of the sun in mid-winter, the shadow environment in all urban and suburban areas are generally dense tending to make the images confusing and superfluous.

Appendix B

Spatial Daylight Autonomy (SDA)

Appendix B – Spatial Daylight Autonomy (SDA) Results Summary

The assessment has been carried out for all rooms. Appendix B provides full detailed results for all rooms assessed. The analysis determined that 99% of KLD and Bedrooms – 1386 of 1404 rooms- throughout the proposed development would achieve the SDA targets in terms of SDA compliance.

In the case of the two rooms which were found to be non-compliant to SDA requirements, there are Compensatory Measures for Sunlight/ Daylight as described in Section 6.3.

Furthermore, as demonstrated in Fig. B.2.1, the overall categorisation for the proposed development determined a high degree of overall daylighting performance with 73% of units assessed determined to receive 100% SDA, while a further 19% receive between 75-99% SDA, and 6% between 50-75% SDA, all of which are in accordance with the

Overall	Pass	Fail	Total
Block C	210	7	217
Block B1	54	1	55
Block B2	114	0	114
Block B3	28	0	28
Block B4	80	0	80
Block B5	96	0	96
Block B6	102	1	103
Block A1	71	0	71
Block A2	112	4	116
Block A3	77	2	79
Block A4	80	0	80
Block A5	113	1	114
Block A6	75	2	77
Block A7	114	0	114
Block A8	54	0	54
Total	**1380**	**18**	**1398**
	99%	**1%**	

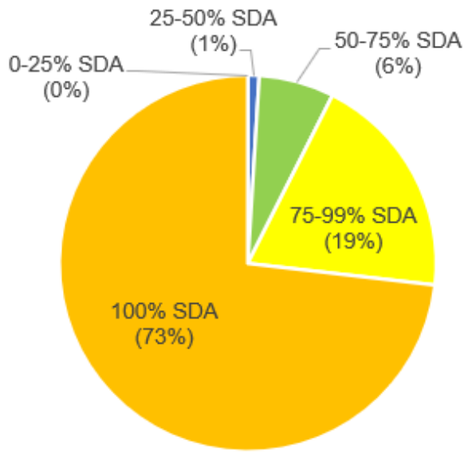


Fig B.2.1 – SDA Categorisation

Block C	Pass	Fail	Total
First Floor	16	2	18
Second Floor	45	4	49
Third Floor	57	1	58
Fourth Floor	58	0	58
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**210**	**7**	**217**
	97%	**3%**	

Block B1	Pass	Fail	Total
Ground Floor	3	0	3
First Floor	12	1	13
Second Floor	15	0	15
Third Floor	15	0	15
Fourth Floor	15	0	15
Total	**60**	**1**	**61**
	98%	**2%**	

Block B2	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

Block B3	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	12	0	12
Second Floor	4	0	4
Total	**28**	**0**	**28**
	100%	**0%**	

Block B4	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**80**	**0**	**80**
	100%	**0%**	

Block B5	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	14	0	14
Second Floor	14	0	14
Third Floor	14	0	14
Fourth Floor	14	0	14
Fifth Floor	14	0	14
Sixth Floor	14	0	14
Total	**96**	**0**	**96**
	100%	**0%**	

Block B6	Pass	Fail	Total
Ground Floor	12	1	13
First Floor	18	0	18
Second Floor	24	0	24
Third Floor	24	0	24
Fourth Floor	24	0	24
Total	**102**	**1**	**103**
	99%	**1%**	

Block A1	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	14	0	14
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**71**	**0**	**71**
	100%	**0%**	

Block A2	Pass	Fail	Total
Ground Floor	14	0	14
First Floor	16	1	17
Second Floor	16	1	17
Third Floor	16	1	17
Fourth Floor	16	1	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**112**	**4**	**116**
	97%	**3%**	

Block A3	Pass	Fail	Total
Ground Floor	14	1	15
First Floor	15	1	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**77**	**2**	**79**
	97%	**3%**	

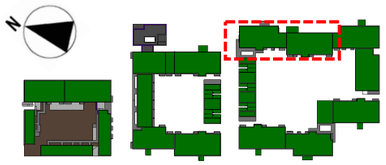
Block A4	Pass	Fail	Total
Ground Floor	16	0	16
First Floor	16	0	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**80**	**0**	**80**
	100%	**0%**	

Block A5	Pass	Fail	Total
Ground Floor	11	1	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**113**	**1**	**114**
	99%	**1%**	

Block A6	Pass	Fail	Total
Ground Floor	7	2	9
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**75**	**2**	**77**
	97%	**3%**	

Block A7	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

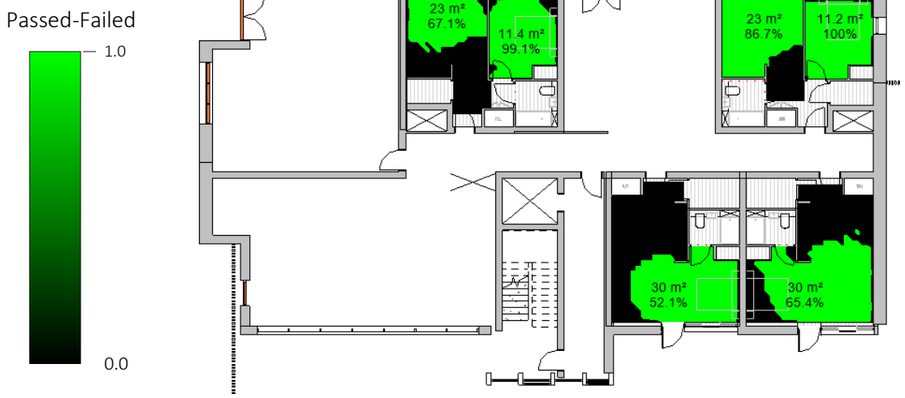
Block A8	Pass	Fail	Total
Ground Floor	24	0	24
First Floor	18	0	18
Second Floor	12	0	12
Total	**54**	**0**	**54**
	100%	**0%**	



Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

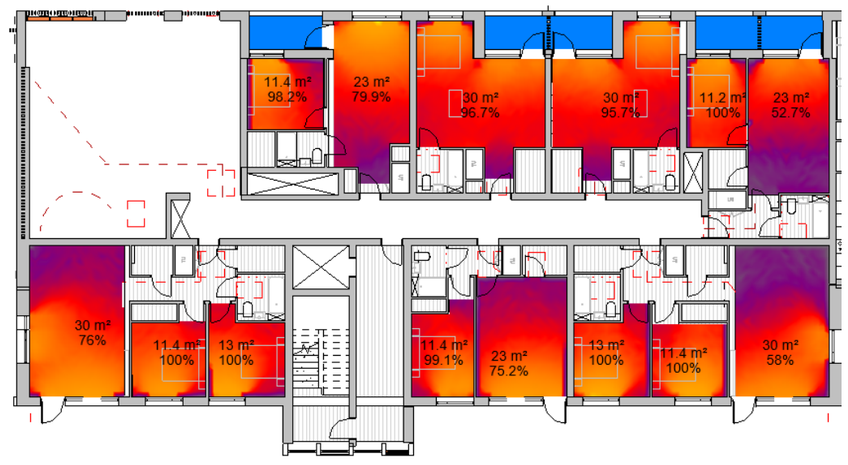
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.



Block A1

Block A2



SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A1	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	14	0	14
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**71**	**0**	**71**
	100%	**0%**	

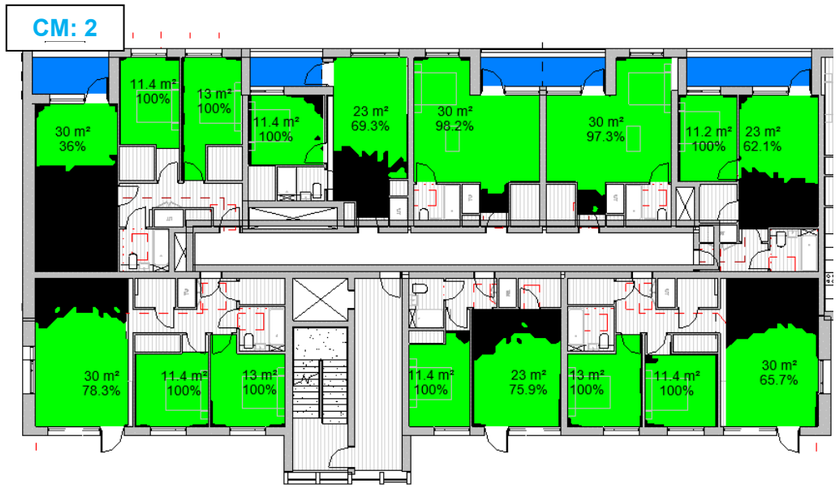
Block A2	Pass	Fail	Total
Ground Floor	14	0	14
First Floor	16	1	17
Second Floor	16	1	17
Third Floor	16	1	17
Fourth Floor	16	1	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**112**	**4**	**116**
	97%	**3%**	

Block A1 & A2 - First Floor

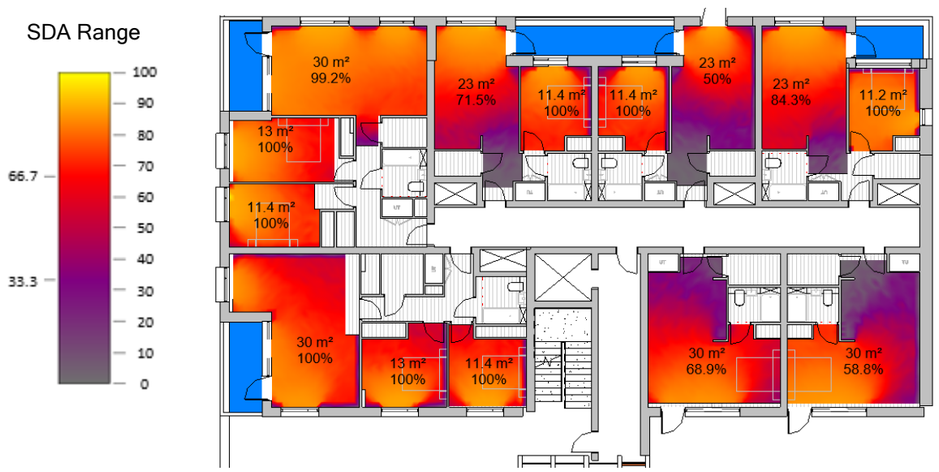
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

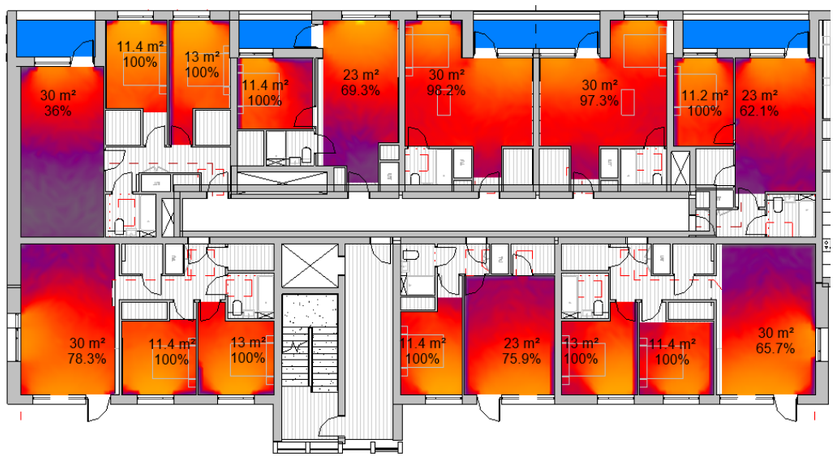
The Majority of units assessed were determined to be compliant with SDA with the exception of 1 unit in Block A2.

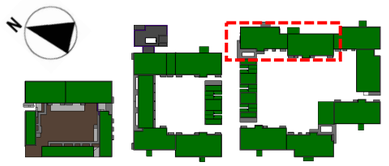


Block A1



Block A2





Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A1	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	14	0	14
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**71**	**0**	**71**
	100%	**0%**	

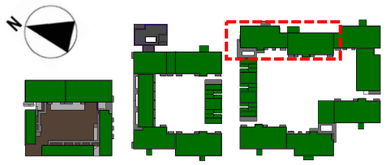
Block A2	Pass	Fail	Total
Ground Floor	14	0	14
First Floor	16	1	17
Second Floor	16	1	17
Third Floor	16	1	17
Fourth Floor	16	1	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**112**	**4**	**116**
	97%	**3%**	

Block A1 & A2 - Second Floor

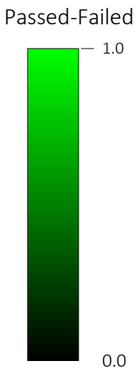
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

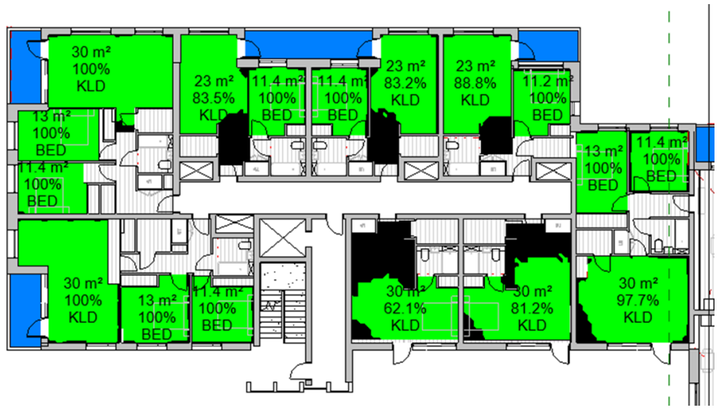
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

The Majority of units assessed were determined to be compliant with SDA with the exception of 1 unit in Block A2.



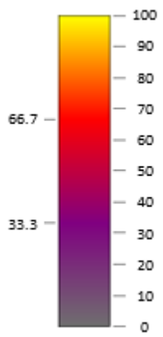
Passed-Failed

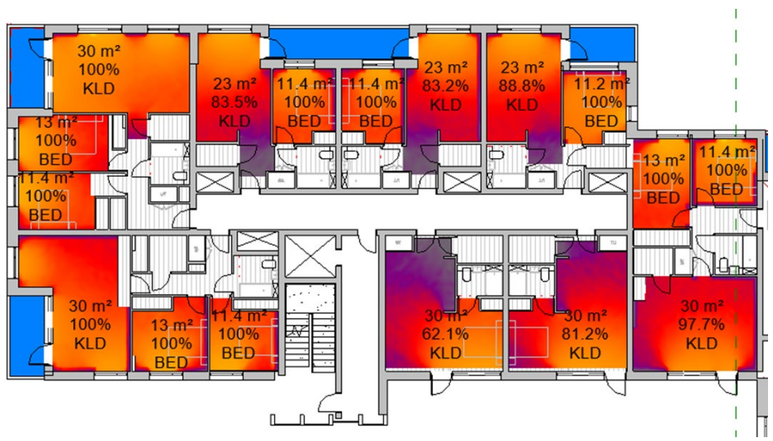


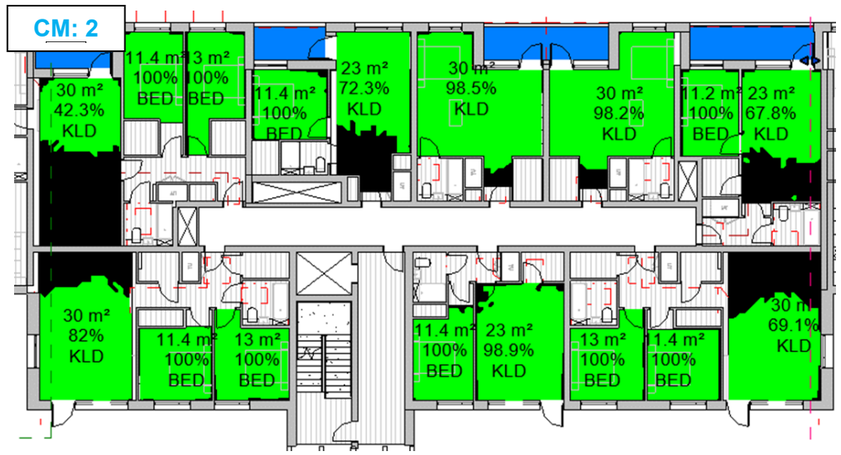


Block A1

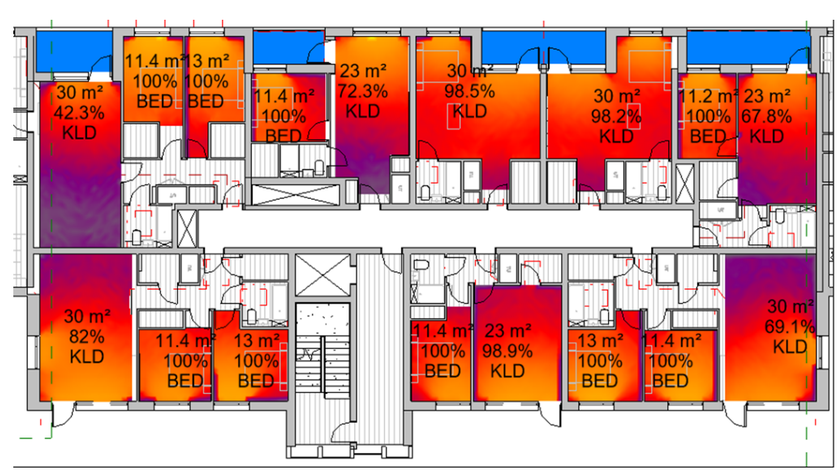
SDA Range







Block A2



Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A1	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	14	0	14
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**71**	**0**	**71**
	100%	**0%**	

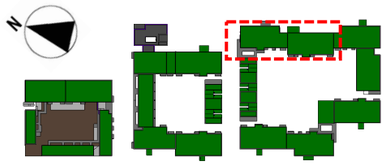
Block A2	Pass	Fail	Total
Ground Floor	14	0	14
First Floor	16	1	17
Second Floor	16	1	17
Third Floor	16	1	17
Fourth Floor	16	1	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**112**	**4**	**116**
	97%	**3%**	

Block A1 & A2 - Third Floor

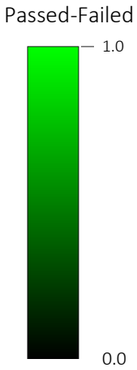
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

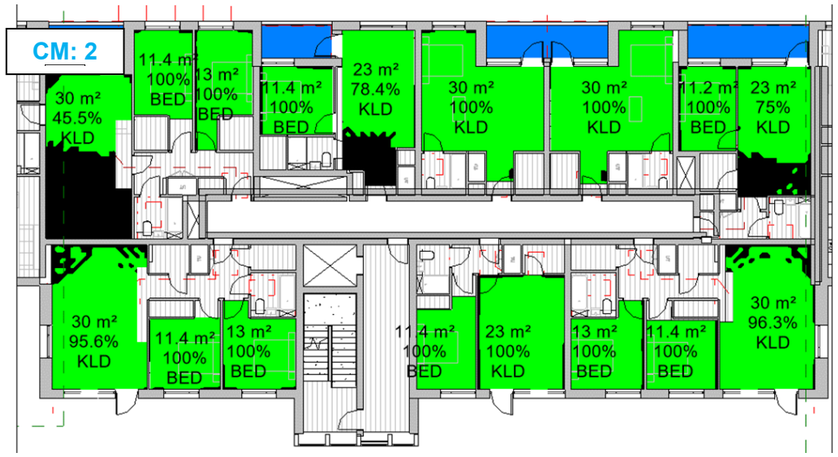
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

The Majority of units assessed were determined to be compliant with SDA with the exception of 1 unit in Block A2.



Passed-Failed



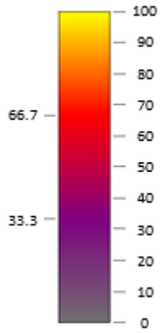


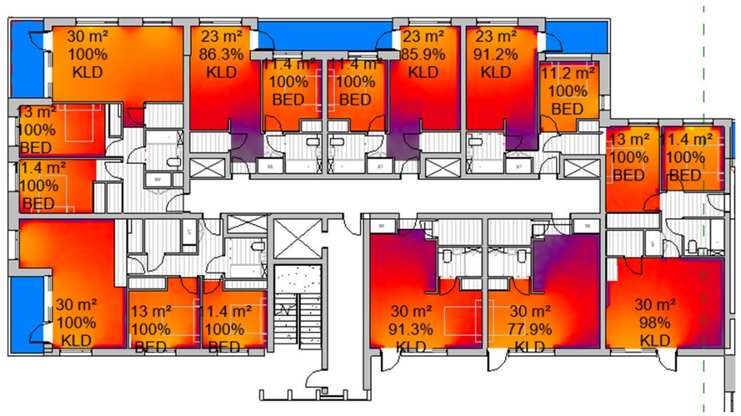
Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A1

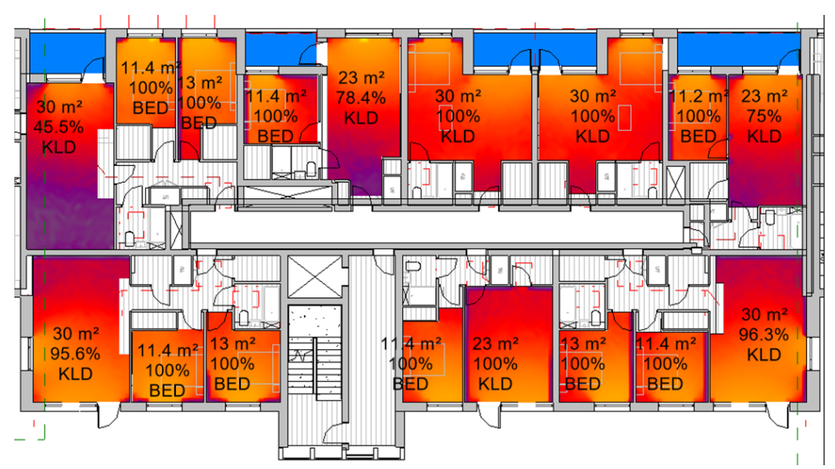
SDA Range





Block A1	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	14	0	14
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**71**	**0**	**71**
	100%	**0%**	

Block A2



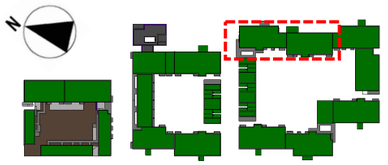
Block A2	Pass	Fail	Total
Ground Floor	14	0	14
First Floor	16	1	17
Second Floor	16	1	17
Third Floor	16	1	17
Fourth Floor	16	1	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**112**	**4**	**116**
	97%	**3%**	

Block A1 & A2 - Fourth Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

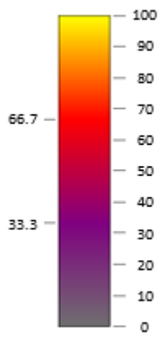
The Majority of units assessed were determined to be compliant with SDA with the exception of 1 unit in Block A2.



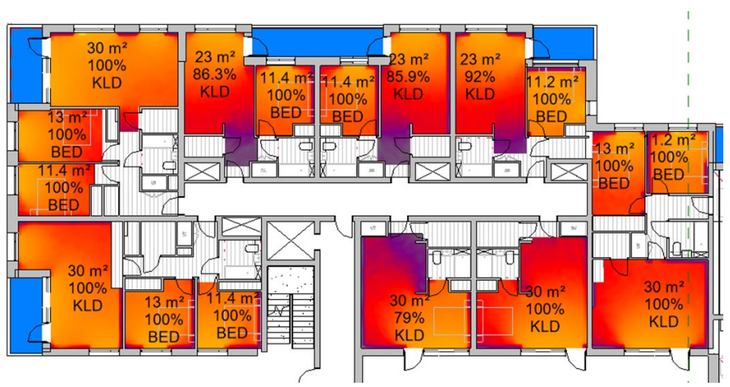
Passed-Failed

CM: 2

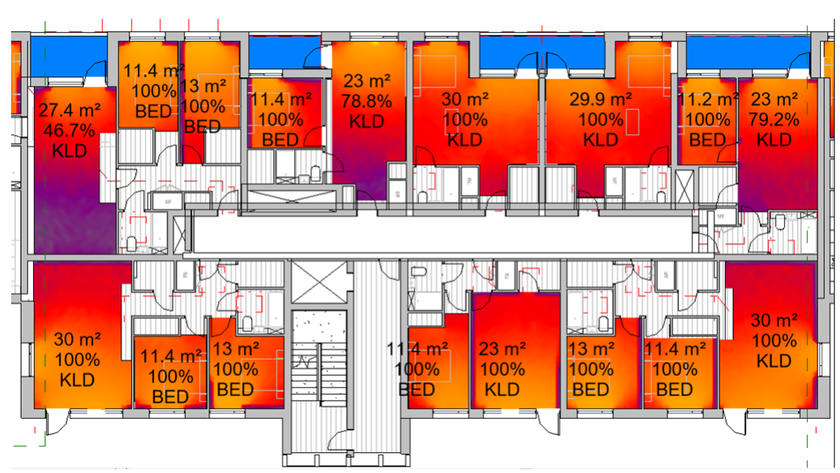
SDA Range



Block A1



Block A2



Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A1	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	14	0	14
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**71**	**0**	**71**
	100%	**0%**	

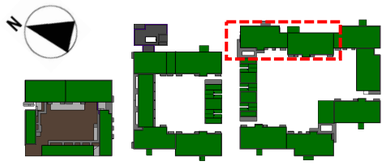
Block A2	Pass	Fail	Total
Ground Floor	14	0	14
First Floor	16	1	17
Second Floor	16	1	17
Third Floor	16	1	17
Fourth Floor	16	1	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**112**	**4**	**116**
	97%	**3%**	

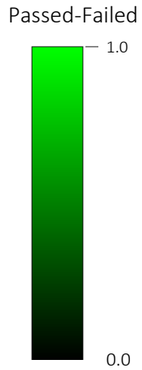
Block A2 - Fifth Floor

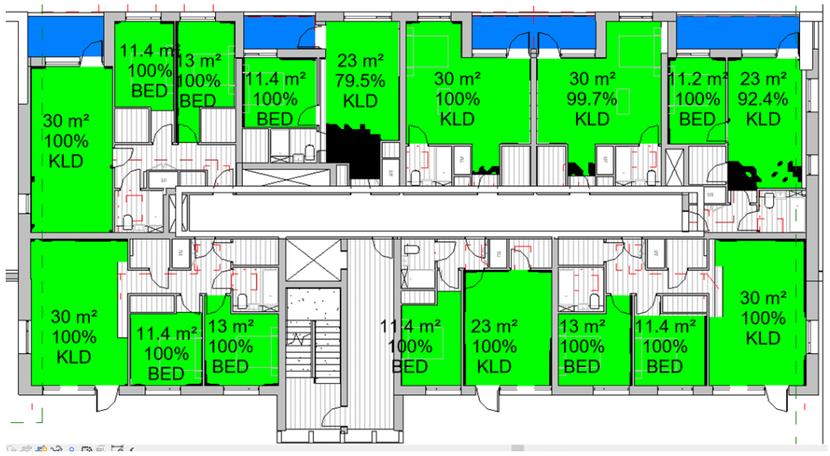
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

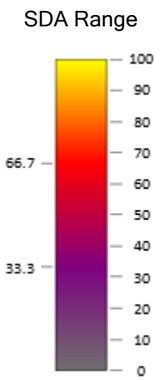
All units assessed were determined to be compliant with SDA.

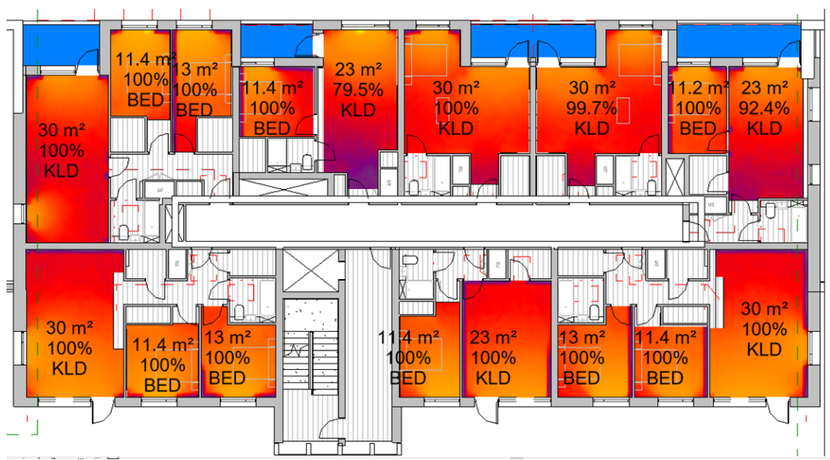






Block A2





SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

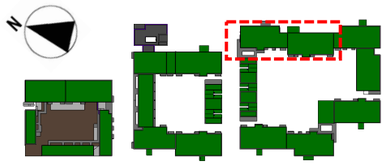
Block A2	Pass	Fail	Total
Ground Floor	14	0	14
First Floor	16	1	17
Second Floor	16	1	17
Third Floor	16	1	17
Fourth Floor	16	1	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**112**	**4**	**116**
	97%	**3%**	

Block A2 - Sixth Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.



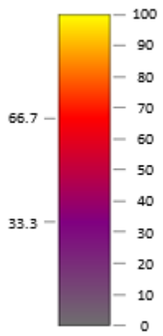
Passed-Failed

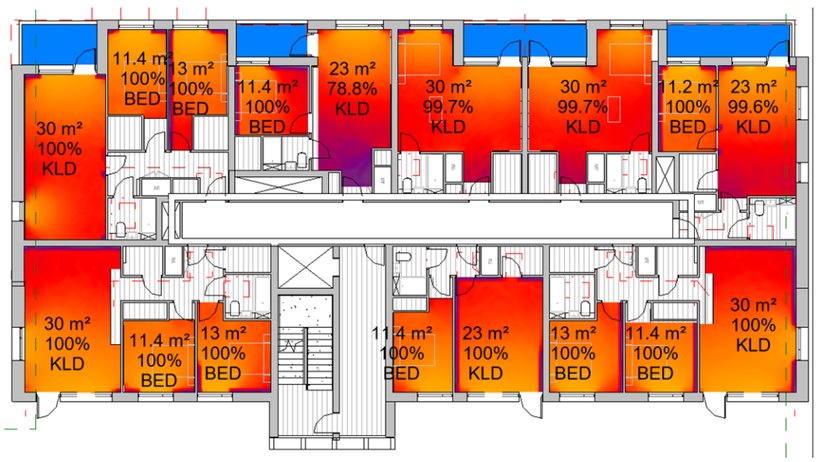
SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A2	Pass	Fail	Total
Ground Floor	14	0	14
First Floor	16	1	17
Second Floor	16	1	17
Third Floor	16	1	17
Fourth Floor	16	1	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**112**	**4**	**116**
	97%	**3%**	

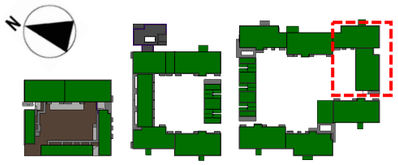
Block A2

SDA Range





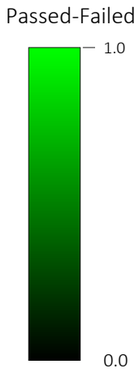
Block A3 & A4 - Ground Floor



Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

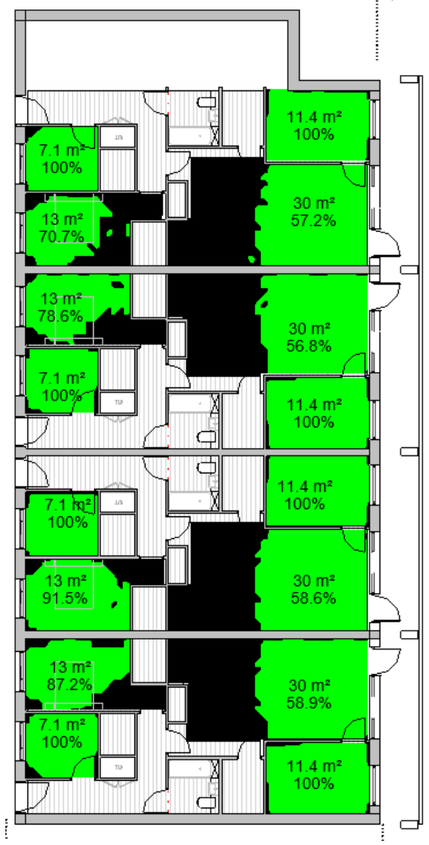
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

The Majority of units assessed were determined to be compliant with SDA with the exception of 1 unit in Block A3.



Block A3

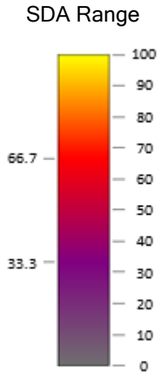
CM: 2, 4

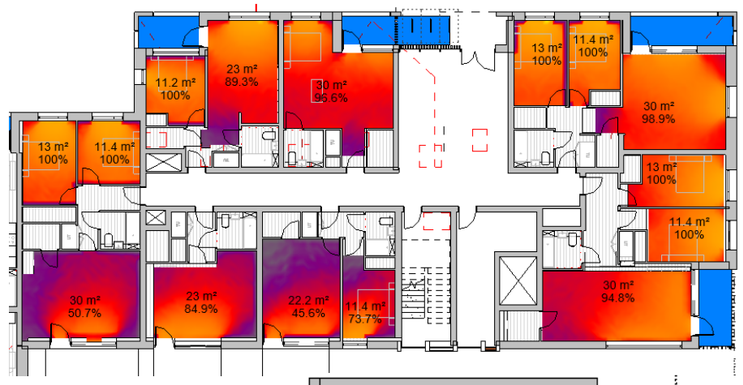


SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A3	Pass	Fail	Total
Ground Floor	14	1	15
First Floor	15	1	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**77**	**2**	**79**
	97%	**3%**	

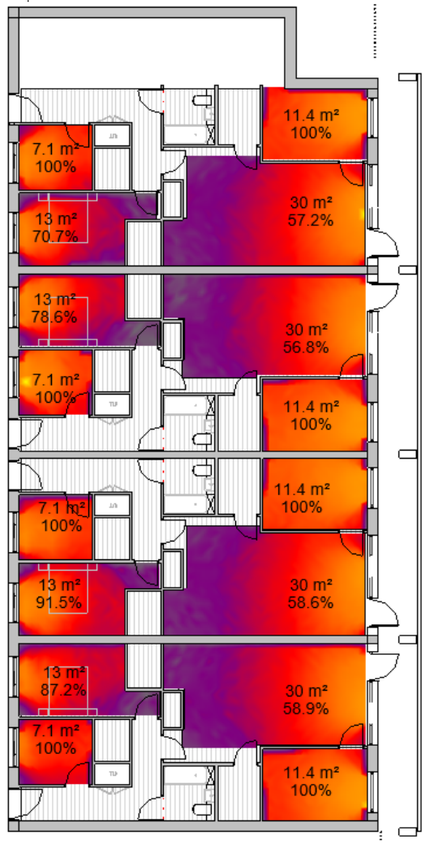
Block A4	Pass	Fail	Total
Ground Floor	16	0	16
First Floor	16	0	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**80**	**0**	**80**
	100%	**0%**	





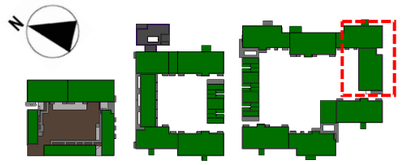
Block A3

Block A4



Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect

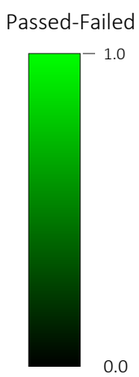
Block A3 & A4 - First Floor



Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

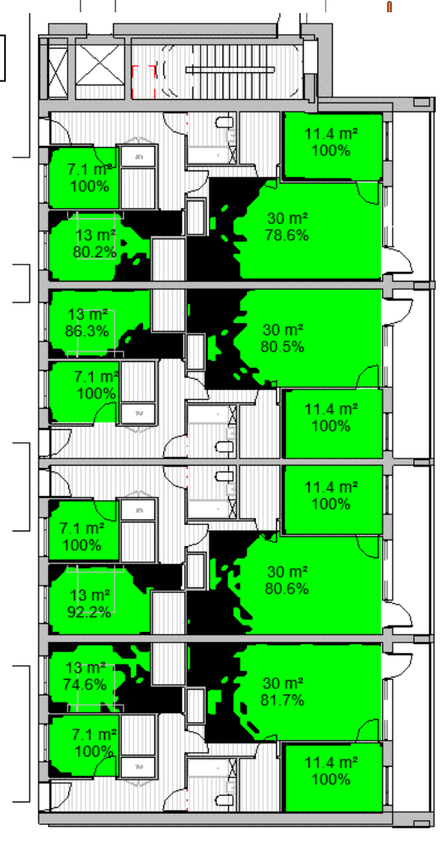
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

The Majority of units assessed were determined to be compliant with SDA with the exception of 1 unit in Block A3.

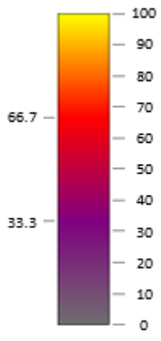


Block A3

CM: 2,4

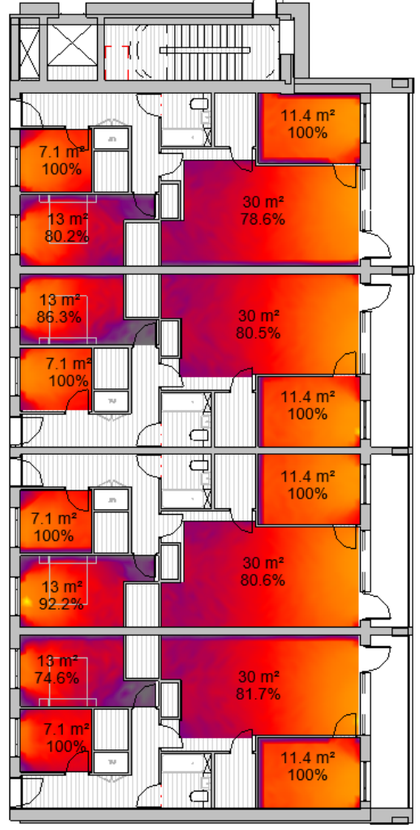


SDA Range



Block A3

Block A4



Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A3	Pass	Fail	Total
Ground Floor	14	1	15
First Floor	15	1	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**77**	**2**	**79**
	97%	**3%**	

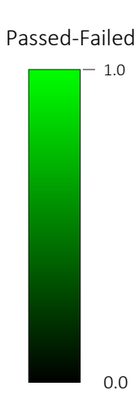
Block A4	Pass	Fail	Total
Ground Floor	16	0	16
First Floor	16	0	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**80**	**0**	**80**
	100%	**0%**	

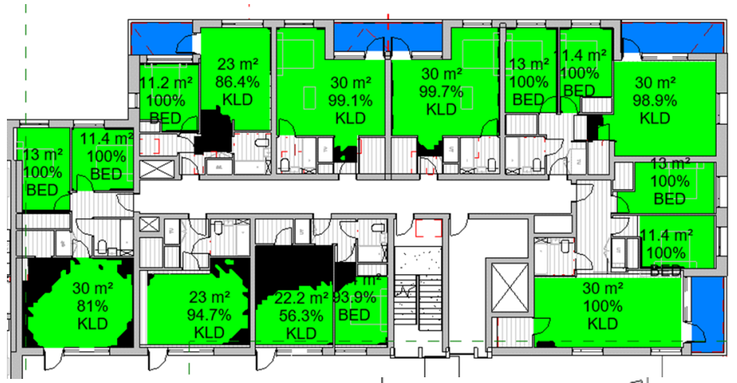
Block A3 & A4 – Second Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

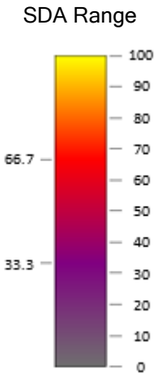
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

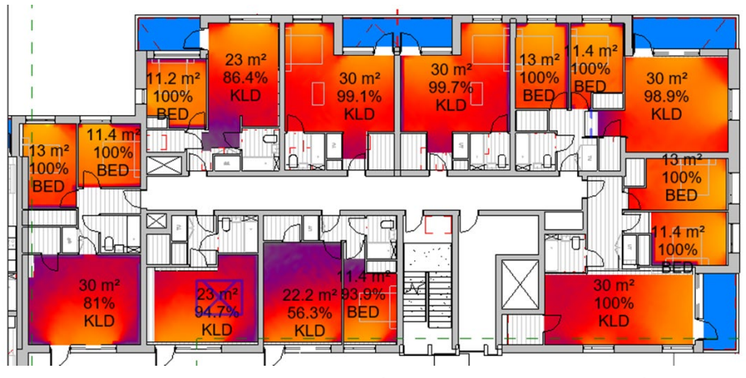
All units assessed were determined to be compliant with SDA.





Block A3



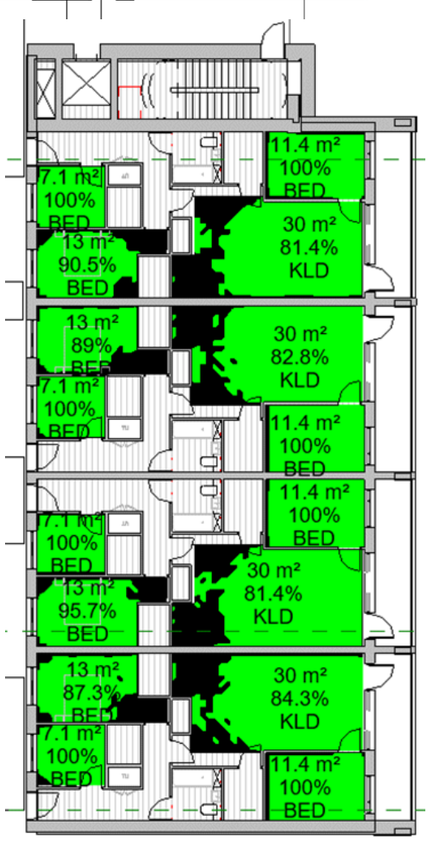


Block A3

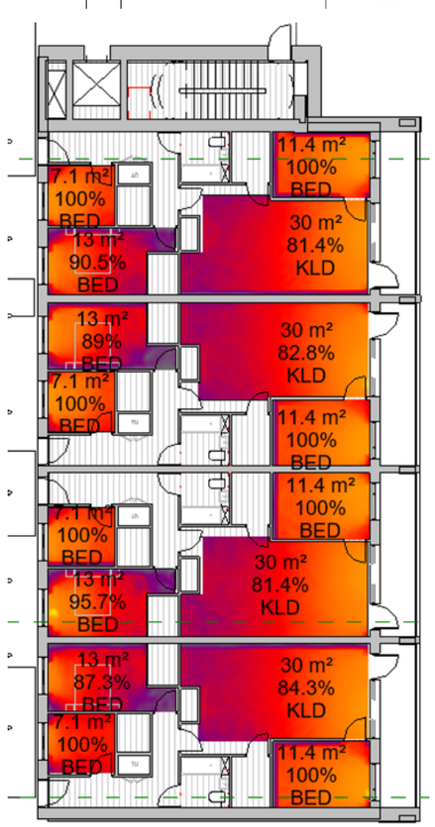
SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A3	Pass	Fail	Total
Ground Floor	14	1	15
First Floor	15	1	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**77**	**2**	**79**
	97%	**3%**	

Block A4	Pass	Fail	Total
Ground Floor	16	0	16
First Floor	16	0	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**80**	**0**	**80**
	100%	**0%**	



Block A4



Block A3 & A4 - Third Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.

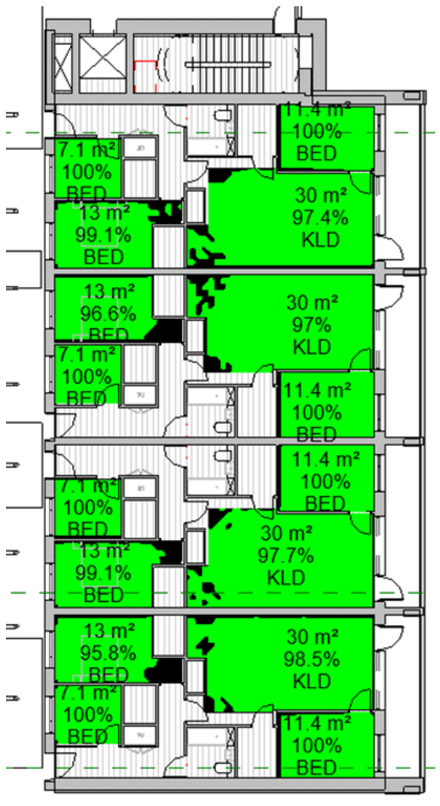
Block A3

Block A3

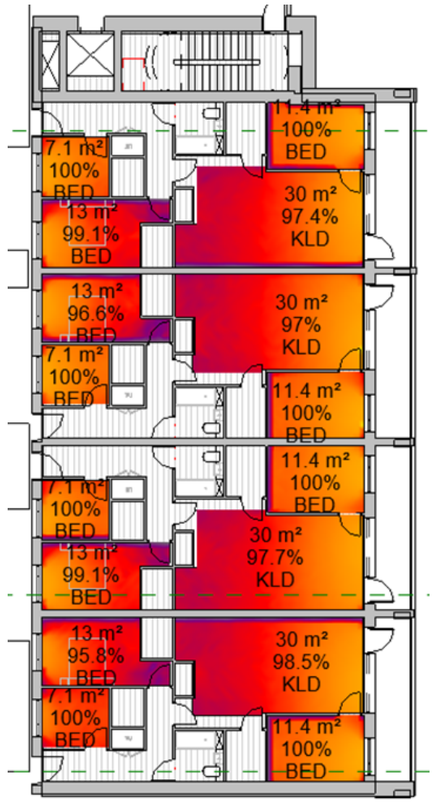
SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A3	Pass	Fail	Total
Ground Floor	14	1	15
First Floor	15	1	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**77**	**2**	**79**
	97%	**3%**	

Block A4	Pass	Fail	Total
Ground Floor	16	0	16
First Floor	16	0	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**80**	**0**	**80**
	100%	**0%**	



Block A4

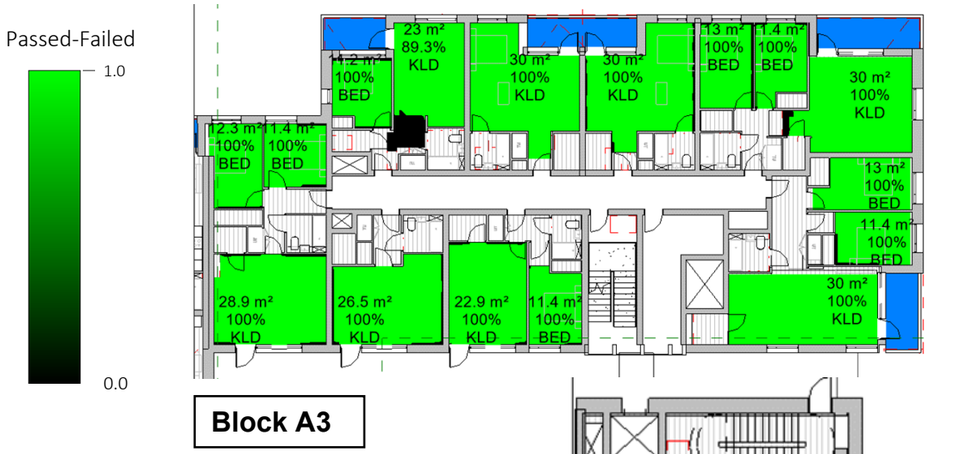


Block A3 & A4 - Fourth Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

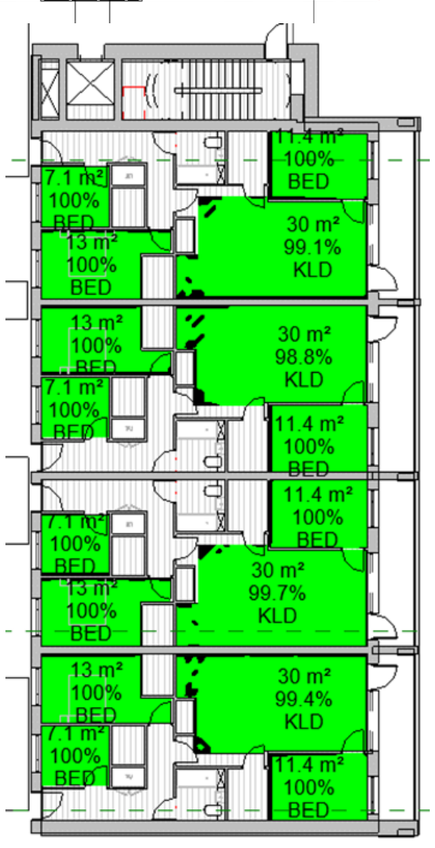
All units assessed were determined to be compliant with SDA.



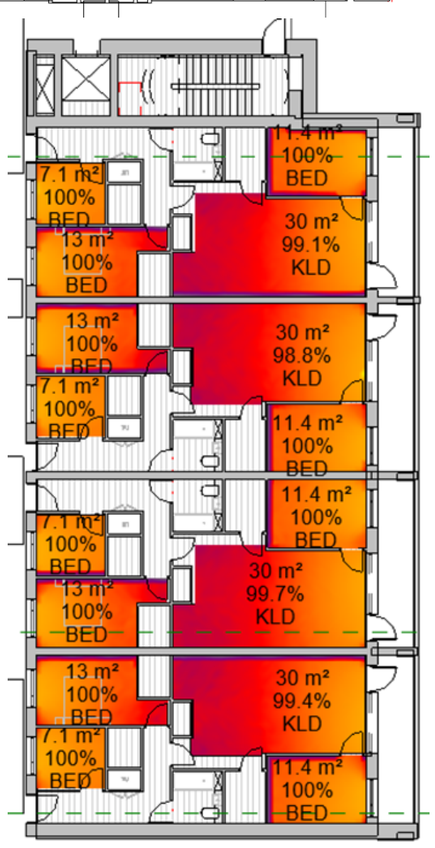
SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A3	Pass	Fail	Total
Ground Floor	14	1	15
First Floor	15	1	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**77**	**2**	**79**
	97%	**3%**	

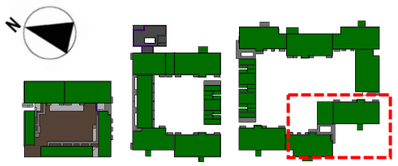
Block A4	Pass	Fail	Total
Ground Floor	16	0	16
First Floor	16	0	16
Second Floor	16	0	16
Third Floor	16	0	16
Fourth Floor	16	0	16
Total	**80**	**0**	**80**
	100%	**0%**	



Block A4



Block A5 & A6 - Ground Floor

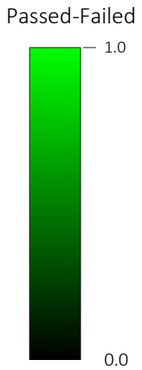


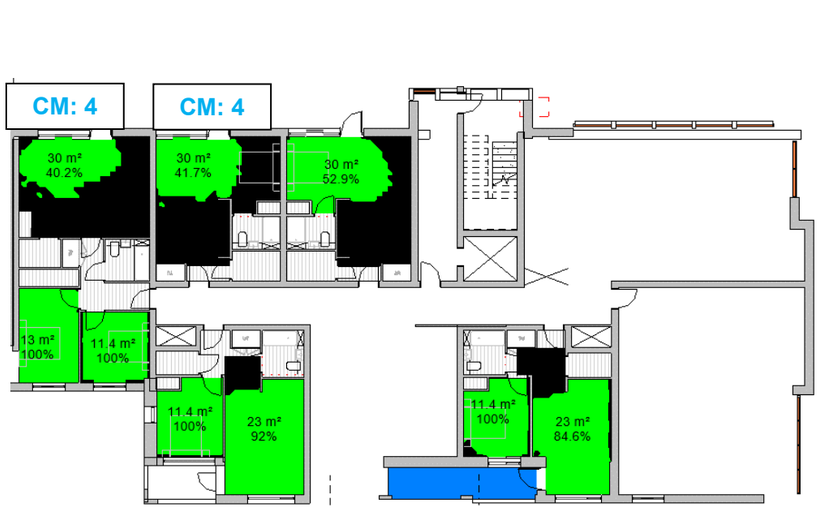
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA with the exception of 2 units in Block A6 and 1 unit in Block A5.

Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect



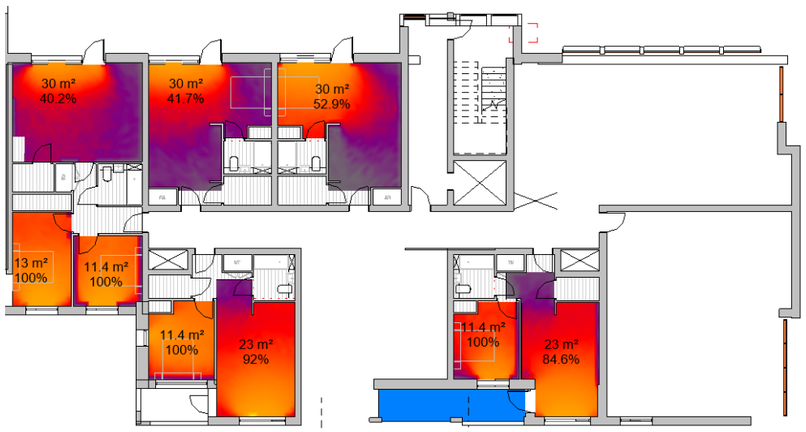


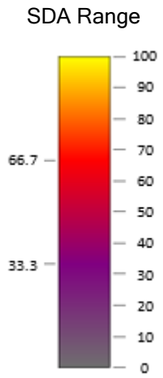
Block A5

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A5	Pass	Fail	Total
Ground Floor	11	1	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**113**	**1**	**114**
	99%	**1%**	

Block A6





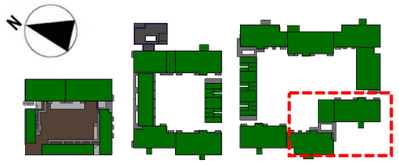
Block A6	Pass	Fail	Total
Ground Floor	7	2	9
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**75**	**2**	**77**
	97%	**3%**	

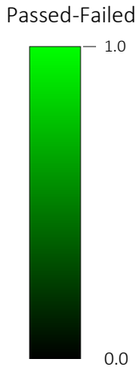
Block A5 & A6 - First Floor

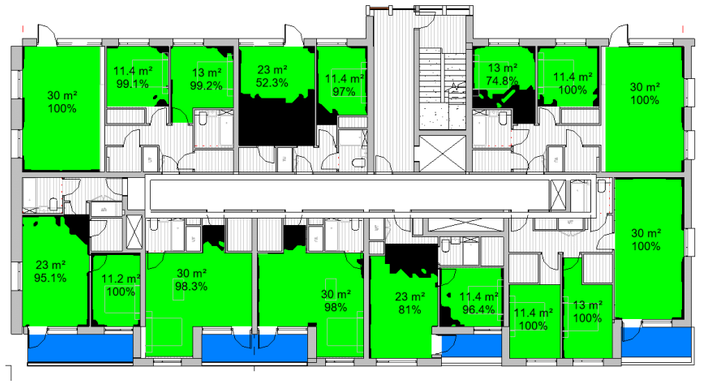
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.

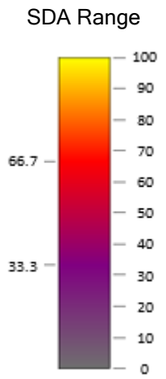


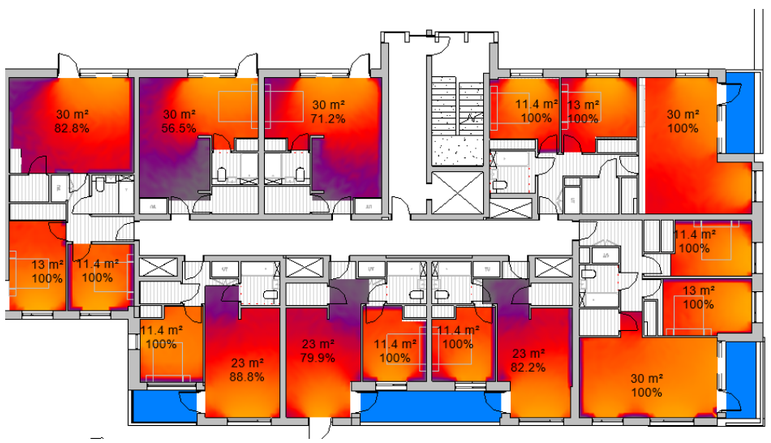


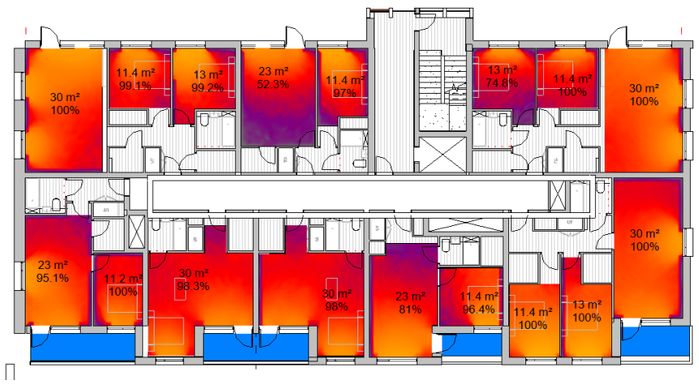


Block A5

Block A6







SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A5	Pass	Fail	Total
Ground Floor	11	1	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**113**	**1**	**114**
	99%	**1%**	

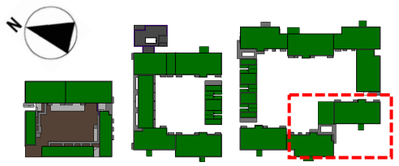
Block A6	Pass	Fail	Total
Ground Floor	7	2	9
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**75**	**2**	**77**
	97%	**3%**	

Block A5 & A6 - Second Floor

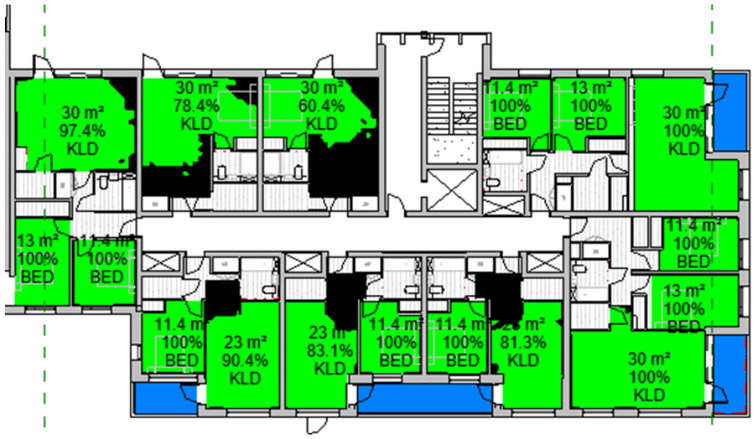
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

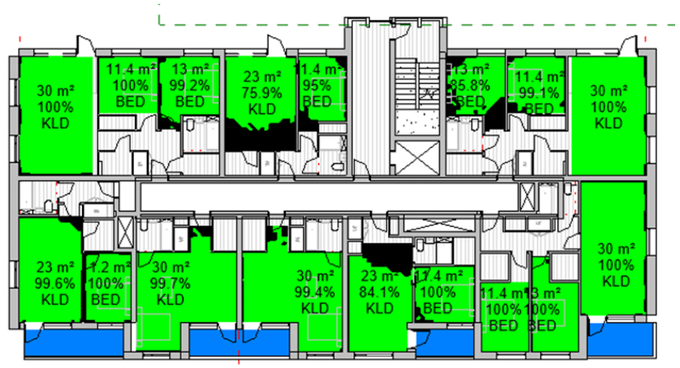
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.



Passed-Failed



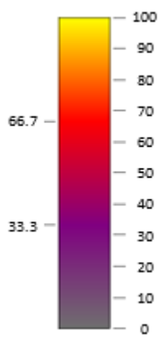


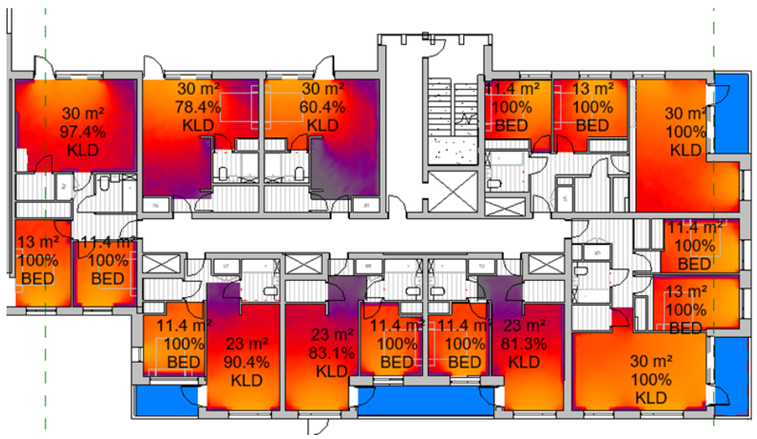
Block A5

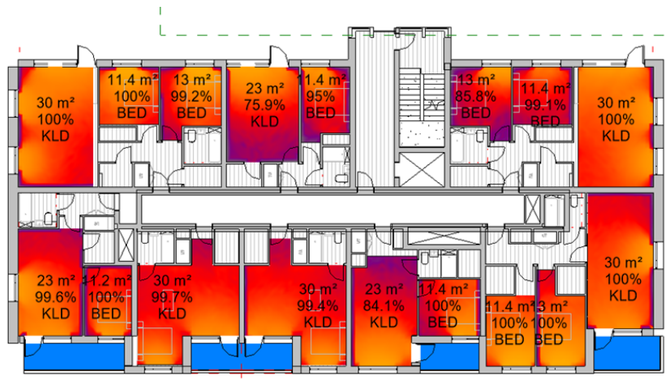
SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A6

SDA Range







Block A5	Pass	Fail	Total
Ground Floor	11	1	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**113**	**1**	**114**
	99%	**1%**	

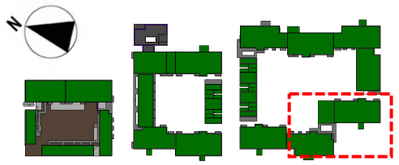
Block A6	Pass	Fail	Total
Ground Floor	7	2	9
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**75**	**2**	**77**
	97%	**3%**	

Block A5 & A6 - Third Floor

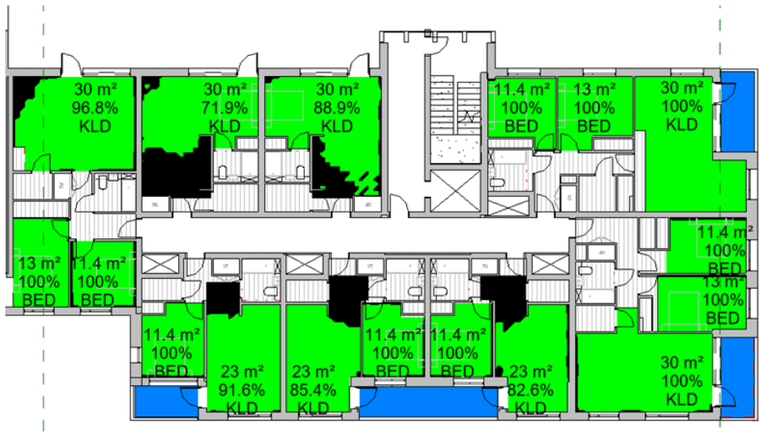
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

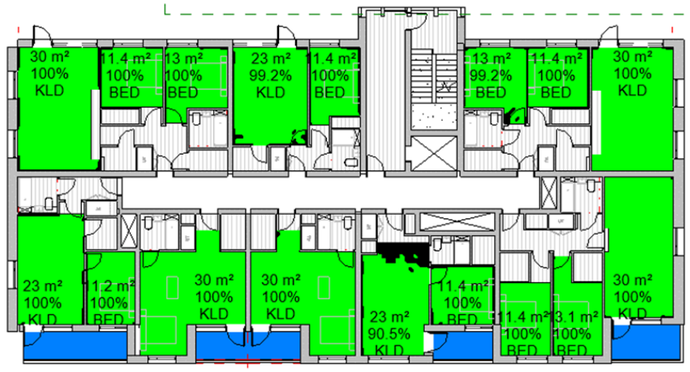
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.



Passed-Failed

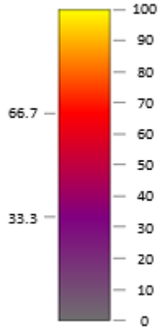


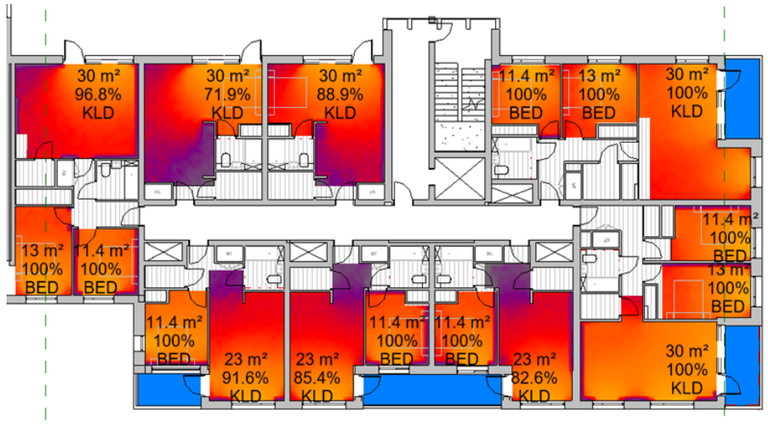


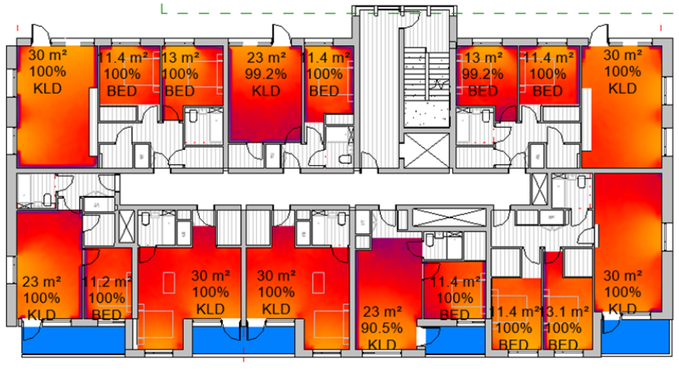
Block A5

Block A6

SDA Range







SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A5	Pass	Fail	Total
Ground Floor	11	1	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**113**	**1**	**114**
	99%	**1%**	

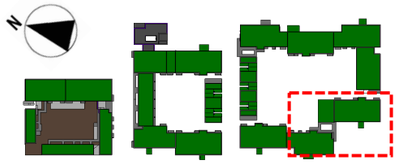
Block A6	Pass	Fail	Total
Ground Floor	7	2	9
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**75**	**2**	**77**
	97%	**3%**	

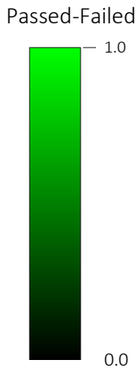
Block A5 & A6 - Fourth Floor

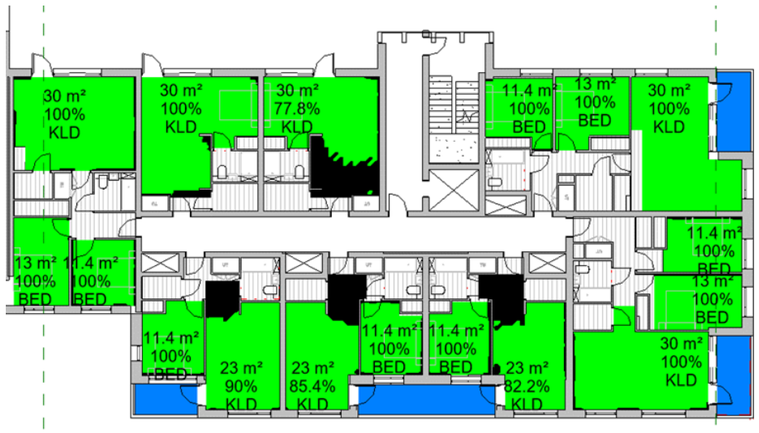
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

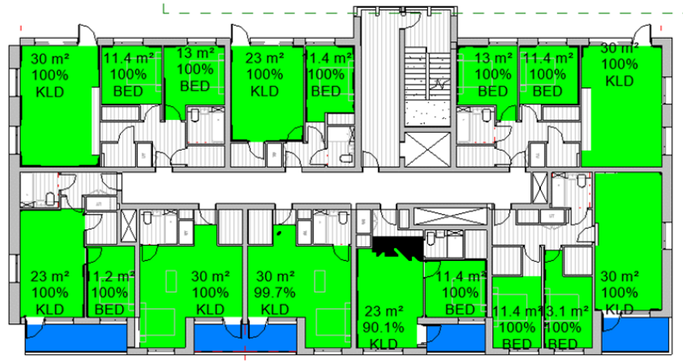
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.







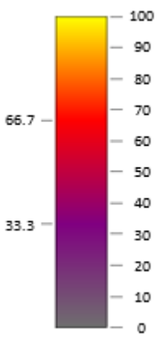


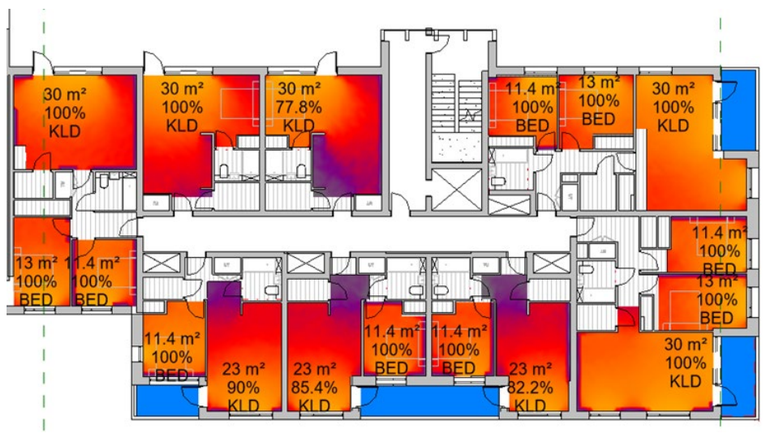
Block A5

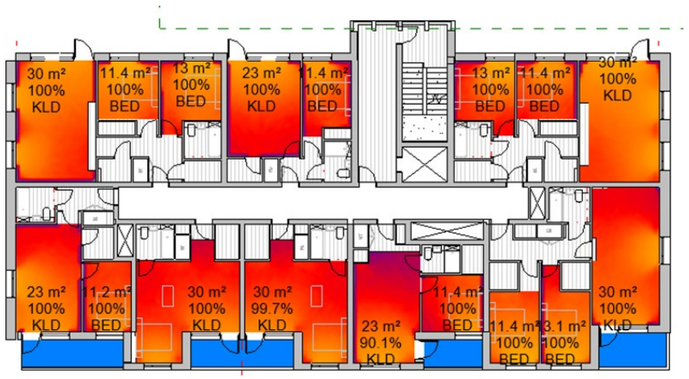
SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A5	Pass	Fail	Total
Ground Floor	11	1	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**113**	**1**	**114**
	99%	**1%**	

Block A6







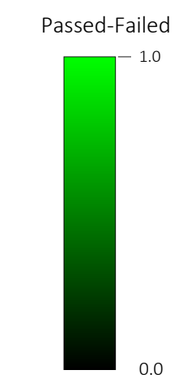
Block A6	Pass	Fail	Total
Ground Floor	7	2	9
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**75**	**2**	**77**
	97%	**3%**	

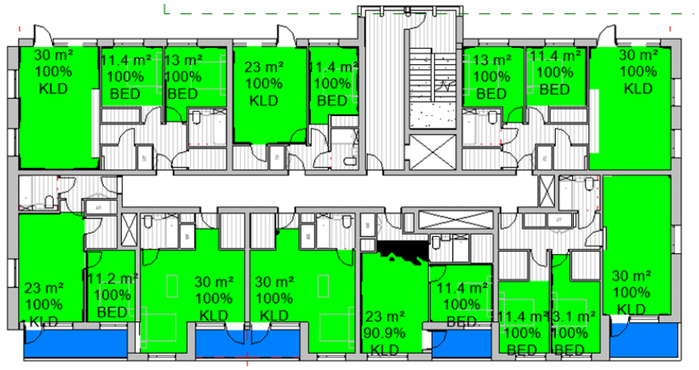
Block A5 - Fifth Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

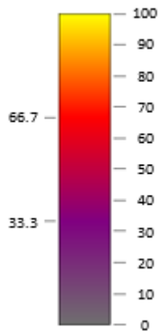
All units assessed were determined to be compliant with SDA.

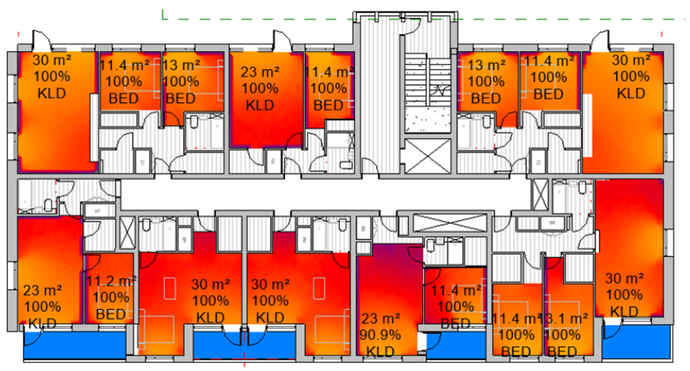




SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A5





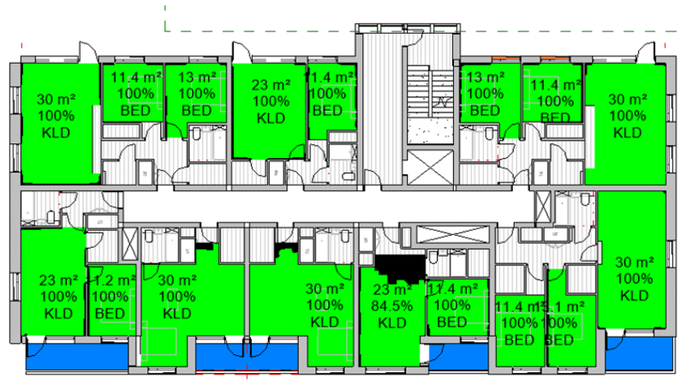
Block A5	Pass	Fail	Total
Ground Floor	11	1	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**113**	**1**	**114**
	99%	**1%**	

Block A5 - Sixth Floor

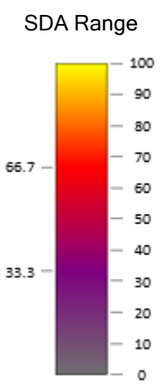
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

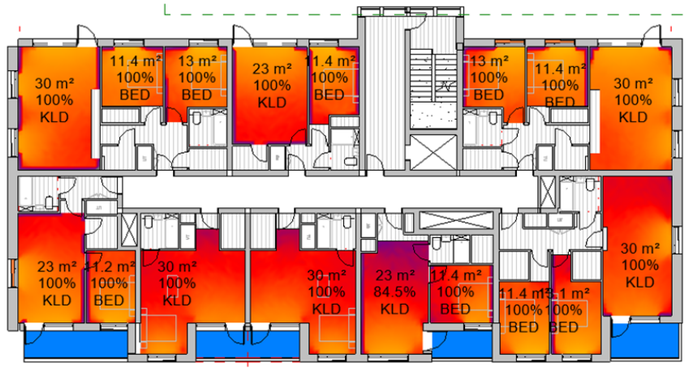
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.



Block A5

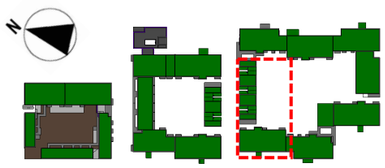




SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A5	Pass	Fail	Total
Ground Floor	11	1	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**113**	**1**	**114**
	99%	**1%**	

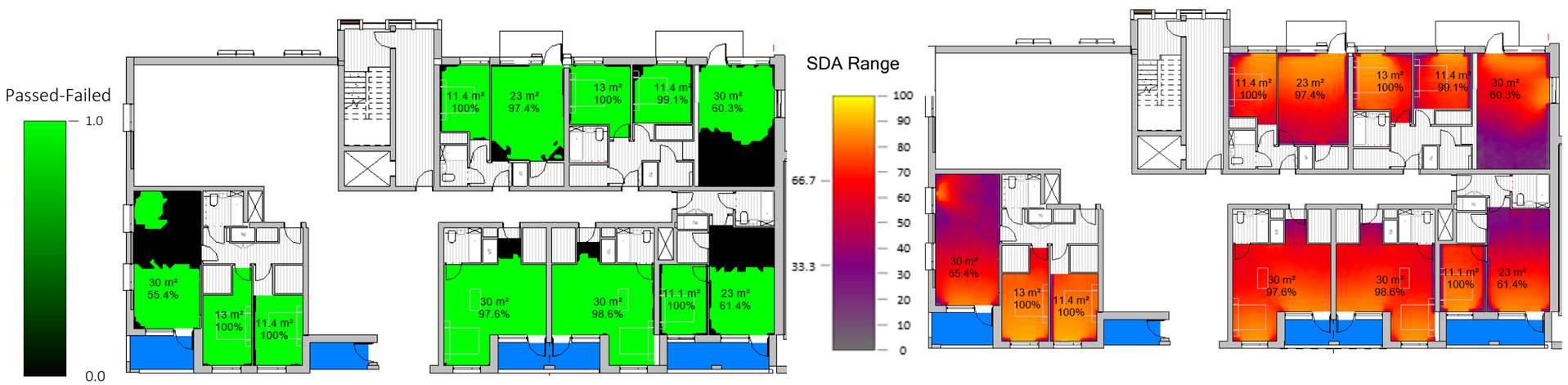
Block A7 – Ground and First Floor



Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

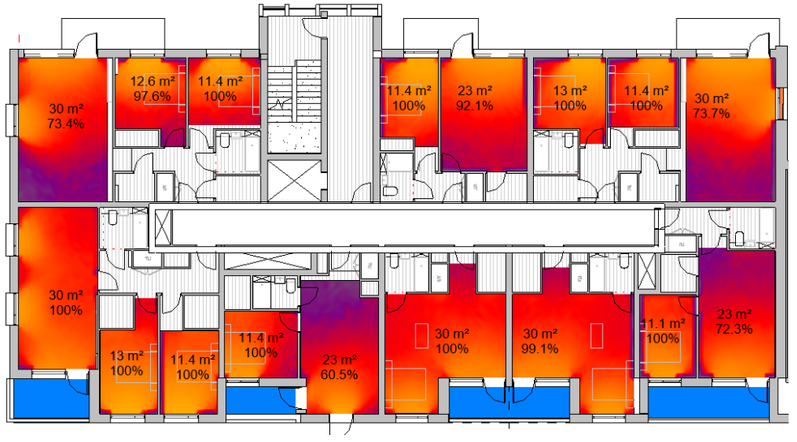
All units assessed were determined to be compliant with SDA.



Block A7 Ground Floor

Block A7 First Floor

Block A7 Ground Floor

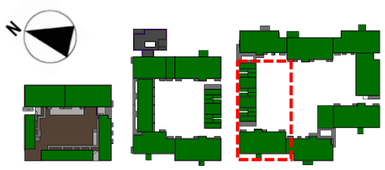


Block A7 First Floor

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A7	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

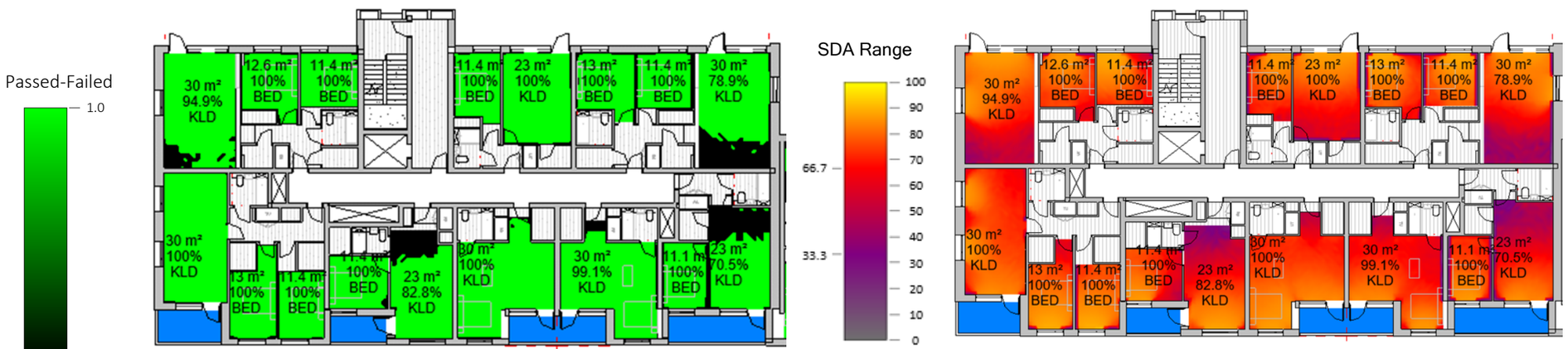
Block A7 – Second and Third Floor



Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

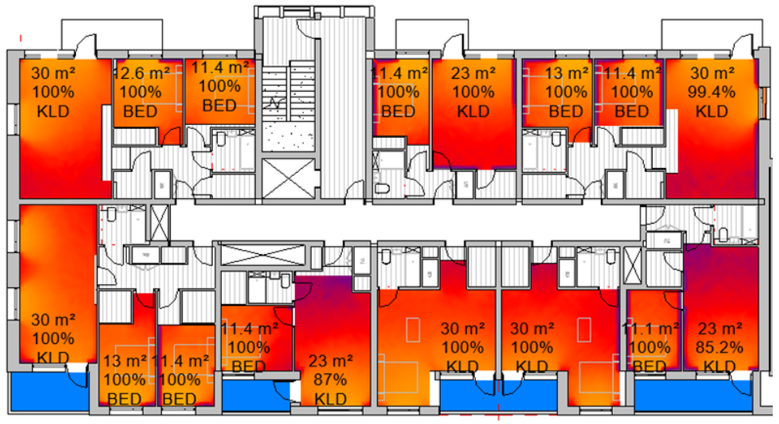
All units assessed were determined to be compliant with SDA.



Block A7 Second Floor

Block A7 Third Floor

Block A7 Second Floor

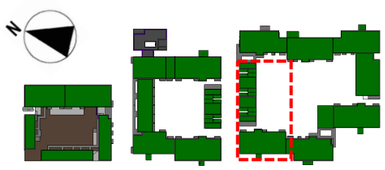


Block A7 Third Floor

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A7	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

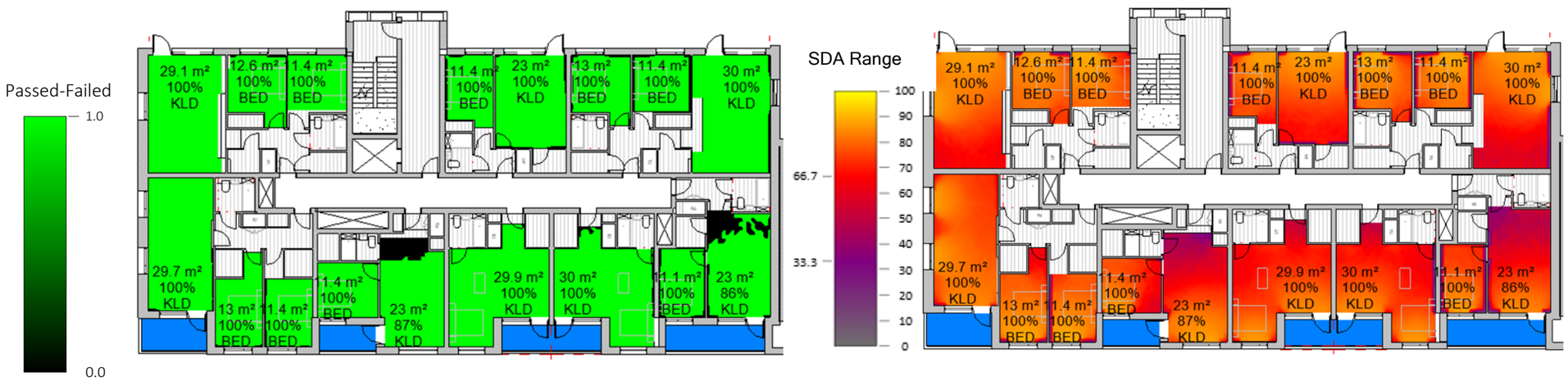
Block A7 – Fourth and Fifth Floor



Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

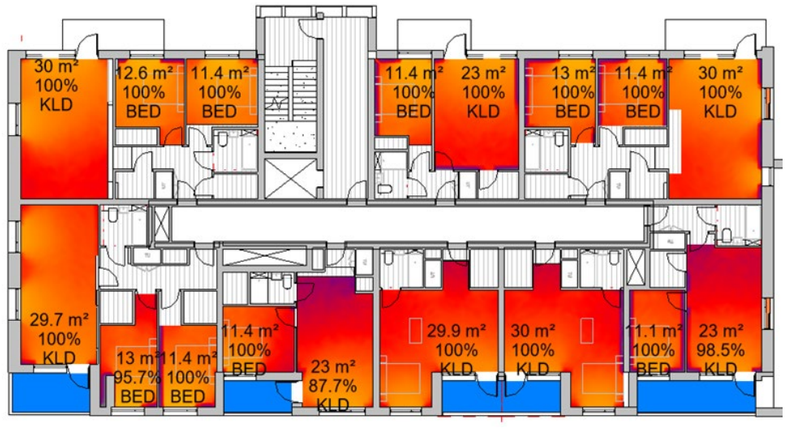
All units assessed were determined to be compliant with SDA.



Block A7 Fourth Floor

Block A7 Fifth Floor

Block A7 Fourth Floor

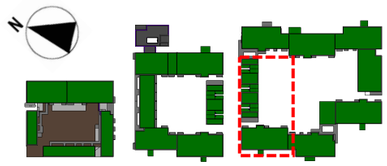


Block A7 Fifth Floor

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A7	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

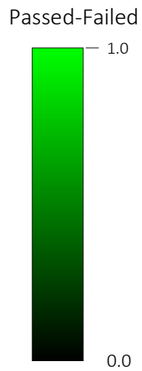
Block A7 –Sixth Floor

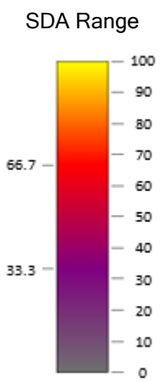


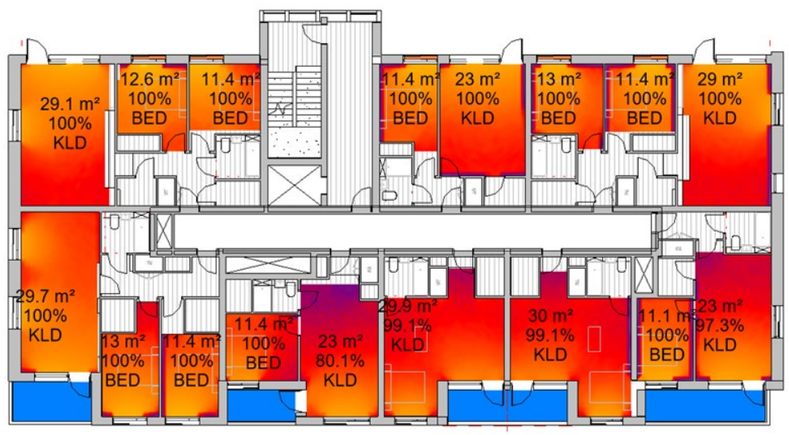
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.







SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

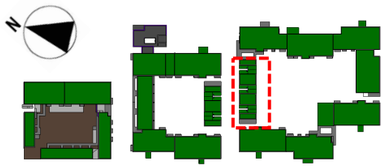
Block A7	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

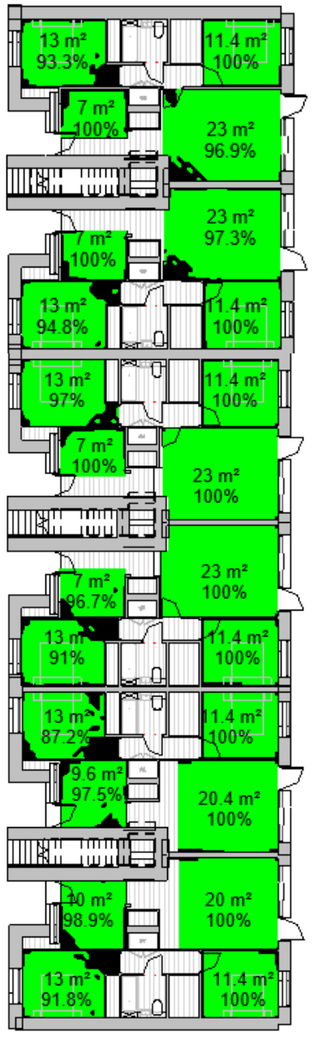
Block A8 – Ground Floor

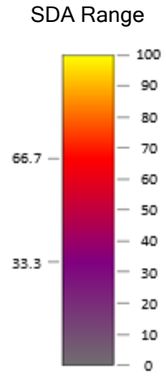
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

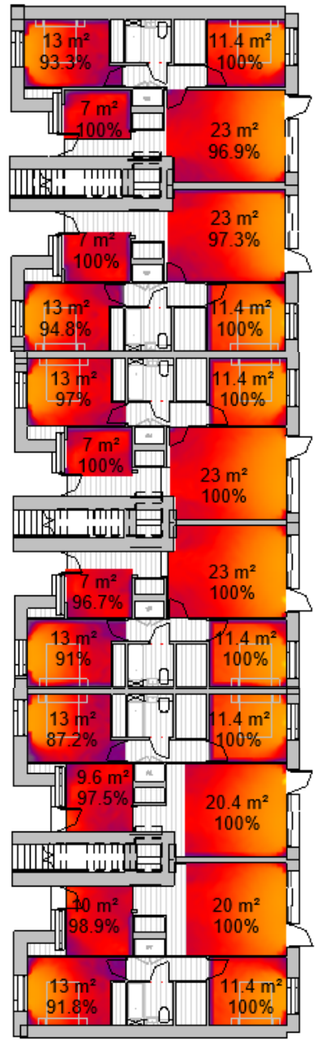
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.





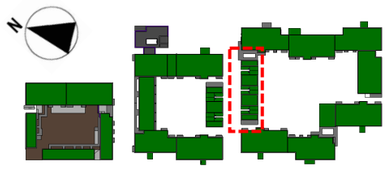




SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A8	Pass	Fail	Total
Ground Floor	24	0	24
First Floor	18	0	18
Second Floor	12	0	12
Total	**54**	**0**	**54**
	100%	**0%**	

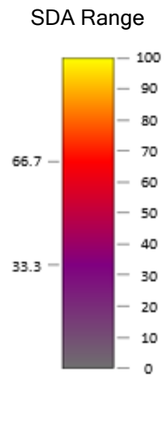
Block A8 – First Floor

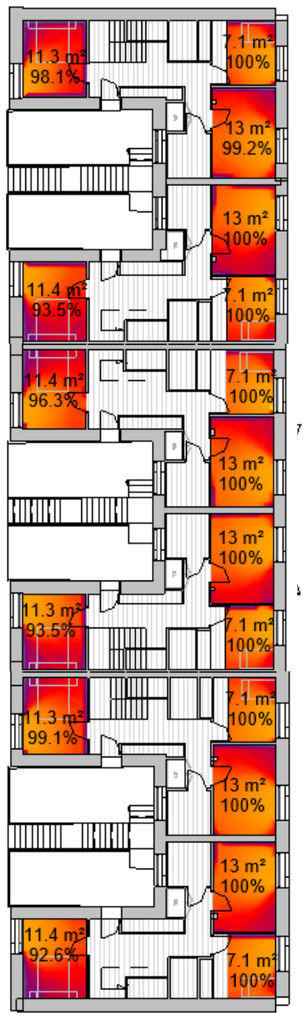


Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.

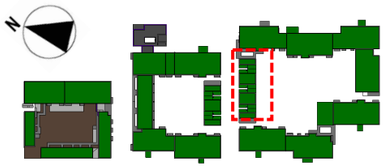




SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block A8	Pass	Fail	Total
Ground Floor	24	0	24
First Floor	18	0	18
Second Floor	12	0	12
Total	**54**	**0**	**54**
	100%	**0%**	

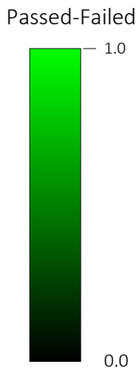
Block A8 – Second Floor

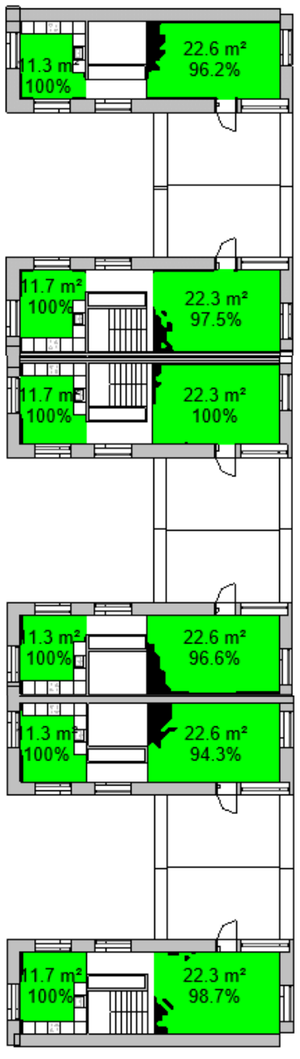


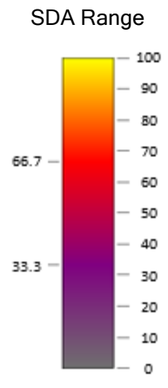
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

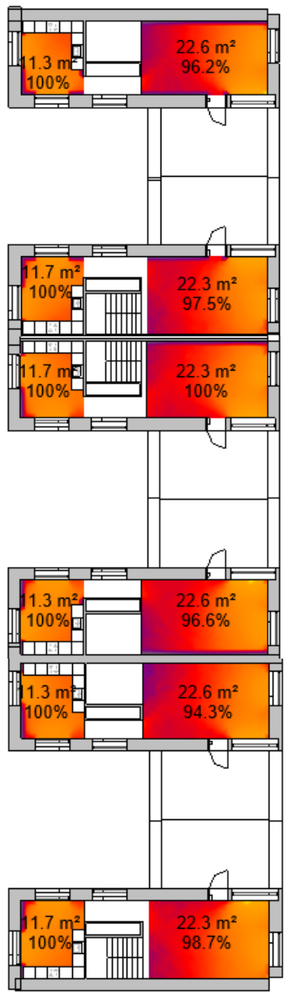
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.









SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

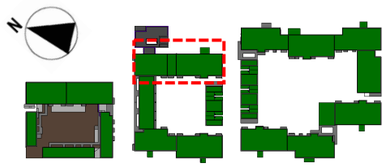
Block A8	Pass	Fail	Total
Ground Floor	24	0	24
First Floor	18	0	18
Second Floor	12	0	12
Total	**54**	**0**	**54**
	100%	**0%**	

Block B1 & B2 - Ground Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

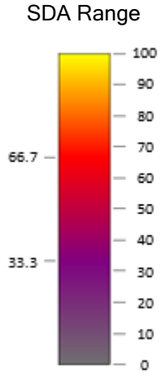
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

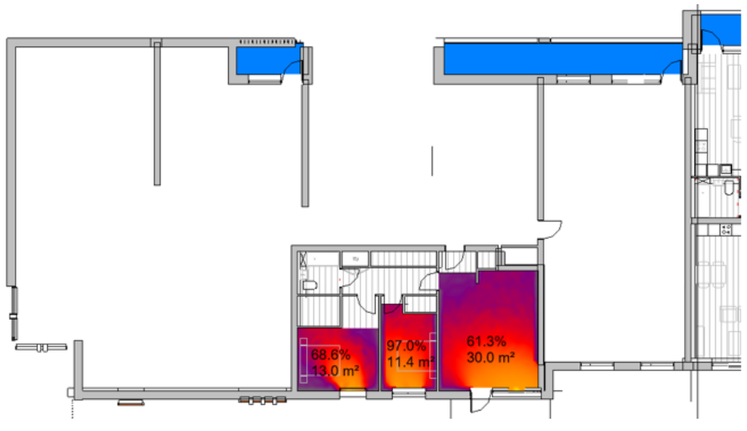
All units assessed were determined to be compliant with SDA.



SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

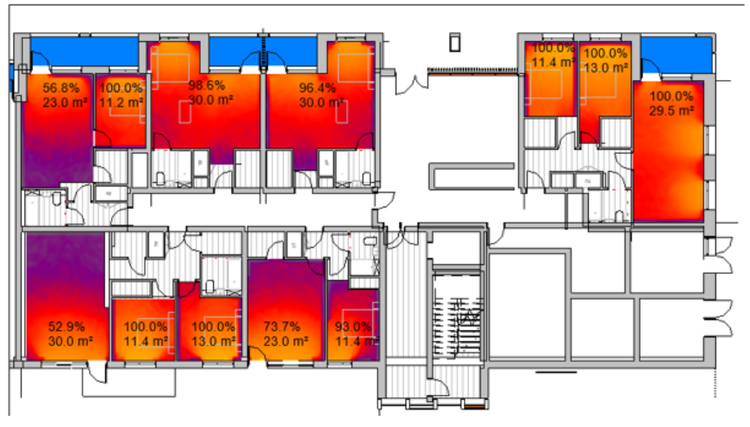
Block B1





Block B1	Pass	Fail	Total
Ground Floor	3	0	3
First Floor	12	1	13
Second Floor	15	0	15
Third Floor	15	0	15
Fourth Floor	15	0	15
Total	**60**	**1**	**61**
	98%	**2%**	

Block B2



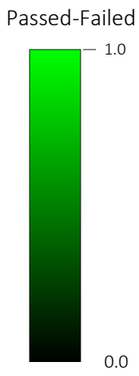
Block B2	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

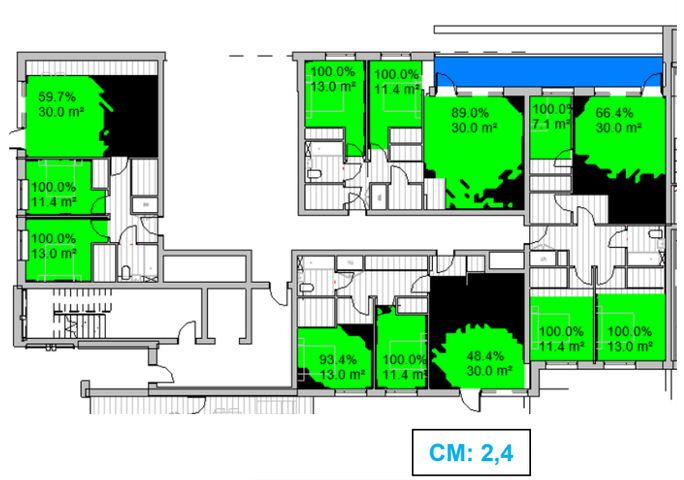
Block B1 & B2 - First Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA with the exception of 1 in Block B1.



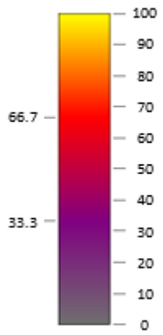


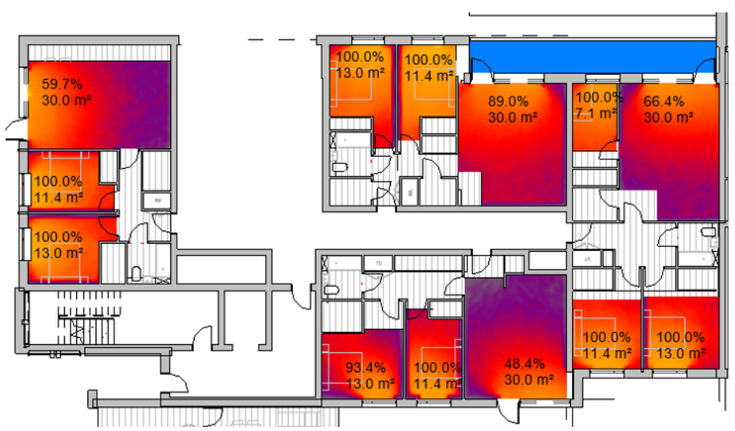
CM: 2,4

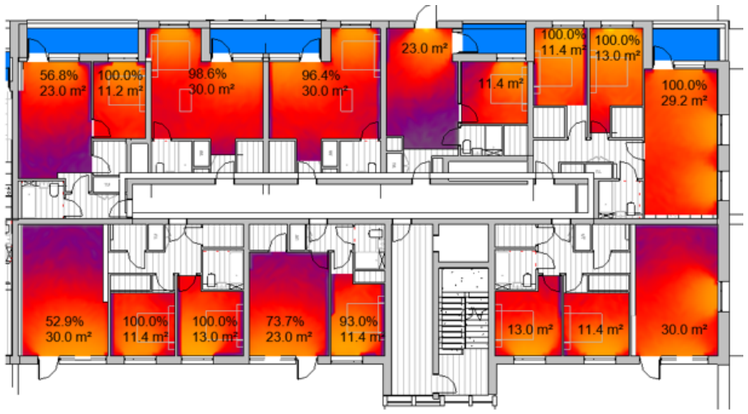
Block B1

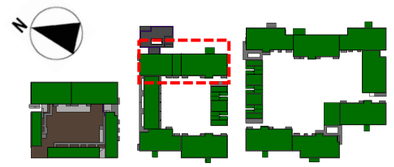
Block B2

SDA Range









Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B1	Pass	Fail	Total
Ground Floor	3	0	3
First Floor	12	1	13
Second Floor	15	0	15
Third Floor	15	0	15
Fourth Floor	15	0	15
Total	**60**	**1**	**61**
	98%	**2%**	

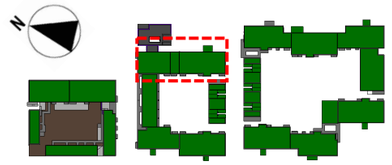
Block B2	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

Block B1 & B2 - Second Floor

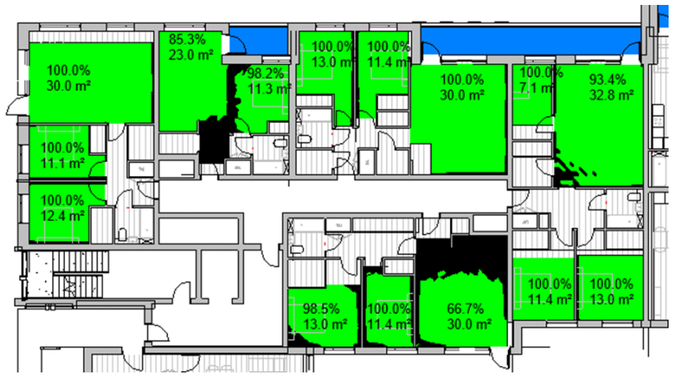
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.



Passed-Failed



SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

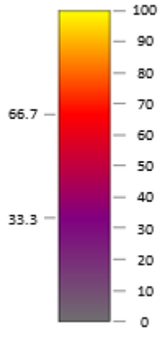
Block B1	Pass	Fail	Total
Ground Floor	3	0	3
First Floor	12	1	13
Second Floor	15	0	15
Third Floor	15	0	15
Fourth Floor	15	0	15
Total	**60**	**1**	**61**
	98%	**2%**	

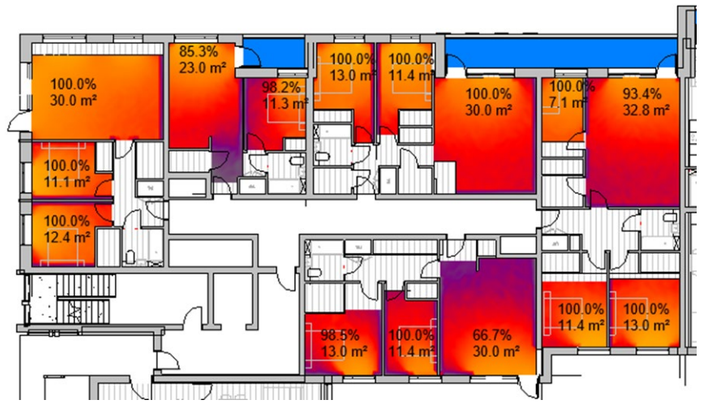
Block B2	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

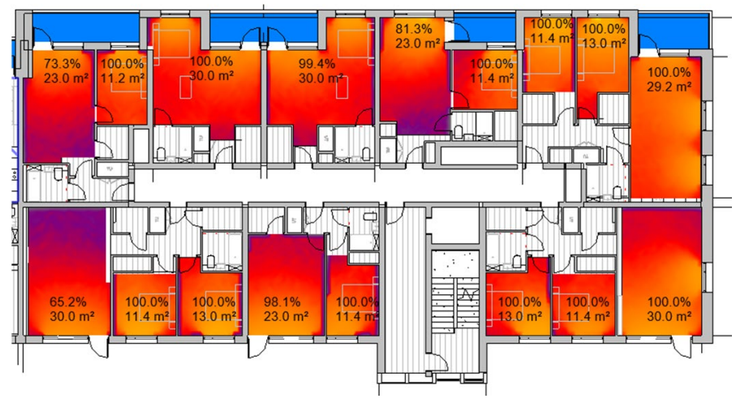
Block B1

Block B2

SDA Range





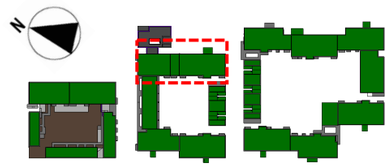


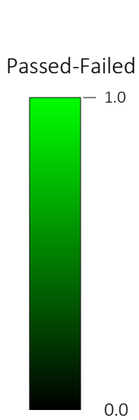
Block B1 & B2 - Third Floor

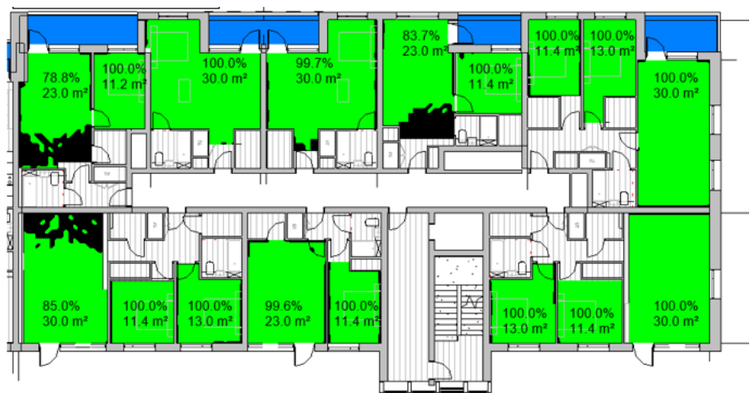
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.



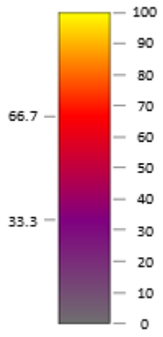


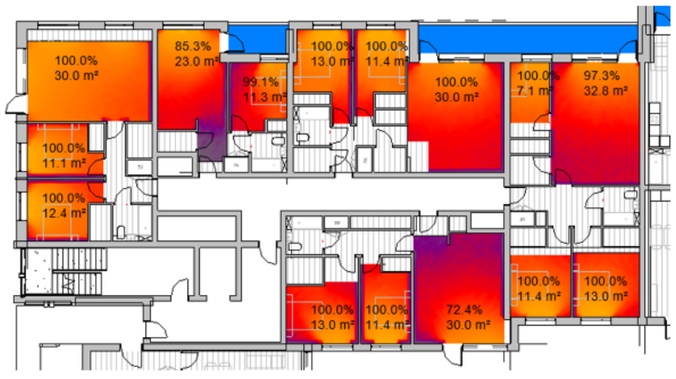


SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B1

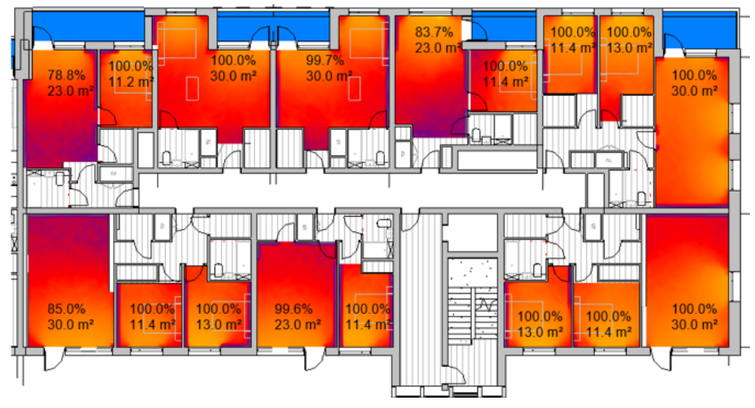
SDA Range





Block B1	Pass	Fail	Total
Ground Floor	3	0	3
First Floor	12	1	13
Second Floor	15	0	15
Third Floor	15	0	15
Fourth Floor	15	0	15
Total	**60**	**1**	**61**
	98%	**2%**	

Block B2



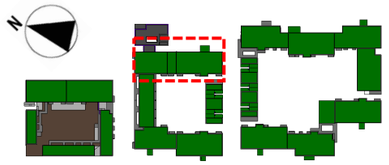
Block B2	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

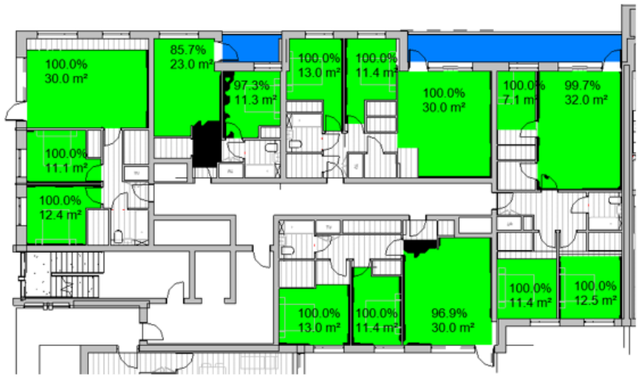
Block B1 & B2 - Fourth Floor

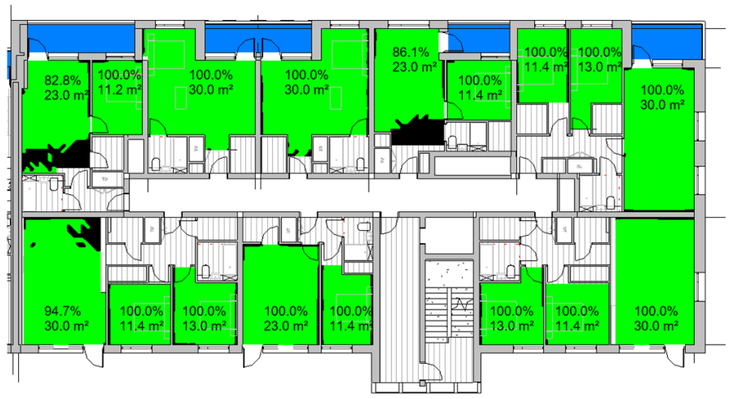
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.







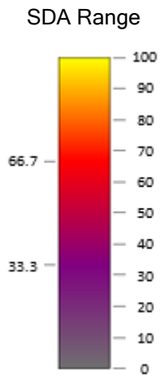
SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

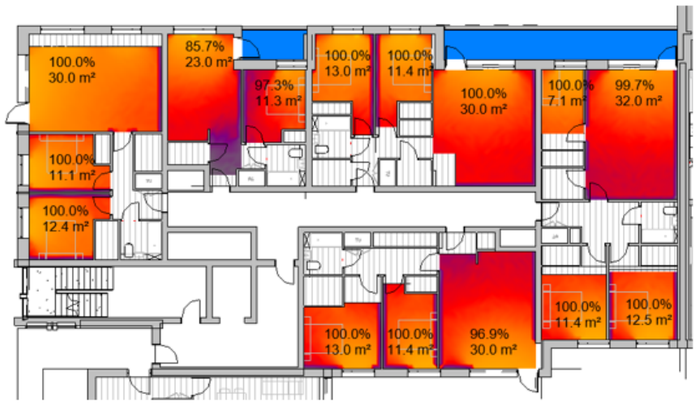
Block B1	Pass	Fail	Total
Ground Floor	3	0	3
First Floor	12	1	13
Second Floor	15	0	15
Third Floor	15	0	15
Fourth Floor	15	0	15
Total	60	1	61
	98%	2%	

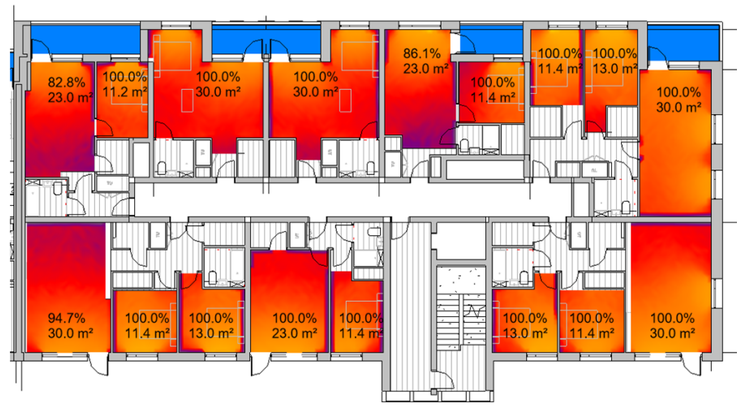
Block B2	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	114	0	114
	100%	0%	

Block B1

Block B2





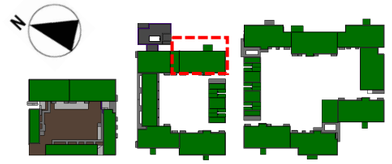


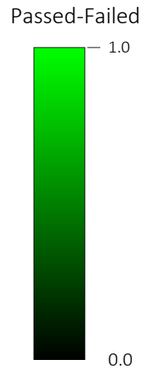
Block B2 - Fifth Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.

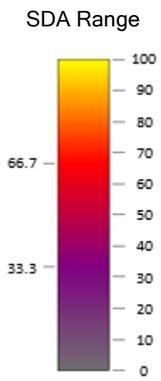


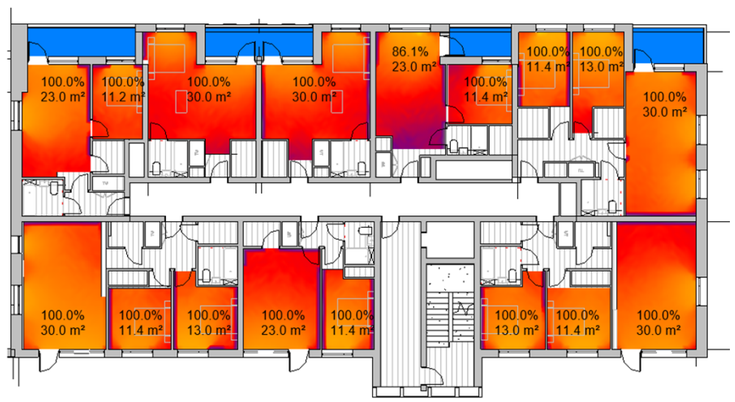


SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B2	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

Block B2



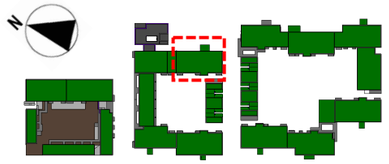


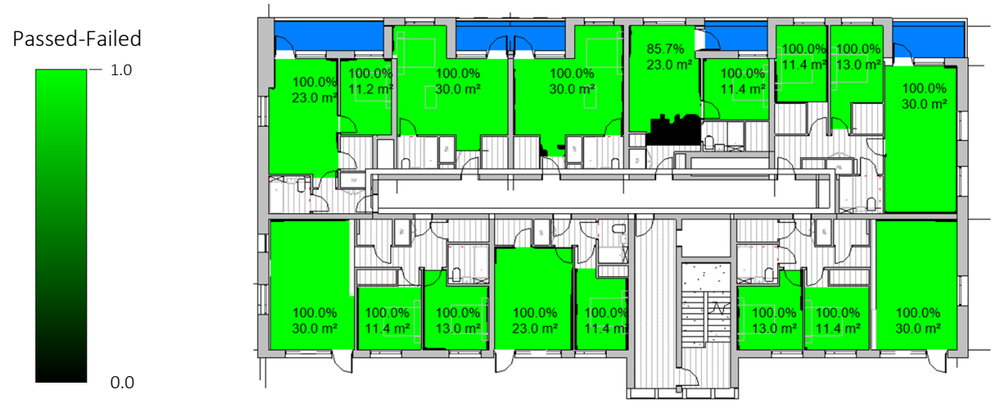
Block B2 - Sixth Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.

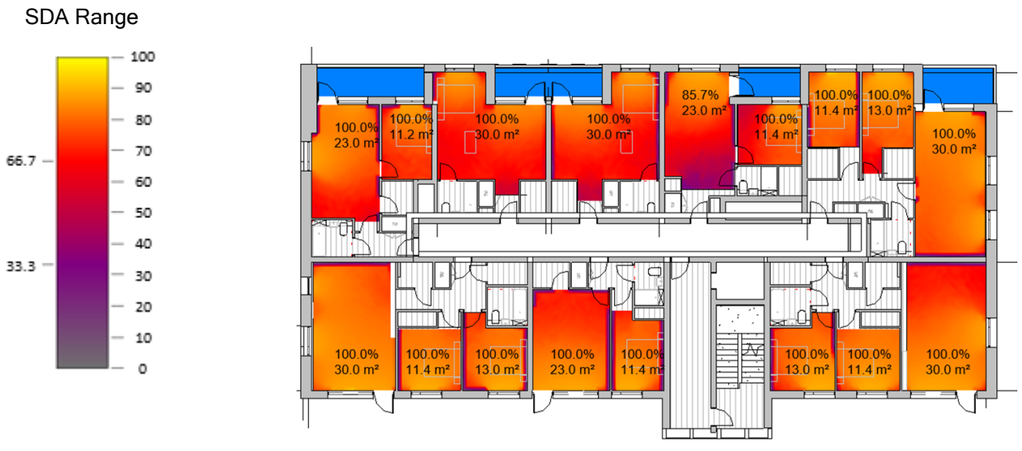




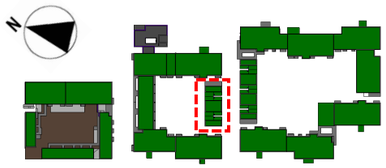
SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B2	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**114**	**0**	**114**
	100%	**0%**	

Block B2



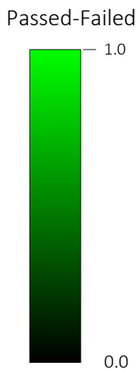
Block B3 – Ground Floor

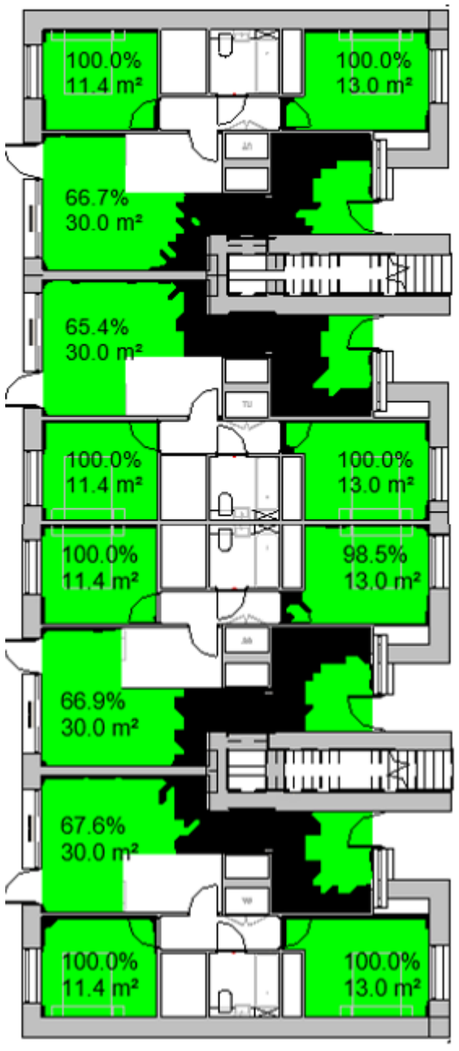


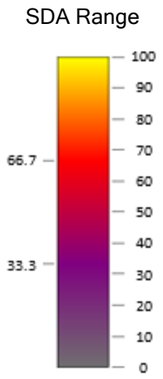
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

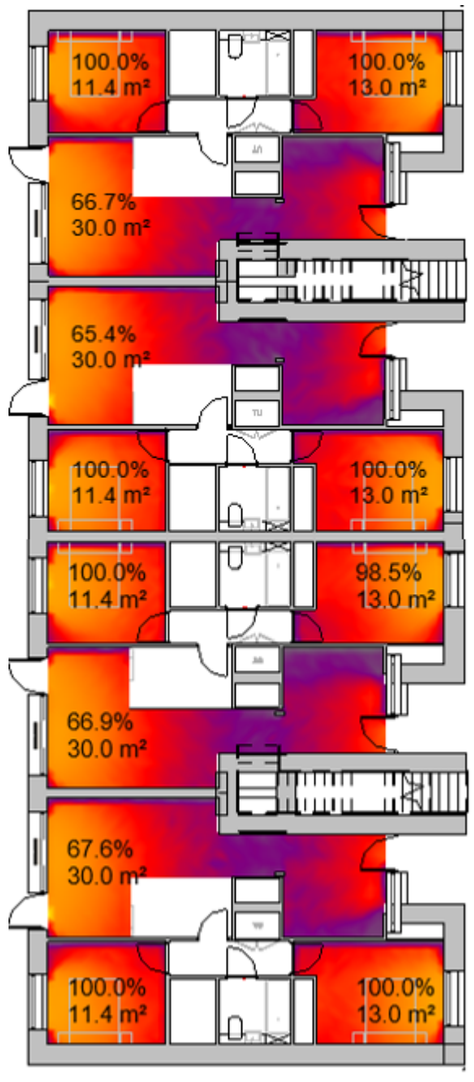
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.





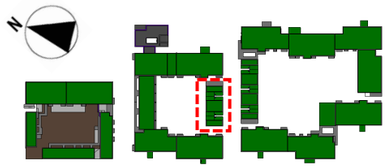




SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B3	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	12	0	12
Second Floor	4	0	4
Total	**28**	**0**	**28**
	100%	**0%**	

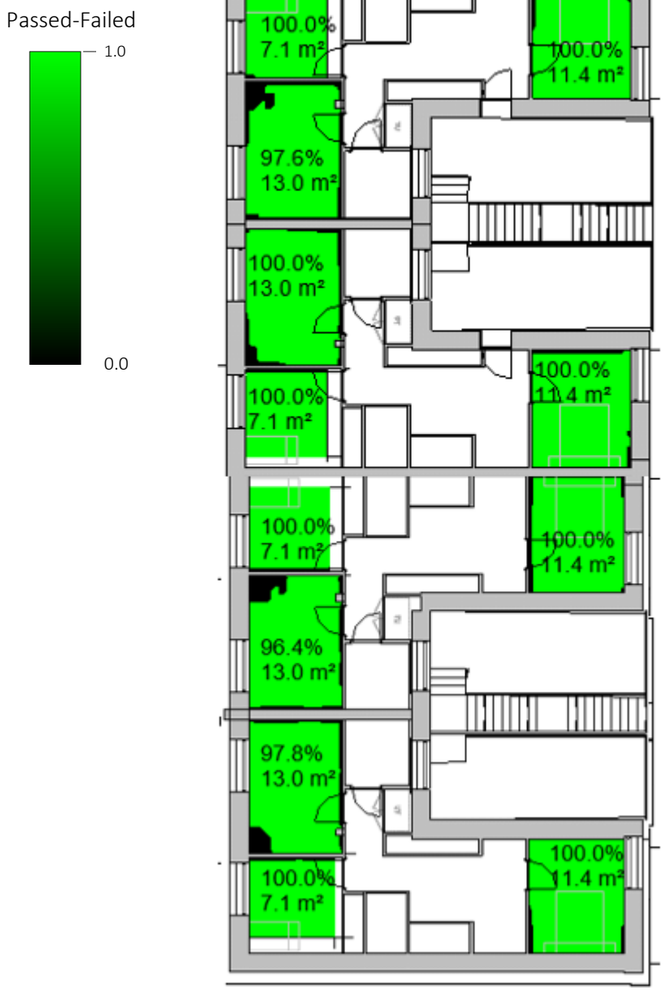
Block B3 – First Floor

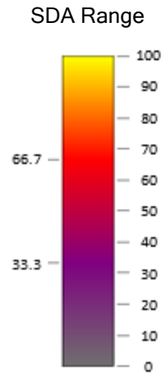


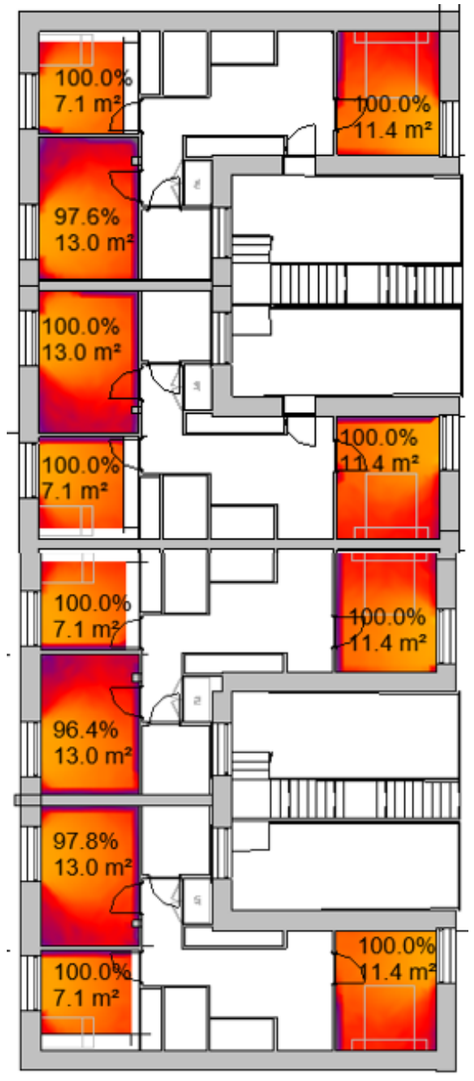
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.



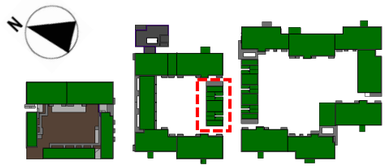




SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B3	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	12	0	12
Second Floor	4	0	4
Total	**28**	**0**	**28**
	100%	**0%**	

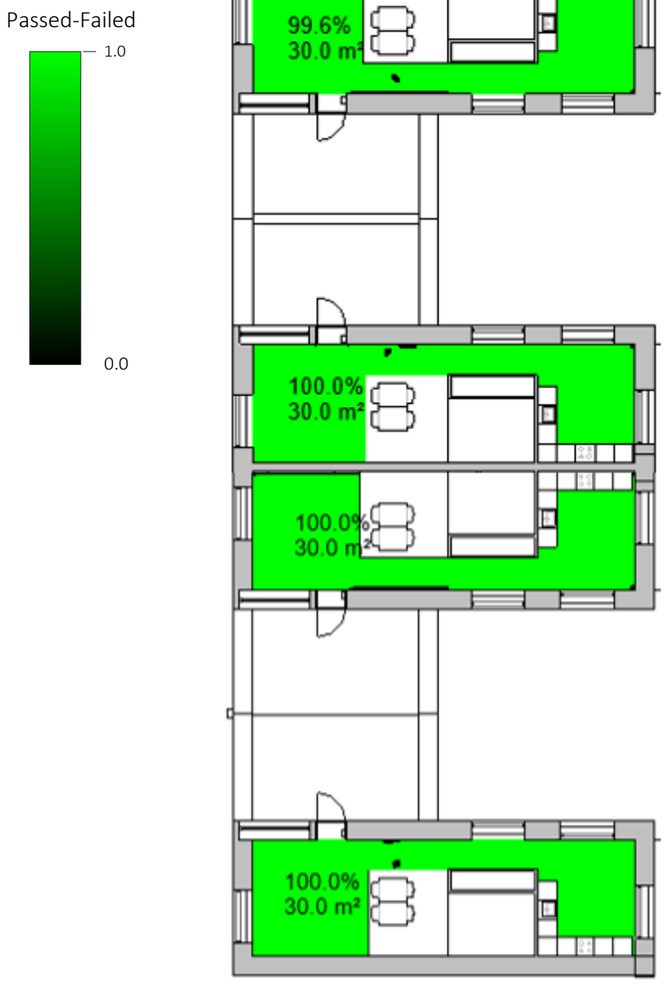
Block B3 – Second Floor

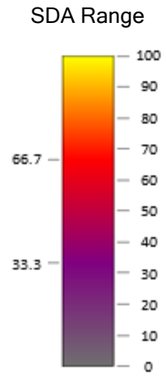


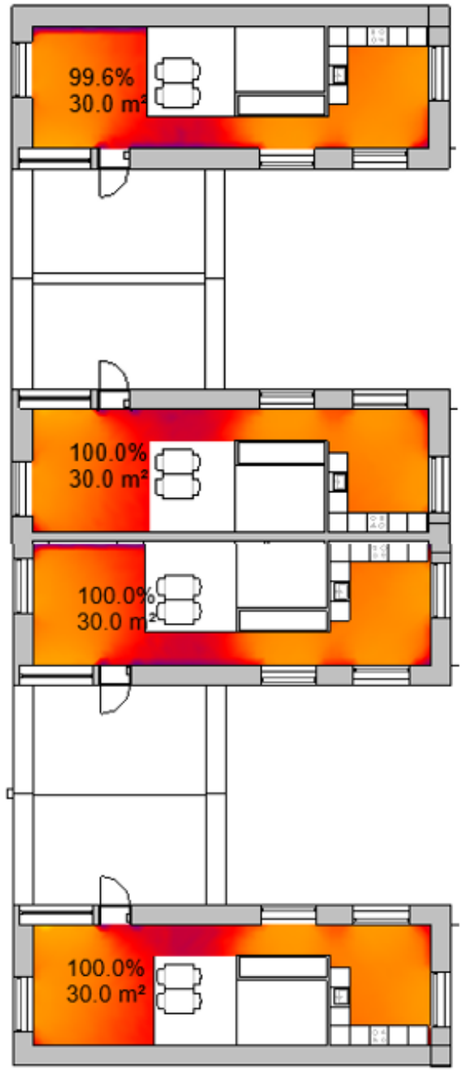
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.







SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

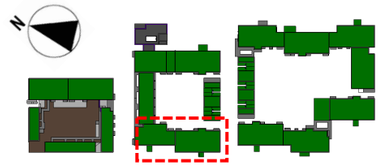
Block B3	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	12	0	12
Second Floor	4	0	4
Total	**28**	**0**	**28**
	100%	**0%**	

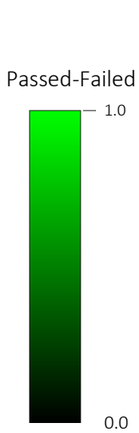
Block B4 & B5 - Ground Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

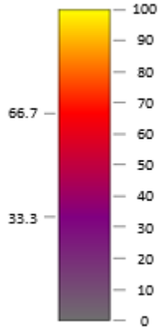
All units assessed were determined to be compliant with SDA.

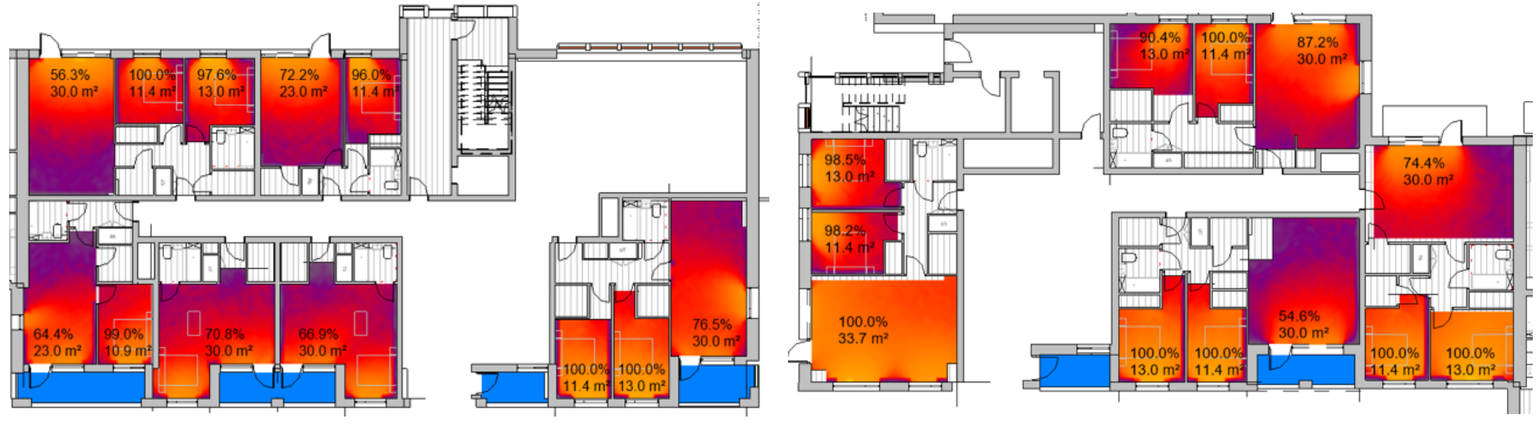




Block B4 **Block B5**

SDA Range





SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B4	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**80**	**0**	**80**
	100%	**0%**	

Block B5	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	14	0	14
Second Floor	14	0	14
Third Floor	14	0	14
Fourth Floor	14	0	14
Fifth Floor	14	0	14
Sixth Floor	14	0	14
Total	**96**	**0**	**96**
	100%	**0%**	

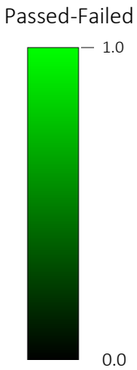
Block B4 & B5 - First Floor

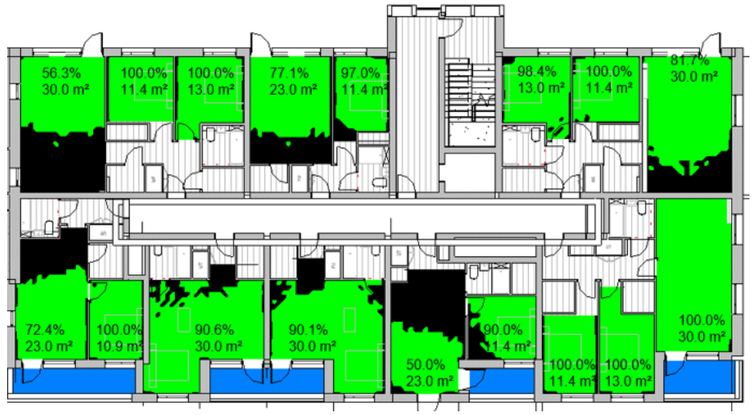
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

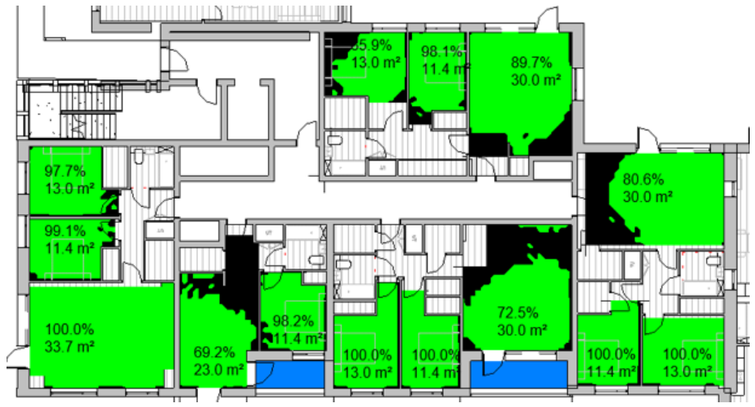
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.

Passed-Failed



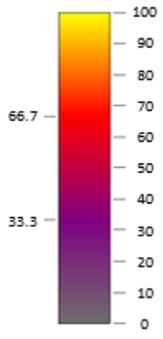


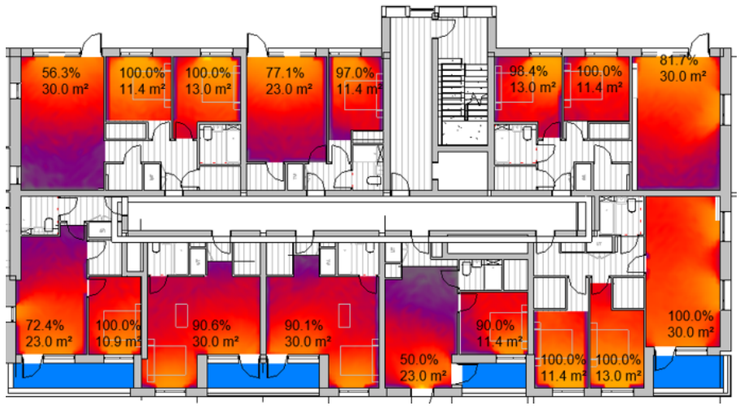


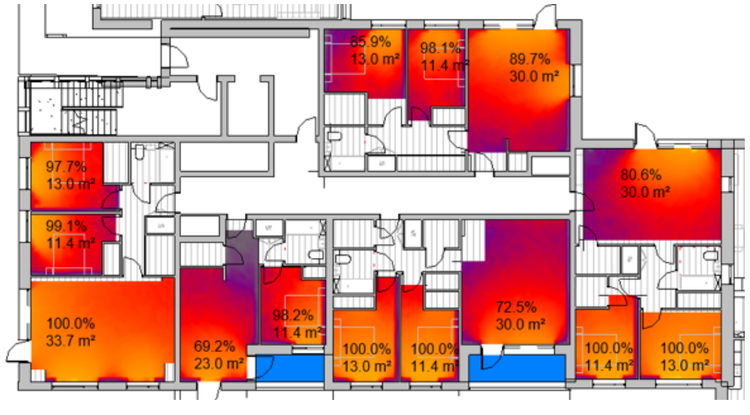
Block B4

Block B5

SDA Range







SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B4	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**80**	**0**	**80**
	100%	**0%**	

Block B5	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	14	0	14
Second Floor	14	0	14
Third Floor	14	0	14
Fourth Floor	14	0	14
Fifth Floor	14	0	14
Sixth Floor	14	0	14
Total	**96**	**0**	**96**
	100%	**0%**	

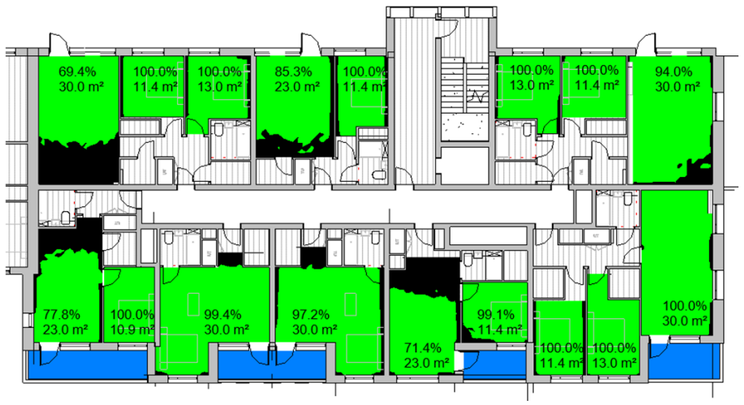
Block B4 & B5 - Second Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.

Passed-Failed



SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

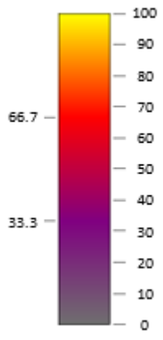
Block B4	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**80**	**0**	**80**
	100%	**0%**	

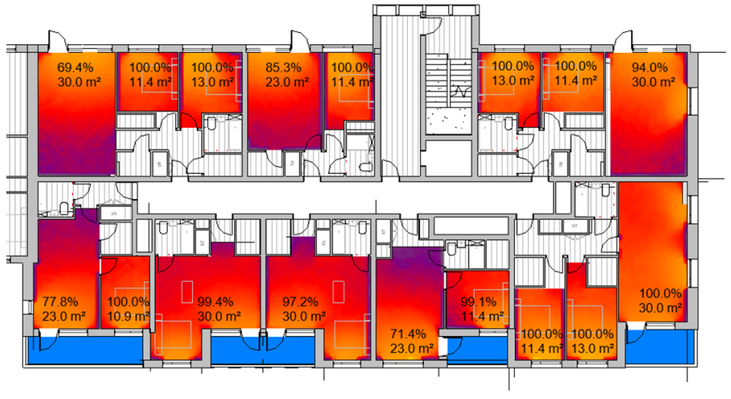
Block B5	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	14	0	14
Second Floor	14	0	14
Third Floor	14	0	14
Fourth Floor	14	0	14
Fifth Floor	14	0	14
Sixth Floor	14	0	14
Total	**96**	**0**	**96**
	100%	**0%**	

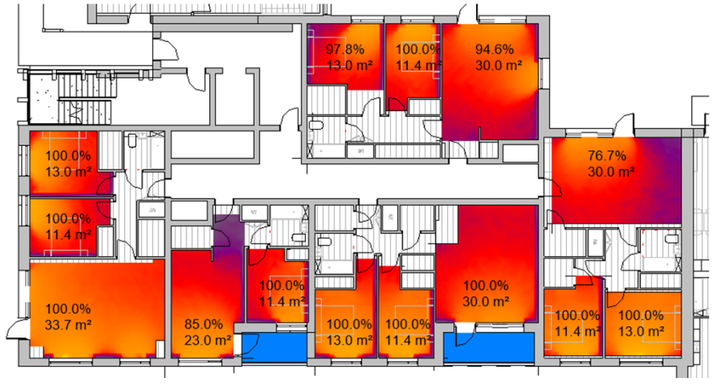
Block B4

Block B5

SDA Range







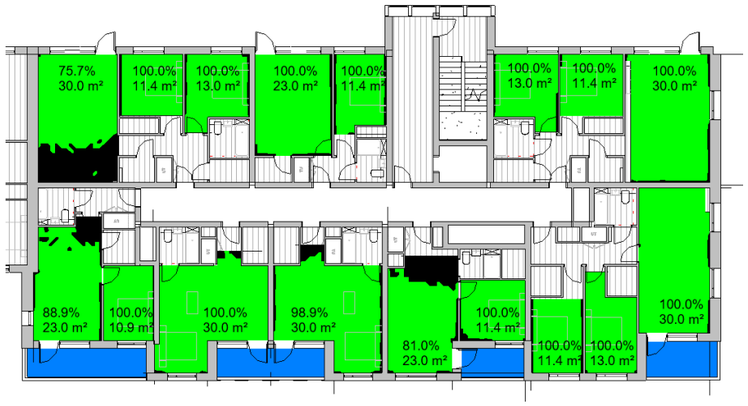
Block B4 & B5 - Third Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.

Passed-Failed



SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

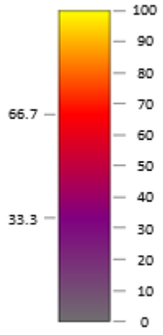
Block B4	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**80**	**0**	**80**
	100%	**0%**	

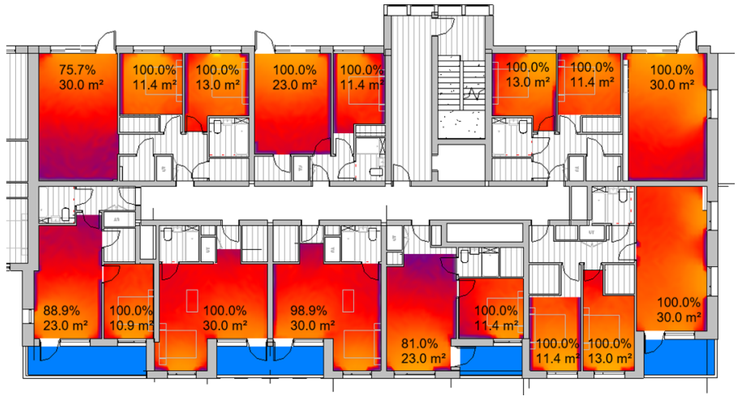
Block B5	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	14	0	14
Second Floor	14	0	14
Third Floor	14	0	14
Fourth Floor	14	0	14
Fifth Floor	14	0	14
Sixth Floor	14	0	14
Total	**96**	**0**	**96**
	100%	**0%**	

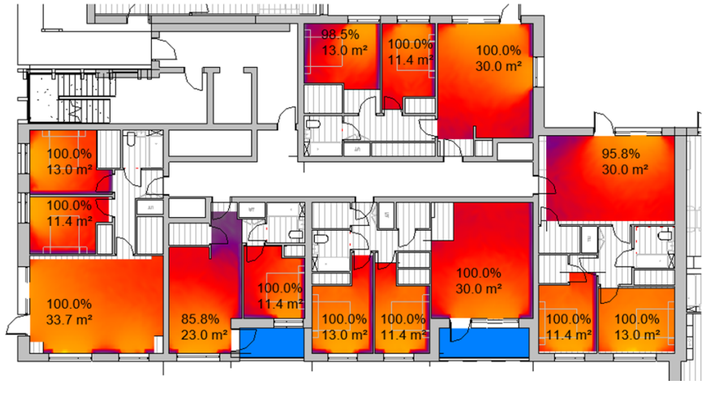
Block B4

Block B5

SDA Range







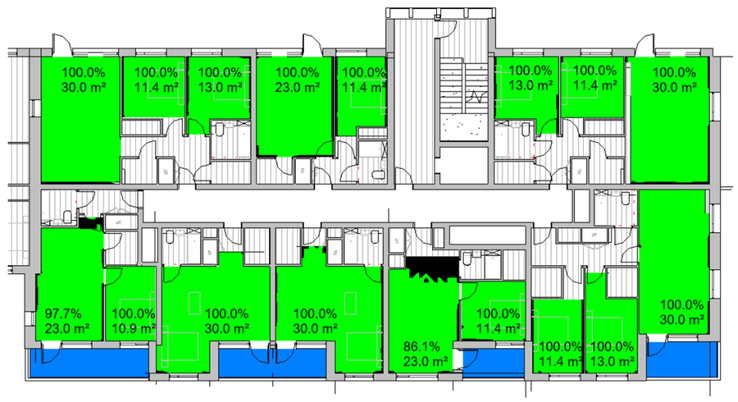
Block B4 & B5 - Fourth Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.

Passed-Failed

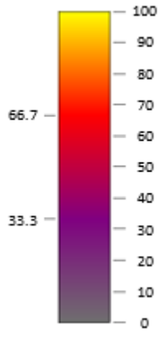


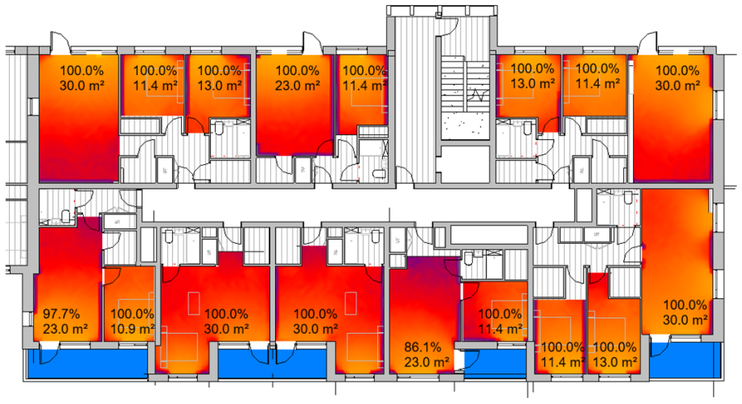
SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

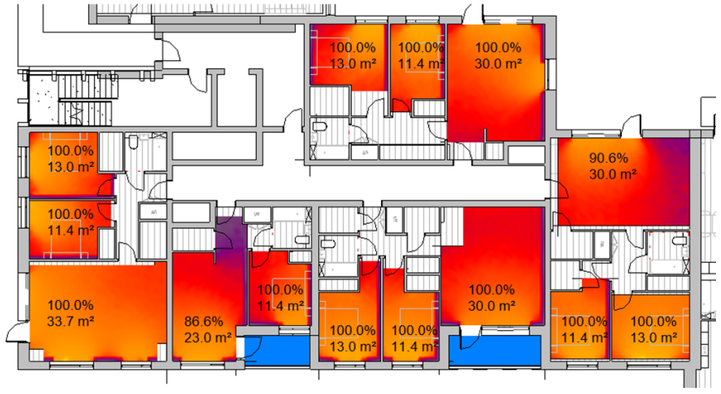
Block B4

Block B5

SDA Range







Block B4	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	17	0	17
Second Floor	17	0	17
Third Floor	17	0	17
Fourth Floor	17	0	17
Total	**80**	**0**	**80**
	100%	**0%**	

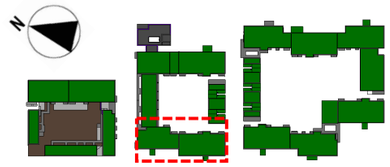
Block B5	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	14	0	14
Second Floor	14	0	14
Third Floor	14	0	14
Fourth Floor	14	0	14
Fifth Floor	14	0	14
Sixth Floor	14	0	14
Total	**96**	**0**	**96**
	100%	**0%**	

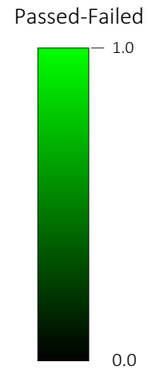
Block B5 - Fifth Floor

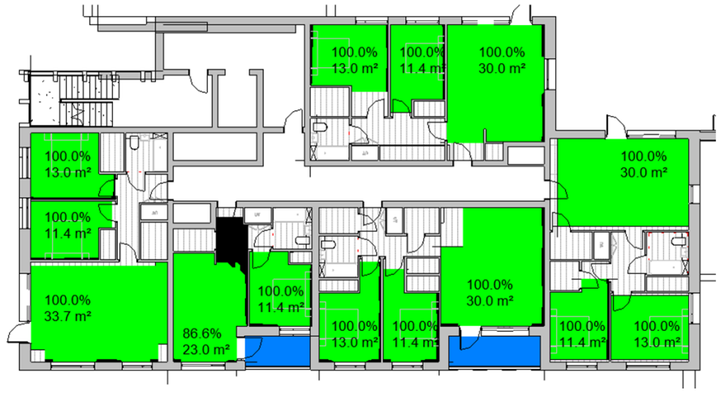
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.

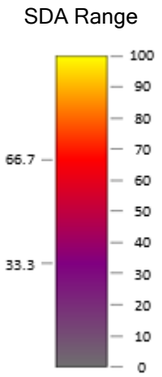


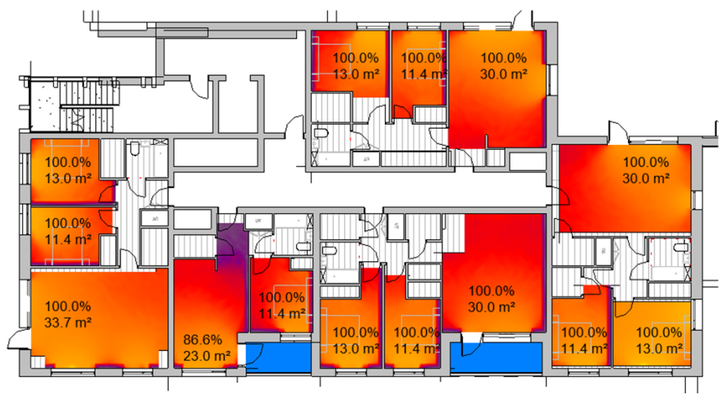




SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B5





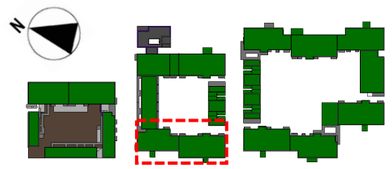
Block B5	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	14	0	14
Second Floor	14	0	14
Third Floor	14	0	14
Fourth Floor	14	0	14
Fifth Floor	14	0	14
Sixth Floor	14	0	14
Total	**96**	**0**	**96**
	100%	**0%**	

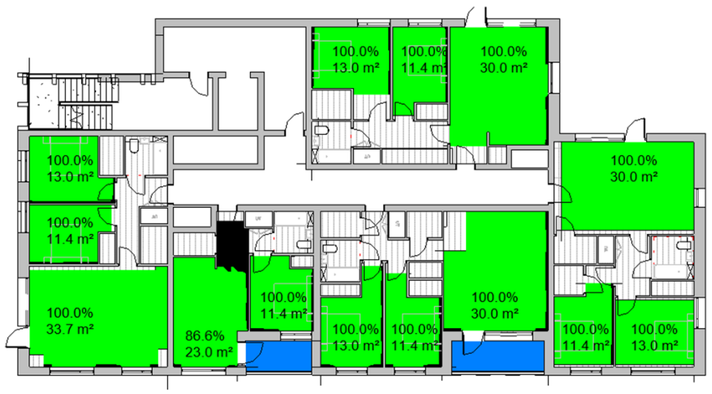
Block B5 - Sixth Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

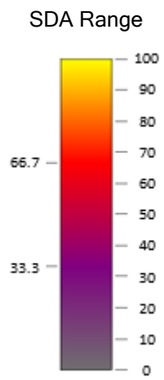
All units assessed were determined to be compliant with SDA.

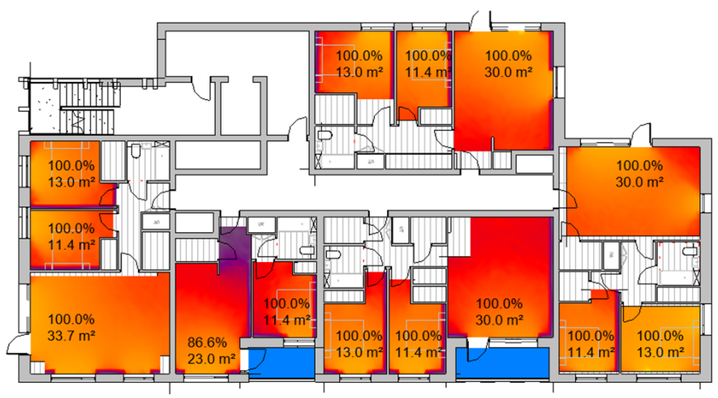




SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

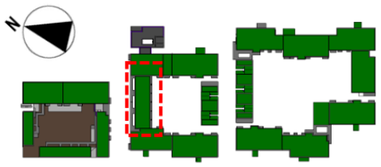
Block B5





Block B5	Pass	Fail	Total
Ground Floor	12	0	12
First Floor	14	0	14
Second Floor	14	0	14
Third Floor	14	0	14
Fourth Floor	14	0	14
Fifth Floor	14	0	14
Sixth Floor	14	0	14
Total	**96**	**0**	**96**
	100%	**0%**	

Block B6 - Ground Floor

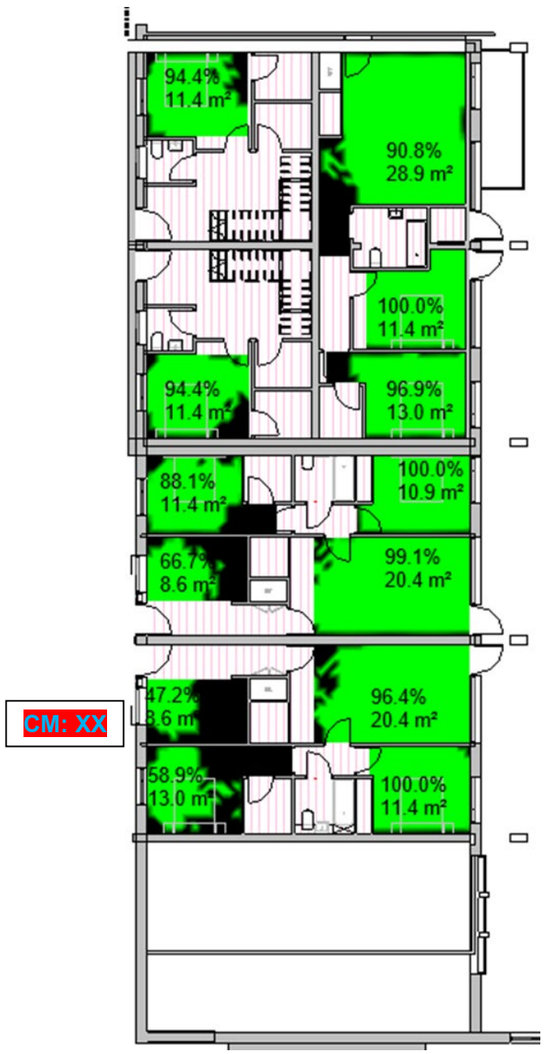


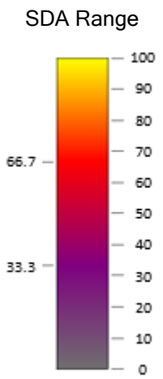
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

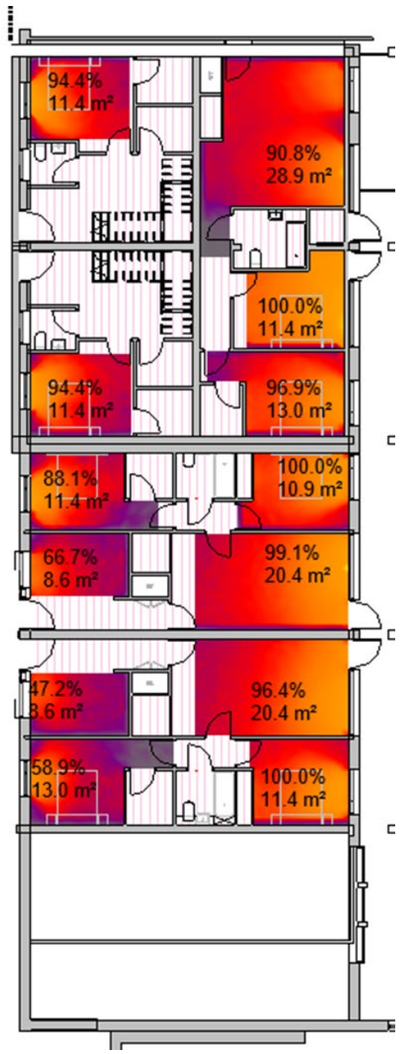
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

One unit assessed was determined not to be compliant with SDA.

Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect







SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

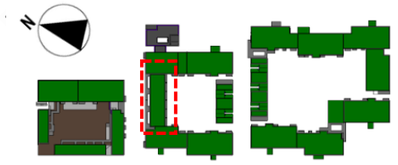
Block B6	Pass	Fail	Total
Ground Floor	12	1	13
First Floor	18	0	18
Second Floor	24	0	24
Third Floor	24	0	24
Fourth Floor	24	0	24
Total	**102**	**1**	**103**
	99%	**1%**	

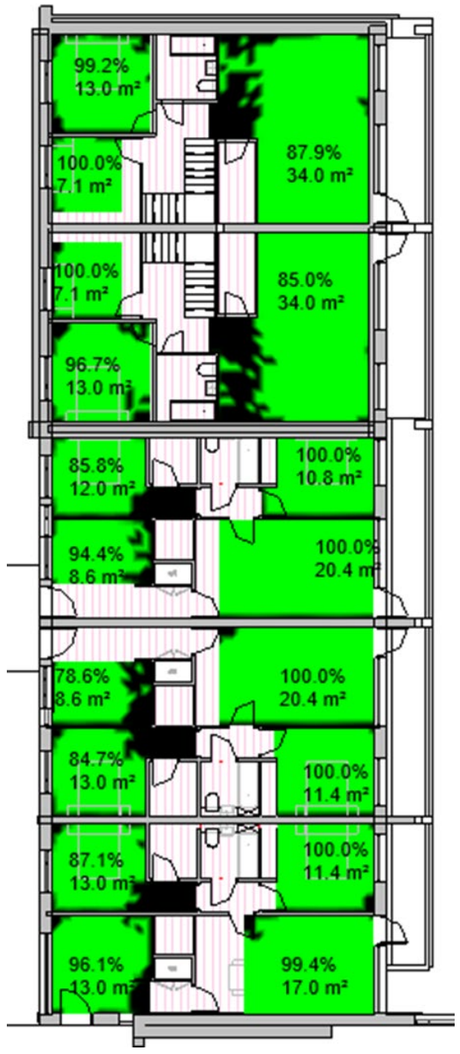
Block B6 - First Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

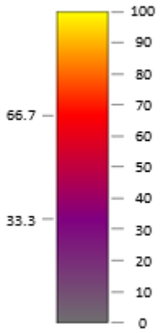
All units assessed were determined to be compliant with SDA.

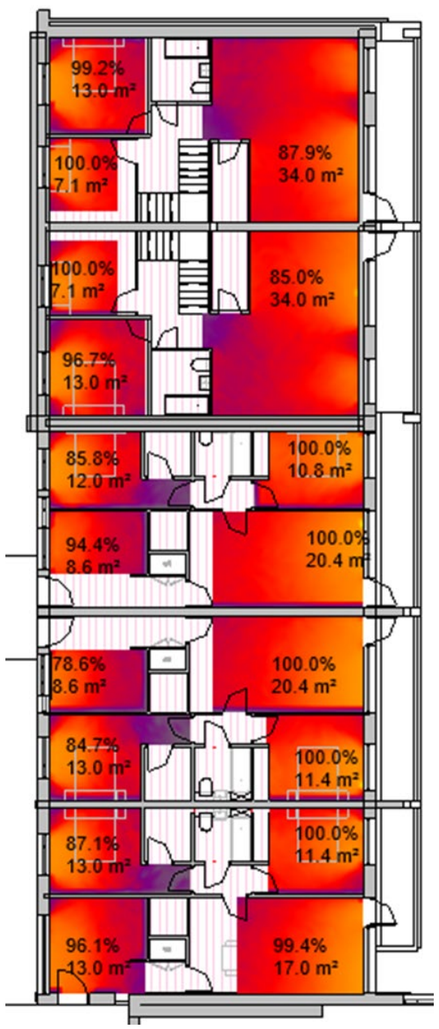




Passed-Failed

SDA Range

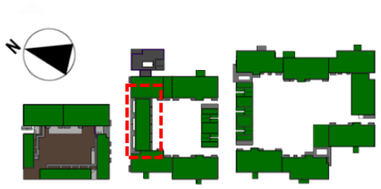




SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B6	Pass	Fail	Total
Ground Floor	12	1	13
First Floor	18	0	18
Second Floor	24	0	24
Third Floor	24	0	24
Fourth Floor	24	0	24
Total	**102**	**1**	**103**
	99%	**1%**	

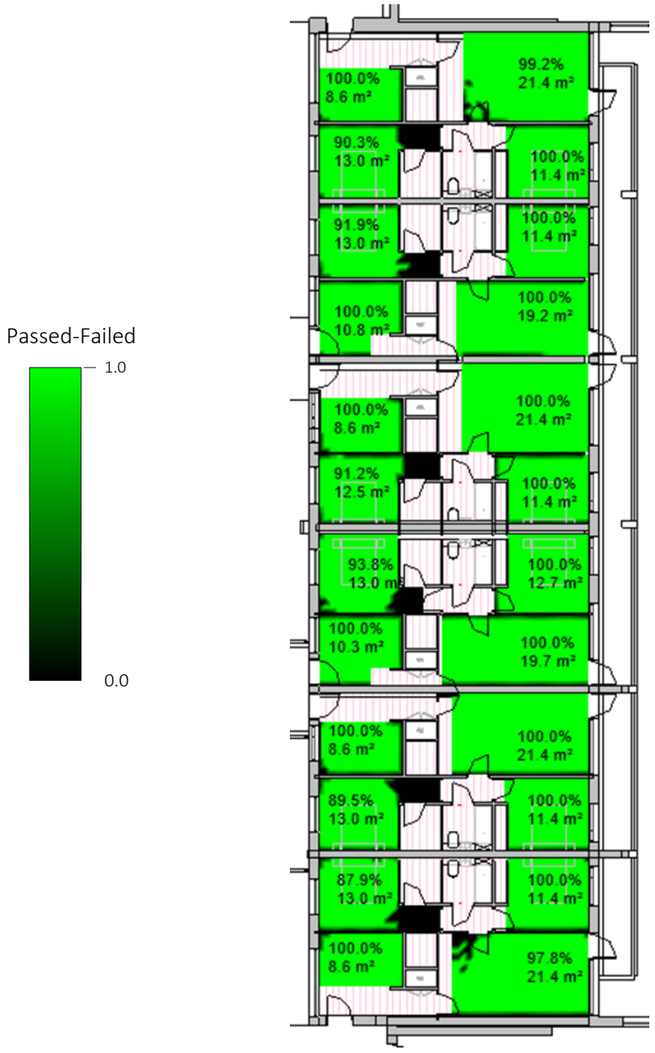
Block B6 - Second Floor

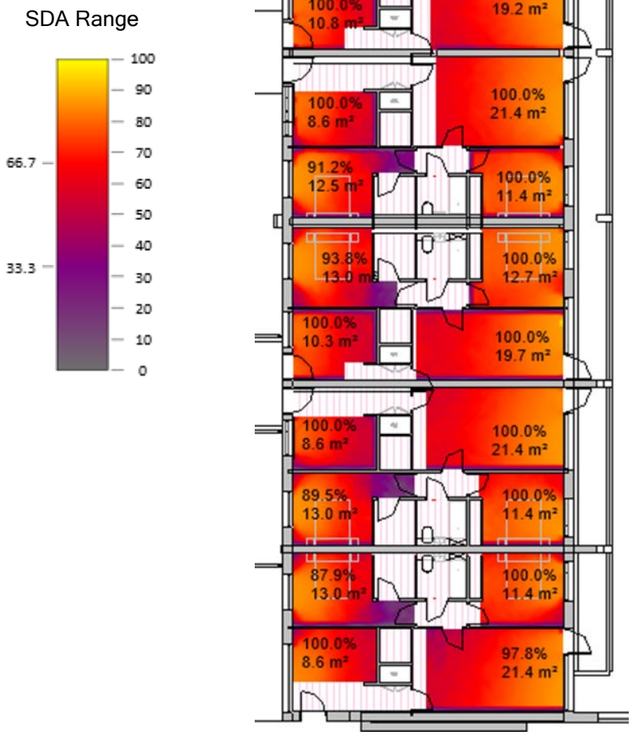


Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

All units assessed were determined to be compliant with SDA.

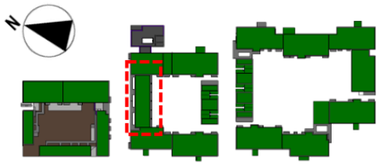




SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B6	Pass	Fail	Total
Ground Floor	12	1	13
First Floor	18	0	18
Second Floor	24	0	24
Third Floor	24	0	24
Fourth Floor	24	0	24
Total	**102**	**1**	**103**
	99%	**1%**	

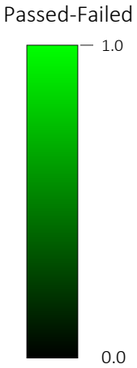
Block B6 - Third Floor

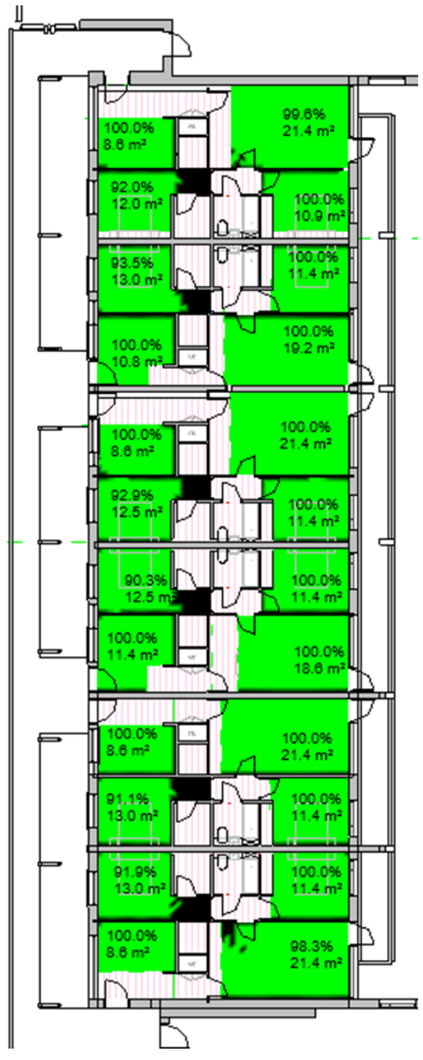


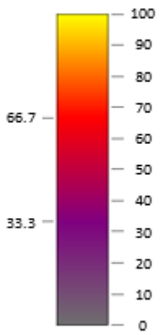
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

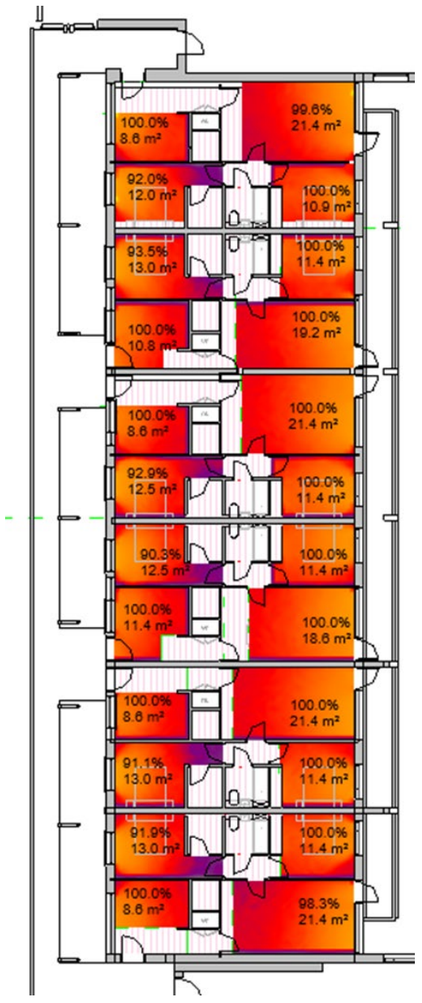
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

One unit assessed was determined not to be compliant with SDA.





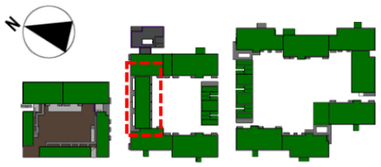




SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B6	Pass	Fail	Total
Ground Floor	12	1	13
First Floor	18	0	18
Second Floor	24	0	24
Third Floor	24	0	24
Fourth Floor	24	0	24
Total	**102**	**1**	**103**
	99%	**1%**	

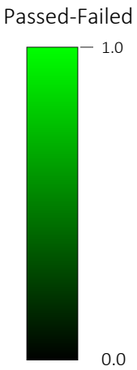
Block B6 - Fourth Floor

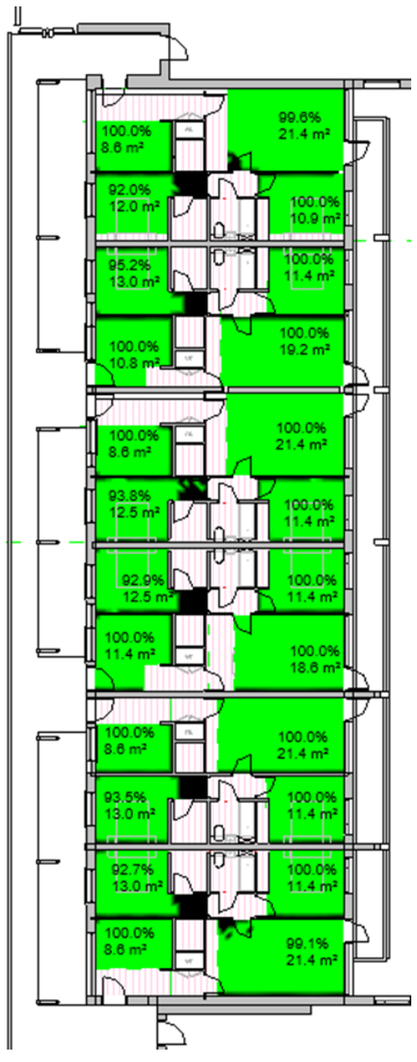


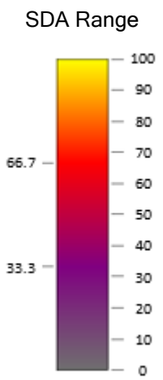
Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

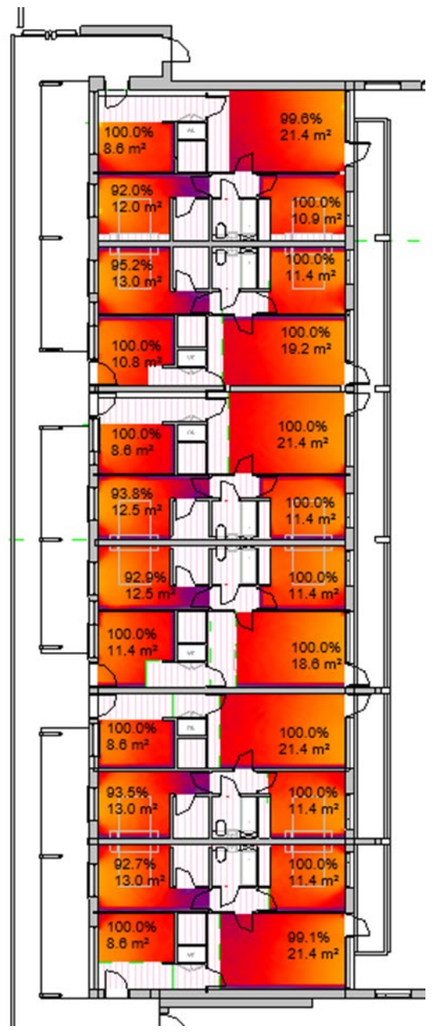
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

One unit assessed was determined not to be compliant with SDA.









SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

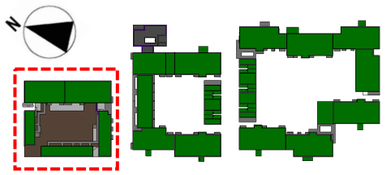
Block B6	Pass	Fail	Total
Ground Floor	12	1	13
First Floor	18	0	18
Second Floor	24	0	24
Third Floor	24	0	24
Fourth Floor	24	0	24
Total	**102**	**1**	**103**
	99%	**1%**	

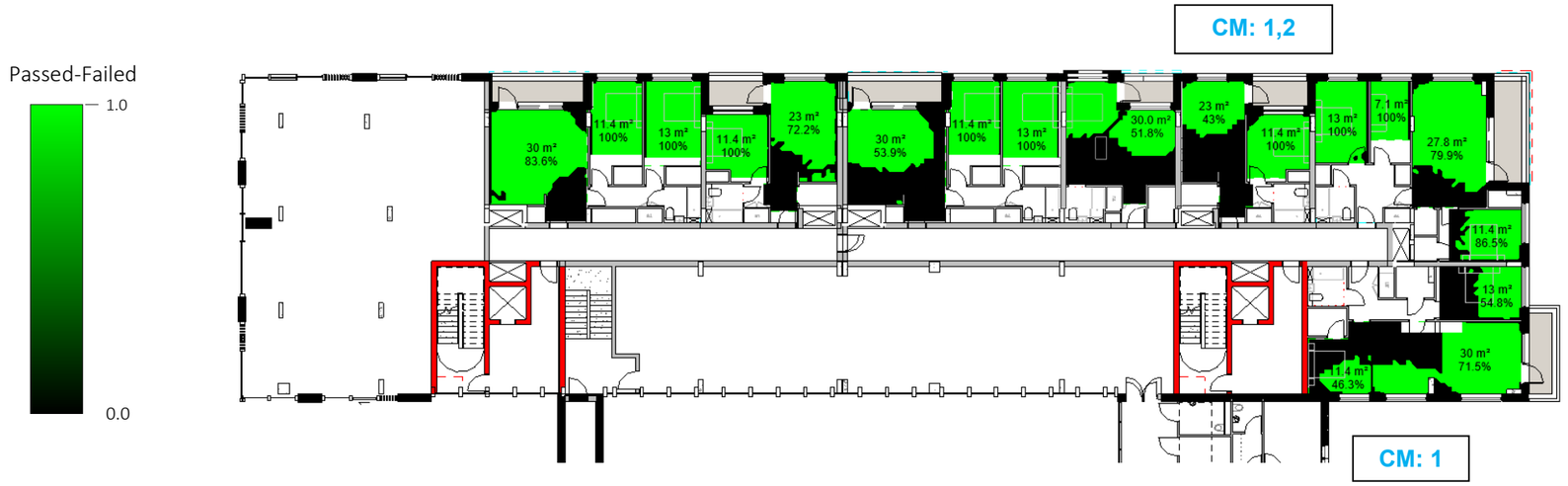
Block C – First Floor

Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

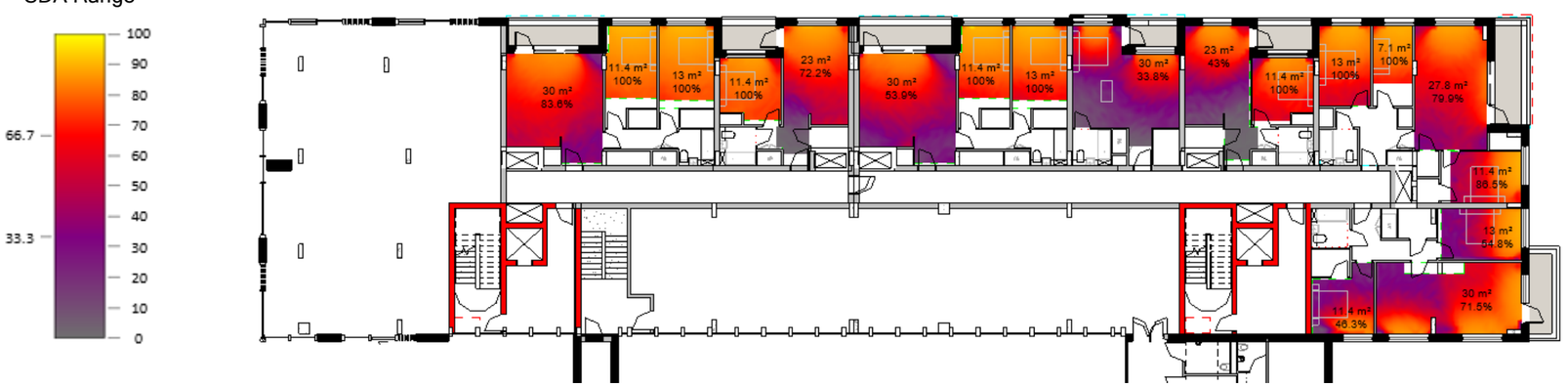
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms

3 out of the 18 units assessed were determined to not be compliant for SDA.





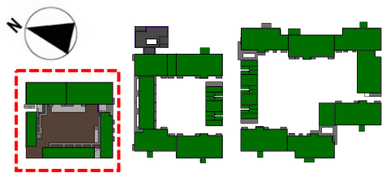
Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect



SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block C	Pass	Fail	Total
First Floor	16	2	18
Second Floor	45	4	49
Third Floor	57	1	58
Fourth Floor	58	0	58
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**210**	**7**	**217**
	97%	**3%**	

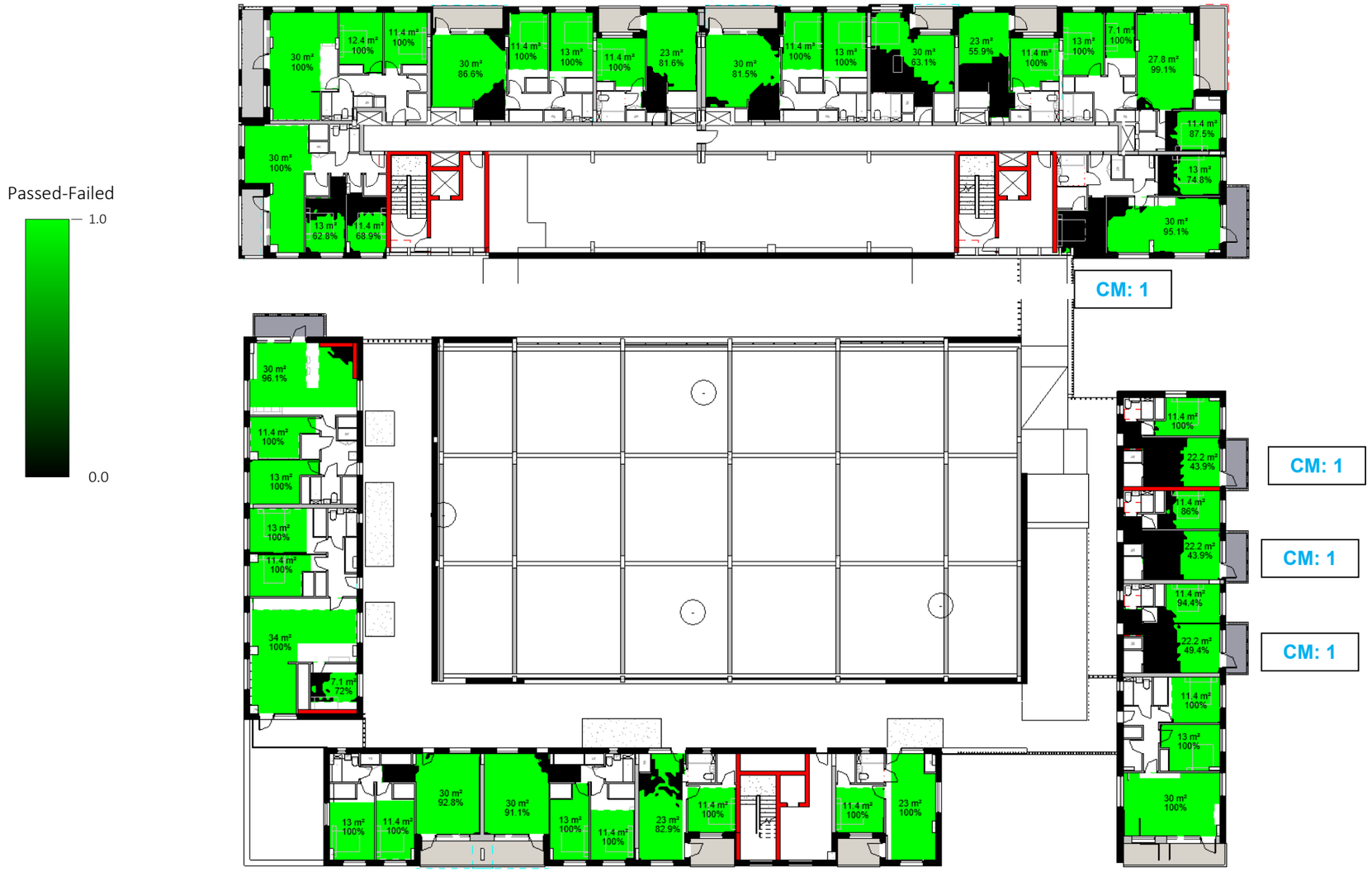
Block C – Second Floor



Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

4 out of the 49 units assessed were determined to not be compliant for SDA.

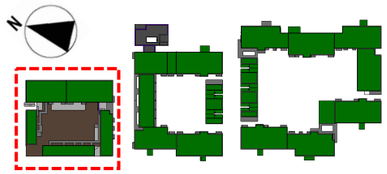


Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block C	Pass	Fail	Total
First Floor	16	2	18
Second Floor	45	4	49
Third Floor	57	1	58
Fourth Floor	58	0	58
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**210**	**7**	**217**
	97%	**3%**	

Block C – Second Floor



Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

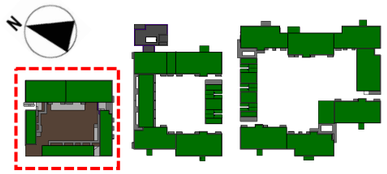
4 out of the 49 units assessed were determined to not be compliant for SDA.

Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block C	Pass	Fail	Total
First Floor	16	2	18
Second Floor	45	4	49
Third Floor	57	1	58
Fourth Floor	58	0	58
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**210**	**7**	**217**
	97%	**3%**	

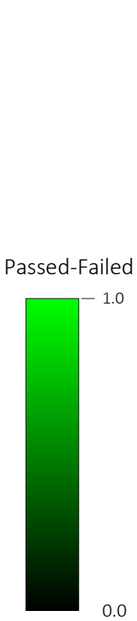
Block C – Third Floor



Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

1 out of the 58 units assessed was determined to not be compliant for SDA.

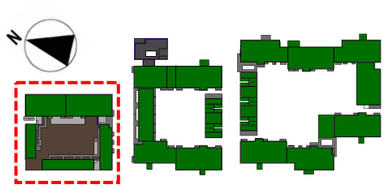


Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block C	Pass	Fail	Total
First Floor	16	2	18
Second Floor	45	4	49
Third Floor	57	1	58
Fourth Floor	58	0	58
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**210**	**7**	**217**
	97%	**3%**	

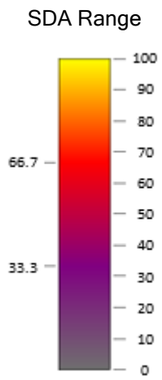
Block C – Third Floor



Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

1 out of the 58 units assessed were determined to not be compliant for SDA.



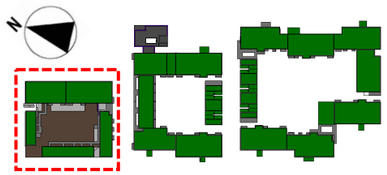
CM: 1

Compensatory Measures
1: Sunlight
2: Daylight Adjacency
3: Dual Aspect
4: Aspect

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block C	Pass	Fail	Total
First Floor	16	2	18
Second Floor	45	4	49
Third Floor	57	1	58
Fourth Floor	58	0	58
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**210**	**7**	**217**
	97%	**3%**	

Block C – Fourth Floor



Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

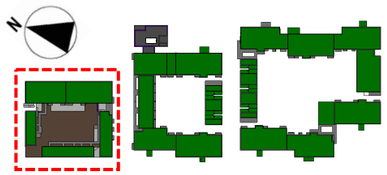
The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

This floor was determined to be fully compliant for SDA.

SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block C	Pass	Fail	Total
First Floor	16	2	18
Second Floor	45	4	49
Third Floor	57	1	58
Fourth Floor	58	0	58
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**210**	**7**	**217**
	97%	**3%**	

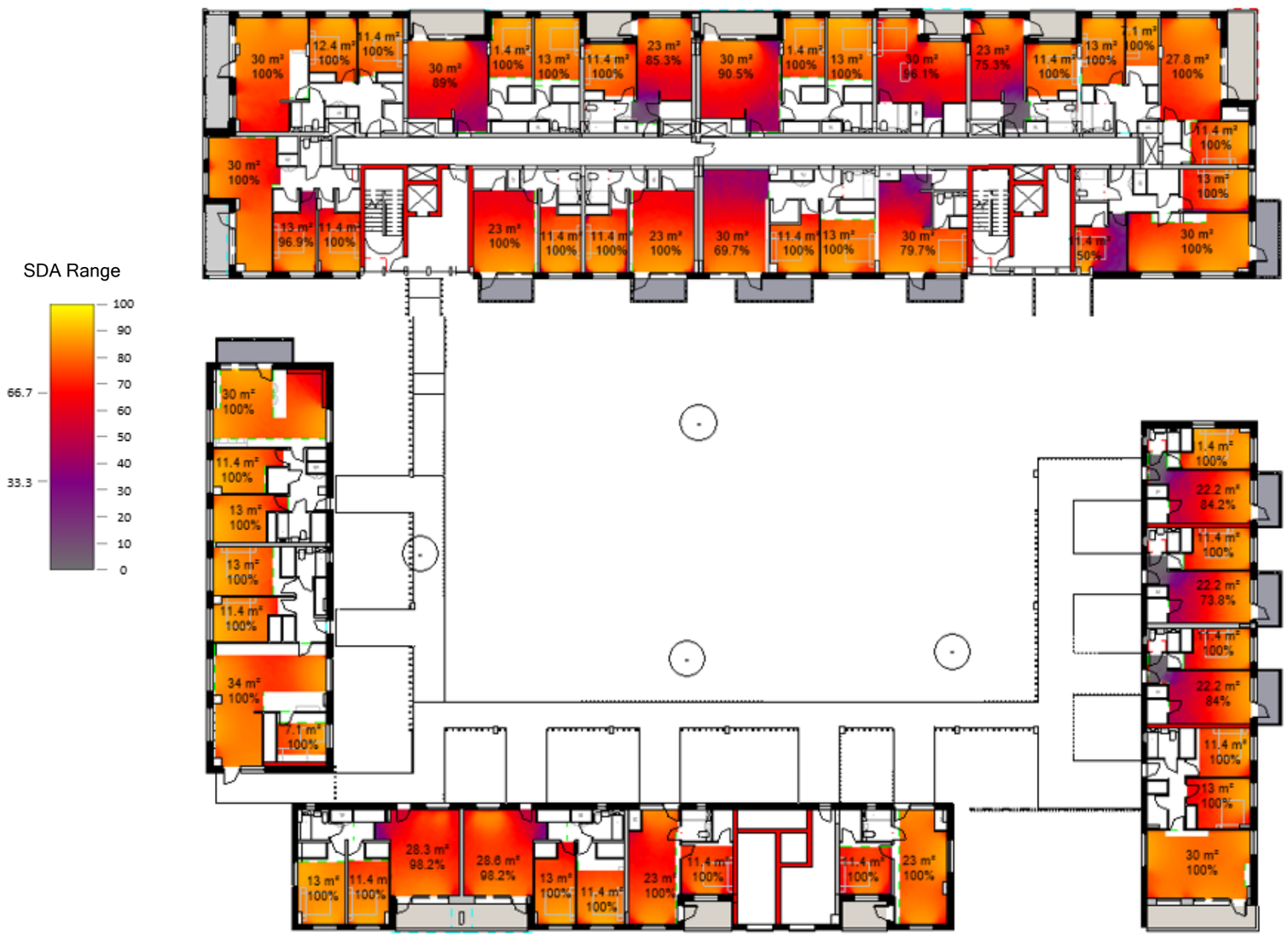
Block C – Fourth Floor



Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms.

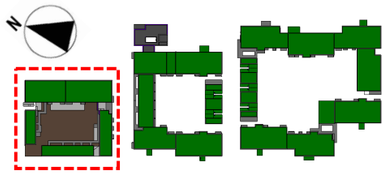
This floor was determined to be fully compliant for SDA.



SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

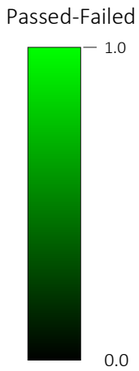
Block C	Pass	Fail	Total
First Floor	16	2	18
Second Floor	45	4	49
Third Floor	57	1	58
Fourth Floor	58	0	58
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**210**	**7**	**217**
	97%	**3%**	

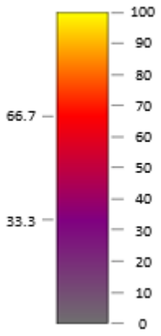
Block C – Fifth Floor

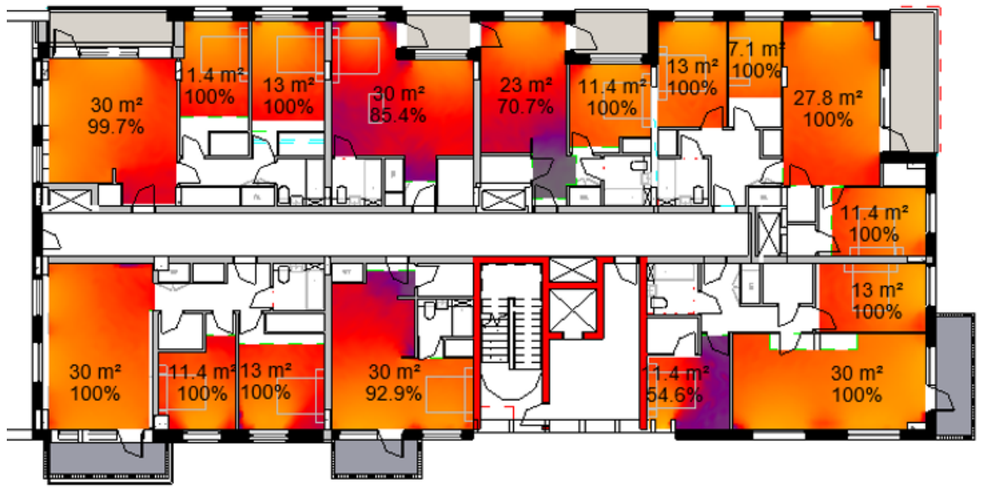


Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms. This floor was determined to be fully compliant for SDA.



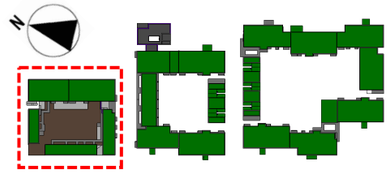




SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

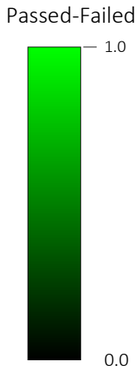
Block C	Pass	Fail	Total
First Floor	16	2	18
Second Floor	45	4	49
Third Floor	57	1	58
Fourth Floor	58	0	58
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**210**	**7**	**217**
	97%	**3%**	

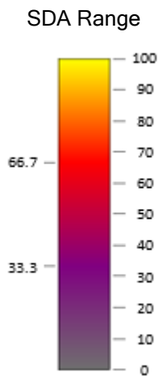
Block C – Sixth Floor



Spatial Daylight Autonomy (SDA) is illustrated below with a graduated compliance scale for 0% (grey) to 100% (yellow).

The second image shows compliance as pass (green) / fail (Black) for the targets of 200Lux in KLD/Kitchen, 150Lux in Living areas, and 100Lux in bedrooms. This floor was determined to be fully compliant for SDA.





SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block C	Pass	Fail	Total
First Floor	16	2	18
Second Floor	45	4	49
Third Floor	57	1	58
Fourth Floor	58	0	58
Fifth Floor	17	0	17
Sixth Floor	17	0	17
Total	**210**	**7**	**217**
	97%	**3%**	

Appendix C

Exposure To Sunlight

Appendix C - Exposure to Sunlight Results Summary

The results tables below (Fig C.1.1) confirm how a high level of compliance for Exposure to Sunlight. 97% of the units assessed were determined to be compliant as 560 out of 577 apartments or duplexes were compliant. Appendix C provides full detailed results for all units as assessed.

Furthermore, as demonstrated in Fig. C.1.2, the overall categorisation for the proposed development determined a high degree of overall sunlighting performance, with 65% of apartments predicted to enjoy a “High” degree of Exposure to Sunlight and a further 18% being in the “Medium” Category, and 14% above the minimum threshold, all of which are in accordance with the BR.209 classification.

Overall	Pass	Fail	Total
Block C	85	1	86
Block B1	22	2	24
Block B2	54	0	54
Block B3	12	0	12
Block B4	36	2	38
Block B5	34	0	34
Block B6	26	0	26
Block A1	35	0	35
Block A2	55	0	55
Block A3	33	6	39
Block A4	20	0	20
Block A5	48	6	54
Block A6	36	1	37
Block A7	54	0	54
Block A8	18	0	18
Total	**568**	**18**	**586**
	97%	**3%**	

Fig C.1.1 –Exposure to Sunlight – Overall Compliance

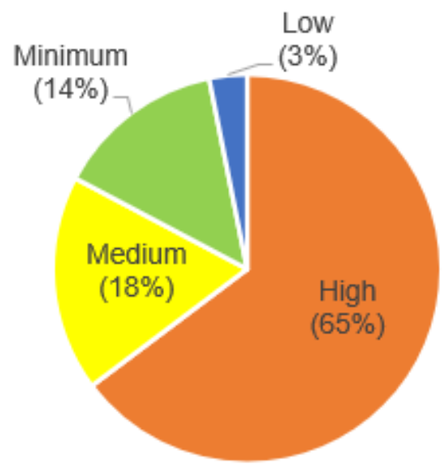
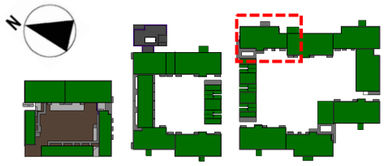
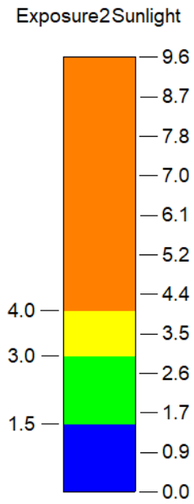


Fig C.1.2 –Exposure to Sunlight – Overall Categorisation

Block A1 - Ground Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

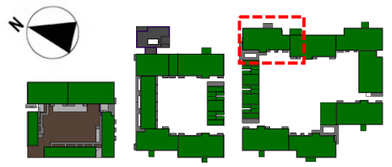


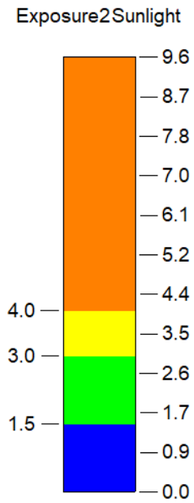


Block A1	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	7	0	7
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**35**	**0**	**35**
	100%	**0%**	

Block A1 - First Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

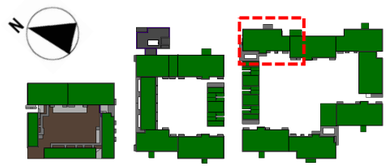


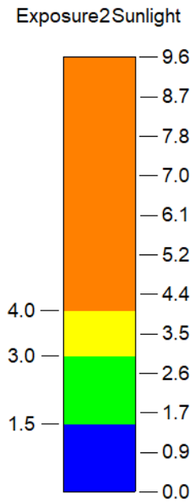


Block A1	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	7	0	7
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**35**	**0**	**35**
	100%	**0%**	

Block A1 - Second Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

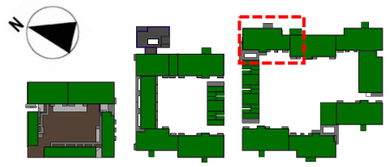


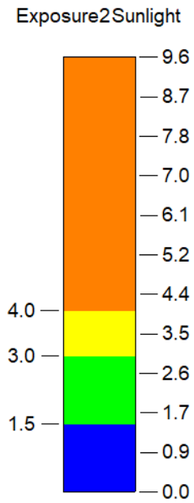


Block A1	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	7	0	7
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**35**	**0**	**35**
	100%	**0%**	

Block A1 - Third Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

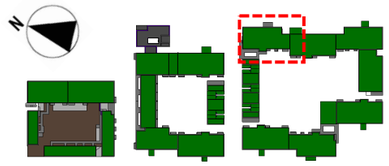


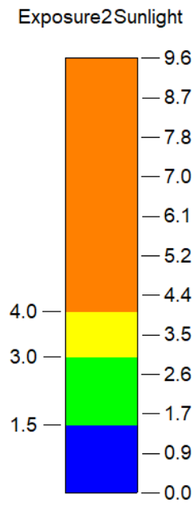


Block A1	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	7	0	7
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**35**	**0**	**35**
	100%	**0%**	

Block A1 - Fourth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

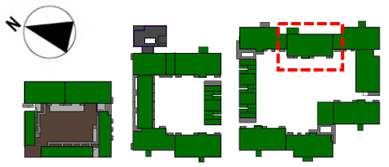


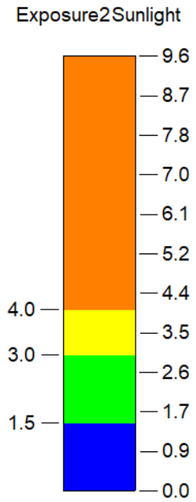


Block A1	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	7	0	7
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**35**	**0**	**35**
	100%	**0%**	

Block A2 - Ground Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

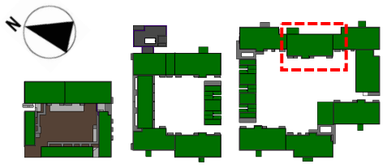


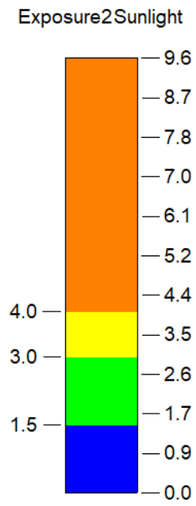


Block A2	Pass	Fail	Total
Ground Floor	7	0	7
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**55**	**0**	**55**
	100%	**0%**	

Block A2 - First Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

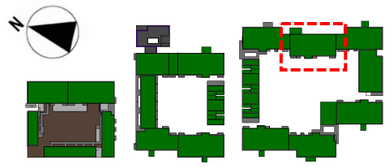


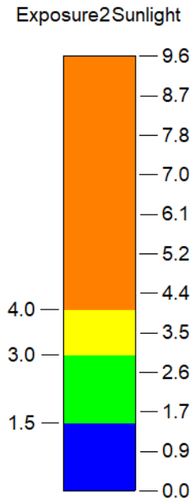


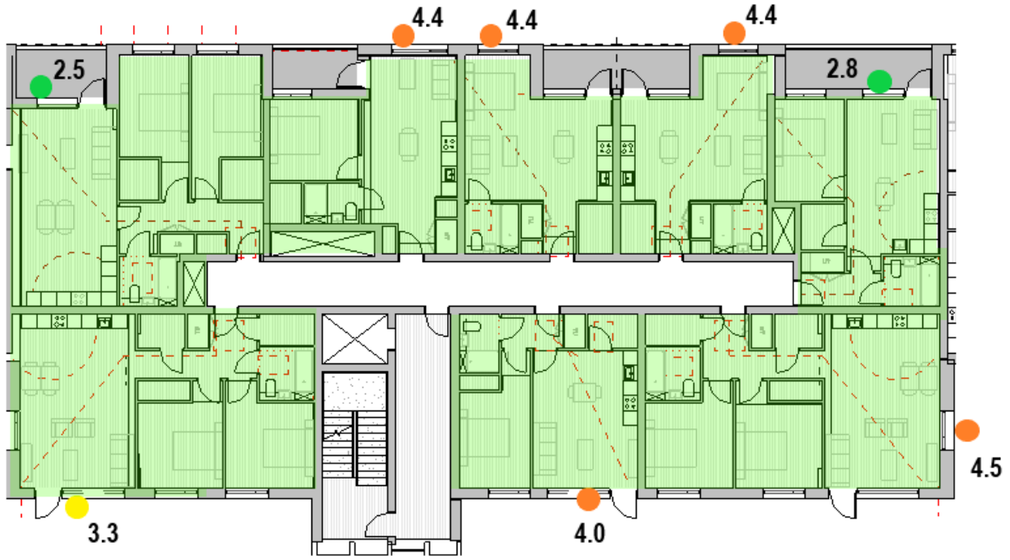
Block A2	Pass	Fail	Total
Ground Floor	7	0	7
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**55**	**0**	**55**
	100%	**0%**	

Block A2 - Second Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



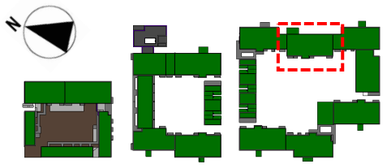


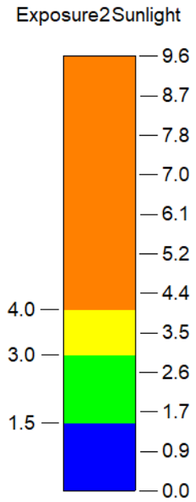


Block A2	Pass	Fail	Total
Ground Floor	7	0	7
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**55**	**0**	**55**
	100%	**0%**	

Block A2 - Third Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

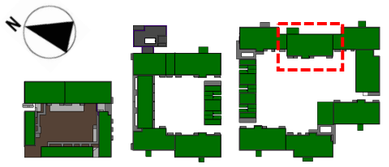


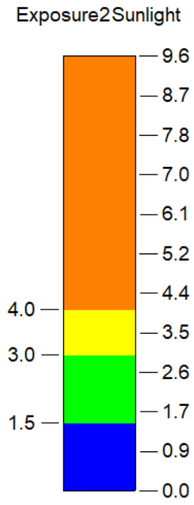


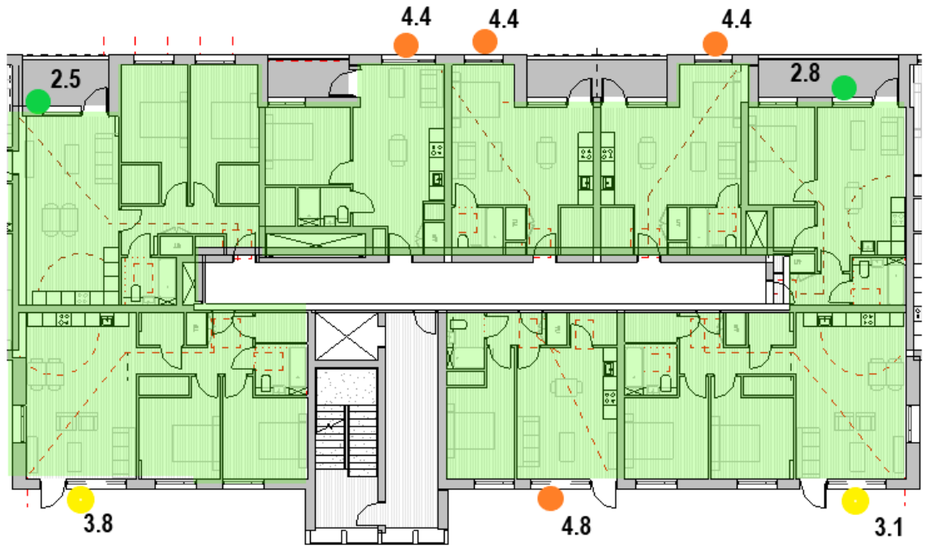
Block A2	Pass	Fail	Total
Ground Floor	7	0	7
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**55**	**0**	**55**
	100%	**0%**	

Block A2 - Fourth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



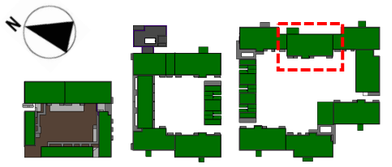


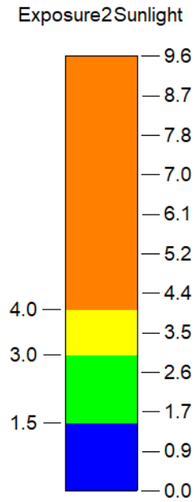


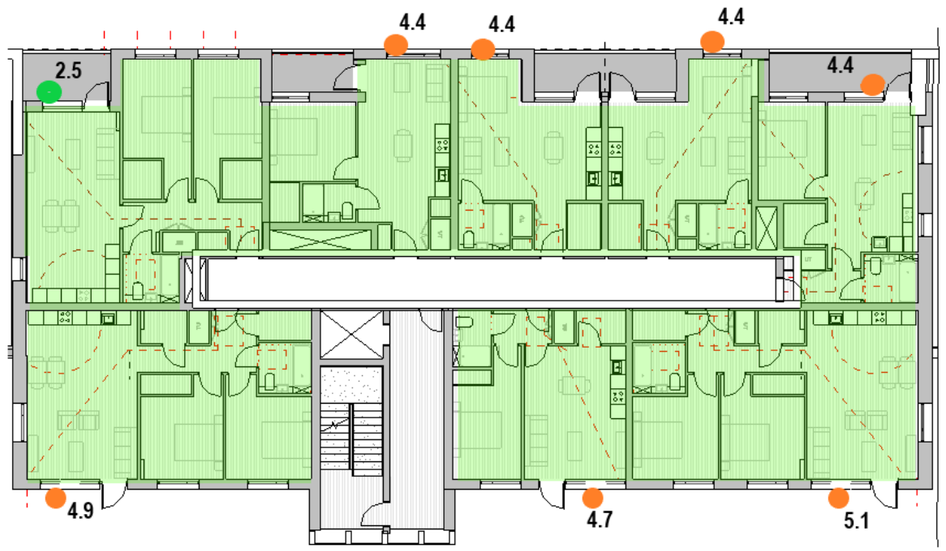
Block A2	Pass	Fail	Total
Ground Floor	7	0	7
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**55**	**0**	**55**
	100%	**0%**	

Block A2 - Fifth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



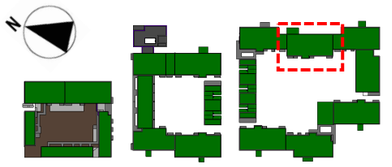


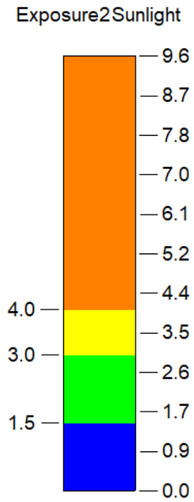


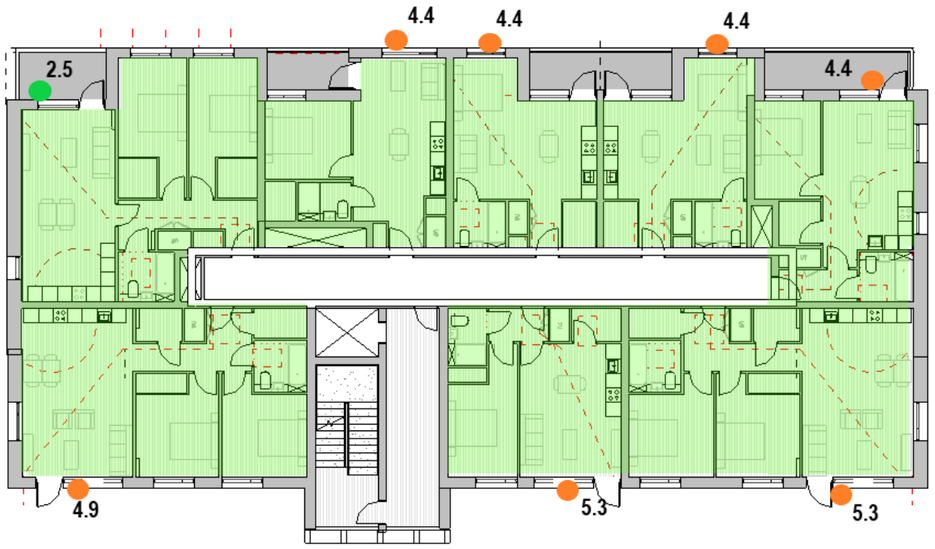
Block A2	Pass	Fail	Total
Ground Floor	7	0	7
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**55**	**0**	**55**
	100%	**0%**	

Block A2 - Sixth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



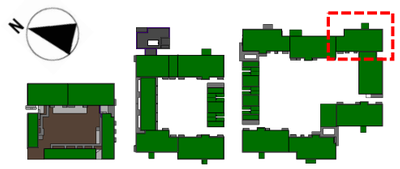


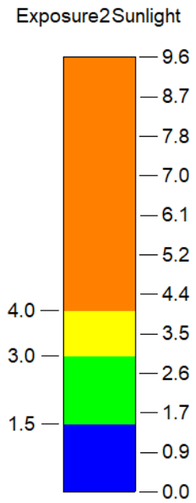


Block A2	Pass	Fail	Total
Ground Floor	7	0	7
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**55**	**0**	**55**
	100%	**0%**	

Block A3 - Ground Floor

Sunlight Analysis as illustrated below, determined 4 out of 7 units on this floor achieve the minimum recommendations.

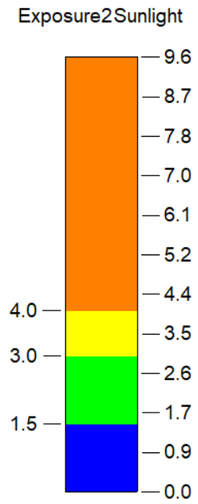




Block A3	Pass	Fail	Total
Ground Floor	4	3	7
First Floor	6	2	8
Second Floor	7	1	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**33**	**6**	**39**
	85%	**15%**	

Block A3 - First Floor

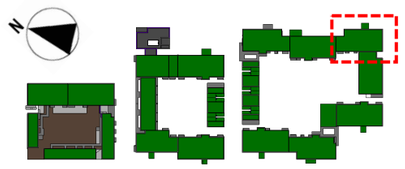
Sunlight Analysis as illustrated below, determined 6 out of 8 units on this floor achieve the minimum recommendations.

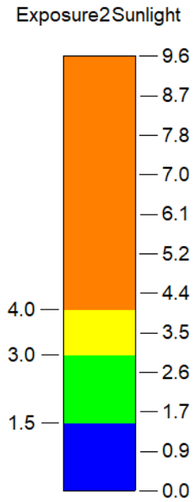


Block A3	Pass	Fail	Total
Ground Floor	4	3	7
First Floor	6	2	8
Second Floor	7	1	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**33**	**6**	**39**
	85%	**15%**	

Block A3 - Second Floor

Sunlight Analysis as illustrated below, determined 7 out of 8 units on this floor achieve the minimum recommendations.

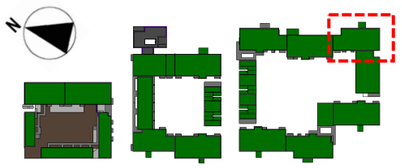


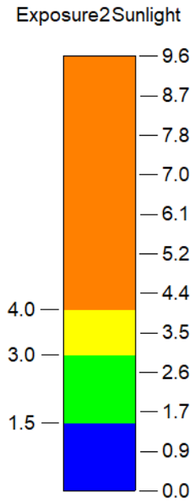


Block A3	Pass	Fail	Total
Ground Floor	4	3	7
First Floor	6	2	8
Second Floor	7	1	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**33**	**6**	**39**
	85%	**15%**	

Block A3 - Third Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

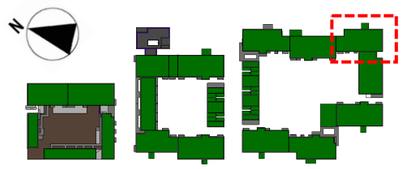


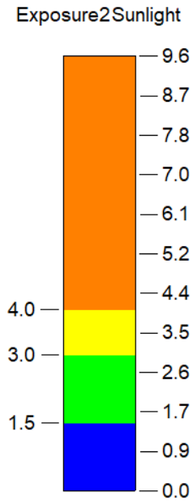


Block A3	Pass	Fail	Total
Ground Floor	4	3	7
First Floor	6	2	8
Second Floor	7	1	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**33**	**6**	**39**
	85%	**15%**	

Block A3 - Fourth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

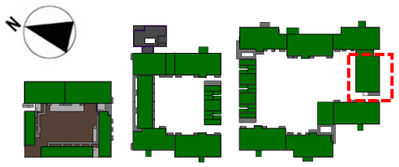


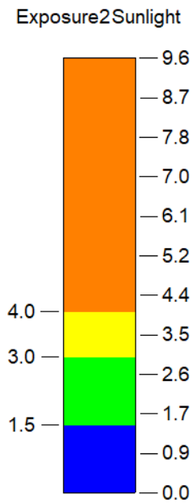


Block A3	Pass	Fail	Total
Ground Floor	4	3	7
First Floor	6	2	8
Second Floor	7	1	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**33**	**6**	**39**
	85%	**15%**	

Block A4 - Ground Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

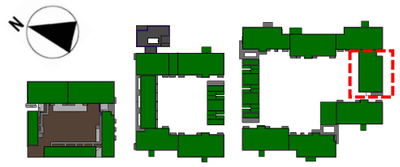


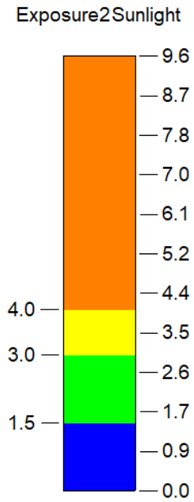


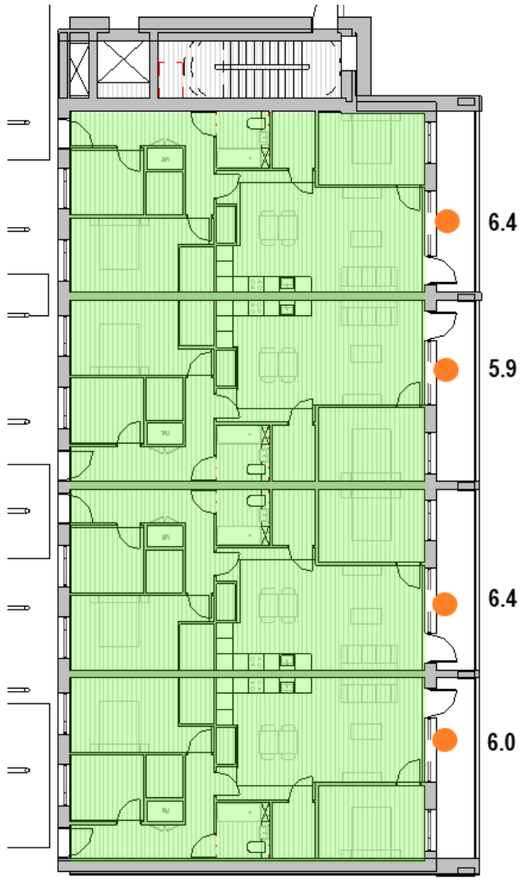
Block A4	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	4	0	4
Second Floor	4	0	4
Third Floor	4	0	4
Fourth Floor	4	0	4
Total	**20**	**0**	**20**
	100%	**0%**	

Block A4 - First Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



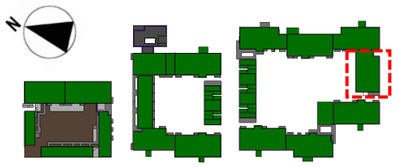


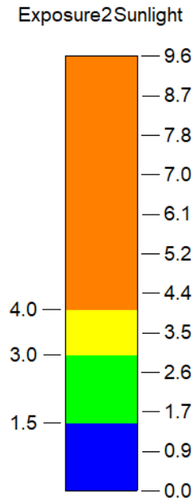


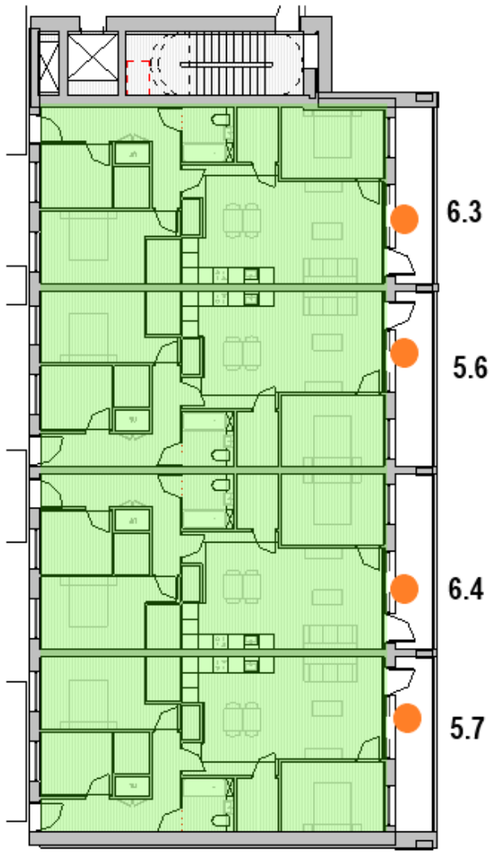
Block A4	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	4	0	4
Second Floor	4	0	4
Third Floor	4	0	4
Fourth Floor	4	0	4
Total	**20**	**0**	**20**
	100%	**0%**	

Block A4 - Second Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



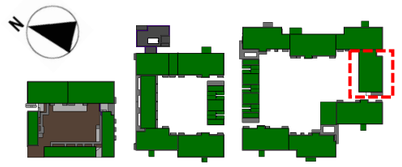


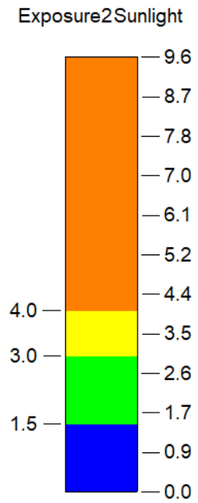


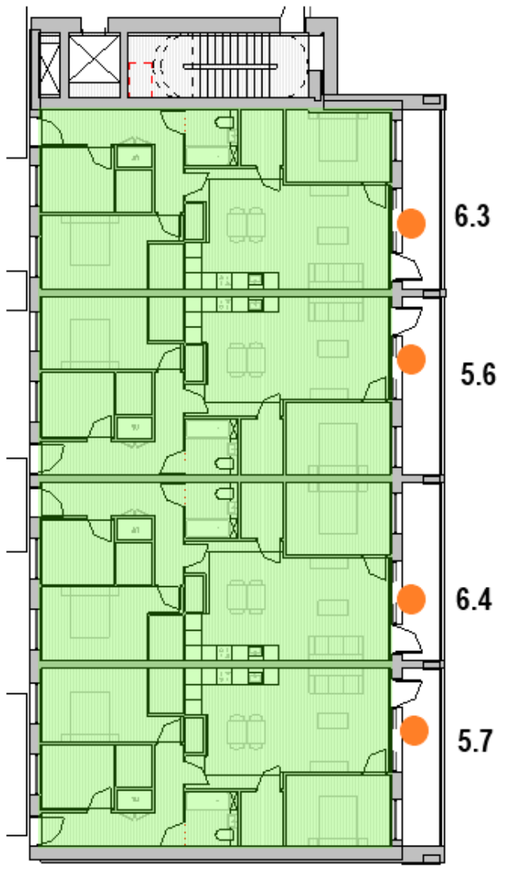
Block A4	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	4	0	4
Second Floor	4	0	4
Third Floor	4	0	4
Fourth Floor	4	0	4
Total	**20**	**0**	**20**
	100%	**0%**	

Block A4 - Third Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



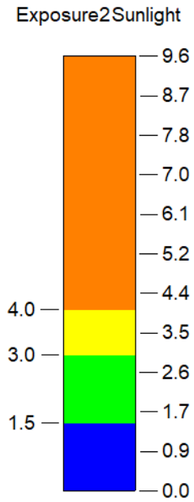


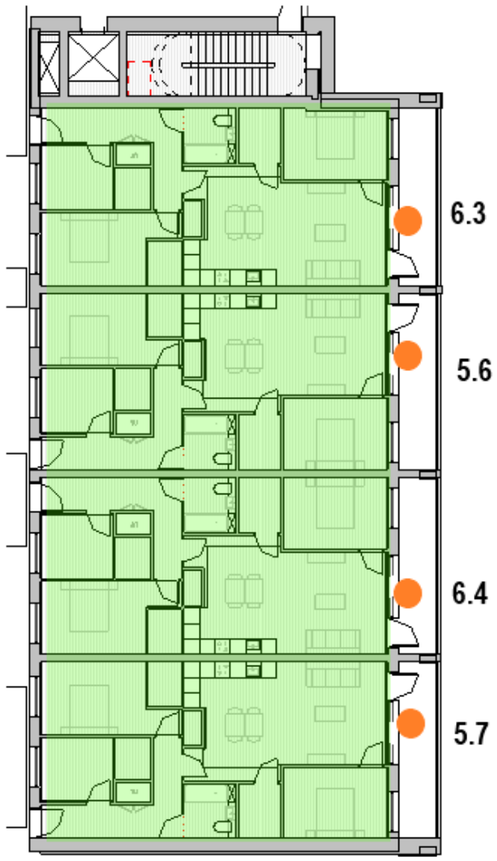


Block A4	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	4	0	4
Second Floor	4	0	4
Third Floor	4	0	4
Fourth Floor	4	0	4
Total	**20**	**0**	**20**
	100%	**0%**	

Block A4 - Fourth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

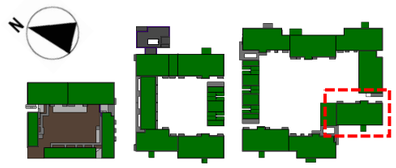


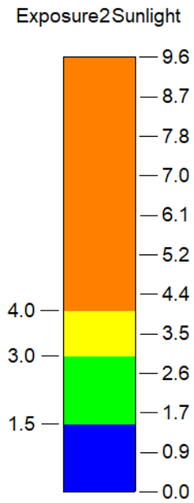


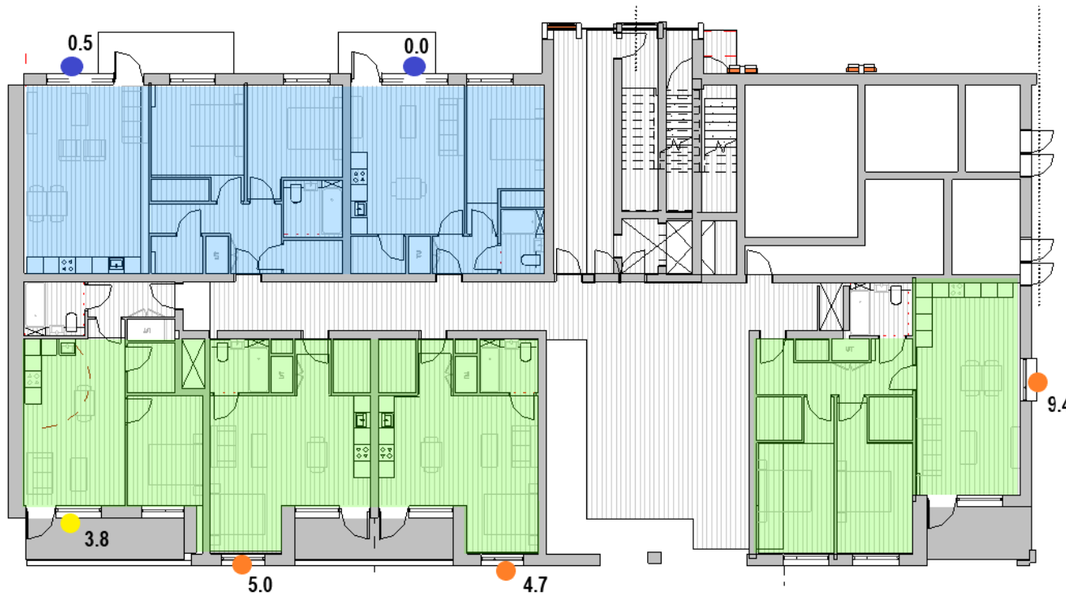
Block A4	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	4	0	4
Second Floor	4	0	4
Third Floor	4	0	4
Fourth Floor	4	0	4
Total	**20**	**0**	**20**
	100%	**0%**	

Block A5 - Ground Floor

Sunlight Analysis as illustrated below, determined 4 out of 6 units on this floor achieve the minimum recommendations.



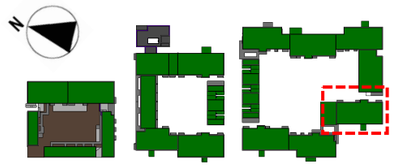


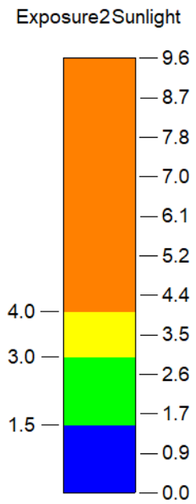


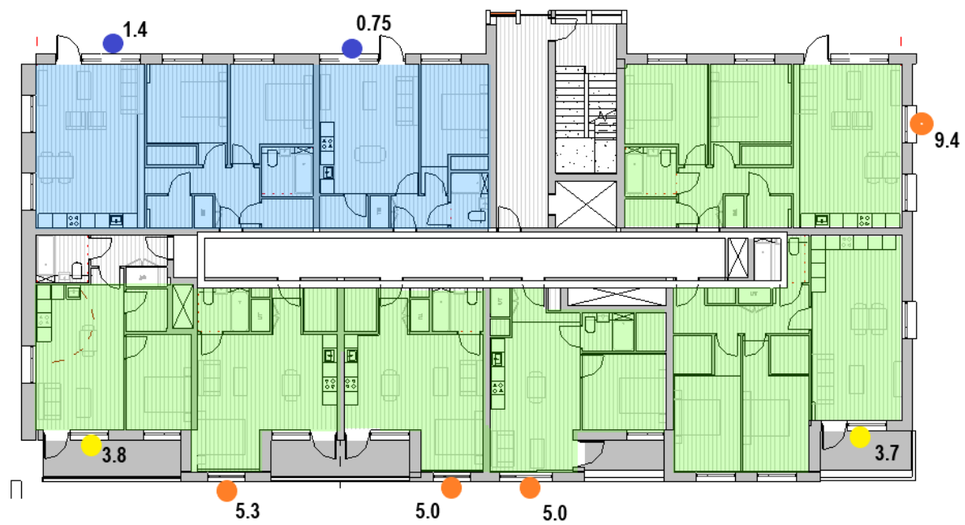
Block A5	Pass	Fail	Total
Ground Floor	4	2	6
First Floor	6	2	8
Second Floor	7	1	8
Third Floor	7	1	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**48**	**6**	**54**
	89%	**11%**	

Block A5 - First Floor

Sunlight Analysis as illustrated below, determined 6 out of 8 units on this floor achieve the minimum recommendations.



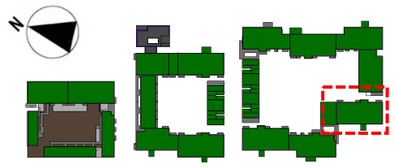


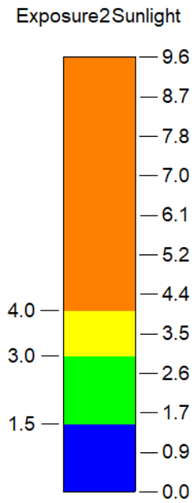


Block A5	Pass	Fail	Total
Ground Floor	4	2	6
First Floor	6	2	8
Second Floor	7	1	8
Third Floor	7	1	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**48**	**6**	**54**
	89%	**11%**	

Block A5 - Second Floor

Sunlight Analysis as illustrated below, determined 7 out of 8 units on this floor achieve the minimum recommendations.

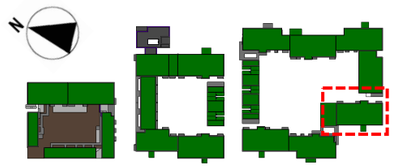


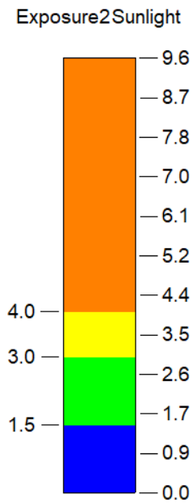


Block A5	Pass	Fail	Total
Ground Floor	4	2	6
First Floor	6	2	8
Second Floor	7	1	8
Third Floor	7	1	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**48**	**6**	**54**
	89%	**11%**	

Block A5 - Third Floor

Sunlight Analysis as illustrated below, determined 7 out of 8 units on this floor achieve the minimum recommendations.

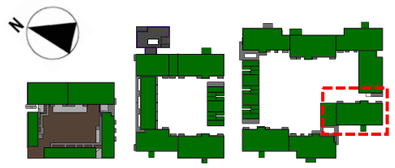


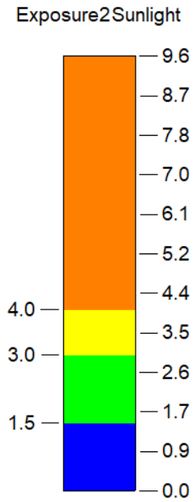


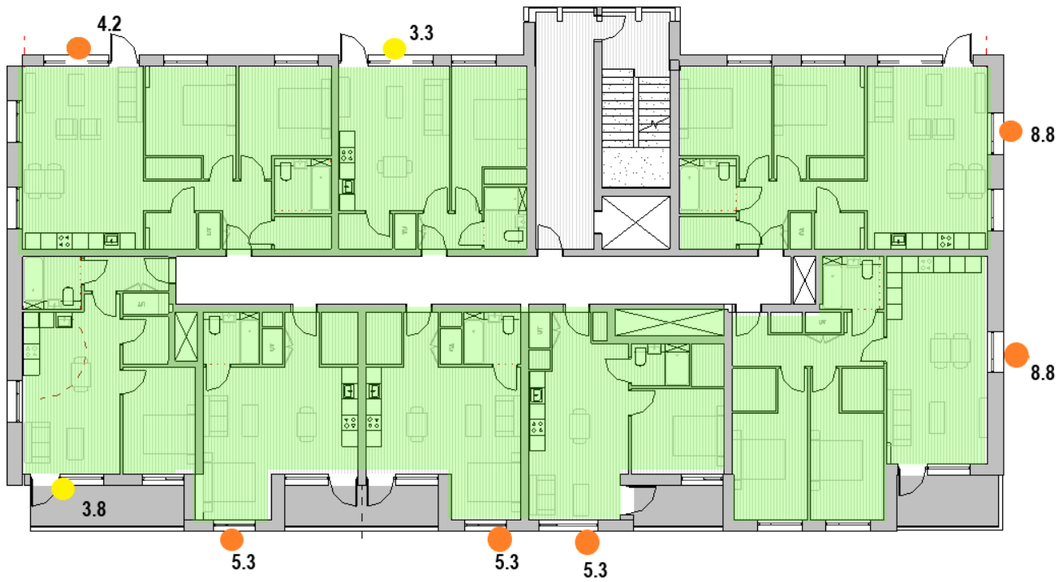
Block A5	Pass	Fail	Total
Ground Floor	4	2	6
First Floor	6	2	8
Second Floor	7	1	8
Third Floor	7	1	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**48**	**6**	**54**
	89%	**11%**	

Block A5 - Fourth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



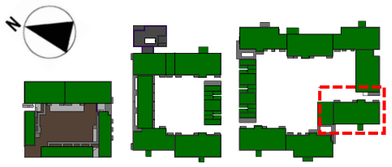


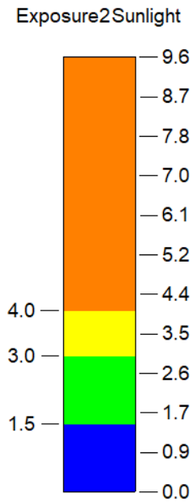


Block A5	Pass	Fail	Total
Ground Floor	4	2	6
First Floor	6	2	8
Second Floor	7	1	8
Third Floor	7	1	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**48**	**6**	**54**
	89%	**11%**	

Block A5 - Fifth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

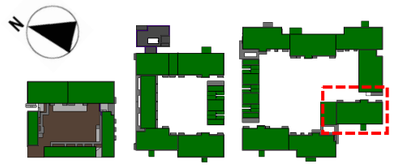


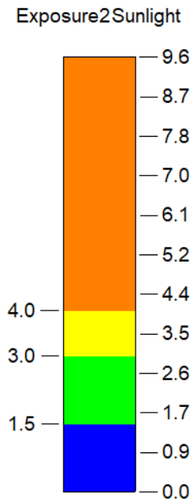


Block A5	Pass	Fail	Total
Ground Floor	4	2	6
First Floor	6	2	8
Second Floor	7	1	8
Third Floor	7	1	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**48**	**6**	**54**
	89%	**11%**	

Block A5 - Sixth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

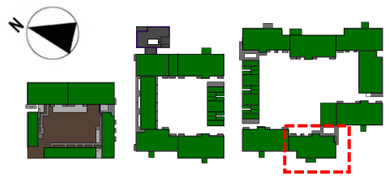


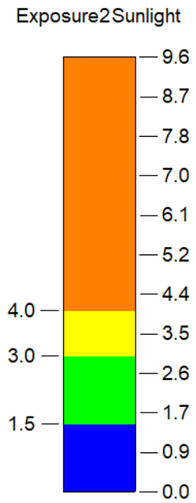


Block A5	Pass	Fail	Total
Ground Floor	4	2	6
First Floor	6	2	8
Second Floor	7	1	8
Third Floor	7	1	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**48**	**6**	**54**
	89%	**11%**	

Block A6 - Ground Floor

Sunlight Analysis as illustrated below, determined 4 out of 5 units on this floor achieve the minimum recommendations.

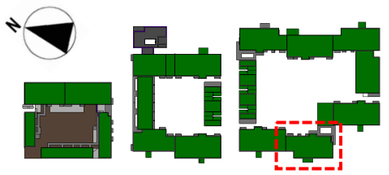


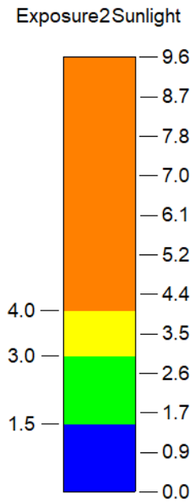


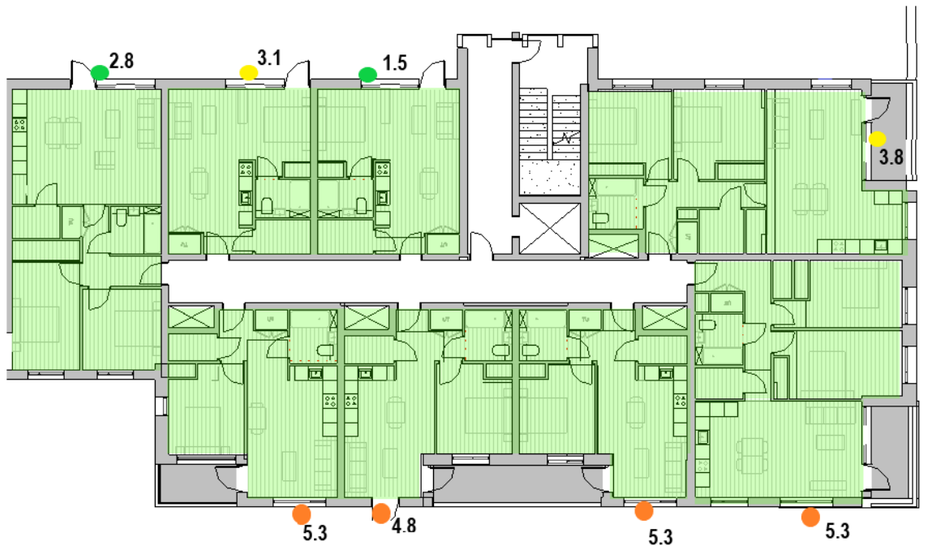
Block A6	Pass	Fail	Total
Ground Floor	4	1	5
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**36**	**1**	**37**
	97%	**3%**	

Block A6 - First Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



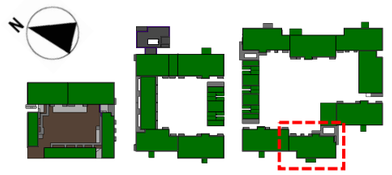


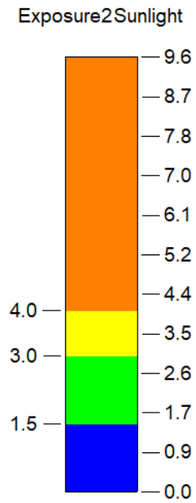


Block A6	Pass	Fail	Total
Ground Floor	4	1	5
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**36**	**1**	**37**
	97%	**3%**	

Block A6 - Second Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

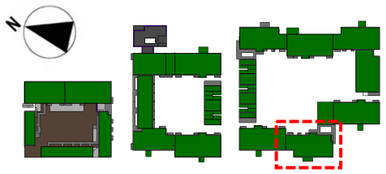


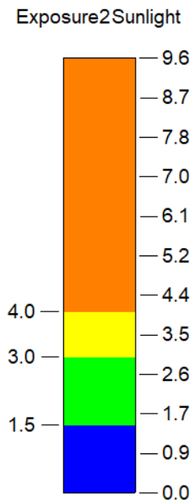


Block A6	Pass	Fail	Total
Ground Floor	4	1	5
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**36**	**1**	**37**
	97%	**3%**	

Block A6 - Third Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

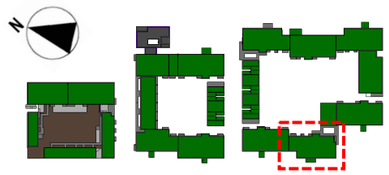


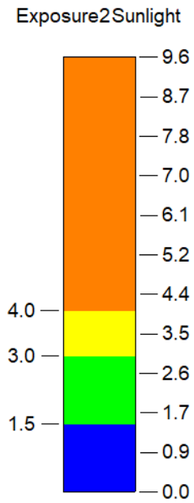


Block A6	Pass	Fail	Total
Ground Floor	4	1	5
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**36**	**1**	**37**
	97%	**3%**	

Block A6 - Fourth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

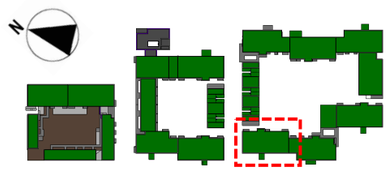


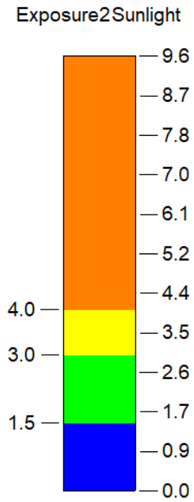


Block A6	Pass	Fail	Total
Ground Floor	4	1	5
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**36**	**1**	**37**
	97%	**3%**	

Block A7 - Ground Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

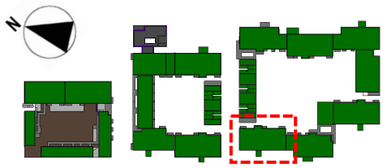


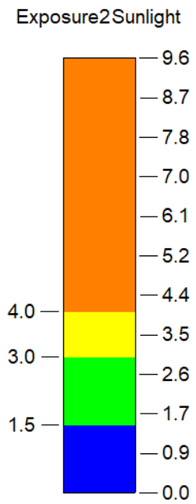


Block A7	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block A7 - First Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

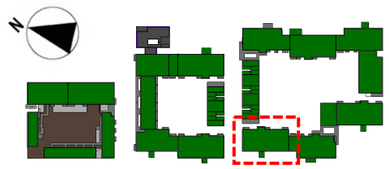


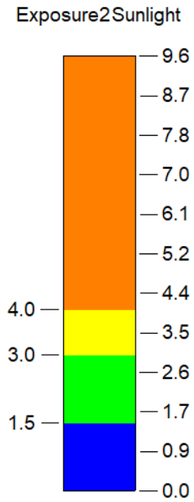


Block A7	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block A7 - Second Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

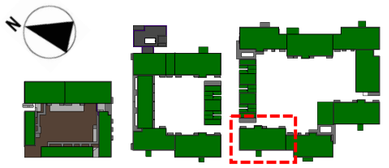


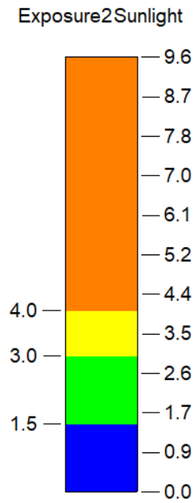


Block A7	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block A7 - Third Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

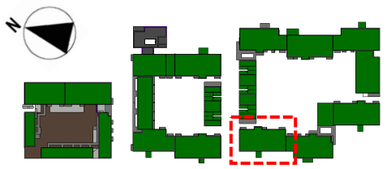


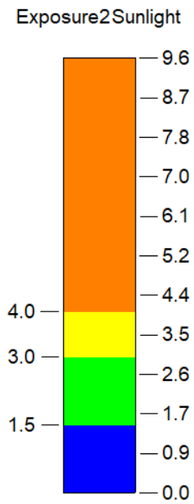


Block A7	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block A7 - Fourth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

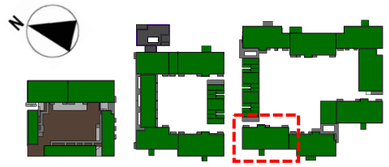


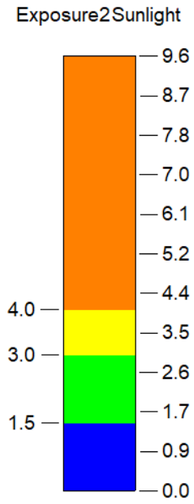


Block A7	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block A7 - Fifth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

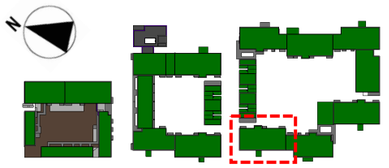


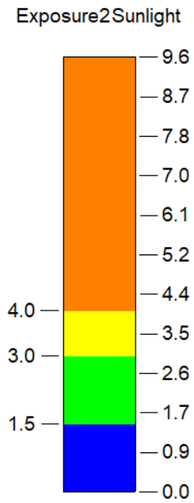


Block A7	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block A7 - Sixth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

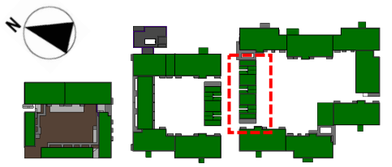


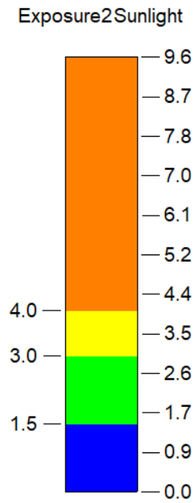


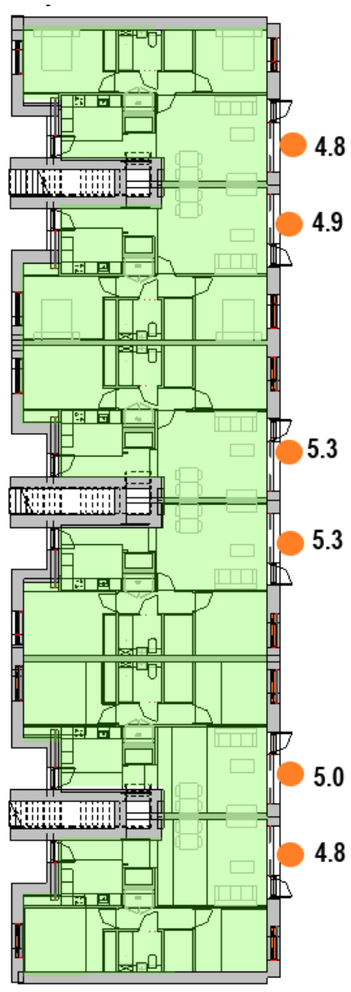
Block A7	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block A8 - Ground Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



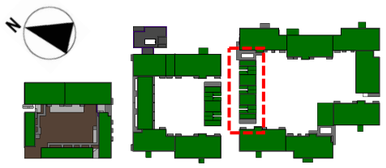


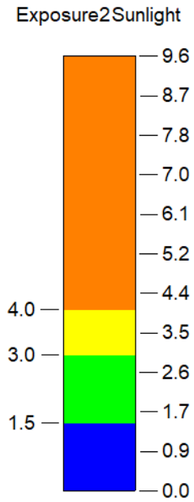


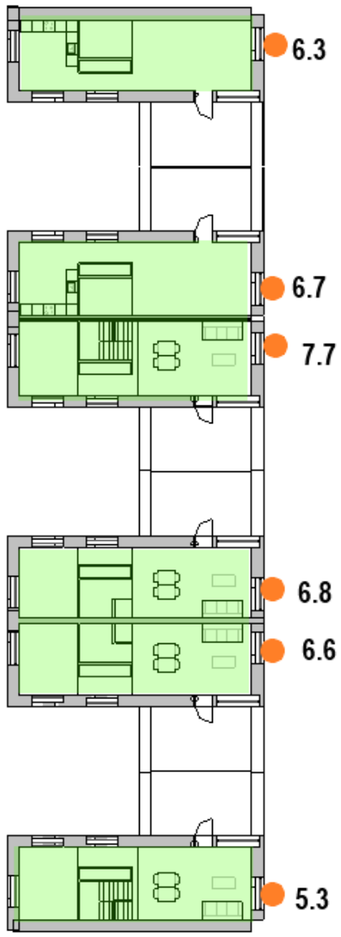
Block A8	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	6	0	6
Second Floor	6	0	6
Total	**18**	**0**	**18**
	100%	**0%**	

Block A8 - Second Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



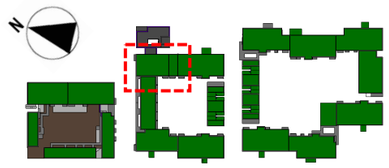


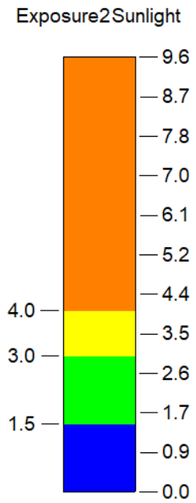


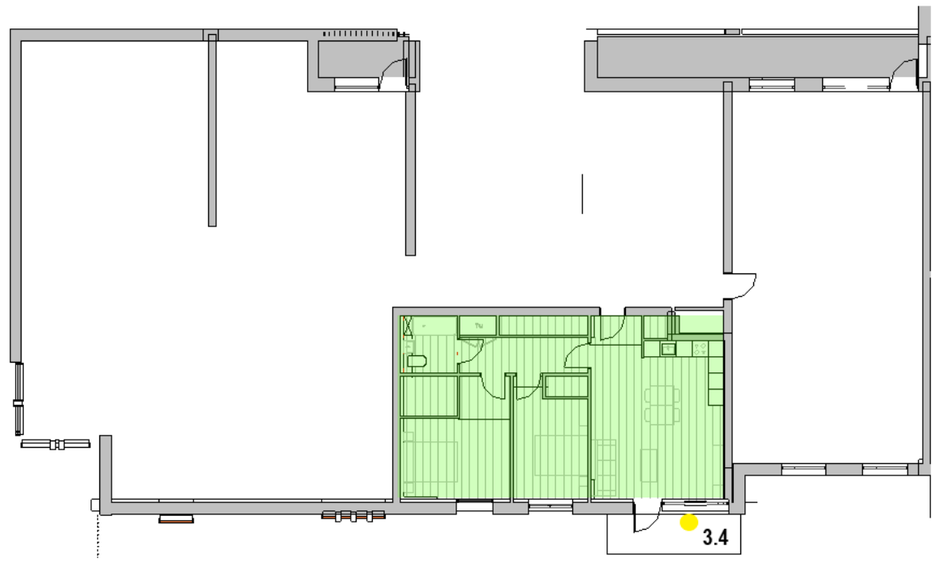
Block A8	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	6	0	6
Second Floor	6	0	6
Total	**18**	**0**	**18**
	100%	**0%**	

Block B1 - Ground Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



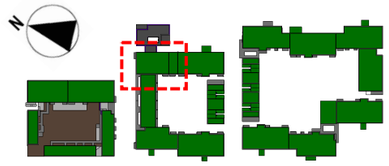


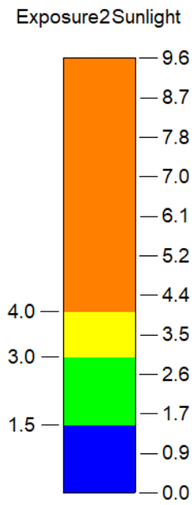


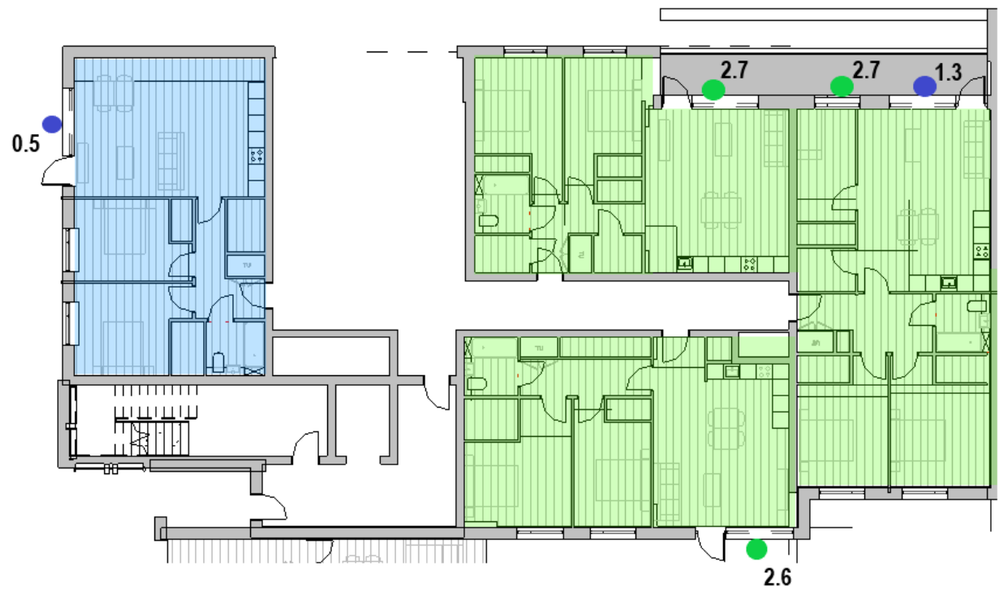
Block B1	Pass	Fail	Total
Ground Floor	3	1	4
First Floor	5	0	5
Second Floor	5	0	5
Third Floor	5	0	5
Fourth Floor	5	0	5
Total	**23**	**1**	**24**
	96%	**4%**	

Block B1- First Floor

Sunlight Analysis as illustrated below, determined 3 out of 4 units on this floor achieve the minimum recommendations.



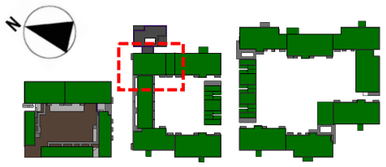


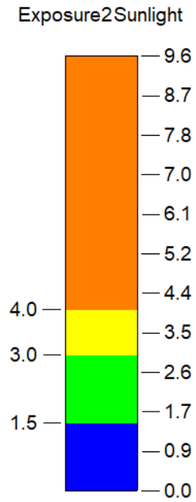


Block B1	Pass	Fail	Total
Ground Floor	3	1	4
First Floor	5	0	5
Second Floor	5	0	5
Third Floor	5	0	5
Fourth Floor	5	0	5
Total	**23**	**1**	**24**
	96%	**4%**	

Block B1- Second Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

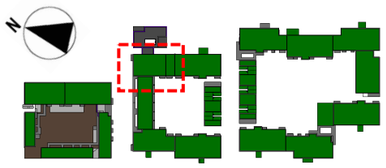


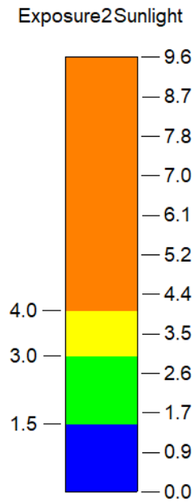


Block B1	Pass	Fail	Total
Ground Floor	3	1	4
First Floor	5	0	5
Second Floor	5	0	5
Third Floor	5	0	5
Fourth Floor	5	0	5
Total	**23**	**1**	**24**
	96%	**4%**	

Block B1- Third Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

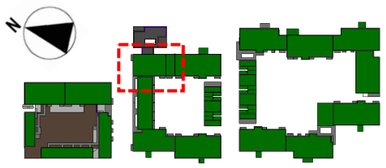


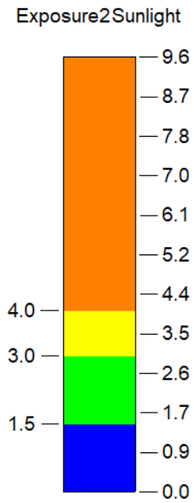


Block B1	Pass	Fail	Total
Ground Floor	3	1	4
First Floor	5	0	5
Second Floor	5	0	5
Third Floor	5	0	5
Fourth Floor	5	0	5
Total	**23**	**1**	**24**
	96%	**4%**	

Block B1- Fourth Floor

Sunlight Analysis as illustrated below, determined units on this floor achieve the minimum recommendations.

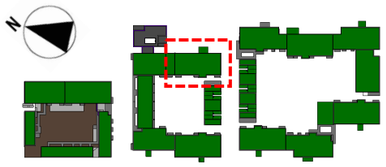


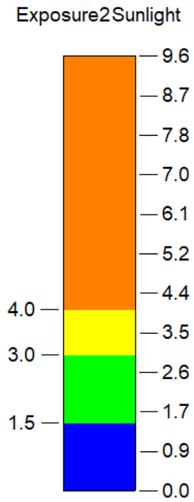


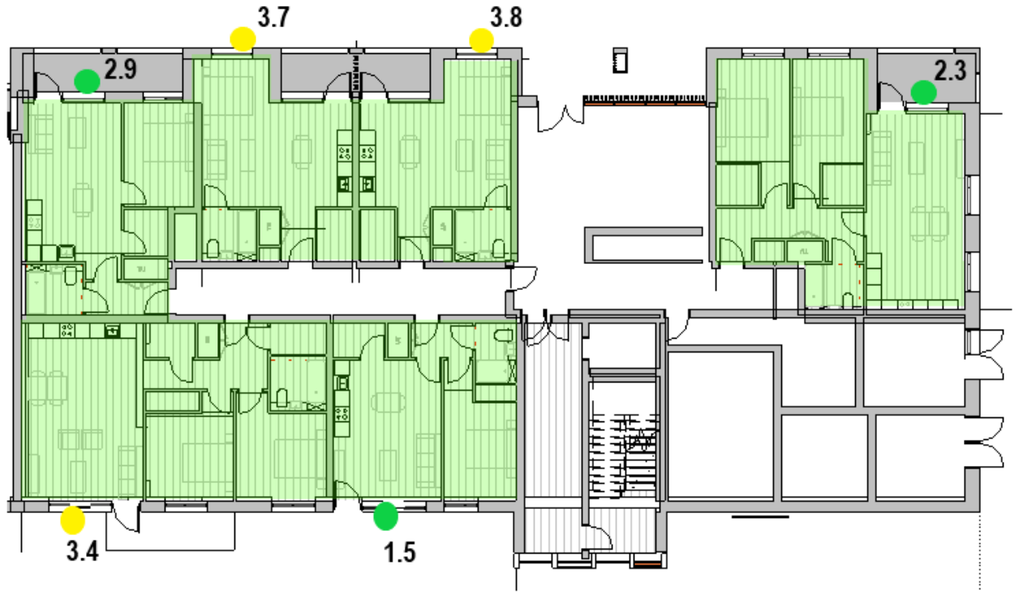
Block B1	Pass	Fail	Total
Ground Floor	3	1	4
First Floor	5	0	5
Second Floor	5	0	5
Third Floor	5	0	5
Fourth Floor	5	0	5
Total	**23**	**1**	**24**
	96%	**4%**	

Block B2 - Ground Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



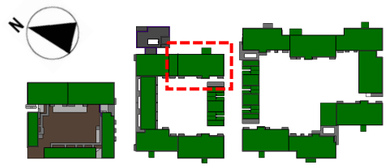


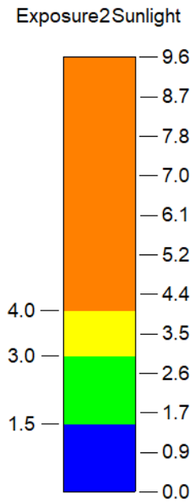


Block B2	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block B2 - First Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

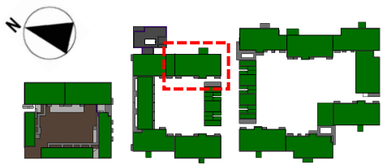


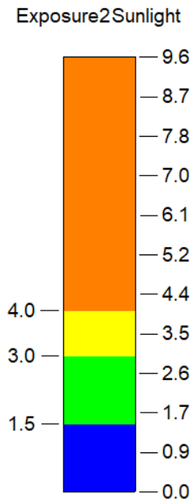


Block B2	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block B2 - Second Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

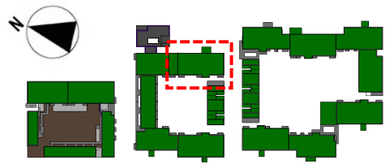


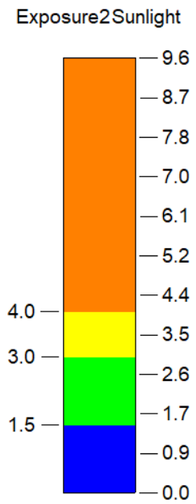


Block B2	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block B2 - Third Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

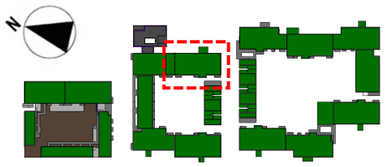


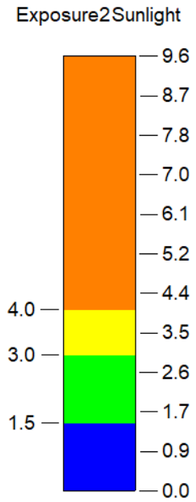


Block B2	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block B2 - Fourth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

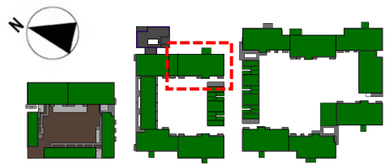


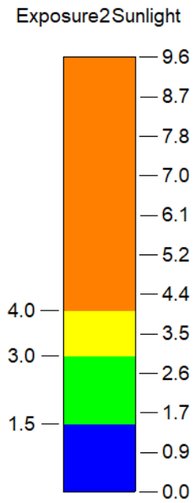


Block B2	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block B2 - Fifth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

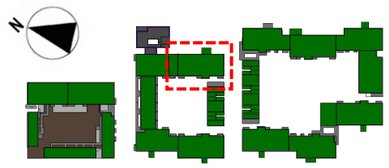


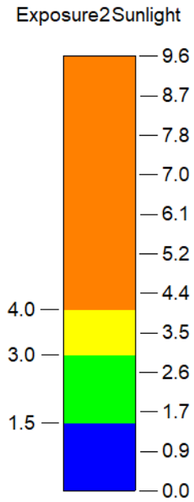


Block B2	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block B2 - Sixth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

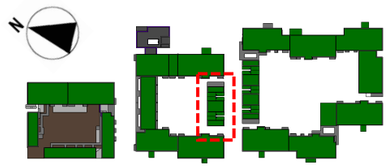


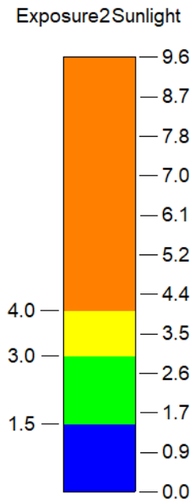


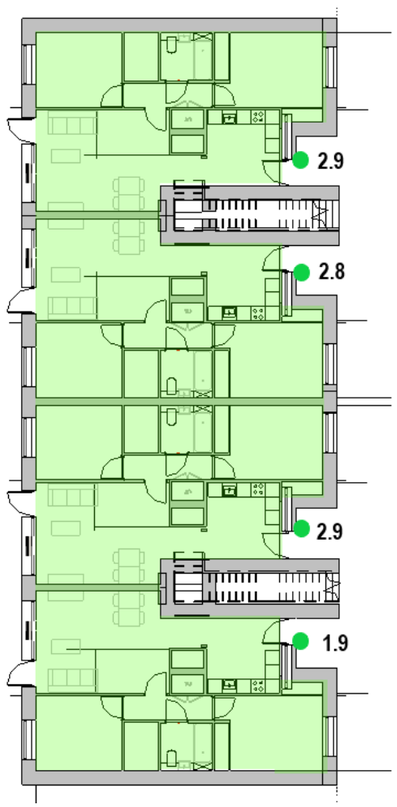
Block B2	Pass	Fail	Total
Ground Floor	6	0	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Fifth Floor	8	0	8
Sixth Floor	8	0	8
Total	**54**	**0**	**54**
	100%	**0%**	

Block B3 - Ground Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



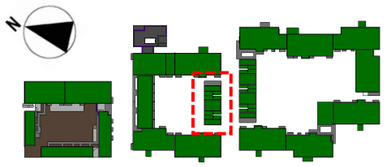


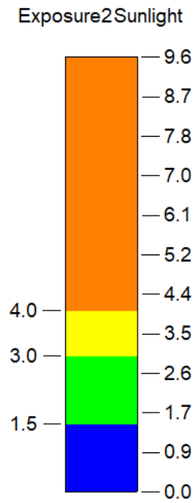


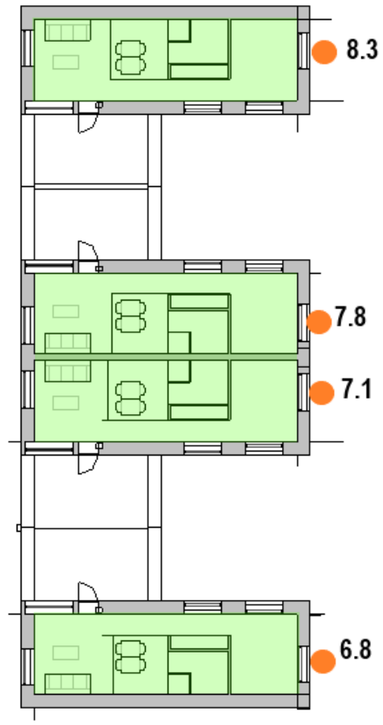
Block B3	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	4	0	4
Second Floor	4	0	4
Total	**12**	**0**	**12**
	100%	**0%**	

Block B3 - First Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



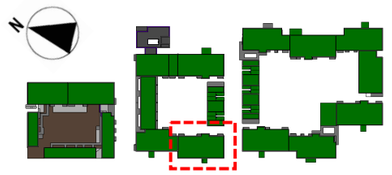




Block B3	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	4	0	4
Second Floor	4	0	4
Total	**12**	**0**	**12**
	100%	**0%**	

Block B4 - Ground Floor

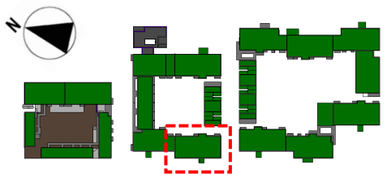
Sunlight Analysis as illustrated below, determined 4 out of 6 units on this floor achieve the minimum recommendations.

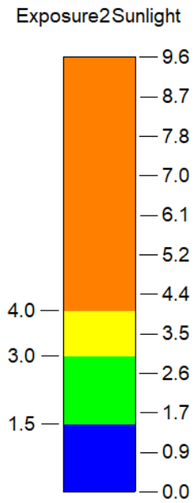


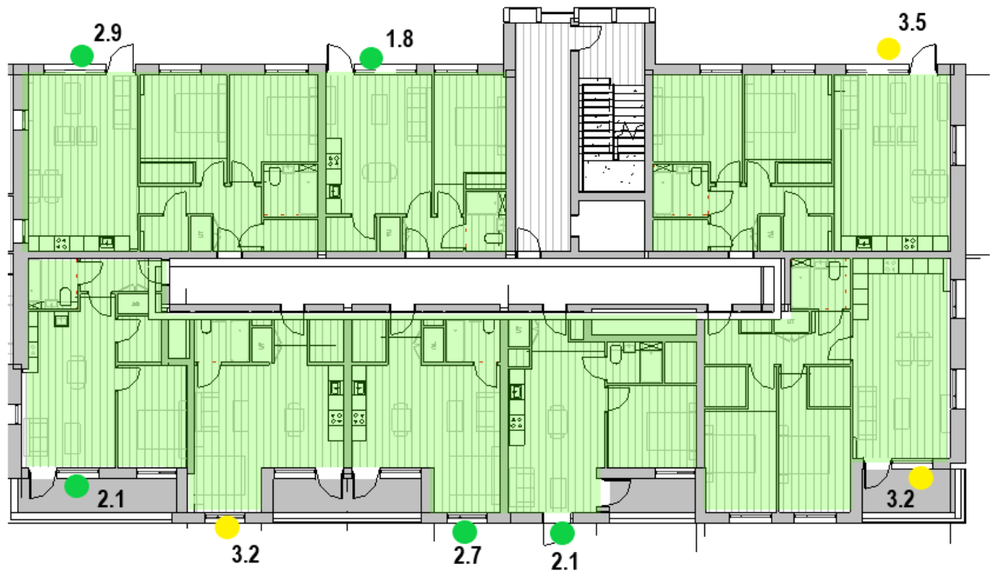
Block B4	Pass	Fail	Total
Ground Floor	4	2	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**36**	**2**	**38**
	95%	**5%**	

Block B4 - First Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



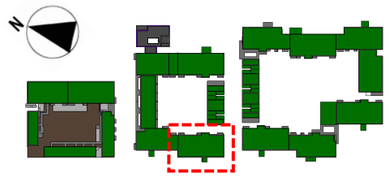


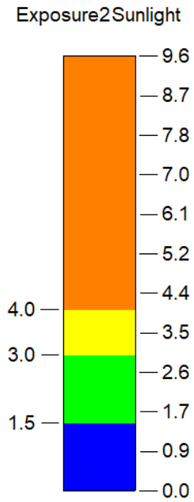


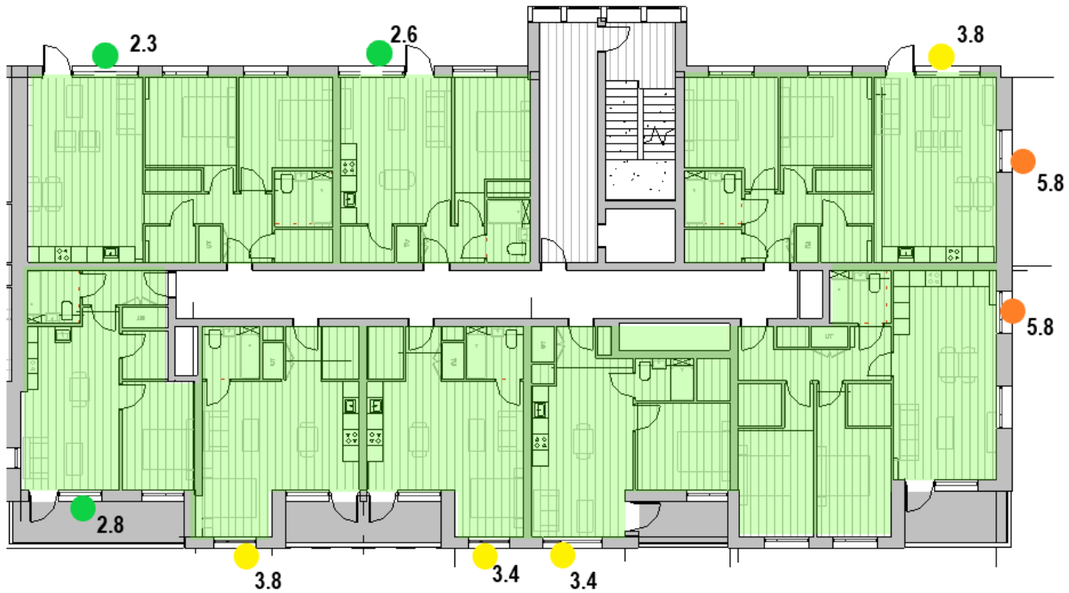
Block B4	Pass	Fail	Total
Ground Floor	4	2	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**36**	**2**	**38**
	95%	**5%**	

Block B4 - Second Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



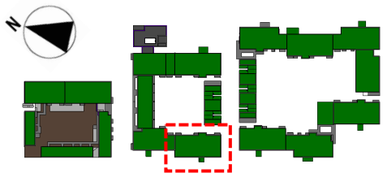


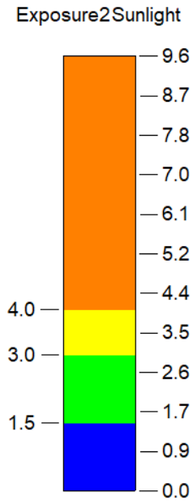


Block B4	Pass	Fail	Total
Ground Floor	4	2	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**36**	**2**	**38**
	95%	**5%**	

Block B4 - Third Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

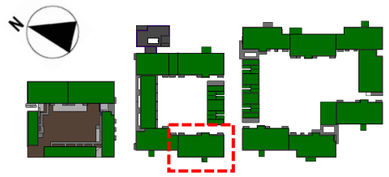


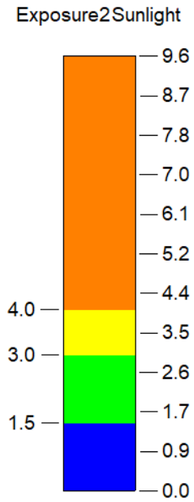


Block B4	Pass	Fail	Total
Ground Floor	4	2	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**36**	**2**	**38**
	95%	**5%**	

Block B4 - Fourth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

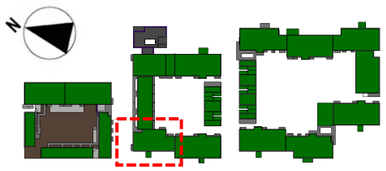


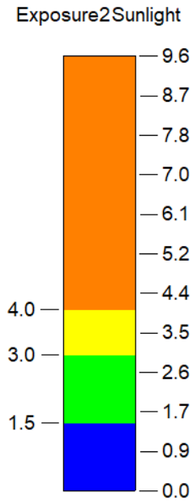


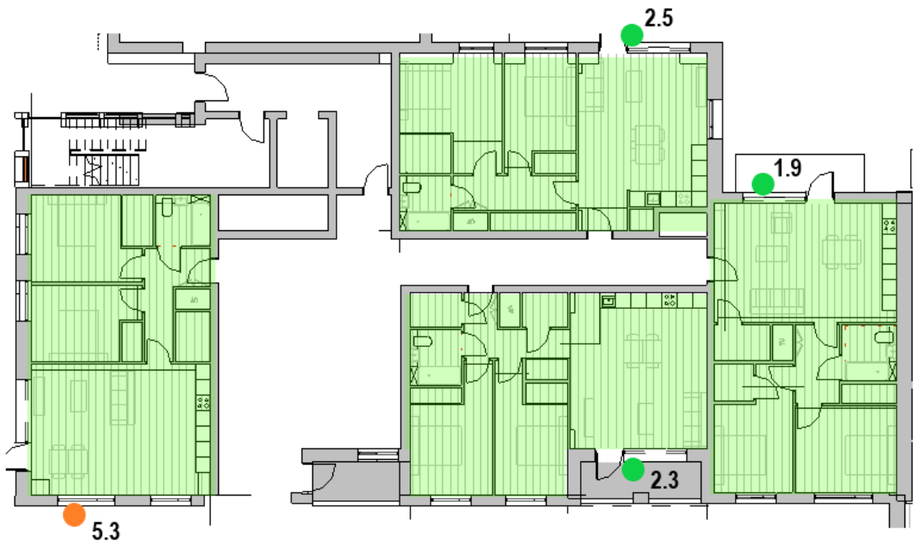
Block B4	Pass	Fail	Total
Ground Floor	4	2	6
First Floor	8	0	8
Second Floor	8	0	8
Third Floor	8	0	8
Fourth Floor	8	0	8
Total	**36**	**2**	**38**
	95%	**5%**	

Block B5 - Ground Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



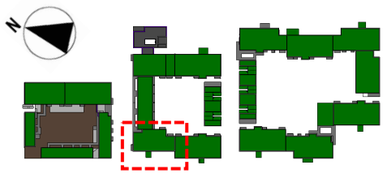


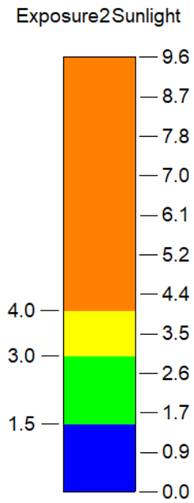


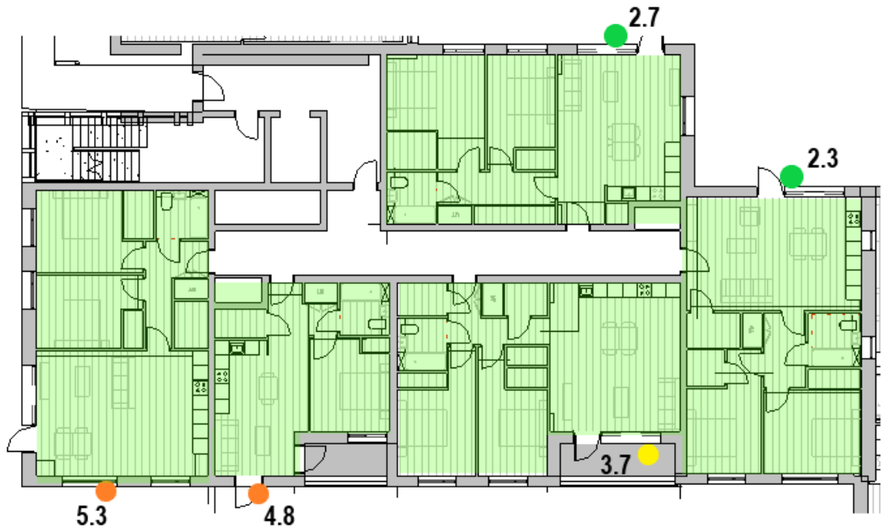
Block B5	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	5	0	5
Second Floor	5	0	5
Third Floor	5	0	5
Fourth Floor	5	0	5
Fifth Floor	5	0	5
Sixth Floor	5	0	5
Total	**34**	**0**	**34**
	100%	**0%**	

Block B5 - First Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



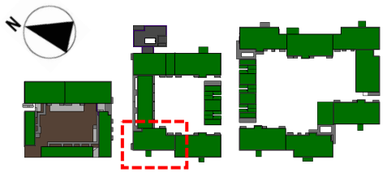


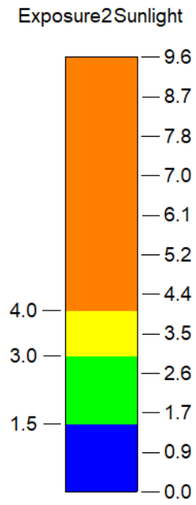


Block B5	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	5	0	5
Second Floor	5	0	5
Third Floor	5	0	5
Fourth Floor	5	0	5
Fifth Floor	5	0	5
Sixth Floor	5	0	5
Total	**34**	**0**	**34**
	100%	**0%**	

Block B5 - Second Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

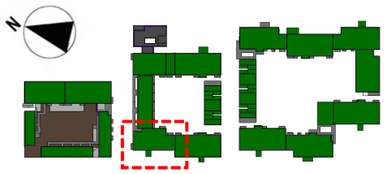


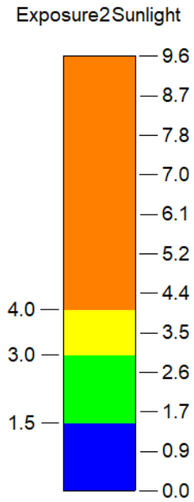


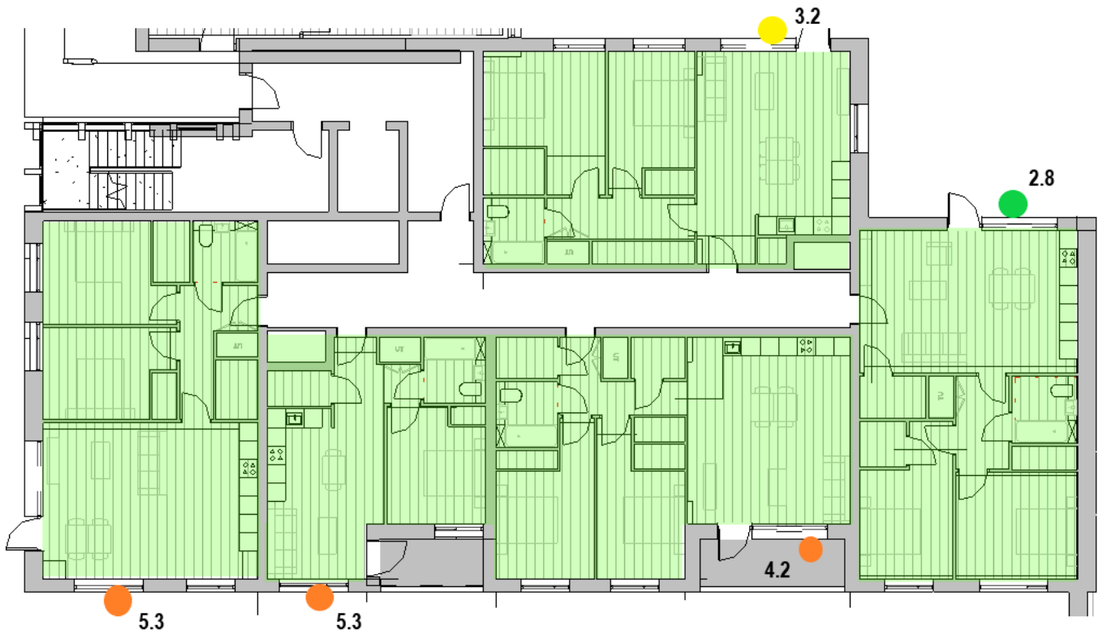
Block B5	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	5	0	5
Second Floor	5	0	5
Third Floor	5	0	5
Fourth Floor	5	0	5
Fifth Floor	5	0	5
Sixth Floor	5	0	5
Total	**34**	**0**	**34**
	100%	**0%**	

Block B5 - Third Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



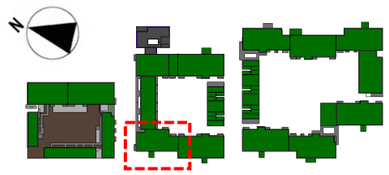


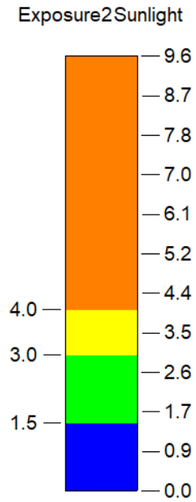


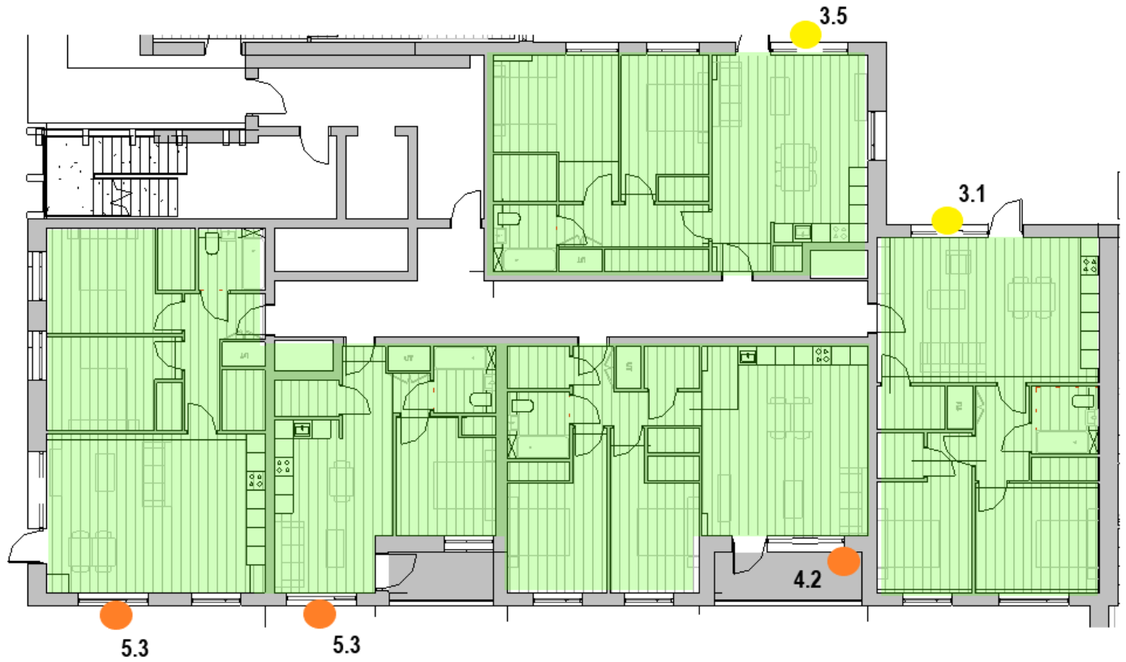
Block B5	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	5	0	5
Second Floor	5	0	5
Third Floor	5	0	5
Fourth Floor	5	0	5
Fifth Floor	5	0	5
Sixth Floor	5	0	5
Total	**34**	**0**	**34**
	100%	**0%**	

Block B5 - Fourth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



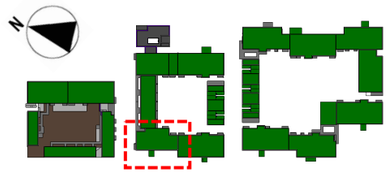


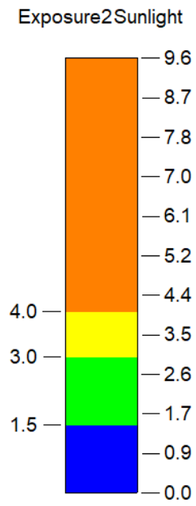


Block B5	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	5	0	5
Second Floor	5	0	5
Third Floor	5	0	5
Fourth Floor	5	0	5
Fifth Floor	5	0	5
Sixth Floor	5	0	5
Total	**34**	**0**	**34**
	100%	**0%**	

Block B5 - Fifth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

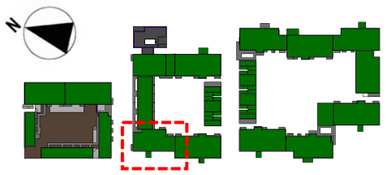


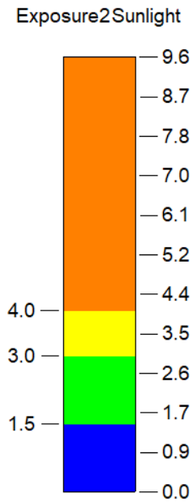


Block B5	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	5	0	5
Second Floor	5	0	5
Third Floor	5	0	5
Fourth Floor	5	0	5
Fifth Floor	5	0	5
Sixth Floor	5	0	5
Total	**34**	**0**	**34**
	100%	**0%**	

Block B5 - Sixth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

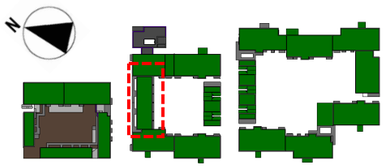


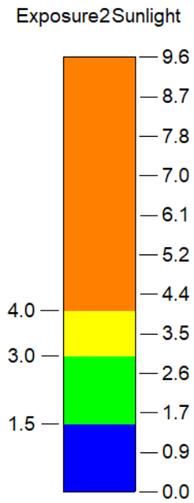


Block B5	Pass	Fail	Total
Ground Floor	4	0	4
First Floor	5	0	5
Second Floor	5	0	5
Third Floor	5	0	5
Fourth Floor	5	0	5
Fifth Floor	5	0	5
Sixth Floor	5	0	5
Total	**34**	**0**	**34**
	100%	**0%**	

Block B6 - Ground Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

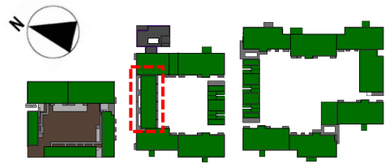


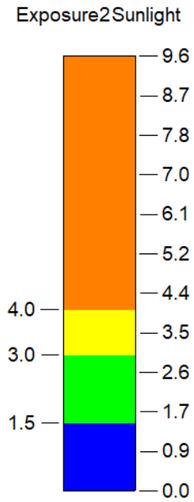


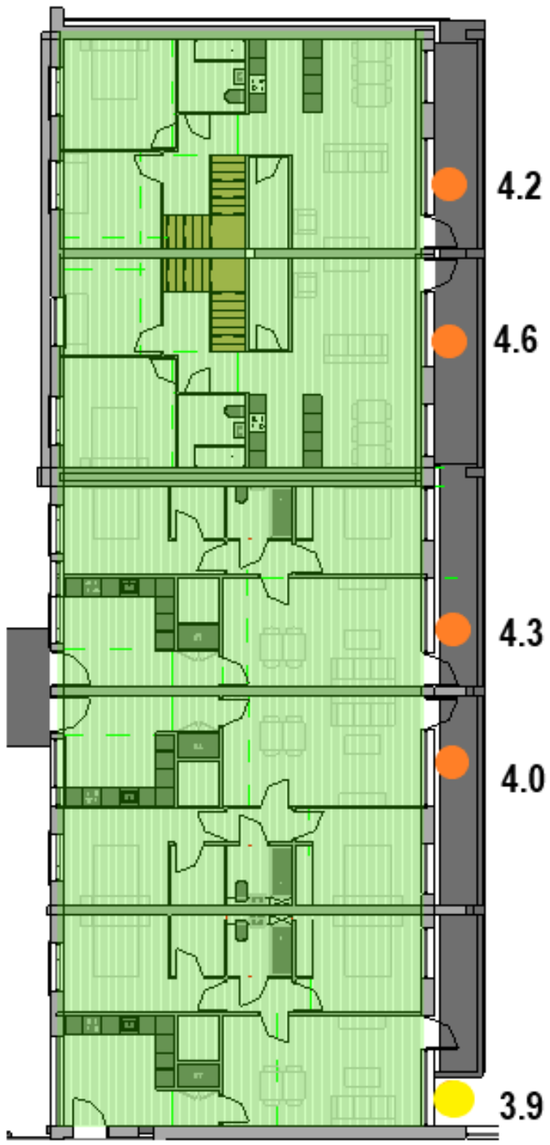
Block B6	Pass	Fail	Total
Ground Floor	3	0	3
First Floor	5	0	5
Second Floor	6	0	6
Third Floor	6	0	6
Fourth Floor	6	0	6
Total	**26**	**0**	**26**
	100%	**0%**	

Block B6 – First Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



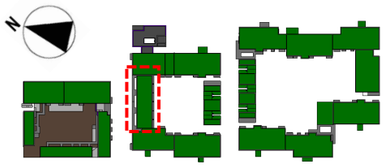


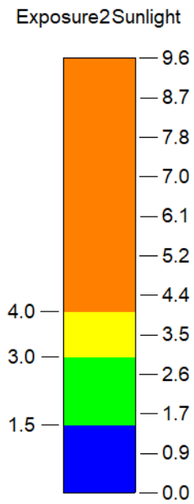


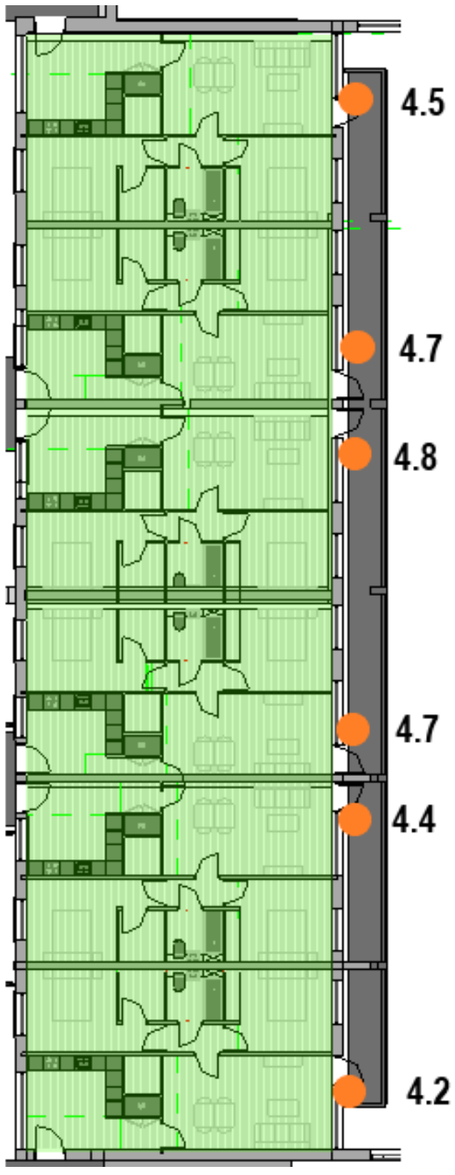
Block B6	Pass	Fail	Total
Ground Floor	3	0	3
First Floor	5	0	5
Second Floor	6	0	6
Third Floor	6	0	6
Fourth Floor	6	0	6
Total	**26**	**0**	**26**
	100%	**0%**	

Block B6 – Second Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



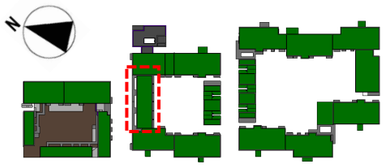


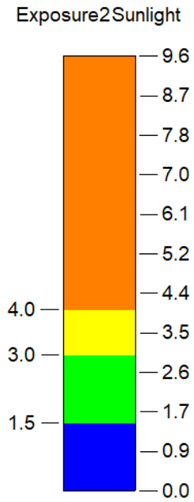


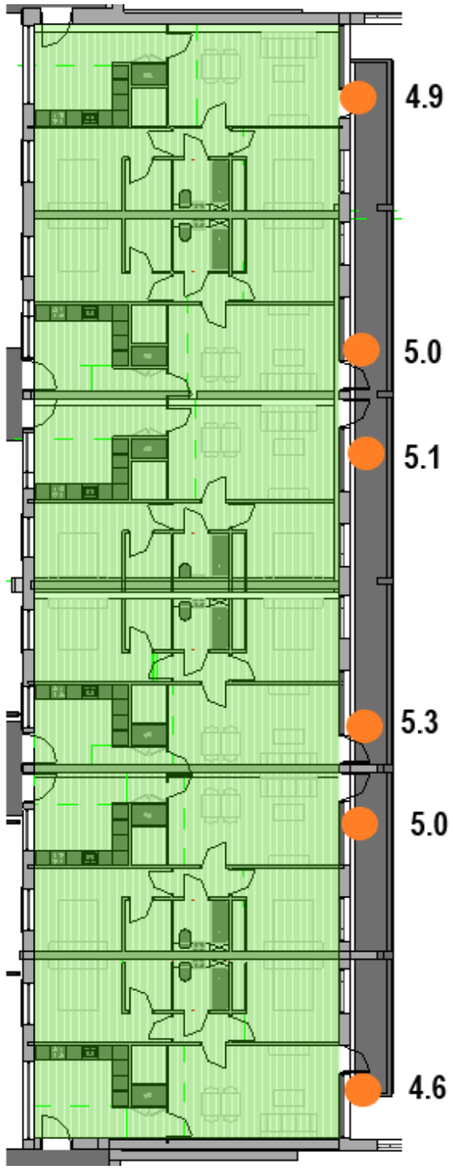
Block B6	Pass	Fail	Total
Ground Floor	3	0	3
First Floor	5	0	5
Second Floor	6	0	6
Third Floor	6	0	6
Fourth Floor	6	0	6
Total	**26**	**0**	**26**
	100%	**0%**	

Block B6 – Third Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



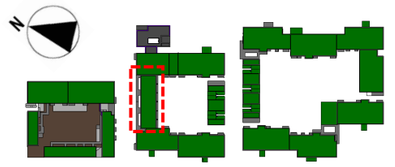


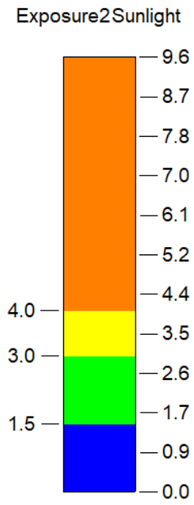


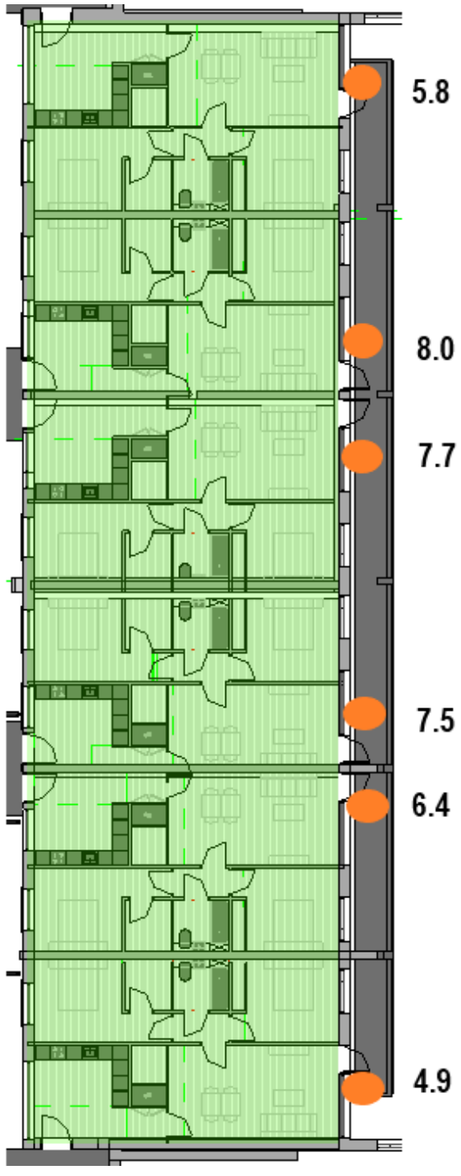
Block B6	Pass	Fail	Total
Ground Floor	3	0	3
First Floor	5	0	5
Second Floor	6	0	6
Third Floor	6	0	6
Fourth Floor	6	0	6
Total	**26**	**0**	**26**
	100%	**0%**	

Block B6 – Fourth Floor

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



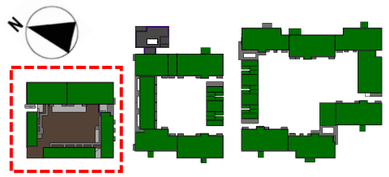


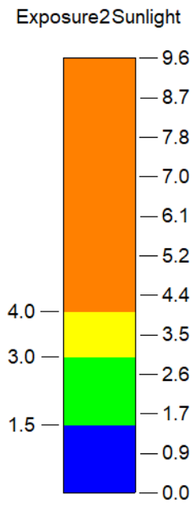


Block B6	Pass	Fail	Total
Ground Floor	3	0	3
First Floor	5	0	5
Second Floor	6	0	6
Third Floor	6	0	6
Fourth Floor	6	0	6
Total	**26**	**0**	**26**
	100%	**0%**	

Block C – Level 01

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.

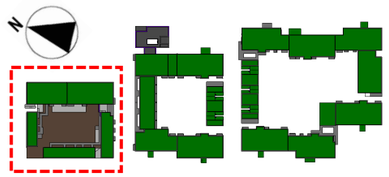


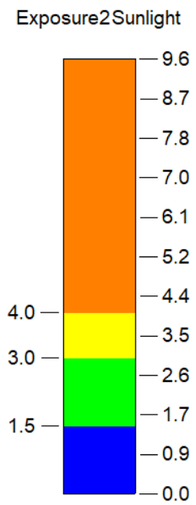


Block C	Pass	Fail	Total
First Floor	7	0	7
Second Floor	18	1	19
Third Floor	23	0	23
Fourth Floor	23	0	23
Fifth Floor	7	0	7
Sixth Floor	7	0	7
Total	**85**	**1**	**86**
	99%	**1%**	

Block C – Level 02

Sunlight Analysis as illustrated below, determined 19 out of 20 units on this floor achieve the minimum recommendations.

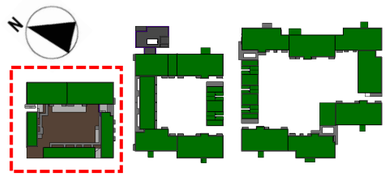


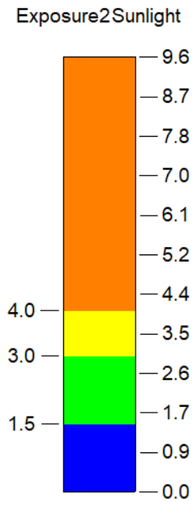


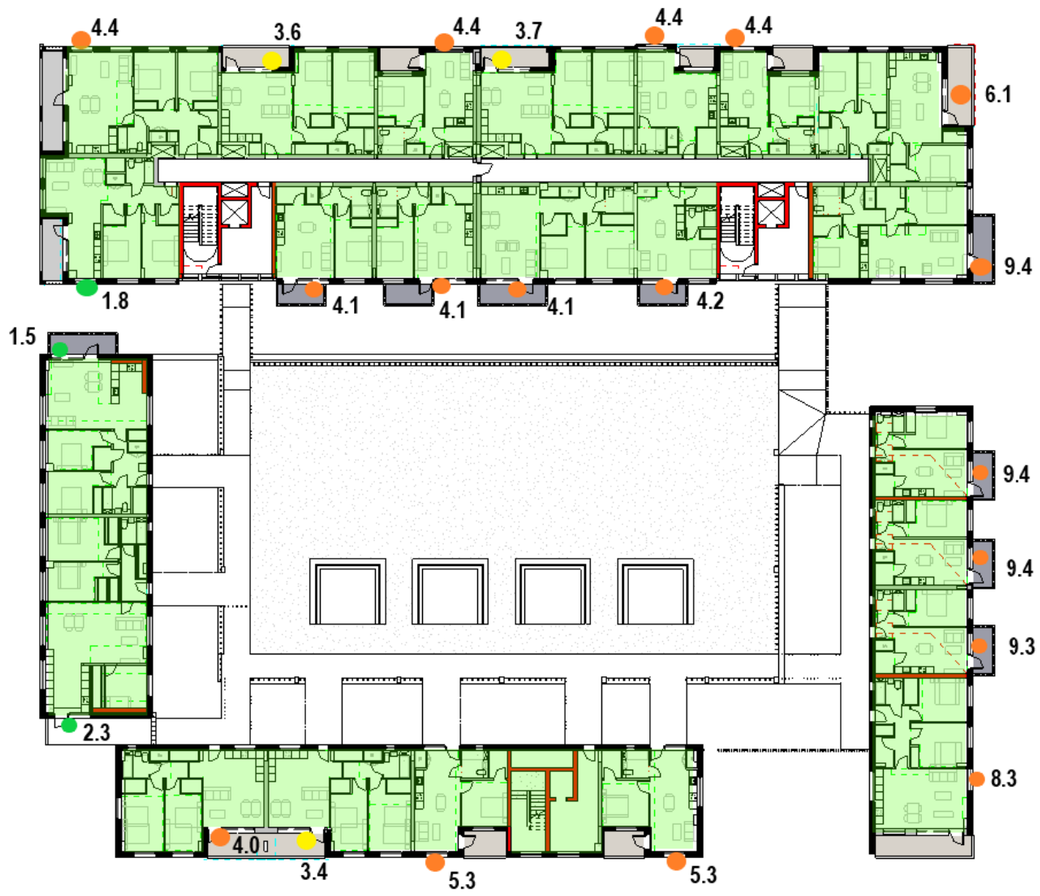
Block C	Pass	Fail	Total
First Floor	7	0	7
Second Floor	18	1	19
Third Floor	23	0	23
Fourth Floor	23	0	23
Fifth Floor	7	0	7
Sixth Floor	7	0	7
Total	**85**	**1**	**86**
	99%	**1%**	

Block C – Level 03

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



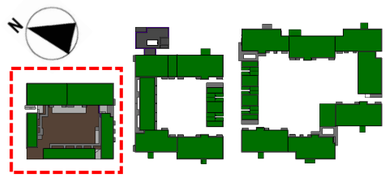


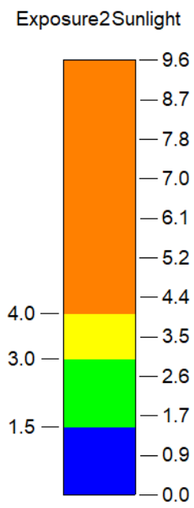


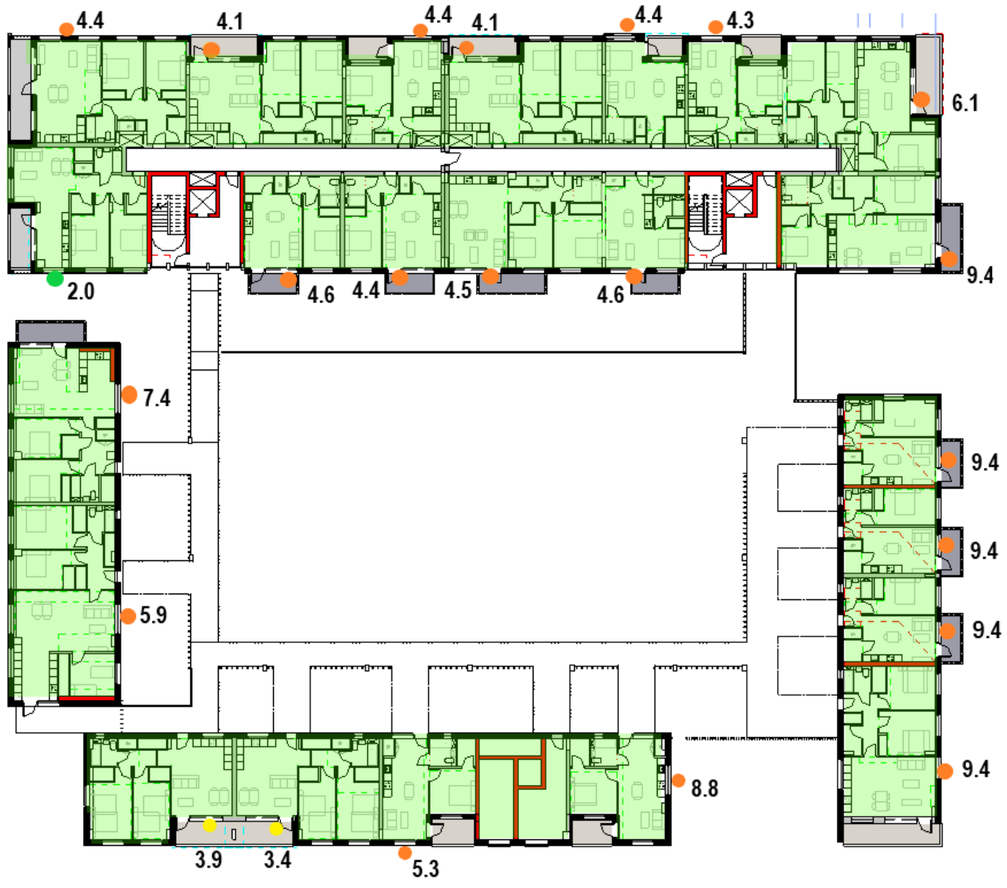
Block C	Pass	Fail	Total
First Floor	7	0	7
Second Floor	18	1	19
Third Floor	23	0	23
Fourth Floor	23	0	23
Fifth Floor	7	0	7
Sixth Floor	7	0	7
Total	**85**	**1**	**86**
	99%	**1%**	

Block C – Level 04

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



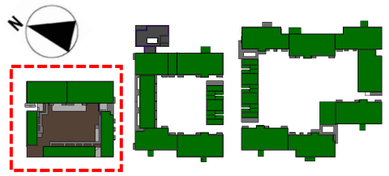


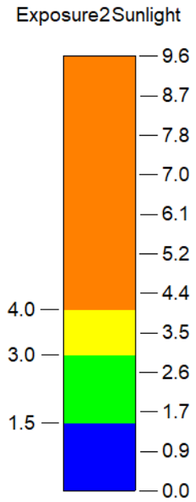


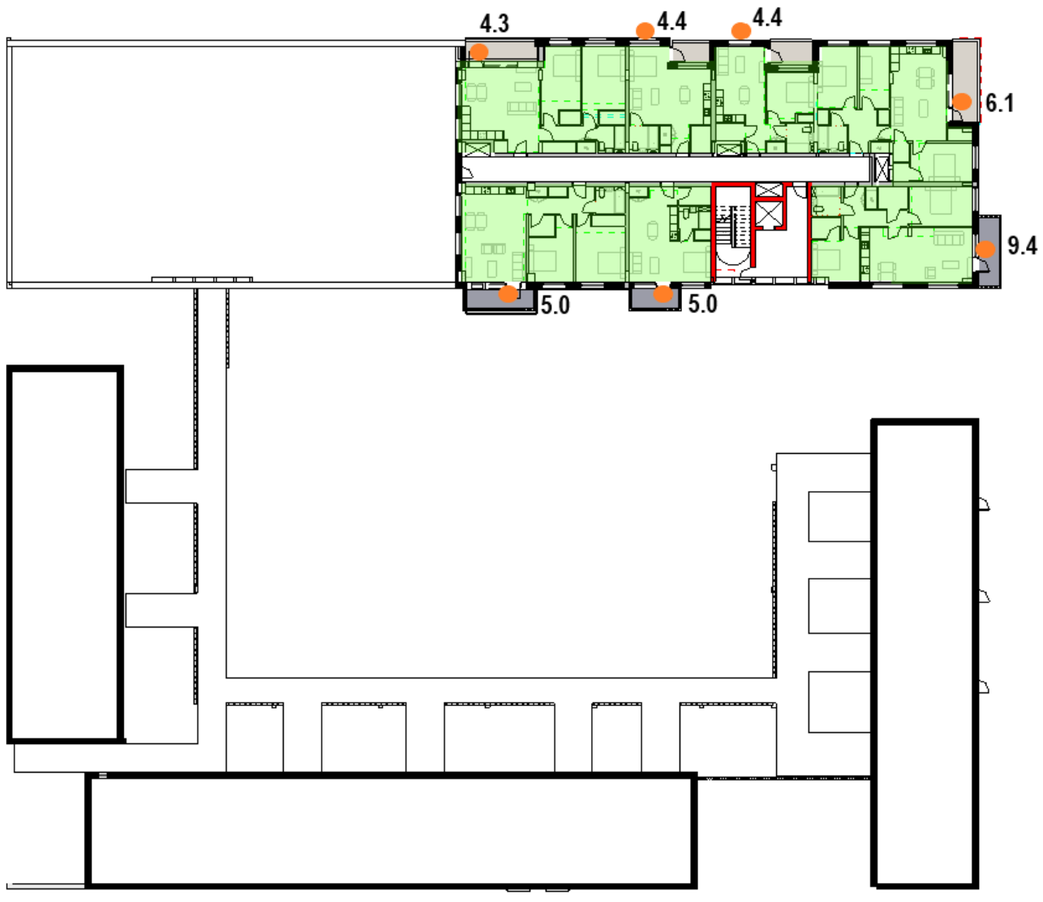
Block C	Pass	Fail	Total
First Floor	7	0	7
Second Floor	18	1	19
Third Floor	23	0	23
Fourth Floor	23	0	23
Fifth Floor	7	0	7
Sixth Floor	7	0	7
Total	**85**	**1**	**86**
	99%	**1%**	

Block C – Level 05

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.



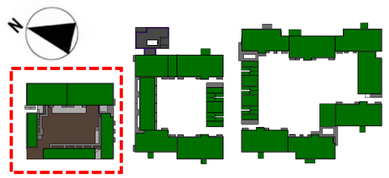


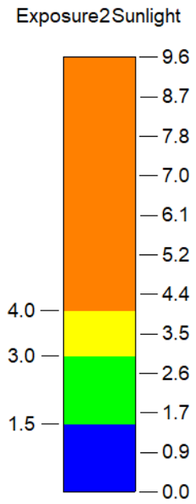


Block C	Pass	Fail	Total
First Floor	7	0	7
Second Floor	18	1	19
Third Floor	23	0	23
Fourth Floor	23	0	23
Fifth Floor	7	0	7
Sixth Floor	7	0	7
Total	**85**	**1**	**86**
	99%	**1%**	

Block C – Level 06

Sunlight Analysis as illustrated below, determined all units on this floor achieve the minimum recommendations.





Block C	Pass	Fail	Total
First Floor	7	0	7
Second Floor	18	1	19
Third Floor	23	0	23
Fourth Floor	23	0	23
Fifth Floor	7	0	7
Sixth Floor	7	0	7
Total	**85**	**1**	**86**
	99%	**1%**	

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