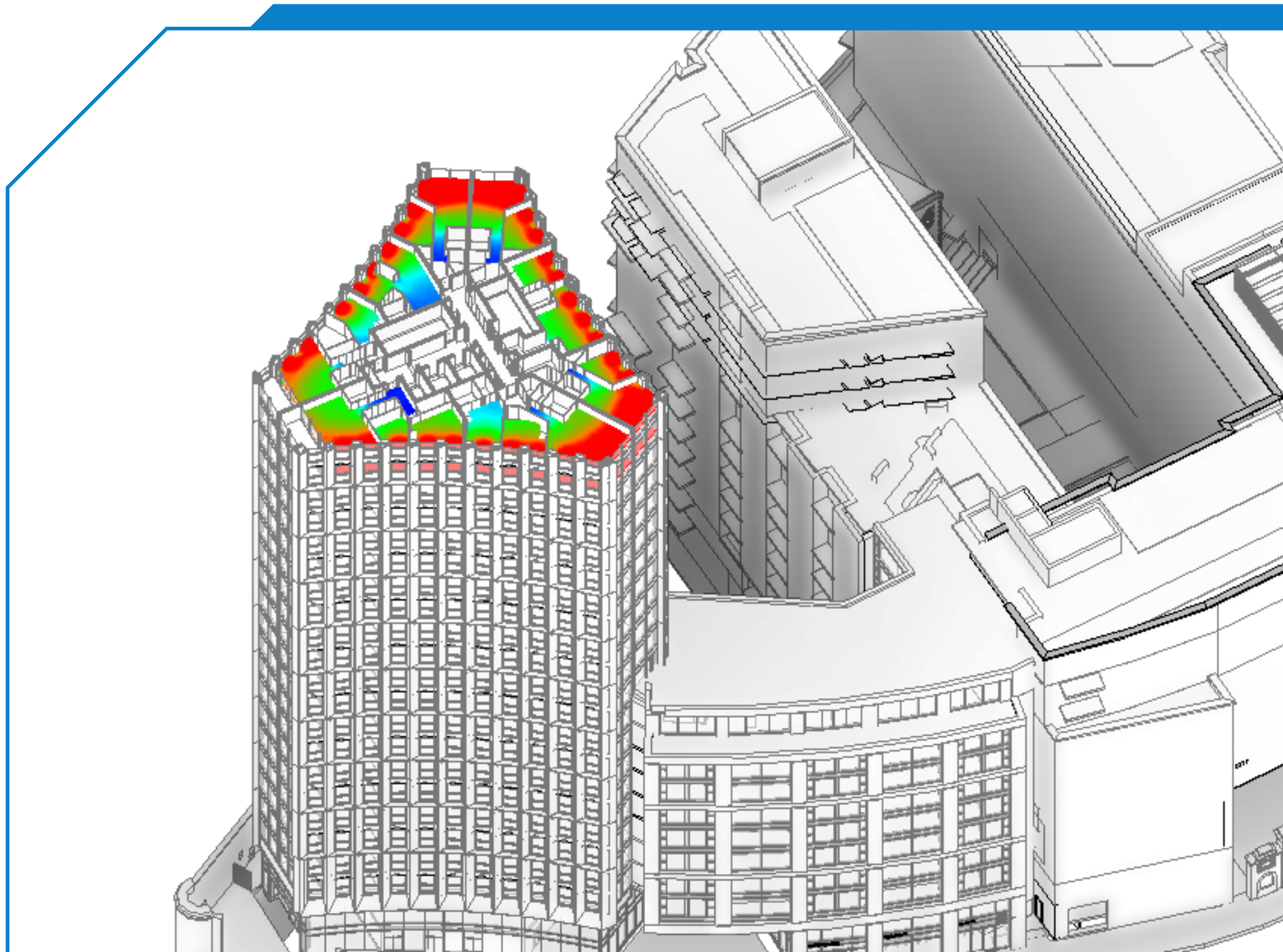
Parkgate Street Residential Blocks A and B2 Planning Amendment

Date	Report Revision	IN2 Project Ref.	Document Ref.
05/03/2025	01	D2453	D2453_Parkgate Street Residential Blocks A and B2_Daylight and Sunlight_Planning Amendment_Rev00



Prepared for

CHARTERED LAND

Document Control

Compiled by: MH & MAP

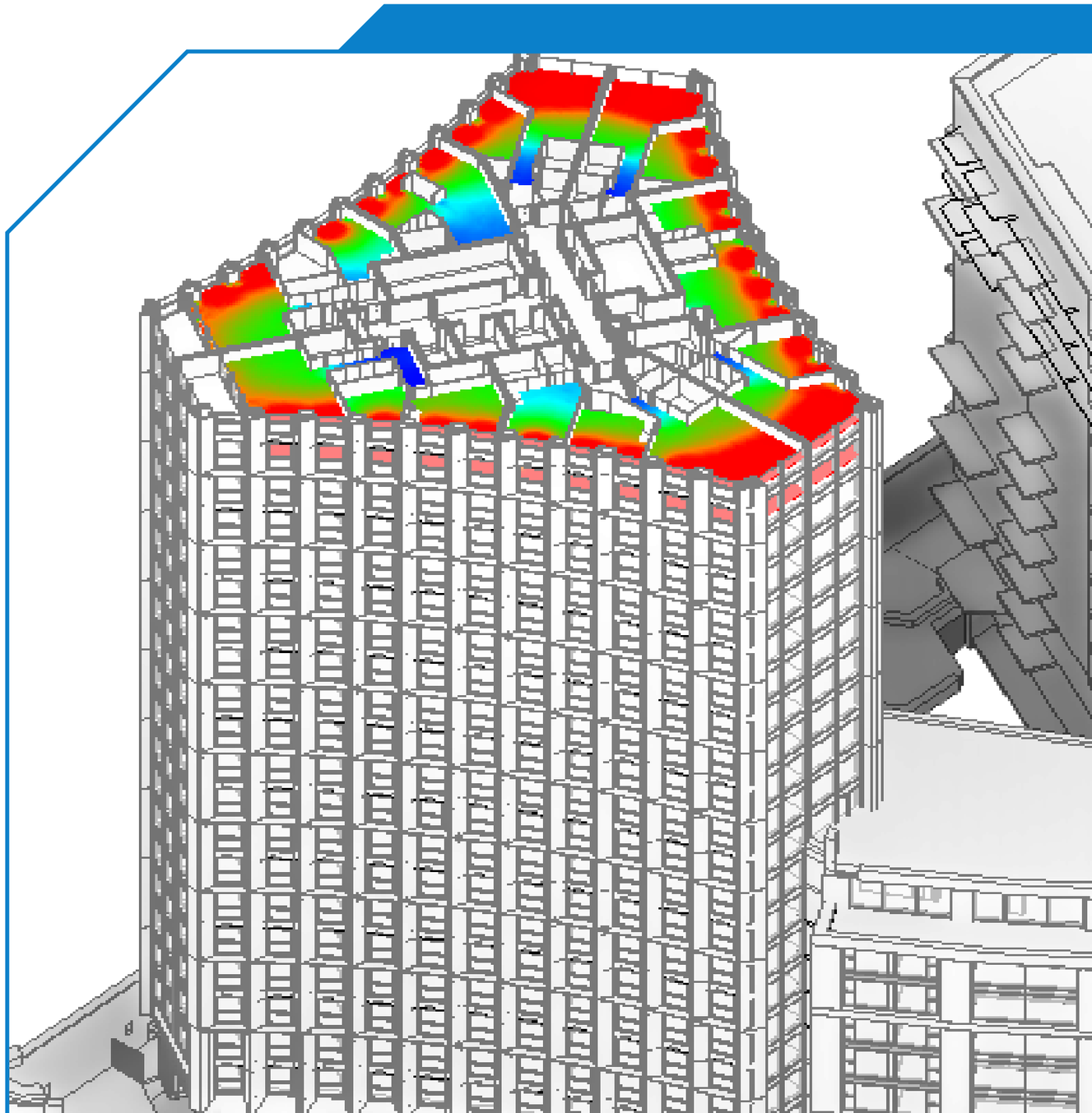
Authorised by: WOD

File name:
D2453_Parkgate Street Residential Blocks A and B2 _Daylight and Sunlight_Planning Amendment_Rev01

Report History

Date	Revision	Description	Status
03/03/2025	Rev.00	Issue for review	
05/03/2025	Rev.01	Updated for comments and issued for planning	

Table of Contents



Executive Summary

This report compiles the daylight and sunlight analysis undertaken by IN2 Engineering Design Partnership for the proposed amendment to Blocks A and B2 for the permitted residential development at 42A Parkgate Street, Dublin 8, under ABP-310567-21 (as amended by planning permission LRD6042/23-S3A).

The report has been prepared as a desktop exercise, with 3D massing and survey information provided by others. No site visits took place, as the information provided included all the relevant required data, and our understanding is that any survey information or 3D models provided were carried out by 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 introduces the various Guidelines and Standards utilised throughout the Daylight / Sunlight analysis. Section 3 is a glossary of common terms found in the report. The specific methodology for each relevant topic is detailed in the corresponding section in the body of this report, as identified below.

Analysis Type	Relevance	Assessment Methodology	Compliance Guidelines Targets	Reference section of this report
Daylight	Existing Neighbouring Buildings	Vertical Sky Component	BRE Guide BR 209 (2022 Edition)	Section 4.0 – Impact on Neighbouring Buildings
Sunlight	Existing Neighbouring Buildings	Annual Probable Sunlight Hours	BRE Guide BR 209 (2022 Edition)	Section 4.0 – Impact on Neighbouring Buildings
Sunlight	Existing Neighbouring Amenity Spaces	Sunlight Hours	BRE Guide BR 209 (2022 Edition)	Section 4.0 – Impact on Neighbouring Buildings
Daylight	Proposed Development	Average Daylight Factor	BRE Guide BR 209 (2nd Edition)	Section 5.0 – Internal Daylight Analysis
Daylight	Proposed Development	Spatial Daylight Autonomy	BRE Guide BR 209 (2022 Edition)	Section 5.0 – Internal Daylight Analysis
Sunlight	Proposed Development	Sunlight Exposure	BR 209 (2022 Edition)	Section 6.0 – Exposure to Sunlight
Sunlight	Proposed Development Amenity Spaces	Sunlight Hours	BRE Guide BR 209 (2022 Edition)	Appendix D – Site Sunlight and Shading

Section 4 discusses the impact of the proposed development on neighbouring buildings. The results determined that due to the massing and careful placement of the proposed amendment, there would be no significant impact on neighbouring residences for daylight (VSC) or Sunlight (APSH).

Section 5 includes daylight analysis that has been undertaken for the kitchen/living/dining (KLD), living room and bedroom spaces in the proposed amended blocks. Units in Block A have been assessed based on the BRE Guide (2nd ed.)'s Average Daylight Factor (ADF) metric, and units in Block B2 have been assessed under the BRE Guide (3rd ed./2022 ed.)'s Spatial Daylight Autonomy (SDA) metric. **100%** of the rooms in Block A and **85%** of the rooms in Block B2 were found to be compliant with the respective metrics as presented in detail in Appendix A and Appendix B, respectively.

As per the Apartment Guidelines, where rooms were determined to not comply with the BRE Guide (total 22no. rooms in Block B2), these have been identified and compensatory measures provided in Appendix B.

Section 7 covers the results for the Exposure to Sunlight Analysis (ETS) on Block B2. This metric assesses the sunlight availability to each unit. **58%** of the units in the proposed amended block were determined to be compliant with the BRE Guide. Detailed results are presented in Appendix C.

For any unit not achieving minimum compliance for ETS, these have been identified, and compensatory measures have been provided in Section 6.3.

Shadow Diagrams have been provided in Appendix D. These diagrams illustrate the site shading for the equinox and both winter and summer solstice. As illustrated in the shadow diagrams, the proposed amendment to Block A and Block B2 will have minimal bearing onto its receiving environment. This was provided for information only. For quantitative analysis Section 4.0 can be referred.

In summary, this report confirms that best practice Daylight and Sunlight availability has been ensured for the proposed amendment to Blocks A and B2 at 42A Parkgate Street, Dublin, with no impact on the existing neighbouring environment.

Standards and Guidelines

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
b) Sustainable Urban Housing: Design Standards for New Apartments (2023 version) (the **"2023 Apartment Guidelines"**). These are guidelines issued under section 28 of the 2000 Planning and Development Act (as amended)
c) Dublin City Development Plan 2022-2028 (the **"DCC Development Plan"**)
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 2nd ed."**)
e) 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 2022"**)
f) British Standard BS 8206-2:2008 – "Lighting for Buildings – Part 2: Code of Practice for Daylighting" (the **"2008 British Standard"**)
g) British Standard BS EN 17037:2018 – Daylight in Buildings (the **"2018 British EN Standard"**)
h) Irish Standard IS EN 17037:2018 (the **"2018 Irish EN Standard"**).
i) Sustainable Residential and Compact Settlement Guideline for Planning Authorities 2024, section 5.3.7.

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.

European Standard EN 17037:2018, which was approved by the Comité Européen de Normalisation (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.

This report has been therefore carried out based on the guidance contained within two relevant editions of the Building Research Establishment's (BRE) Site Layout Planning for Daylight and Sunlight: A guide to good practice (BRE 209) that were applicable at the time when planning permissions were granted individually for Blocks A and B2. Daylight and sunlight analysis for Block B2, the proposed amenity spaces, and impact on neighbours is based on the 3rd edition/2022 edition of BRE 209, while daylight analysis for Block A is based on the 2nd edition.

The BRE Guide is specifically designed to facilitate good building design within the planning context and is referenced in the Apartment Guidelines. The 2020 Apartment Guidelines is the edition valid at the time when planning permission for Block A was granted and references the 2nd edition of the BRE Guide. Correspondingly, the 2023 Apartment Guidelines was the edition valid at the time when planning amendment to Block B2 was granted and references the 3rd edition/2022 edition of the BRE Guide. Both editions of the BRE Guide clarify and expand on the methodologies contained in IS EN 17037 and BS EN 17037 with specific relevance to residential buildings, and as such have been deemed to take precedence over these other documents.

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. 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."

It can be noted from this section that the 2020 Apartment Guidelines continue to refer to the BRE Guide (published in 2011) and to the 2008 British Standard. They do not take into account of the 2018 British Standard and/or the 2018 Irish Standard and as the BRE Guide is still current and applicable, the 2011 edition will therefore provide the basis for the assessments detailed within this report.

The 2023 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 ensure appropriate expert advice and input where necessary, and have regard to quantitative performance approaches to daylight provision outlined in guides like A New European Standard for Daylighting in Buildings EN17037 or UK National Annex BS EN17037 and the associated BRE Guide 209 2022 Edition (June 2022), or any relevant future guidance specific to the Irish context, 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. 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."

DCC Development Plan

The Development Plan, Volume 2: Appendices 16: Sunlight and Daylight notes:

3.6 Understanding and Expectations

The planning authority understand that, at present, there is some ambiguity in what may be considered the appropriate standard to apply for daylight and sunlight assessments. There is a period of transition at present, during which BS 8206-2 has been superseded, but the relevant guidance within BR 209 has not yet been updated. Thus, both BS 8206-2 and BS EN 17037 have relevance.

As such, both for clarity and as an interim measure during this transition period, the planning authority will look to receive relevant metrics from BR 209, BS 8206-2 and BS EN 17037. ***If, over the coming years, a revised version of BR 209 is to be issued, the guidance within this new version will take precedence. (EMPHASIS ADDED)***

The Document notes in 4.0 Relevant Metrics that "Where the text below is unclear or where there is ambiguity over a particular piece of information, the relevant standard and guidance document shall always take precedence." Therefore, "Section 5.0 Assessment Methodologies" for proposed development included in the plan have been superseded and correct methodologies are noted below:

5.1 Performance of the Proposed Development		**Correct Methodology**
Annual Probable Sunlight Hours on all relevant windows	*Not an applicable metric for the proposed development as per BRE Guide (2022) instead Exposure to Sunlight assessment should be utilised.*	Exposure to Sunlight for each dwelling.
Winter Sunlight Hours on all relevant windows	*Not an applicable metric for the proposed development as per BRE Guide (2022) instead Exposure to Sunlight assessment should be utilised.*	Exposure to Sunlight for each dwelling.
Sunlight on Ground in all amenity spaces	*Correct Methodology*	Sunlight on Ground in all amenity spaces
Average Daylight Factor in all habitable rooms	*Not applicable to the proposed amendment as per BRE Guide (2022)*	Spatial Daylight Autonomy (to achieve Target Illuminance) or Median Daylight Factor in all habitable rooms
No Sky Line in all habitable rooms	*Not an applicable metric for the proposed development as per BRE Guide (2022)*	
Target Illuminance in all habitable rooms	*Spatial Daylight Autonomy (to achieve Target Illuminance) or Median Daylight Factor in all habitable rooms.*	

The BRE Guide (2nd 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 in the [2008] British Standard… 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:

"It (the guide) is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location. Appendix F explains how this can be done in a logical way, while retaining consistency with the British Standard recommendations on interior daylighting."

"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."

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 measure will be proposed. In the context of this report, any deviations from the Guides 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 a s practicable and viable as detailed in the report as relevant.

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

1. Light from the Sky (Daylight) – *Based on a theoretical mathematical uniform sky (CIE overcast sky) which does not alter based on orientation.*

    1.1. New Development – Within this section the guide sets values for internal Average Daylight Factors (ADF) for various space types and relevant calculation methodologies.

    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 – This topic is addressed in the 2020 Apartment Guidelines under the issue of dual aspect units and is not covered within this report.

    2.2. Existing Buildings – The guide sets a quantitative assessment for determining the impact of sunlight 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 2008 British Standard

The BRE guide specifically refers to this standard and most of the quantitative criteria set out have already been mentioned in relation to the BRE Guide above. However, the BRE guide provides more detail as to context and implementation. In relation to average daylight factor (ADF), the standard states the following:

"The average daylight factor… is used as the measure of general illumination from skylight. It is considered good practice to ensure that rooms in dwellings and in most other buildings have a predominantly daylit appearance. In order to achieve this the average daylight factor should be at least 2%."

However, the standard then acknowledges that lower lighting levels may be applicable for dwellings, offering minimum ADFs for different room types within dwellings, i.e. 1% for bedrooms; 1.5% for living rooms; and 2% for kitchens (Table 2), and notes that:

"Where one room serves more than one purpose, the minimum average daylight factor should be that for the room type with the highest value. For example, in a space which combines a living room and a kitchen the minimum average daylight factor should be 2%."

Whilst specifically applicable to houses, it should be noted that there is no specific reference within the British Standard to apartment internal galley type kitchens as recognised in the BRE Guide which states:

"2.1.14 Non-daylit internal kitchens should be avoided wherever possible, especially if the kitchen is used as a dining area too. If the layout means that a small internal galley-type kitchen is inevitable, it should be directly linked to a well daylit living room."

The standard's guidance on loss of daylight and sunlight to existing buildings is similar to, but less extensive or detailed than, that contained in the BRE Guide, and in particular Appendix F of the BRE Guide.

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 is 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 Median Daylight Factor (MDF), please refer to internal daylight 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 BS EN 17037 standard varies from the IS EN 17037 standard as it contains a national annex developed by the Building Research Establishment (BRE) to specifically address daylight requirements in domestic dwellings. These requirements are further clarified in the BRE Guide, e.g.: the correct delineation of spaces allowing for the removal of corridor spaces attached to a room; the mandatory inclusion of kitchen spaces in combined living spaces; revised rational upper limits for surface reflectances; default framing factors; maintenance factors. None of which are specified in IS EN 17037, instead requiring, for example, daylight assessment on the ambiguously worded “at least on the required area of the space”. Therefore, for domestic applications, the BRE Guide remains the most applicable document to utilise for daylight assessments.

The National Annex

As is noted above, the 2018 British Standard (BS EN 17037:2018) 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 (European standard including both BS EN 17037:2018 and IS EN 17037:2018)'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."

Glossary


BED
100%
11.4 m²
BED
100%
13.0 m²
BED
100%
13.0 m²
BED
100%
7.1 m²
KLD
86%
28.0 m²
KLD
100%
23.0 m²
KLD
100%
23.0 m²
BED
100%
11.4 m²
BED
100%
11.4 m²
KLD
89%
30.0 m²
BED
100%
11.4 m²

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 BRE Guide at 850mm above floor level.

Average Daylight Factor

Average Daylight Factor (ADF) is the calculated average of available daylight on specified points on the working plane in a space based on the CIE 10,000 lux sky.

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. 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 BRE Guide.

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 BRE Guide.

Impact on Neighbouring Buildings

Impact on Neighbouring Buildings

4.1 Guidance

As set out within the introduction, the impact on existing buildings can be assessed utilising quantitative assessment method as detailed in the BRE Guide "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 measured at the centre of an existing main window is less than 27%, and less than 0.80 times its former value"

The analysis is based on measuring the VSC (Vertical Sky Component) 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 and less than 0.80 times its former annual value; or less than 5% of annual probable sunlight hours between 21 September and 21 March and less than 0.80 times its former value during that period;*
- *and also has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours."*

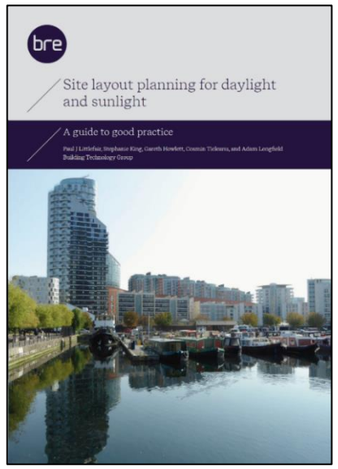


Fig 4.1.1 – BRE publication "Site Layout Planning for Daylight and Sunlight – A guide to good practice (Third Edition)

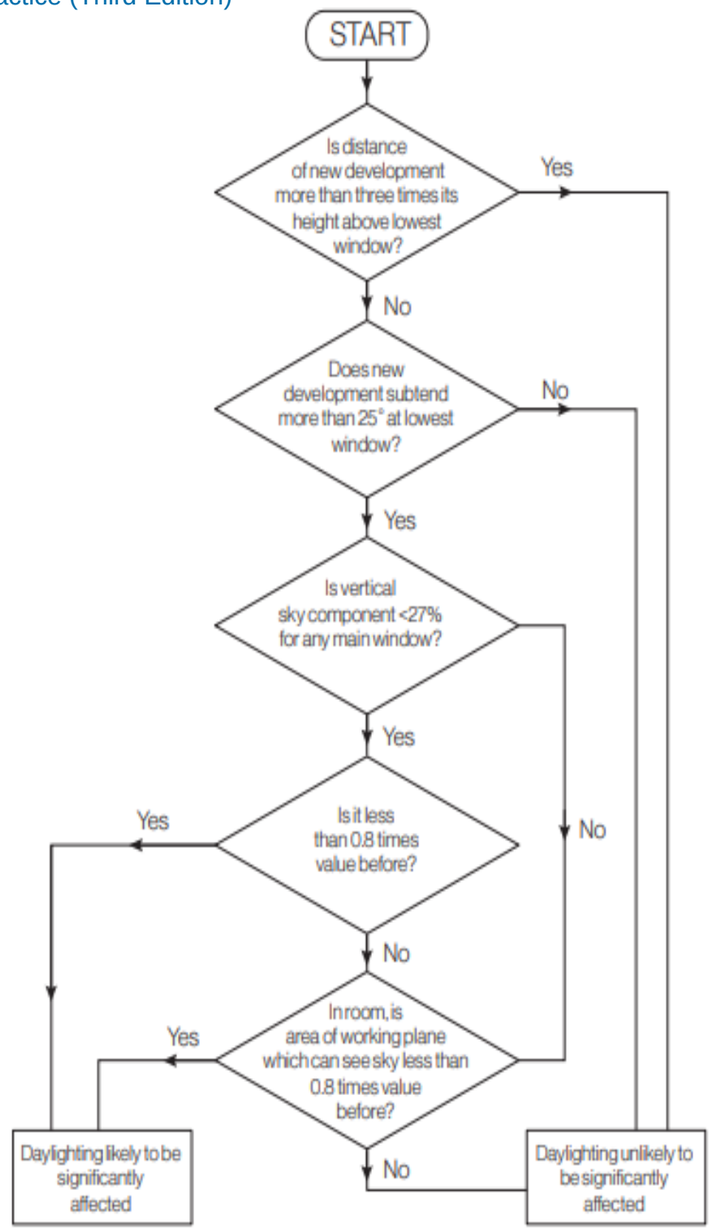


Fig 4.1.2 – BRE publication "Site Layout Planning for Daylight and Sunlight – A guide to good practice (Third Edition) Decision Chart

4.2 Methodology

The analysis therefore looked at existing windows for both daylight and sunlight.

The following neighbouring buildings were assessed.

- Montpelier Hill (as indicated)

Analysis was undertaken by calculating daylight and sunlight availability of the consented Block A and Block B2 development (permitted under ABP-310567-21, as amended by LRD6042/23) together with the proposed amendments for indicative window locations centred on the façade of each dwelling. It can be noted from the google maps image, Fig 4.2.1, that the existing mature trees would have significant impact on the daylight and sunlight to the dwellings on Montpelier Hill, however, for the purpose of the analysis these trees have been excluded from this assessment as per BRE guide recommendations.

Fig 4.2.1 – Google Maps Image for Neighboring Dwellings on Montpelier Hill

4.3 Results – VSC (Daylight) to Neighbouring Buildings

The below tables present the VSC results for all neighbouring dwellings analysed against the permitted scheme as the baseline condition. The assessment is based on the following criteria:

- **Improved**: If the proposed development (with amended Blocks A & B2) provides higher daylighting against the permitted development building.
- **None:** If there is no change in daylighting availability.
- **Negligible:** If the impact of the permitted development building vs the proposed (with amended Blocks A & B2) is between 0.95-1.
- **Minor:** If the impact of the permitted development building vs the proposed (with amended Blocks A & B2) is between 0.95 – 0.80.
- **Moderate:** If the impact of the permitted development building vs the proposed (with amended Blocks A & B2) is between 0.80 – 0.50.
- **Major Adverse:** If the impact of the permitted development building vs the proposed (with amended Blocks A & B2) is below 0.5.

The analysis indicated that all existing residences on Montpelier Hill assessed for daylight impact were found to achieve compliance with BRE recommendations, as VSC values were predicted to be either remain above 27% and or any reduction was negligible. These dwellings would therefore not be adversely affected by the proposed development (with amended Blocks A and B2) in terms of receipt of natural light.

Room Ref	VSC Permitted (%)	VSC Proposed (%)	Proposed/ Permitted	Criterion 1 VSC Proposed ≥ 27%	Criterion 2 VSC Proposed ≥ 100% of VSC Permitted	Impact
Mount 28	31	31	0.98	Yes	Yes	Negligible
Mount 30	28	28	0.99	Yes	Yes	Negligible
Mount 32	31	31	0.99	Yes	Yes	Negligible
Mount 34	26	26	0.99	No	Yes	Negligible
Mount 36	31	30	0.99	Yes	Yes	Negligible
Mount 38	31	31	0.99	Yes	Yes	Negligible
Mount 40	30	29	0.98	Yes	Yes	Negligible
Mount 42	30	30	0.99	Yes	Yes	Negligible
Mount 44	28	27	0.98	Yes	Yes	Negligible
Mount 46	32	32	0.99	Yes	Yes	Negligible
Mount 48	31	30	0.98	Yes	Yes	Negligible
Mount 50	33	32	0.99	Yes	No	Negligible
Mount 52	30	29	0.98	Yes	Yes	Negligible
Mount 54	21	21	0.98	No	Yes	Negligible

Fig 4.3.1 – Permitted vs Proposed VSC Results

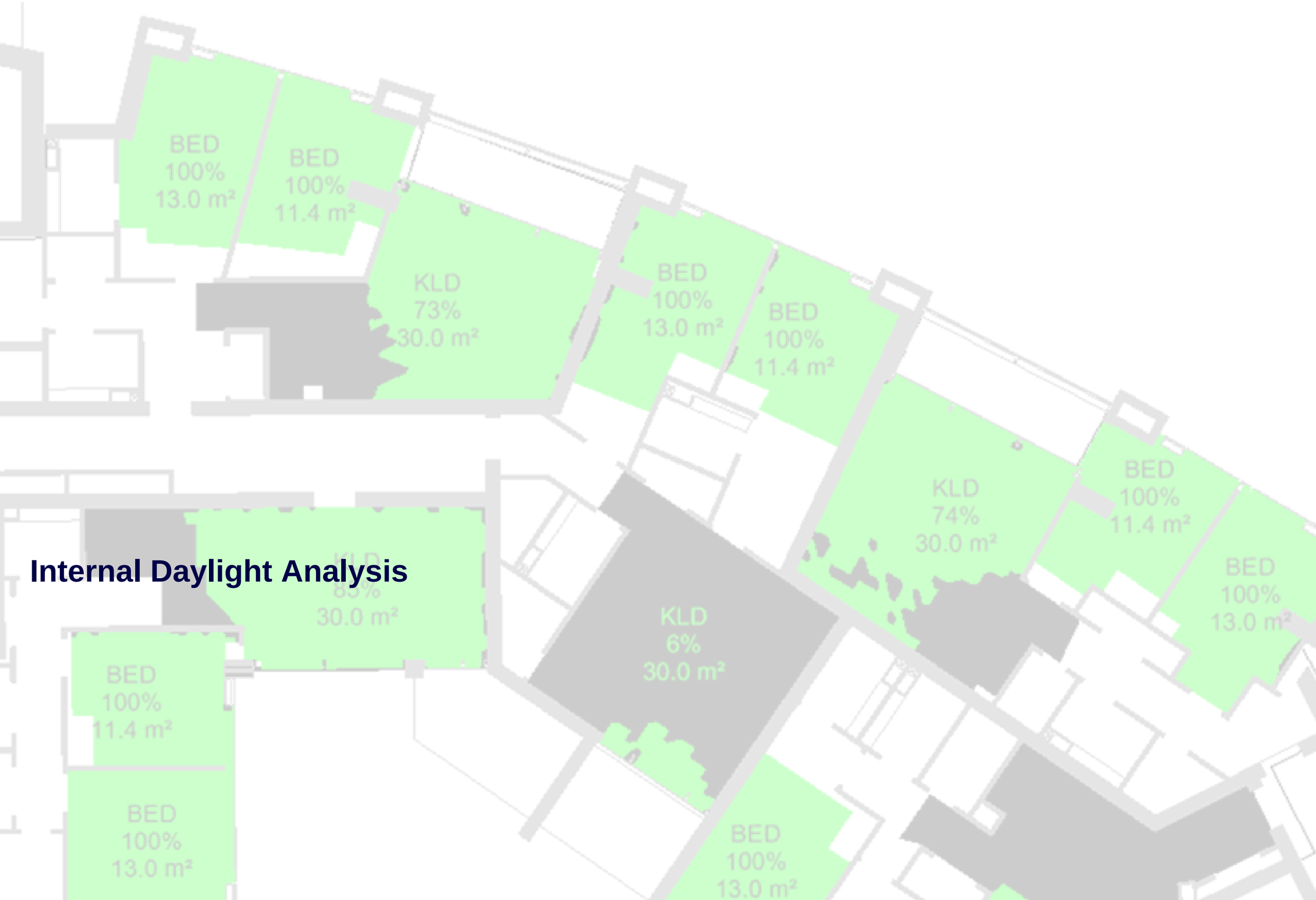
4.4 Results – APSH (Sunlight) to Neighbouring Buildings

The tables below present the APSH (Annual Probable Sunlight Hours) results for the assessed windows in the applicable neighbouring buildings listed in Section 4.2.
The analysis determined that sunlight (APSH) to all assessed neighbouring blocks will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	Annual Permitted (%)	Annual Proposed (%)	Annual Proposed/ Permitted (%)	Winter Permitted (%)	Winter Proposed (%)	Winter Proposed/ Permitted (%)	Total Potential Annual Sunny Hours	Max Allowable Annual Reduction	Actual Annual Reduction	Criterion 1: Annual ≥ 25% Or ≥ 100% of Permitted	Criterion 2: Winter ≥ 5% Or ≥ 100% of Existing	Criterion 3: Annual reduction ≤ 4%	OVERALL COMPLIANCE
Mount 28	76	76	1.0	21	21	1.0	1277	51	0	Yes	Yes	Yes	Pass
Mount 30	65	64	1.0	16	16	1.0	1277	51	13	Yes	Yes	Yes	Pass
Mount 32	79	79	1.0	23	23	1.0	1277	51	0	Yes	Yes	Yes	Pass
Mount 34	59	58	1.0	17	17	1.0	1277	51	13	Yes	Yes	Yes	Pass
Mount 36	71	70	1.0	22	21	1.0	1277	51	13	Yes	Yes	Yes	Pass
Mount 38	80	80	1.0	25	25	1.0	1277	51	0	Yes	Yes	Yes	Pass
Mount 40	71	71	1.0	24	23	1.0	1277	51	0	Yes	Yes	Yes	Pass
Mount 42	76	74	1.0	21	20	0.9	1277	51	26	Yes	Yes	Yes	Pass
Mount 44	63	63	1.0	14	14	1.0	1277	51	0	Yes	Yes	Yes	Pass
Mount 46	82	81	1.0	26	25	1.0	1277	51	13	Yes	Yes	Yes	Pass
Mount 48	77	76	1.0	25	24	1.0	1277	51	13	Yes	Yes	Yes	Pass
Mount 50	78	77	1.0	25	24	1.0	1277	51	13	Yes	Yes	Yes	Pass
Mount 52	64	62	1.0	20	18	0.9	1277	51	26	Yes	Yes	Yes	Pass
Mount 54	48	48	1.0	11	11	1.0	1277	51	0	Yes	Yes	Yes	Pass

Fig 4.3.1 – APSH Results (Sunlight)

Internal Daylight Analysis



Internal Daylight Analysis

5.1 Average Daylight Factor (ADF) Methodology

Daylighting analysis was undertaken for the proposed amendment to Block A using radiance lighting software to determine Average Daylight Factors (ADFs) in accordance with BRE 209 and BS. 8206-2, as referenced in the Sustainable Urban Housing: Design Standards for New Apartments (December 2020), as well as an assessment comparison to BS EN 17037 (National Annex). As previously mentioned in Section 2.0, the ADF metric and methodology remains appropriate in the context of Block A. This block was originally permitted under SHD ABP-310567/21 in October 2021 under the provisions of the 2020 Apartment Guidelines.

ADF's were determined for a CIE Overcast Sky equivalent to providing an external, unobstructed ground illumination level of 10,000 Lux. CIE Overcast skies are theoretical sky models, with brightness highest at the zenith and reducing to the horizon, but also unidirectional (as illustrated in Figure 5.1.1); therefore ADF's do not differ for façade orientation, with North facing rooms achieving identical metric performance to South facing, (all else being equal), as results account for diffuse natural light only and exclude any direct sunlight effects.

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 5.1.2 such as balcony structures, window frames, reveal and cill depth etc. in accordance with the architectural design.

The daylighting models were calculated based on the following assumptions regarding transmittance and reflectance (based on measured manufacturer's test data):

- Glazing Transmission = 70%
- Ceilings: 82% reflectance (BS 00E55 White)
- Walls: 62% reflectance (BS 10C31 Ivory)
- Floors: 36% reflectance (BS 00A05 Platinum Grey)

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 to enable a detailed calculation within each room, the average of which was then determined to calculate ADF.

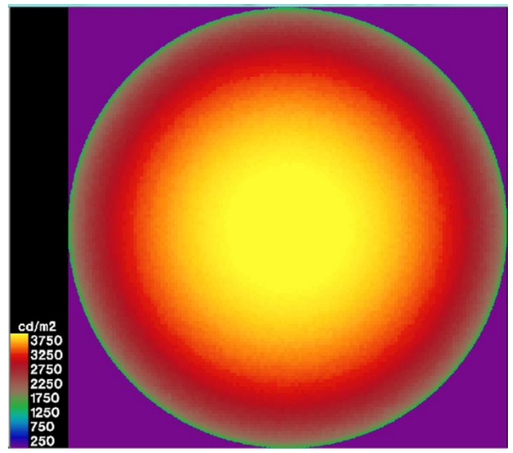


Fig 5.1.1 - CIE Overcast sky as viewed from below.

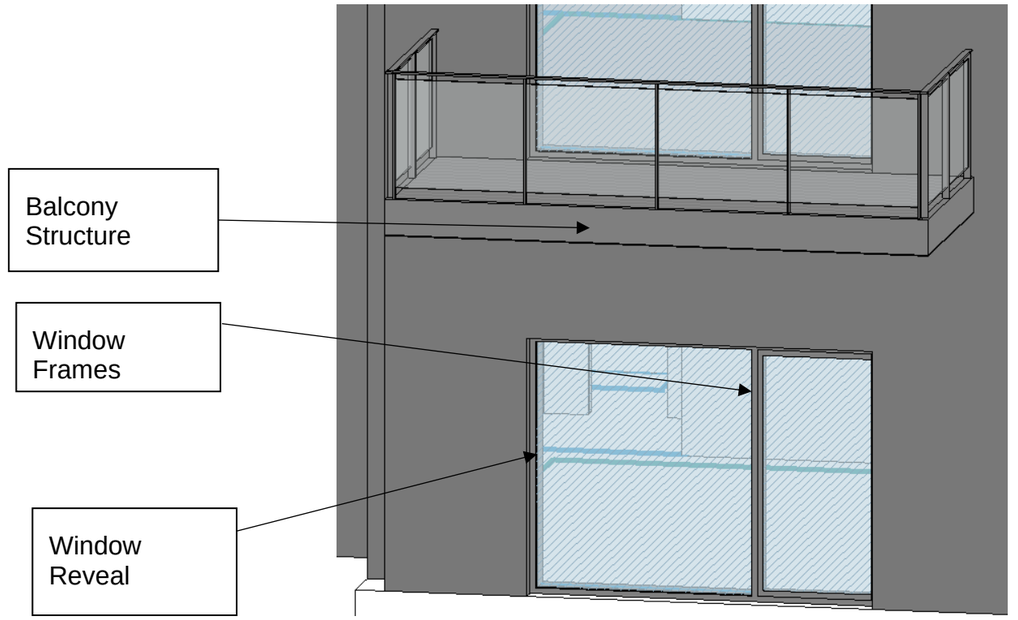


Fig 5.1.2 – Building Details included within Daylight Analysis

5.1 Average Daylight Factor (ADF) Methodology – Cont'd

In relation to daylight, the BRE Guide suggest that:

"Daylight provision in new rooms may be checked using the average daylight factor (ADF). The ADF is a measure of the overall amount of daylight in a space… [The 2008 British Standard] recommends an ADF of 5% for a well daylit space and 2% for a partly daylit space. Below 2% the room will look dull and electric lighting is likely to be turned on. In ***housing*** *[the 2008 British Standard] also gives minimum values of ADF of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms." (emphasis added)*

These daylighting targets (as also utilised within BS.8206-2) were originally introduced in British Standards Code of Practice CP3 Chapter 1 Part 1 released in 1964 and were based on surveys undertaken of UK dwellings in preceding years.

The higher ADF target for Kitchens was in recognition of the task-based nature of lighting requirements as opposed to environmental considerations, in particular "Opinions were recorded for the kitchen in relation to the work centres at the stove, sink and work-table"[1] in the surveying that informed this target, which was based on achieving an illuminance level of 200 Lux at these task based areas for an assumed 10,000 Lux sky (hence 2% ADF). It may be noted that this surveying was also undertaken at a time that artificial lighting within kitchens would have been rudimentary- i.e. predating cooker-hood lighting etc.

With reference to living and cooking areas, the BRE Guide states:

"2.1.13 Living rooms and kitchens need more daylight than bedrooms, so where there is a choice it is best to site the living room or kitchen away from obstructions…"

However additionally, and with specific relevance for apartments, the BRE guide states:

"2.1.14 Non-daylit internal kitchens should be avoided wherever possible, especially if the kitchen is used as a dining area too. If the layout means that a small internal galley-type kitchen is inevitable, it should be directly linked to a well daylit living room."

With regard to the above, the minimum values targeted for relevant spaces are:

- > 1.5% for Living/ Dining Areas
- > 1.0% for Bedrooms

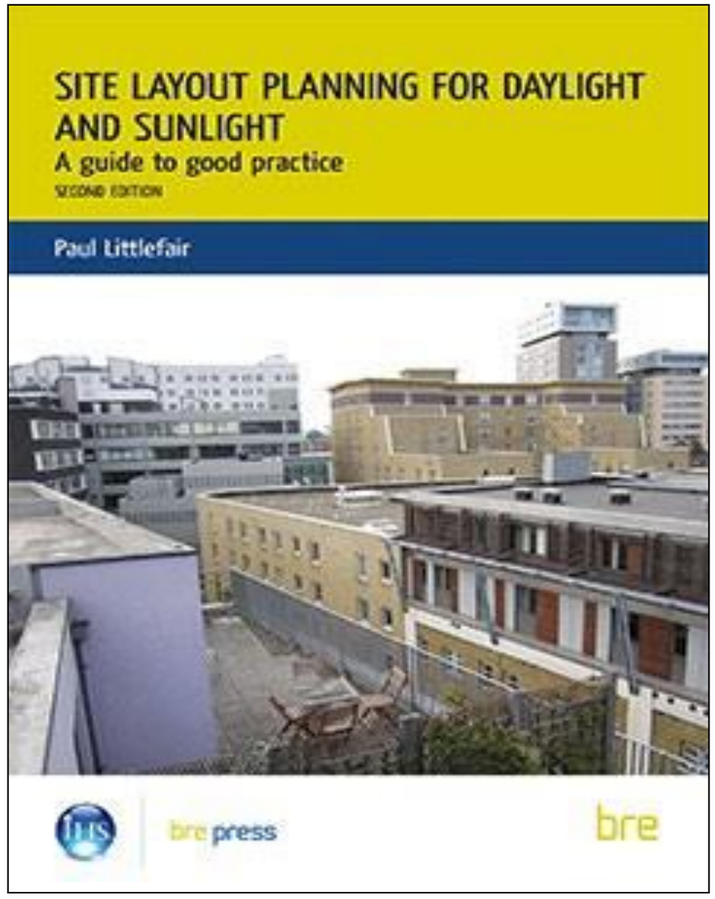
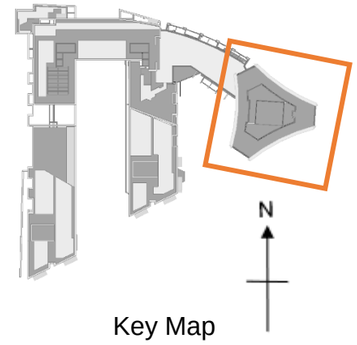


Fig 5.1.3 – The BRE Guide

5.2 Results Summary – Block A (ADF)

The tables below provide a breakdown of compliance rates for each room based on Average Daylight Factor (ADF) and an overall ADF. 100% of the analysed rooms were determined to be compliant with the methodology utilised. Detailed results are included in Appendix A.



Key Map

Permitted Results

Block A	Number of rooms		
	Pass	Fail	Total
Level 1	13	0	13
Level 2	13	0	13
Level 3	13	0	13
Level 4	13	0	13
Level 5	13	0	13
Level 6	13	0	13
Level 7	13	0	13
Level 8	13	0	13
Level 9	15	0	15
Level 10	17	0	17
Level 11	17	0	17
Level 12	17	0	17
Level 13	17	0	17
Level 14	17	0	17
Level 15	17	0	17
Level 16	17	0	17
Level 17	17	0	17
Level 18	17	0	17
Level 19	17	0	17
Level 20	17	0	17
Level 21	17	0	17
Level 22	17	0	17
Level 23	17	0	17
Level 24	17	0	17
Level 25	17	0	17
Level 26	17	0	17
Level 27	17	0	17
	425	0	425
	100%	0%	

Proposed Results

Block A	Number of rooms		
	Pass	Fail	Total
Level 1	13	0	13
Level 2	13	0	13
Level 3	13	0	13
Level 4	13	0	13
Level 5	13	0	13
Level 6	13	0	13
Level 7	13	0	13
Level 8	13	0	13
Level 9	15	0	15
Level 10	17	0	17
Level 11	17	0	17
Level 12	17	0	17
Level 13	17	0	17
Level 14	17	0	17
Level 15	17	0	17
Level 16	17	0	17
Level 17	17	0	17
Level 18	17	0	17
Level 19	17	0	17
Level 20	17	0	17
Level 21	17	0	17
Level 22	17	0	17
Level 23	17	0	17
Level 24	17	0	17
Level 25	17	0	17
Level 26	17	0	17
Level 27	17	0	17
	425	0	425
	100%	0%	

5.3 Spatial Daylight Autonomy Methodology

Spatial Daylight Autonomy (SDA), method 2 EN17037, has been utilised for the assessment of internal daylight for the proposed amendment to Block B2 as it determines a more accurate result for building orientation and location as detailed in BRE Guide. As previously mentioned in Section 2.0, the SDA metric and methodology remains appropriate in the context of Block B2. This block was originally permitted under LRD6042/23 in March 2024 under the provisions of the 2023 Apartment Guidelines.

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 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 5.3.1 indicates overall compliance comparison, with green contours illustrating where daylight was predicted to achieve 100 Lux for bedroom 150 Lux for Livingroom and 200 Lux for KLD and Kitchen. These are the illuminance recommendations for dwellings included in Section C16 of the BRE Guide 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 typical Building Details as exampled in Figure 5.3.2 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 the BRE Guide) to enable a detailed calculation within each room (Figure 5.3.3), the median of which was then determined the space compliance.

Fig 5.3.1 –Daylight Analysis Results

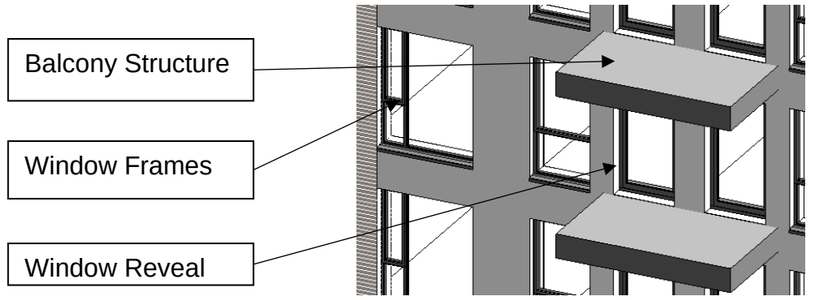


Fig 5.3.2 – Building Details included within Daylight Analysis (Sample)

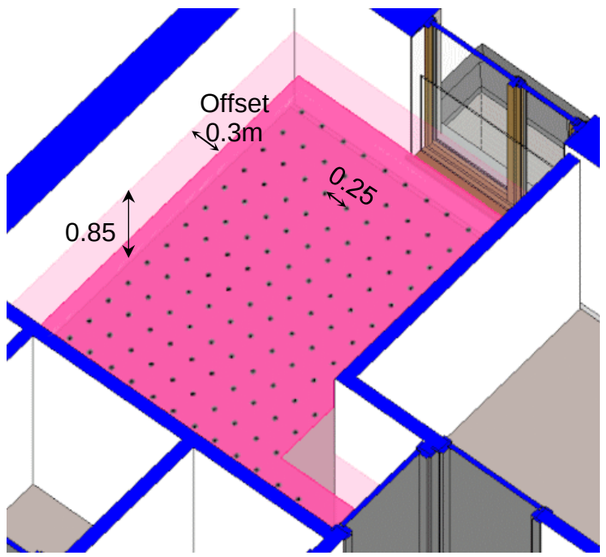


Fig 5.3.3 Calculating working plane

5.3 Spatial Daylight Autonomy Methodology (Cont'd)

The rooms have been assessed to the minimum areas as prescribed in the 2023 Apartment Guidelines, Fig 5.3.4 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****)*

BRE Guide provides additional guidance on room definitions, identifying that corridors/ annexed entrances can be excluded from the assessment area as illustrated in Fig. 5.3.5.

Fig 5.3.6 illustrates an example of how the above has been interpreted to define areas of assessment (highlighted green). The blue highlighted area represents the excluded areas of the aforementioned corridor space. The assessment area is defined, ensuring:

- Minimum required room area as defined in Apartment Guidelines (i.e., min. 30m^2 for 2-bedroom 4-persons 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).

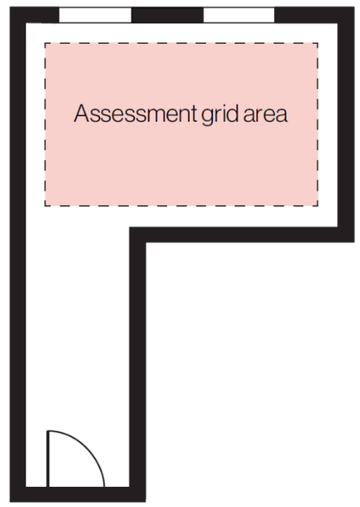


Fig 5.3.5 – BRE Guide Figure C3 – Assessment Area excluding Corridor

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/bed space, also includes circulation*

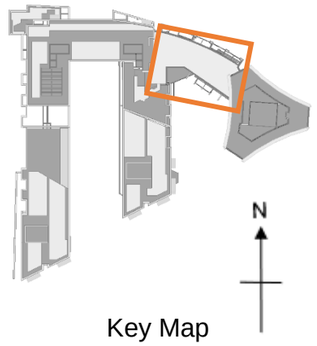
**** Note: Variation of up to 5% can be applied to room areas and widths subject to overall compliance with required minimum overall apartment floor areas.*

Fig 5.3.4 – Apartment Guidelines – Minimum Room Sizes

Fig 5.3.6 – Assessment Space Delineation

5.4 Results Summary – Block B2 (SDA)

The tables below provide a breakdown of compliance rates for each room based on Spatial Daylight Autonomy (SDA) and an overall SDA. 85% of the analysed rooms were determined to be compliant with the methodology utilised. Detailed results are included in Appendix B.



Key Map

Previous Results

Block B2	Number of rooms		
	Pass	Fail	Total
Level 1	14	1	15
Level 2	14	1	15
Level 3	15	0	15
Level 4	15	0	15
Level 5	15	0	15
Level 6	15	0	15
Level 7	15	0	15
Level 8	15	0	15
	118	2	120
	98%	2%	

Current Results

Block B2	Number of rooms		
	Pass	Fail	Total
Level 1	15	3	18
Level 2	15	3	18
Level 3	15	3	18
Level 4	15	3	18
Level 5	15	3	18
Level 6	15	3	18
Level 7	15	3	18
Level 8	17	1	18
	122	22	144
	85%	15%	

5.5 Compensatory Measures for Block B2

The 2023 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 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."

Compensatory Design Solutions

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 reduced daylight.

Total 22no. rooms across the proposed amendment were identified with compensatory measures in accordance with the requirements of the Sustainable Urban Housing – Design Standards for New Apartments 2023.

Each non-compliant room was identified, and compensatory measures are set out in Appendix A as per:

1. 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 room/rooms that are well daylit, despite the assessed room being slightly below target.

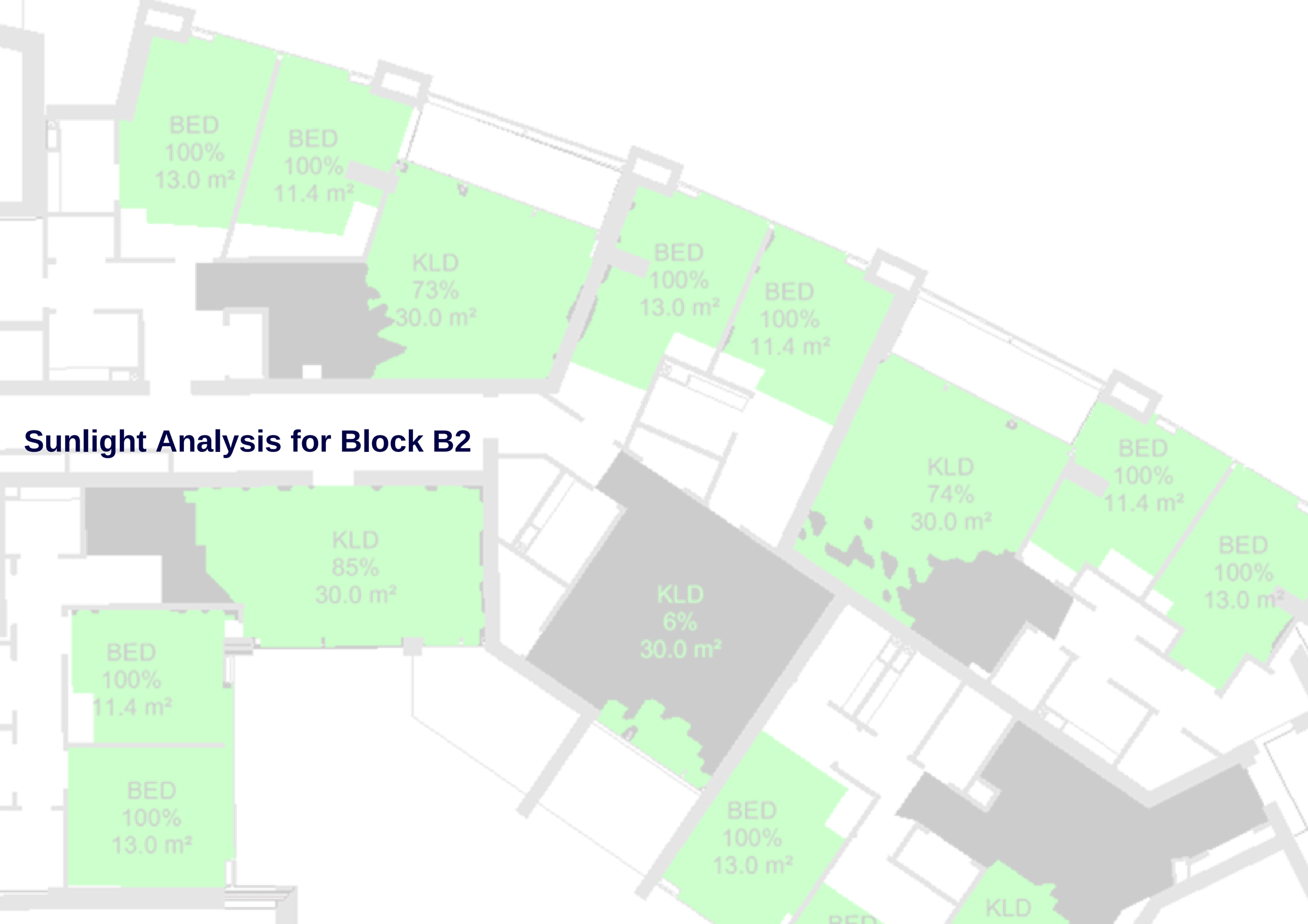
2. Sheltered Private Balcony

The relevant units have the benefit of sheltered private balconies. These balconies provide privacy from overlooking of adjacent spaces. These balconies are southernly facing with an aspect out onto landscaped communal and the River Liffey beyond.

3. Dual Aspect

Some units have the added benefit of dual aspect ensuring multiple options for aspect and sunlight/daylight availability.

Sunlight Analysis for Block B2



Sunlight Analysis

6.1 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 of 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 units as opposed to individual rooms, as is the case for Daylight analysis.

Figure 6.1.1 below is an example of how the results are illustrated, 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)

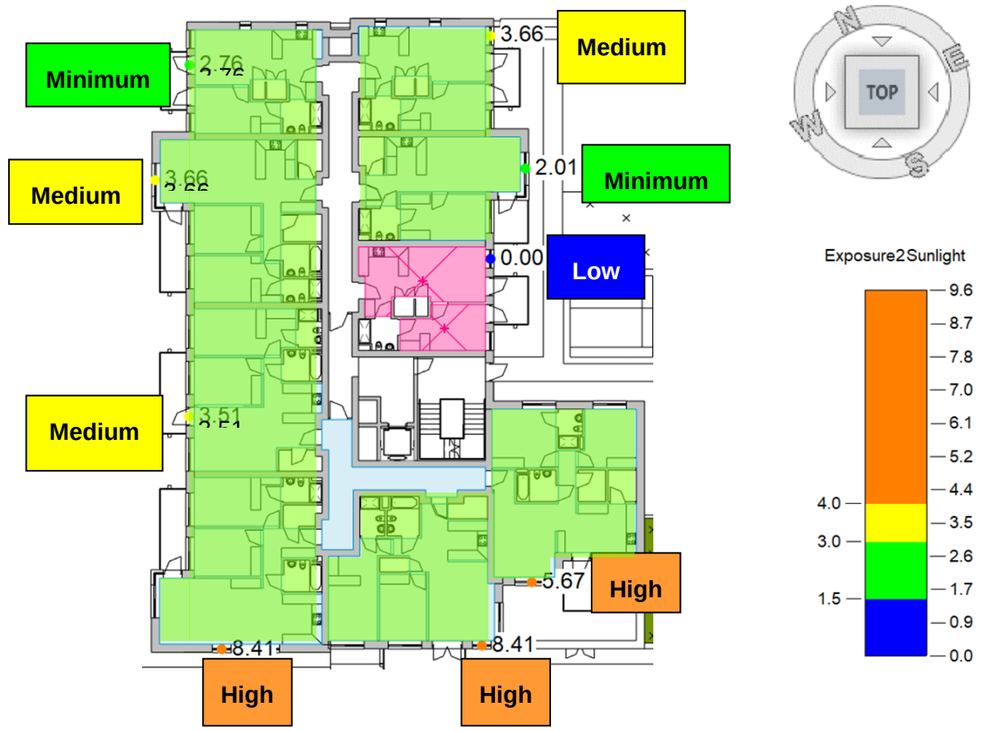


Fig 6.1.1 – Exposure to Sunlight Results – Example Analysis

In the example above, most KLD were determined to receive Medium to High range of Exposure to Sunlight, one unit was determined non-compliant and identified in light red.

6.2 Results Summary – Block B2 (ETS)

The table below shows a summary of the Exposure to Sunlight (ETS) results for the proposed amended block B2 of Parkgate development. Detail results can be found in Appendix C. It was determined that 58% of the units in block B2 achieve compliance for the recommended sunlight availability from BRE Guide.

Previous Results

B2	Number of units		
Levels	Pass	Fail	Total
1	4	1	5
2	4	1	5
3	4	1	5
4	4	1	5
5	4	1	5
6	4	1	5
7	4	1	5
8	4	1	5
	32	8	40
	80%	20%	

Current Results

B2	Number of units		
Levels	Pass	Fail	Total
1	3	3	6
2	3	3	6
3	3	3	6
4	3	3	6
5	4	2	6
6	4	2	6
7	4	2	6
8	4	2	6
	28	20	48
	58%	42%	

6.3 Compensatory Measures for Block B2

The 2023 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 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."

Compensatory Design Solutions

The compensatory measures look to determine a balance between the spaces with reduced sunlight by identifying how other metrics for daylight and/or the unit's aspects can compensate for this reduced sunlight.

Total 21no. units across the proposed amendment were identified with compensatory measures in accordance with the requirements of the Sustainable Urban Housing – Design Standards for New Apartments 2023.

Each non-compliant room was identified, and compensatory measures are set out in Appendix A as per:

1. 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 room/rooms that are well daylit, despite the assessed room being slightly below target.

2. Sheltered Private Balcony

The relevant units have the benefit of sheltered private balconies. These balconies provide privacy from overlooking of adjacent spaces. These balconies are southernly facing with an aspect out onto landscaped communal and the River Liffey beyond.

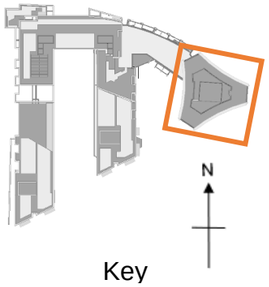
3. Dual Aspect

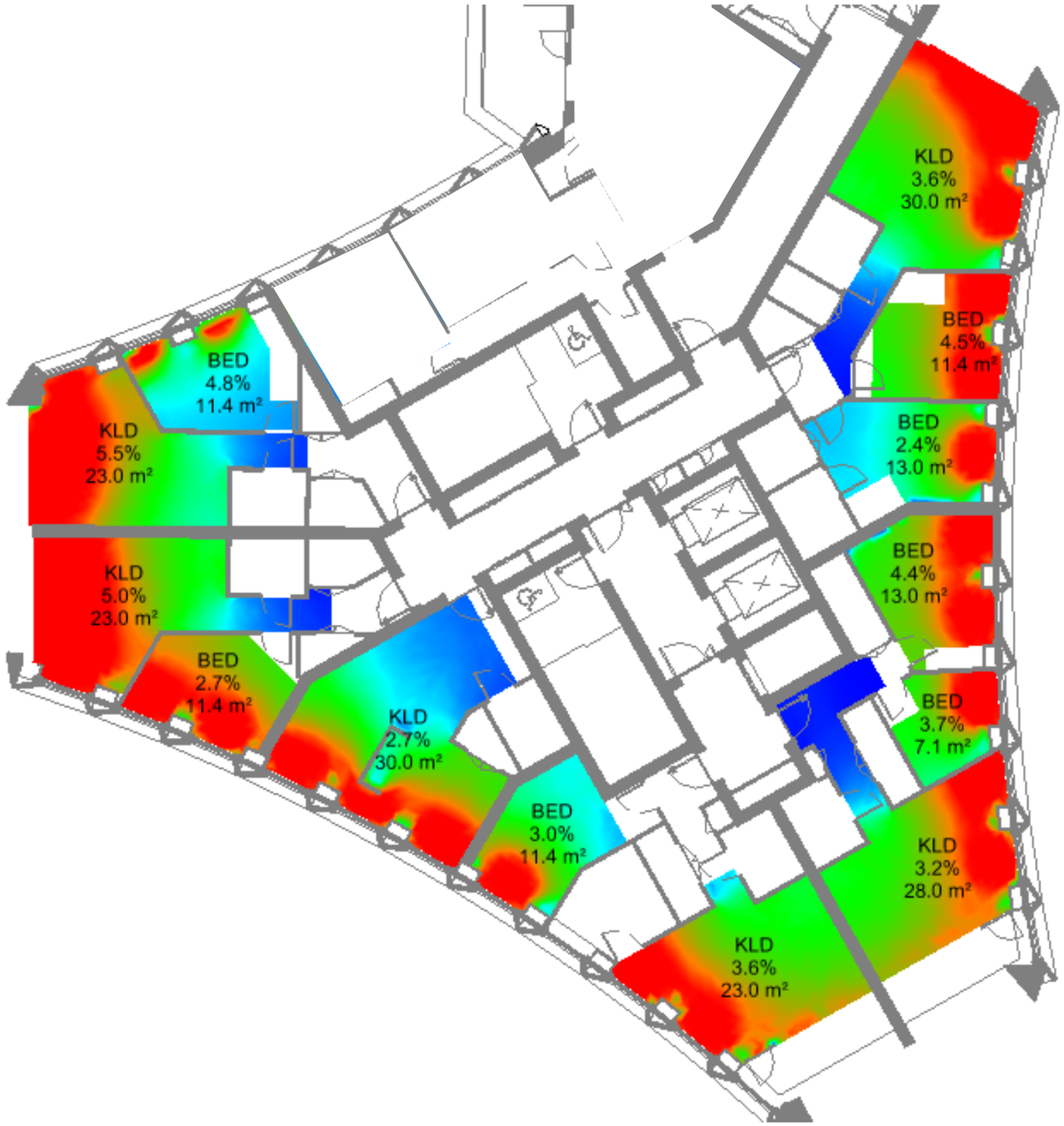
Some units have the added benefit of dual aspect ensuring multiple options for aspect and sunlight/daylight availability.

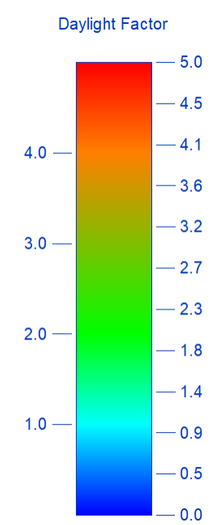
Appendix A – Block A (ADF) Results

Results: Block A (ADF) – 1st Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



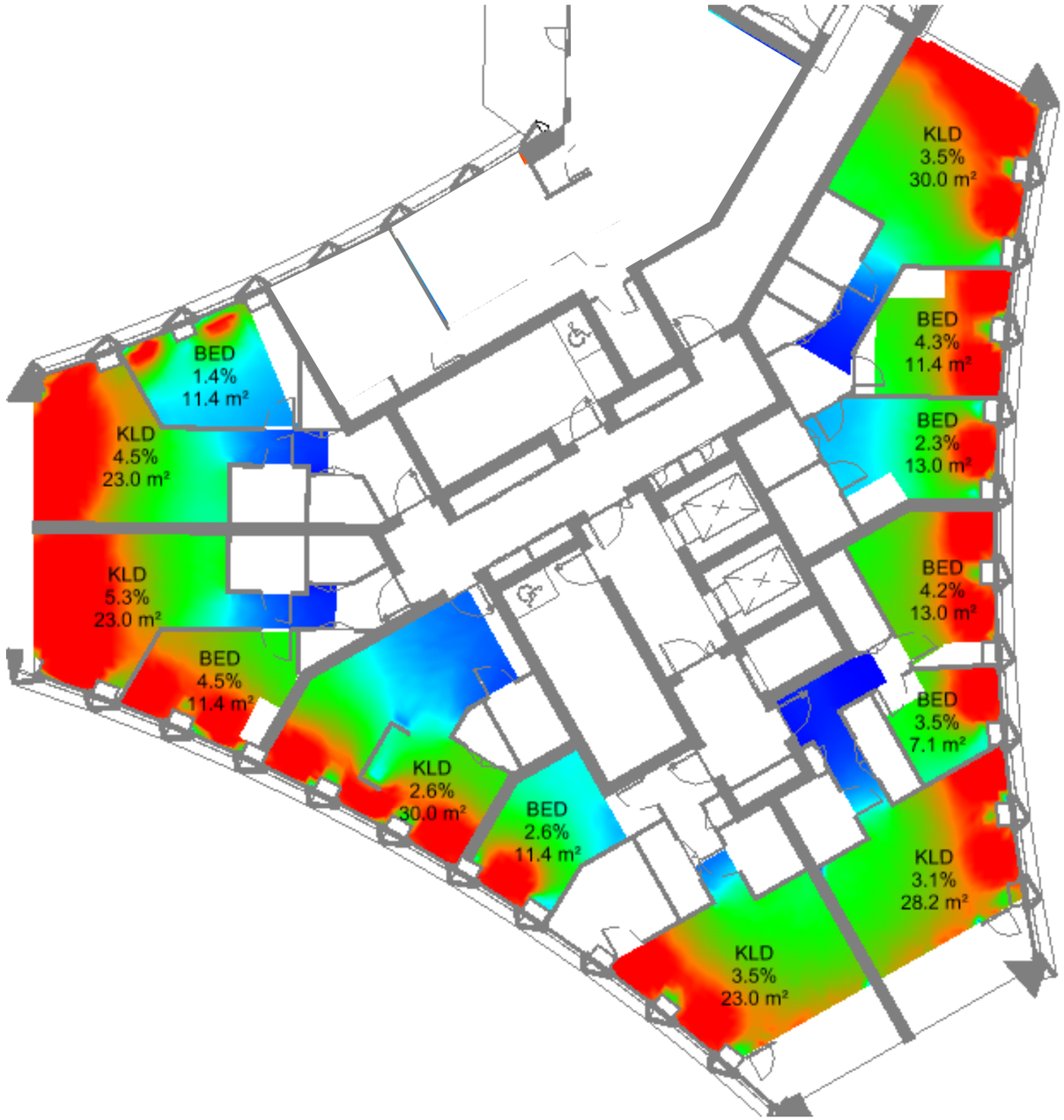


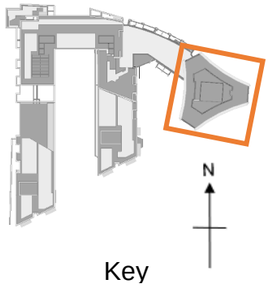


Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 2nd Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.

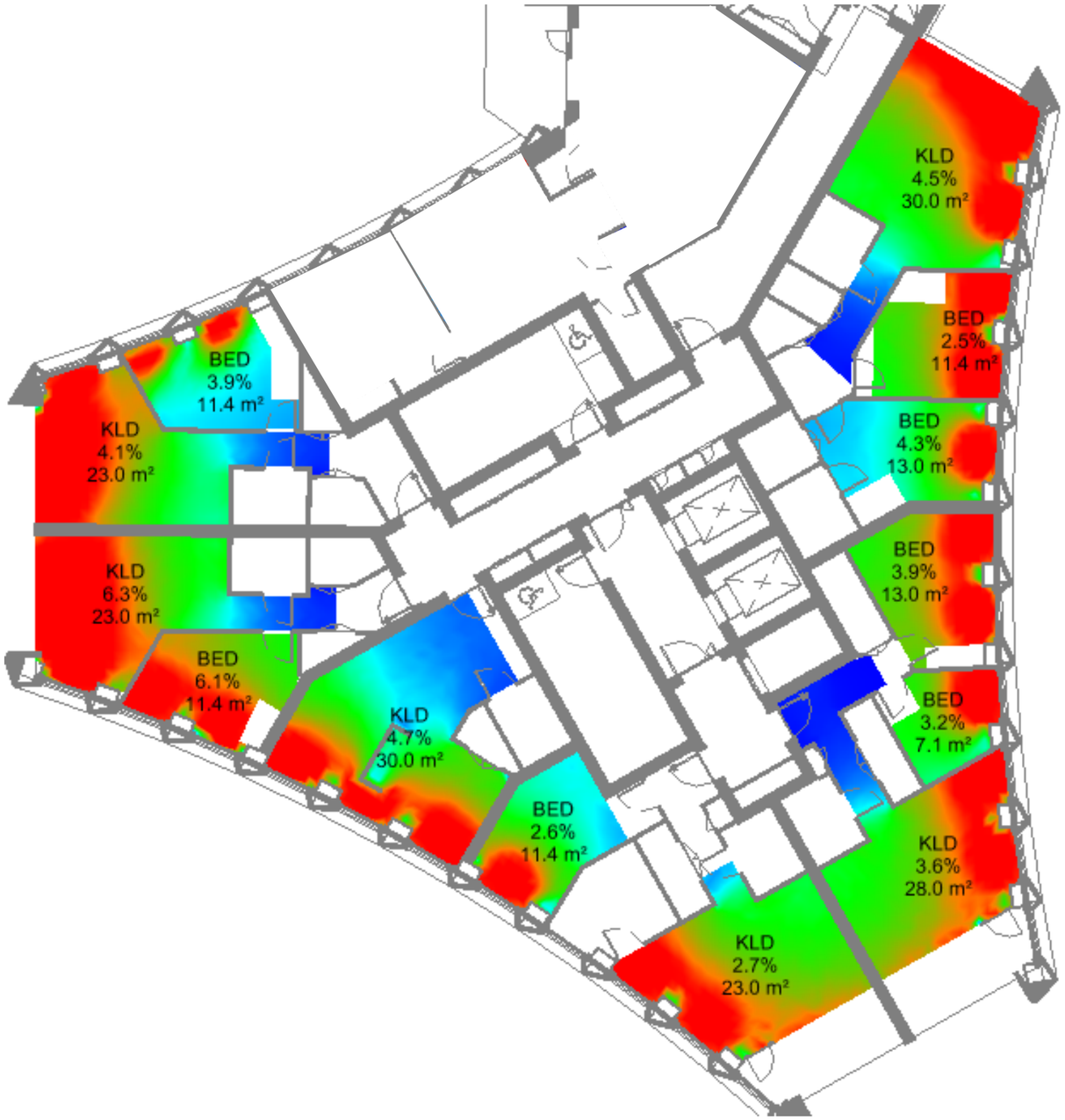


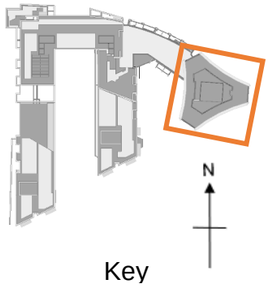


Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 3rd Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



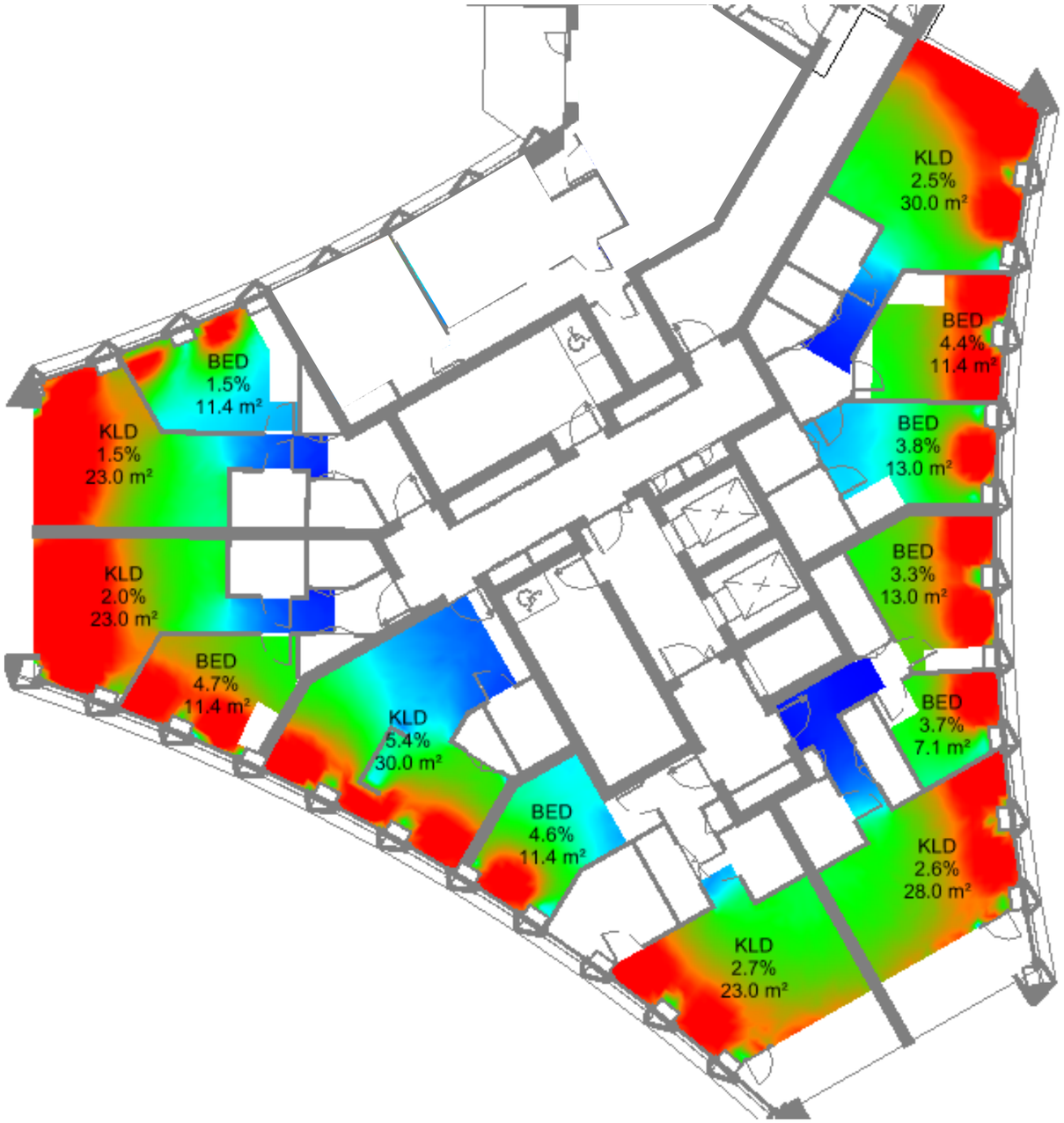


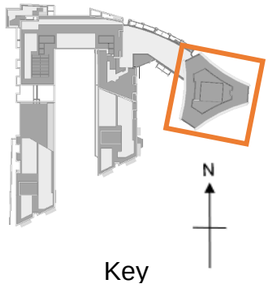
Key

Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 4th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.

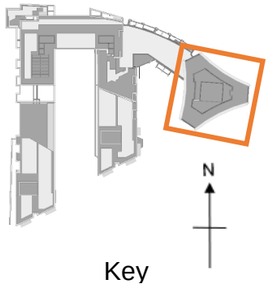




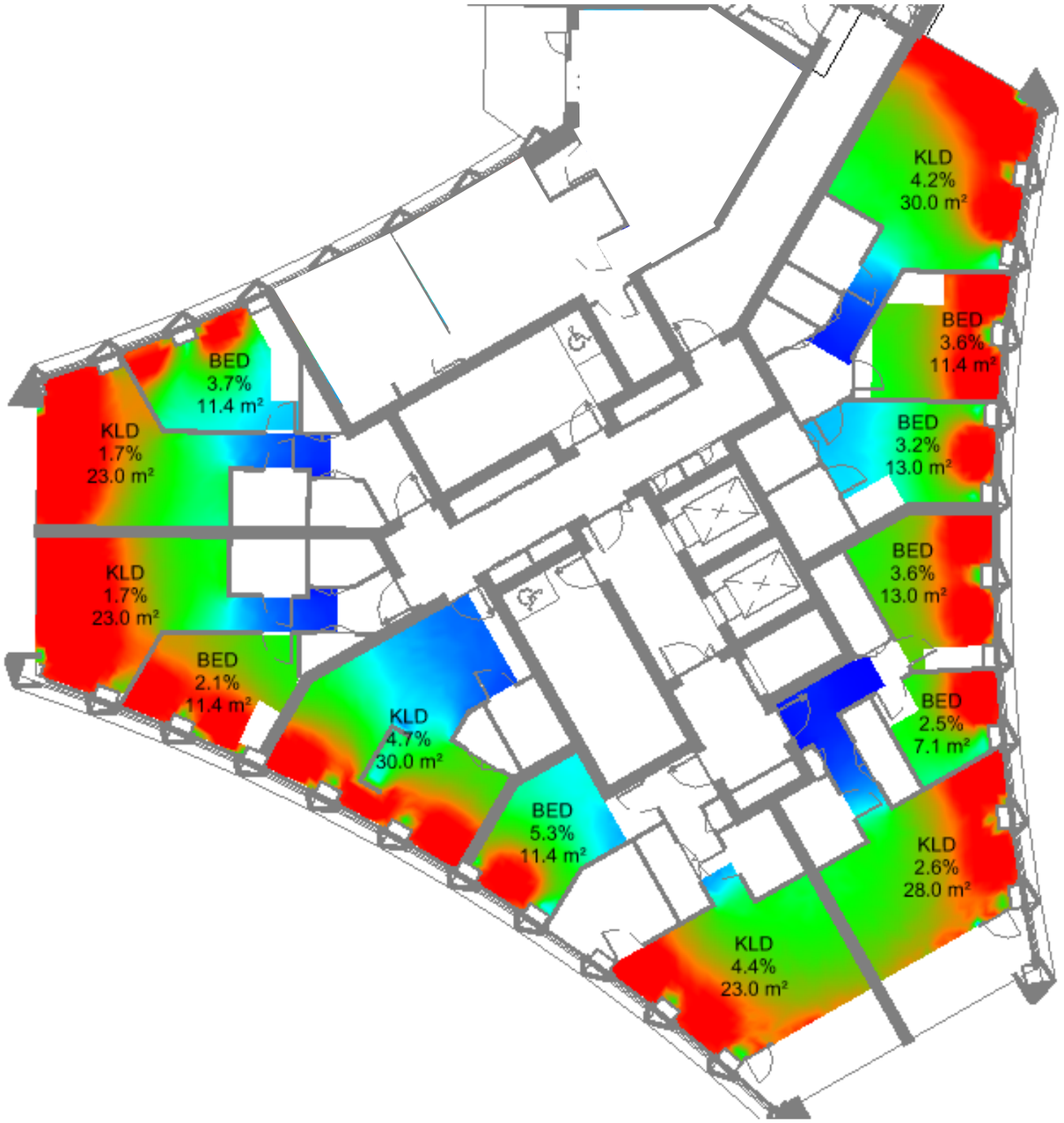
Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 5th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



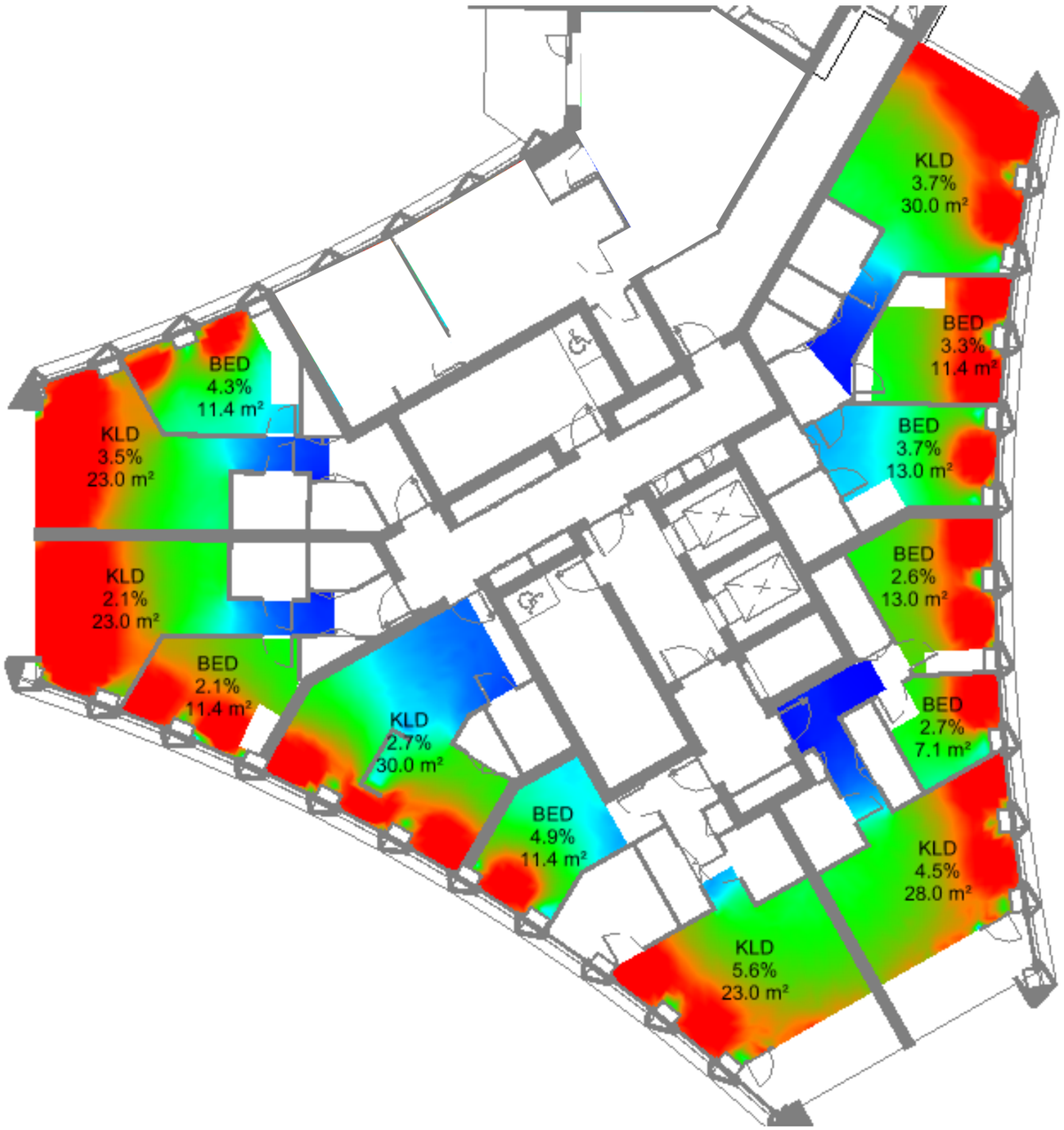
Key

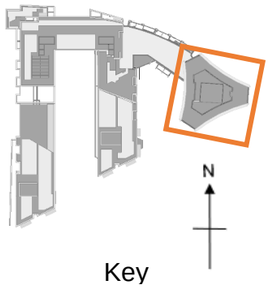


Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 6th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



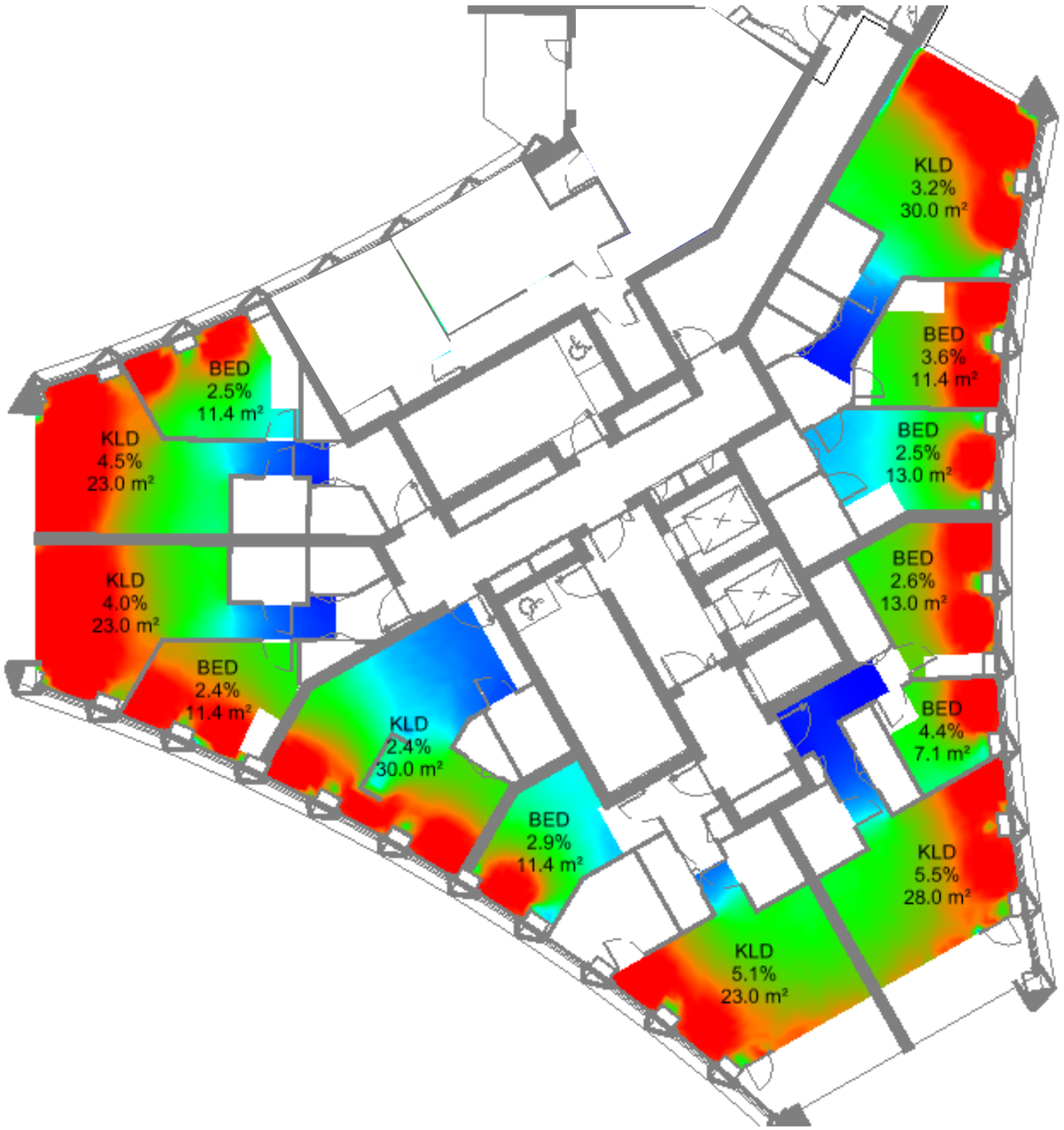


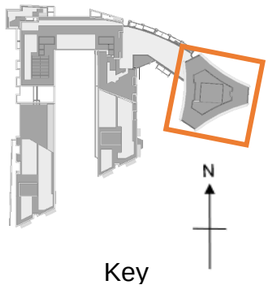
Key

Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 7th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



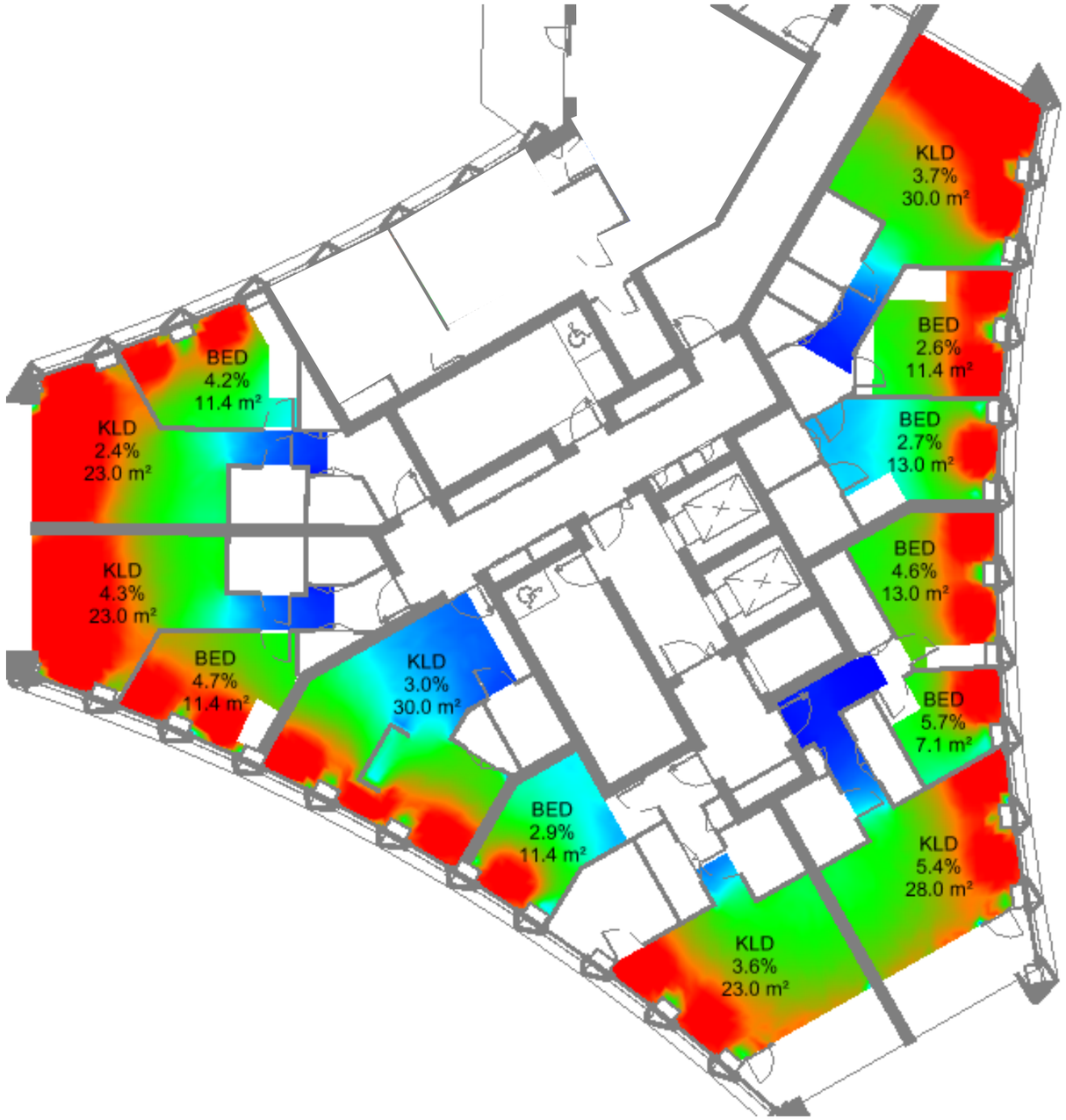


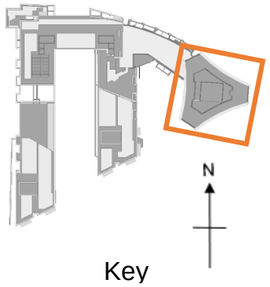
Key

Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 8th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.

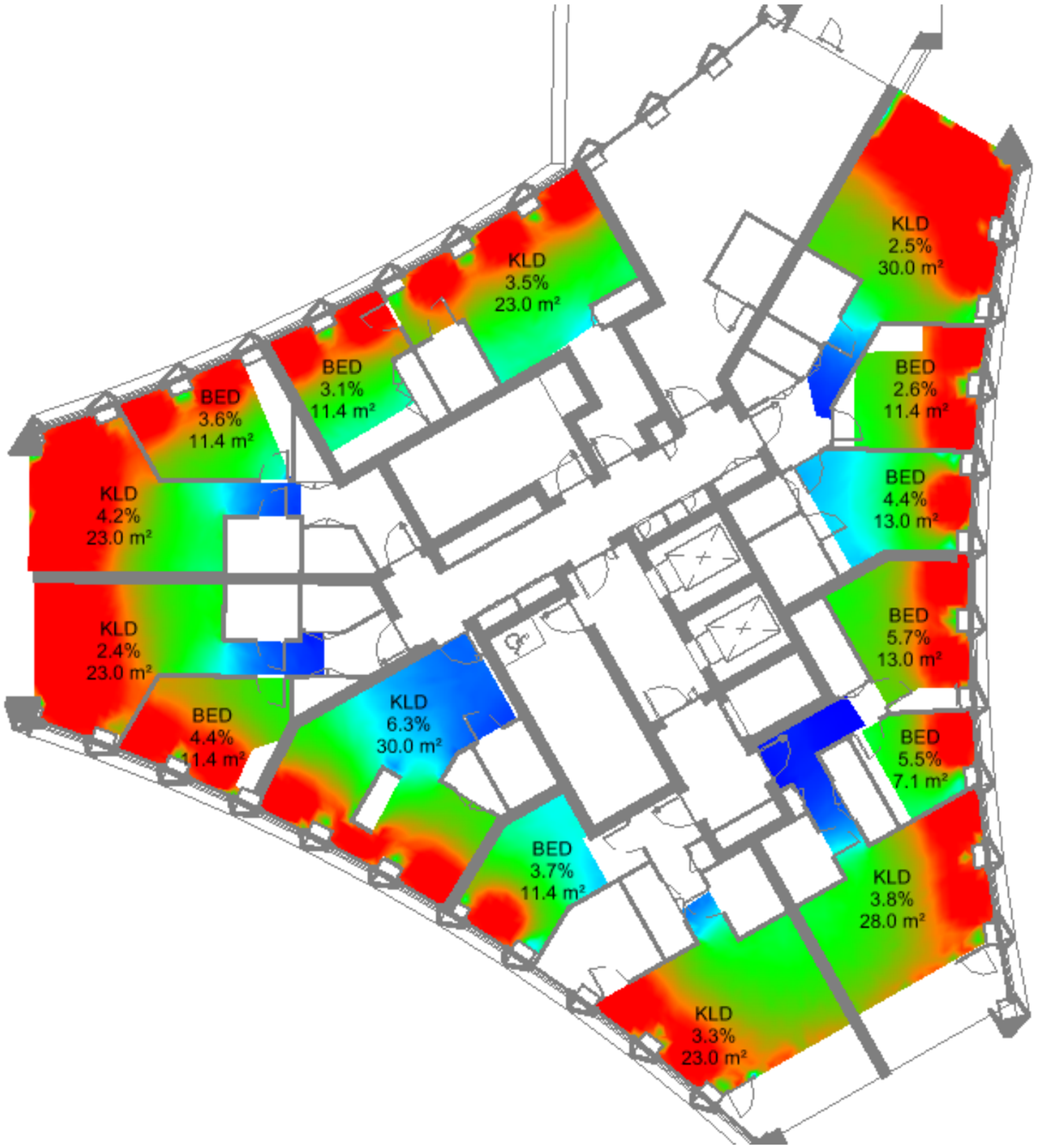


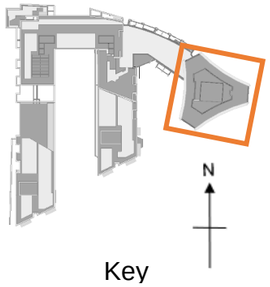


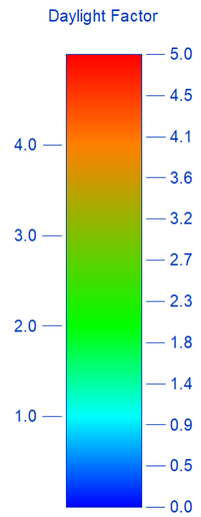
Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 9th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



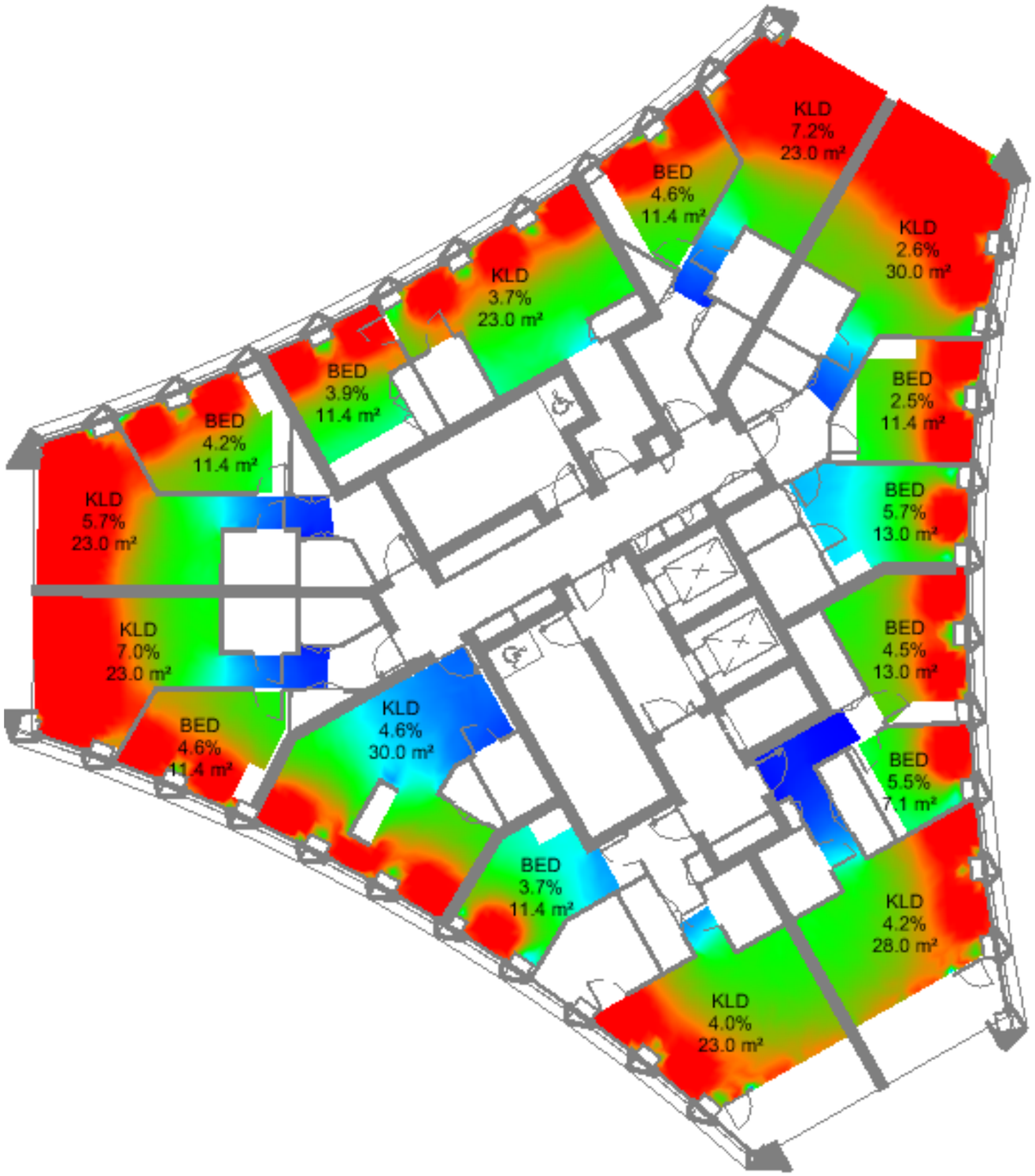


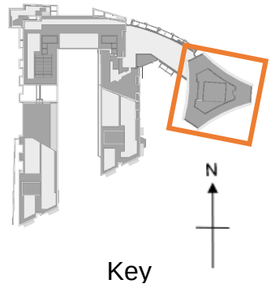


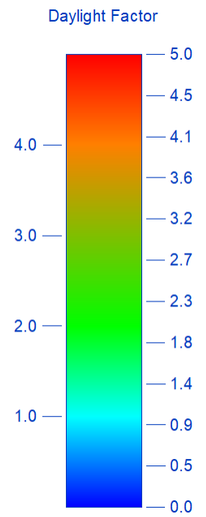
Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 10th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



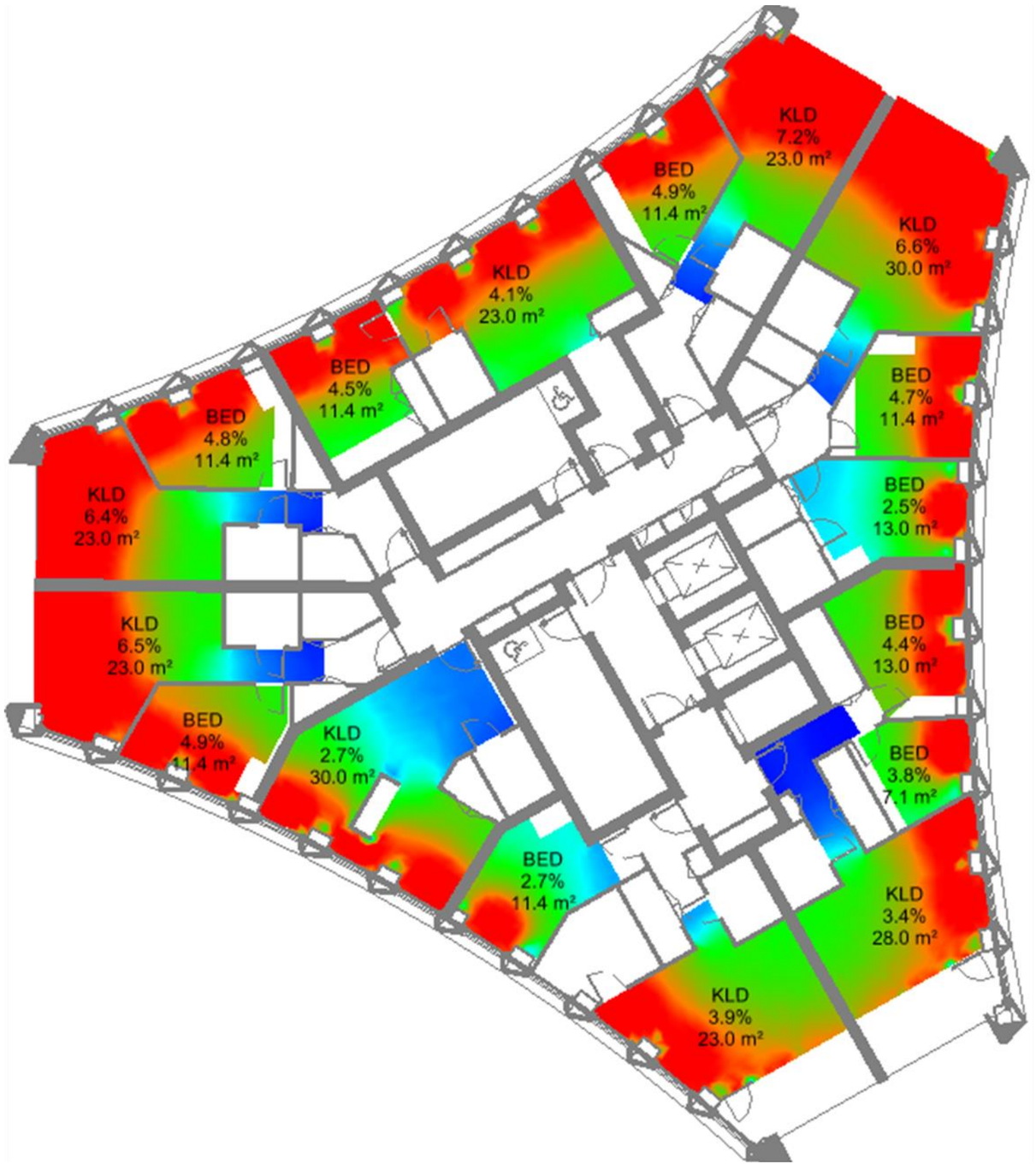


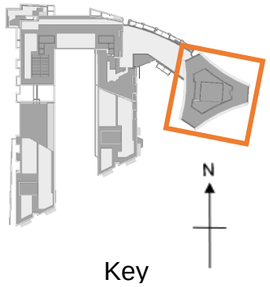


Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

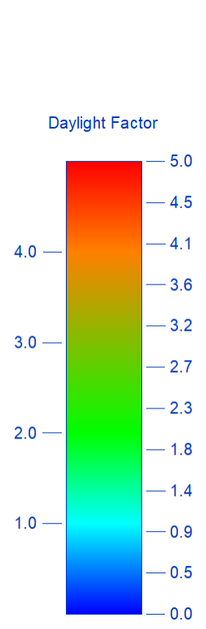
Results: Block A (ADF) – 11th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.





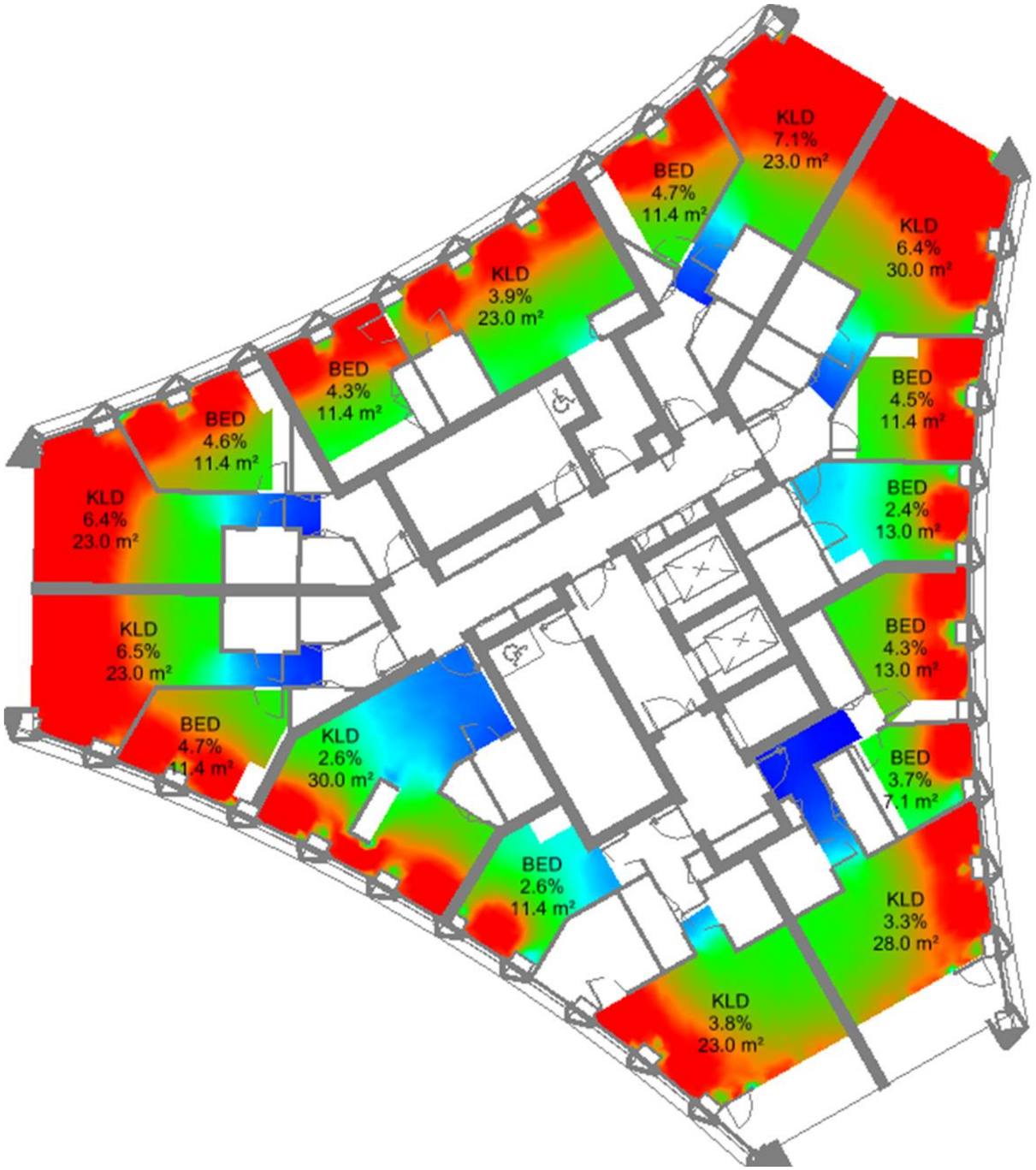
Key

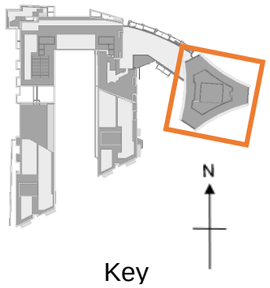


Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 12th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



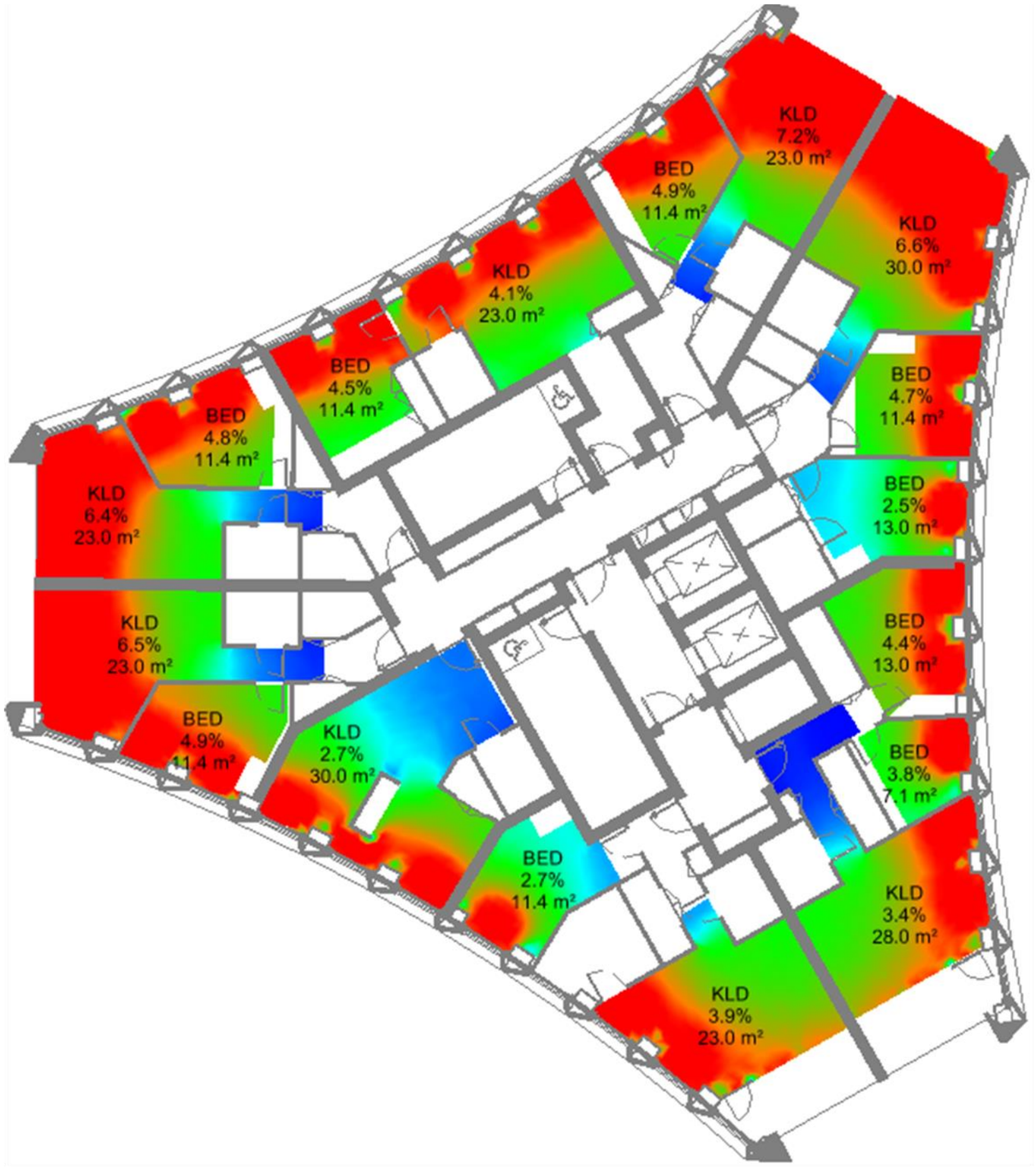


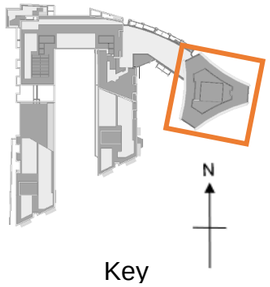
Key

Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

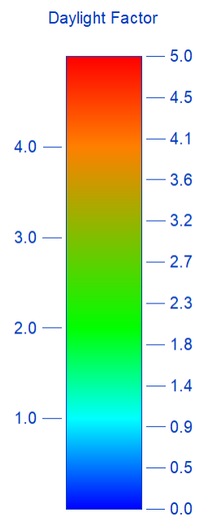
Results: Block A (ADF) – 13th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.





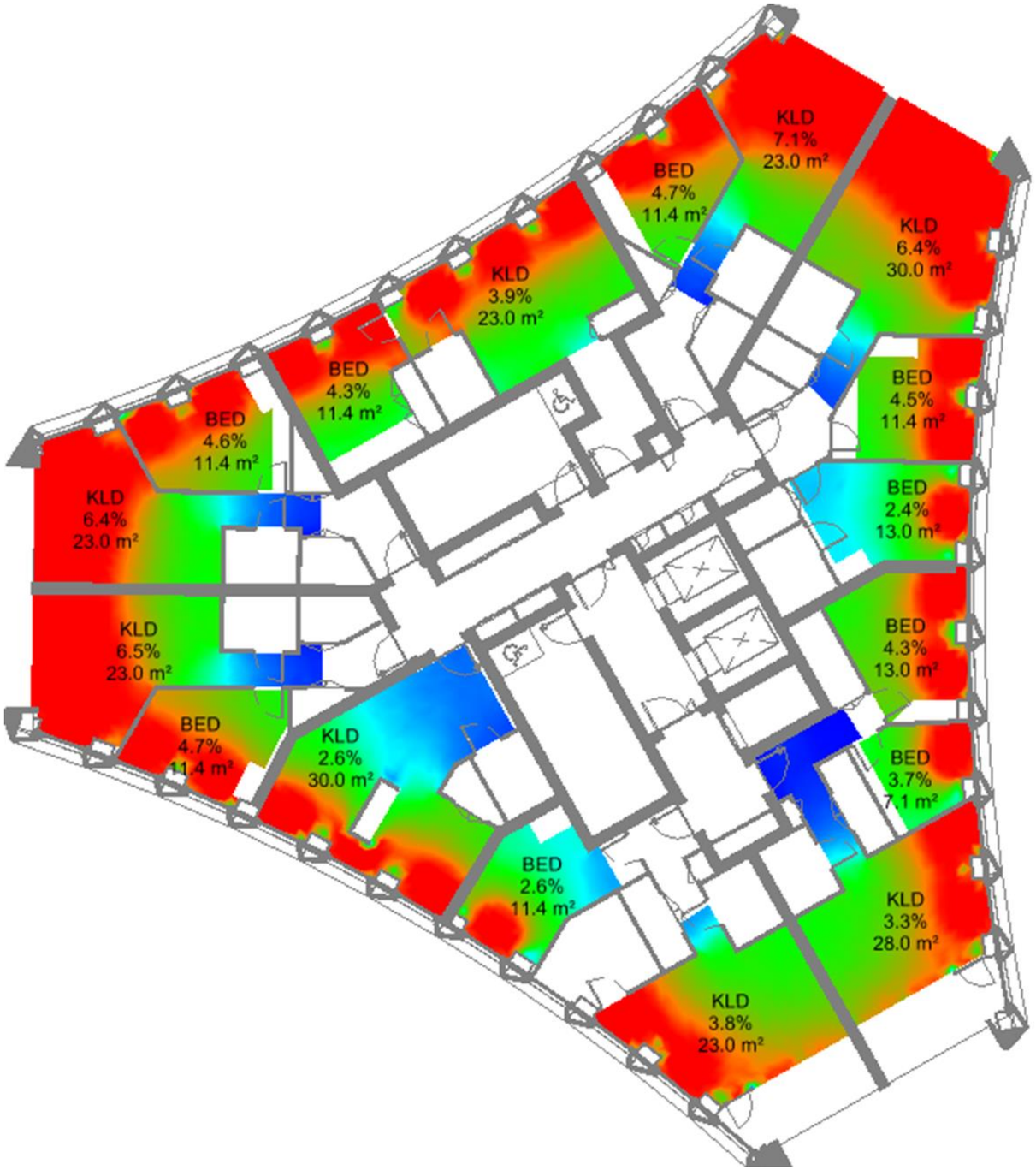
Key

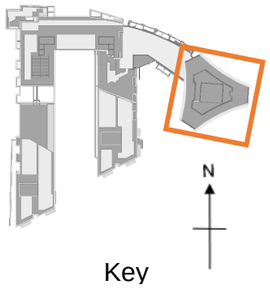


Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 14th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



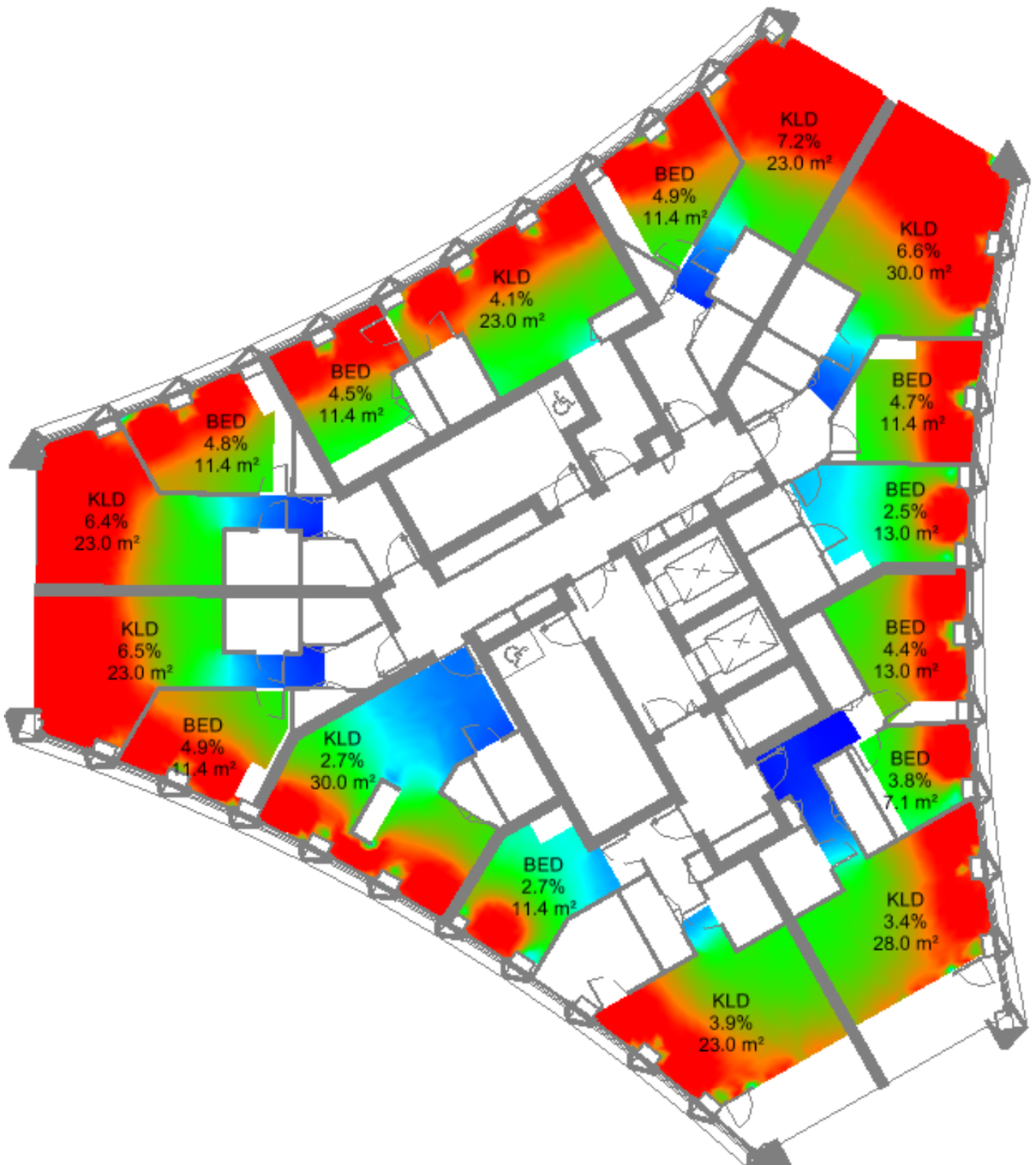


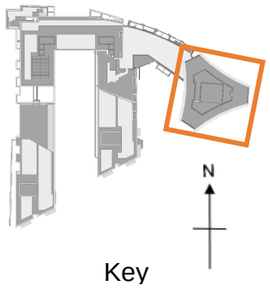
Key

Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

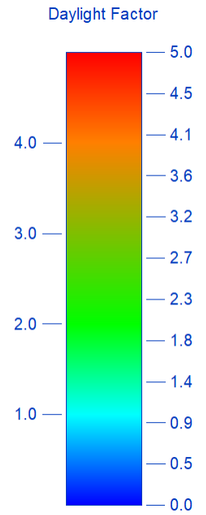
Results: Block A (ADF) – 15th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.





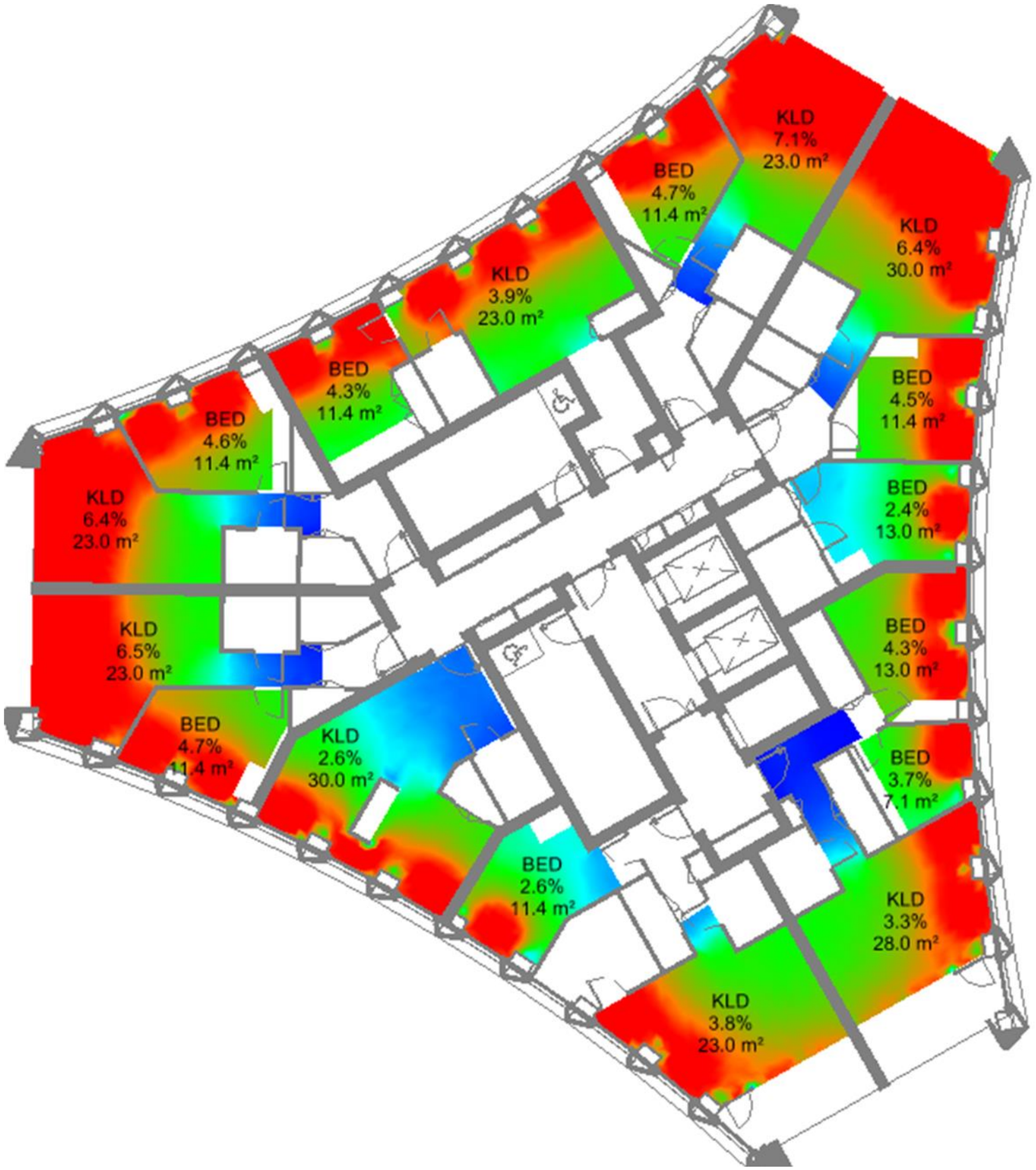
Key

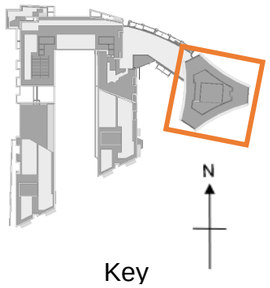


Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 16th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



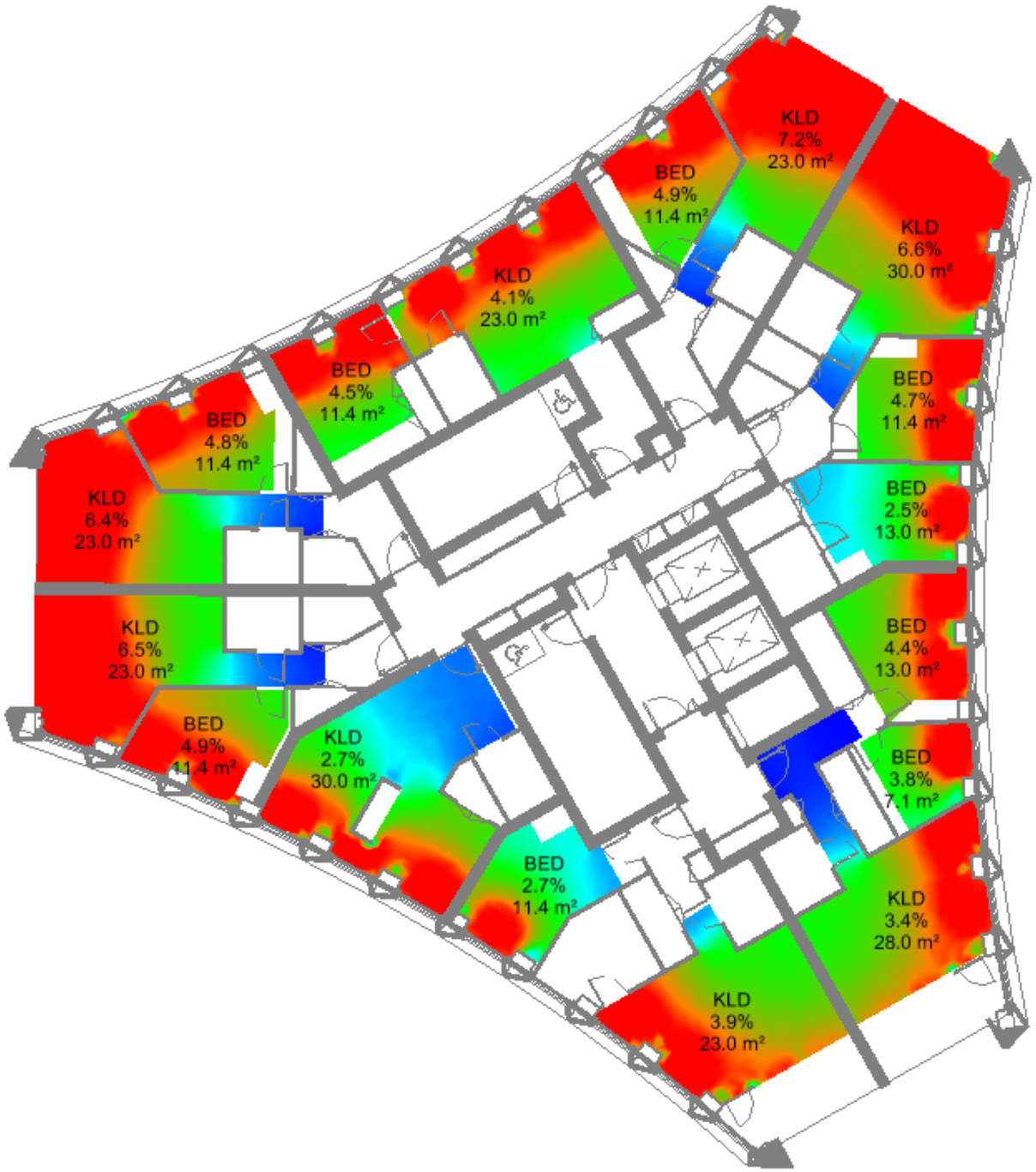


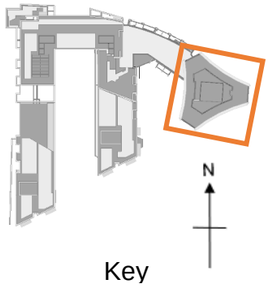
Key

Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

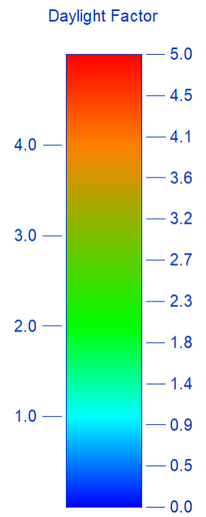
Results: Block A (ADF) – 17th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.





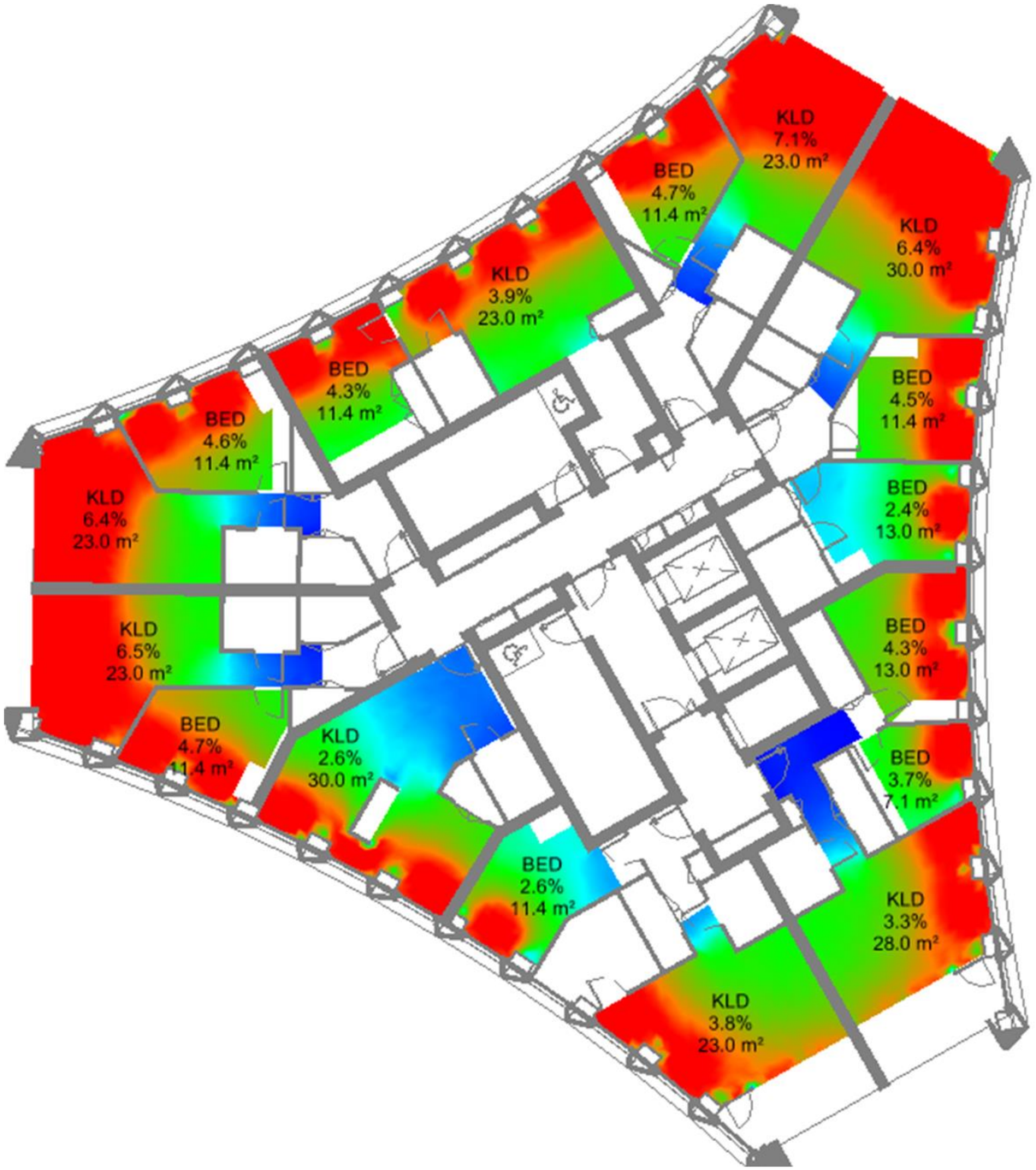
Key

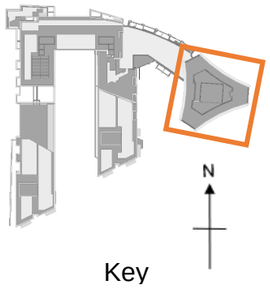


Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 18th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



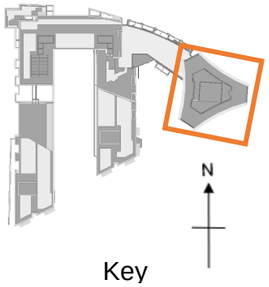


Key

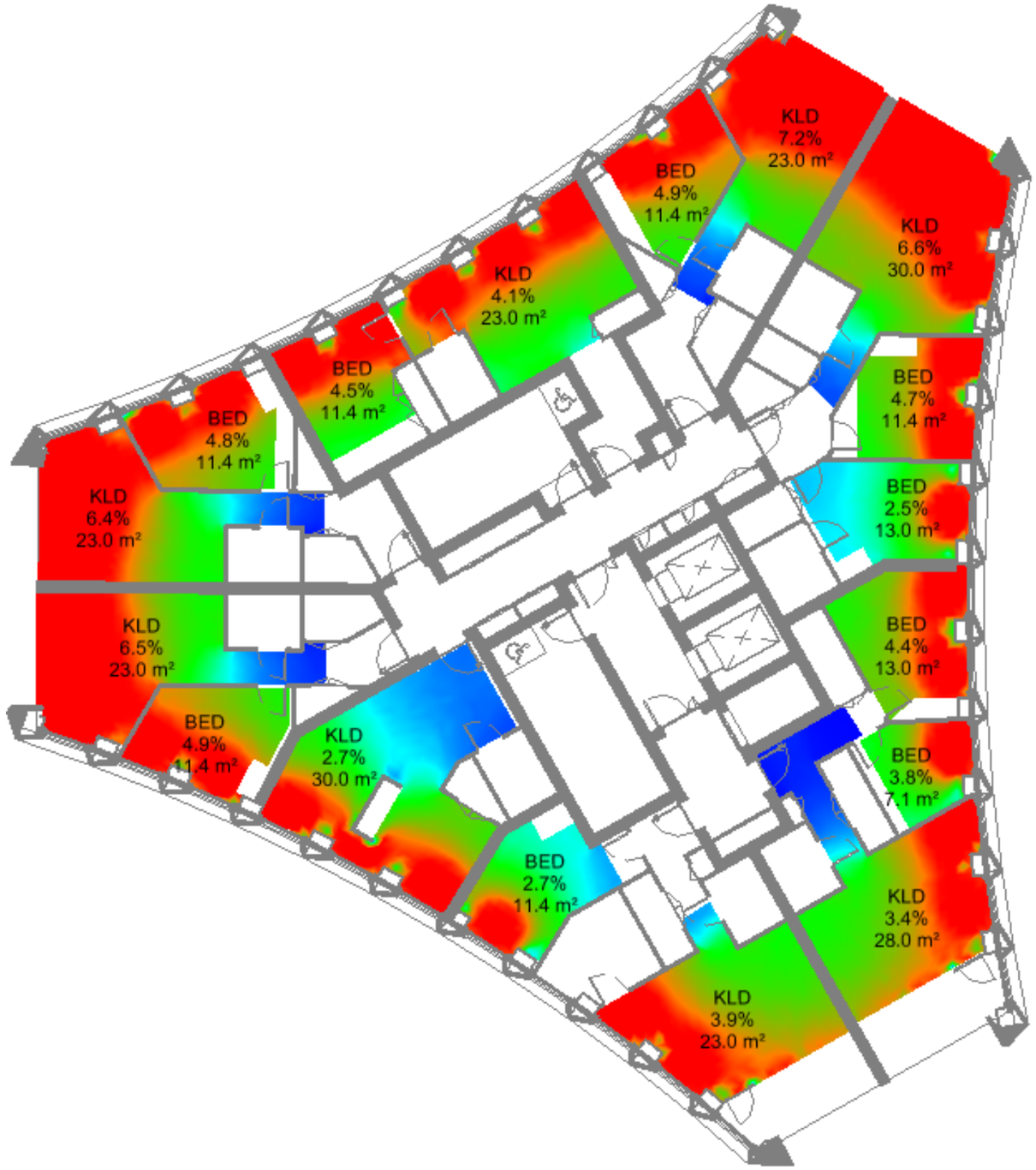
Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

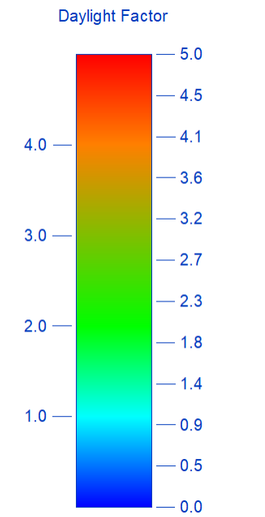
Results: Block A (ADF) – 19th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



Key

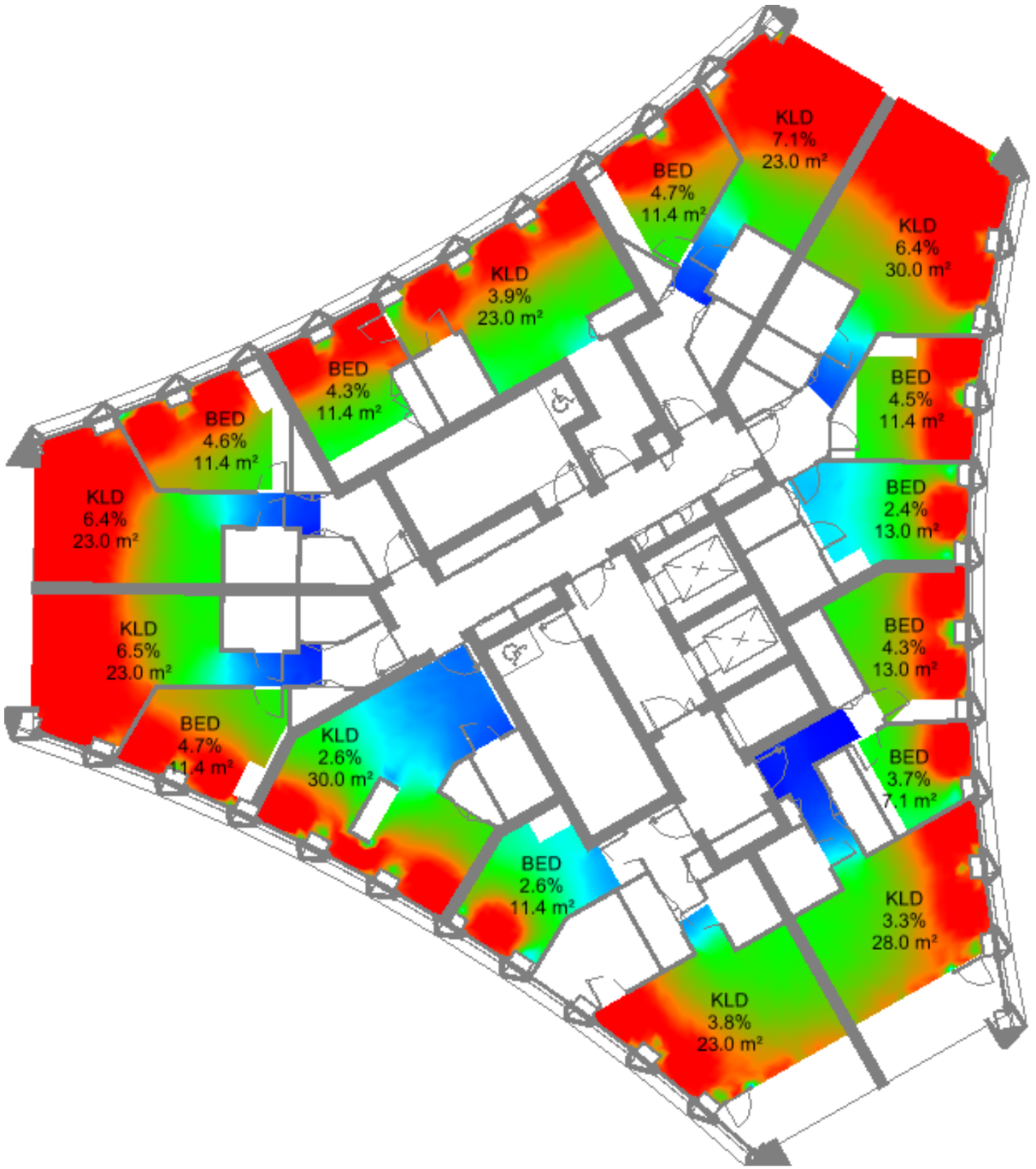


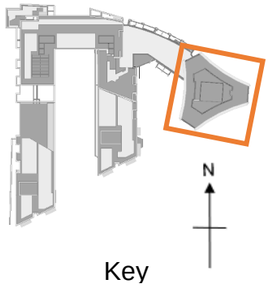


Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

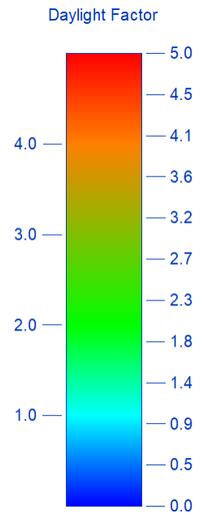
Results: Block A (ADF) – 20th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.





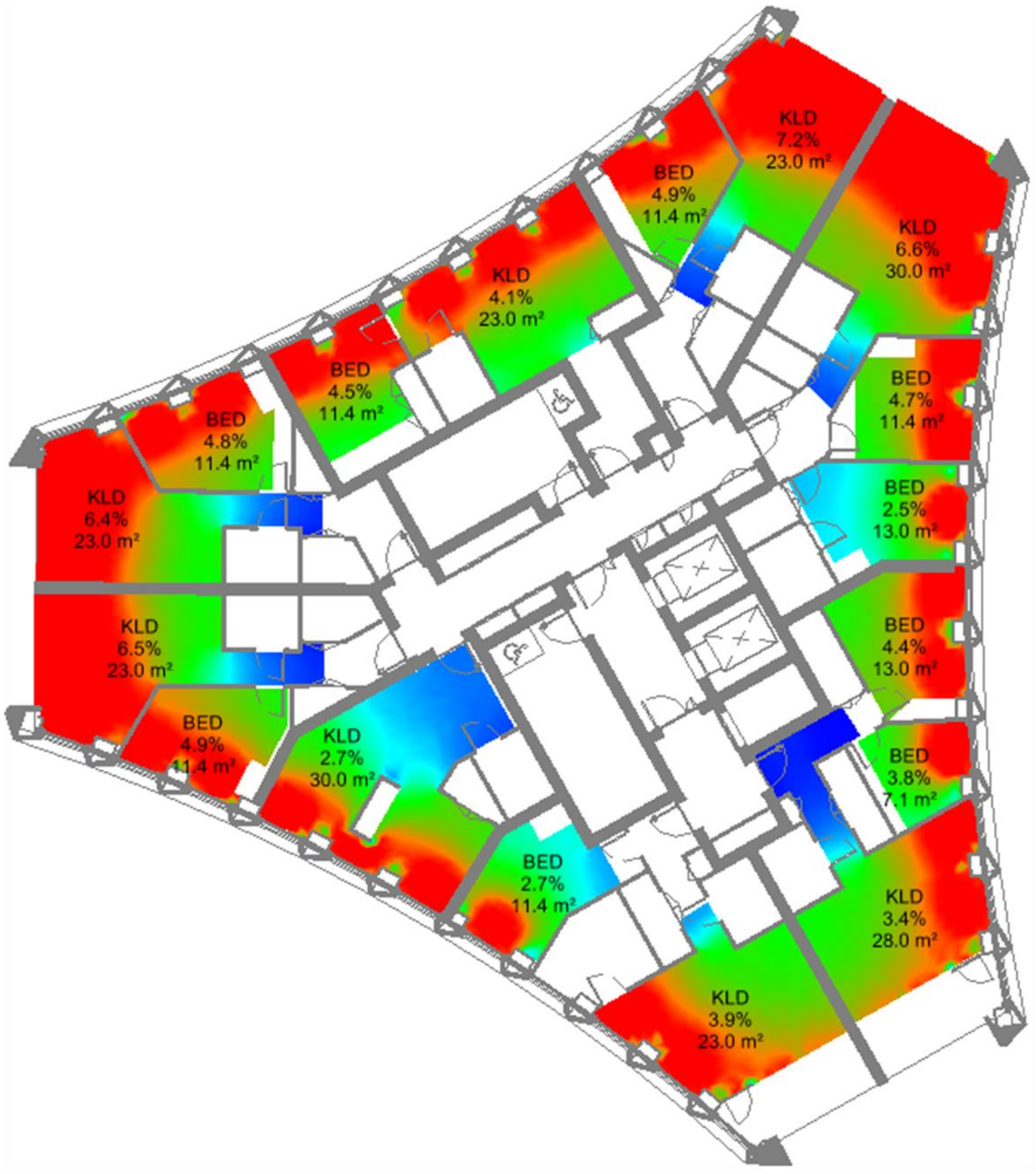
Key

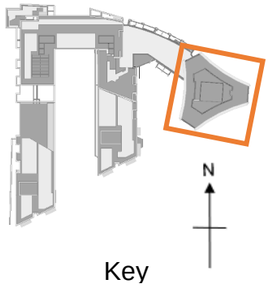


Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

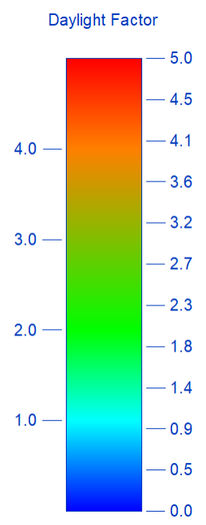
Results: Block A (ADF) – 21st Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.





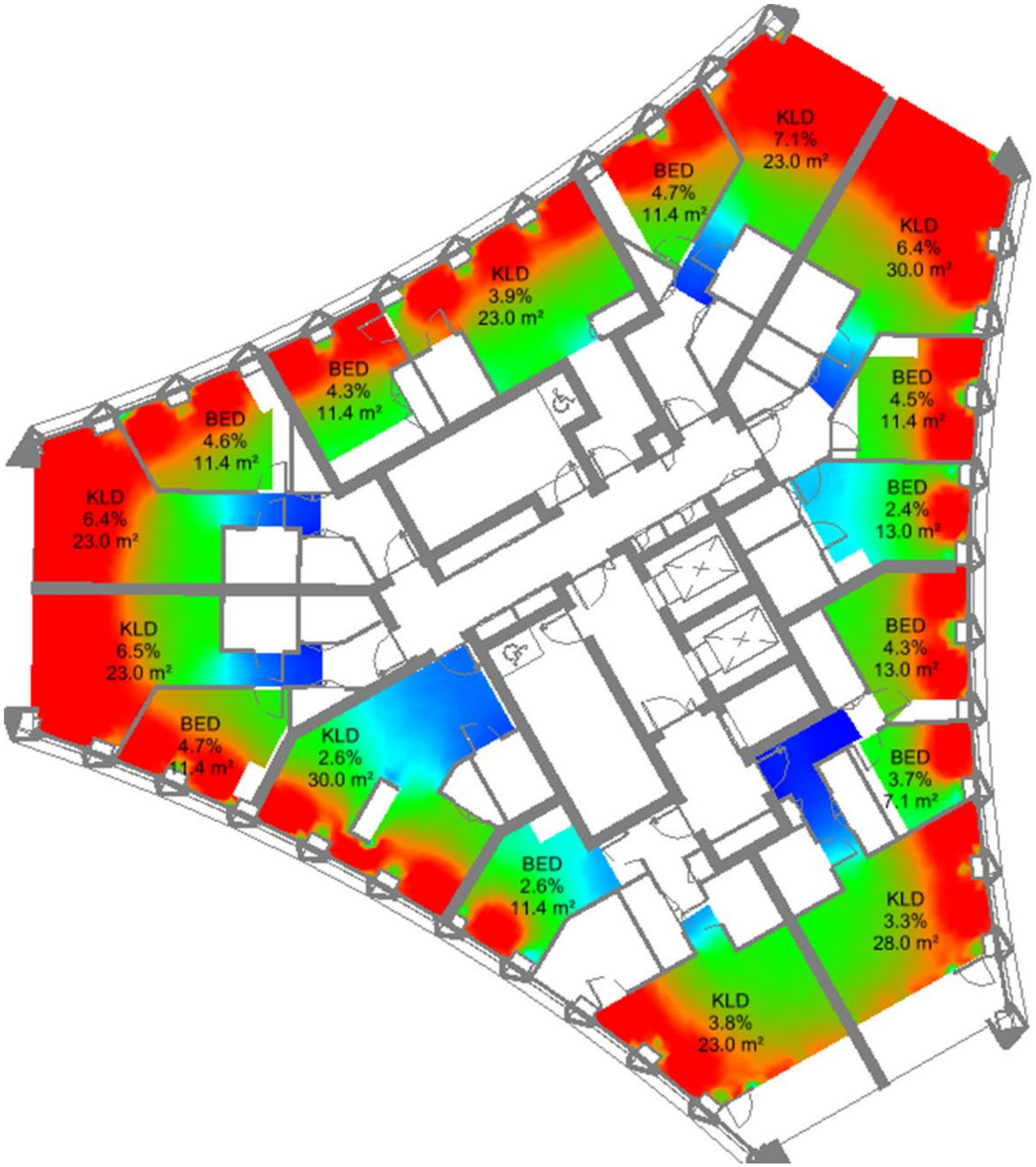
Key

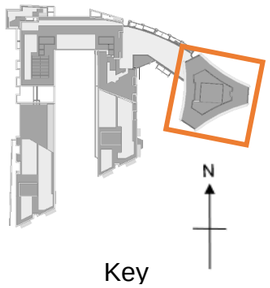


Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 22nd Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



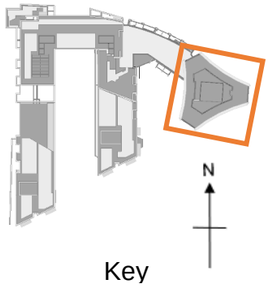


Key

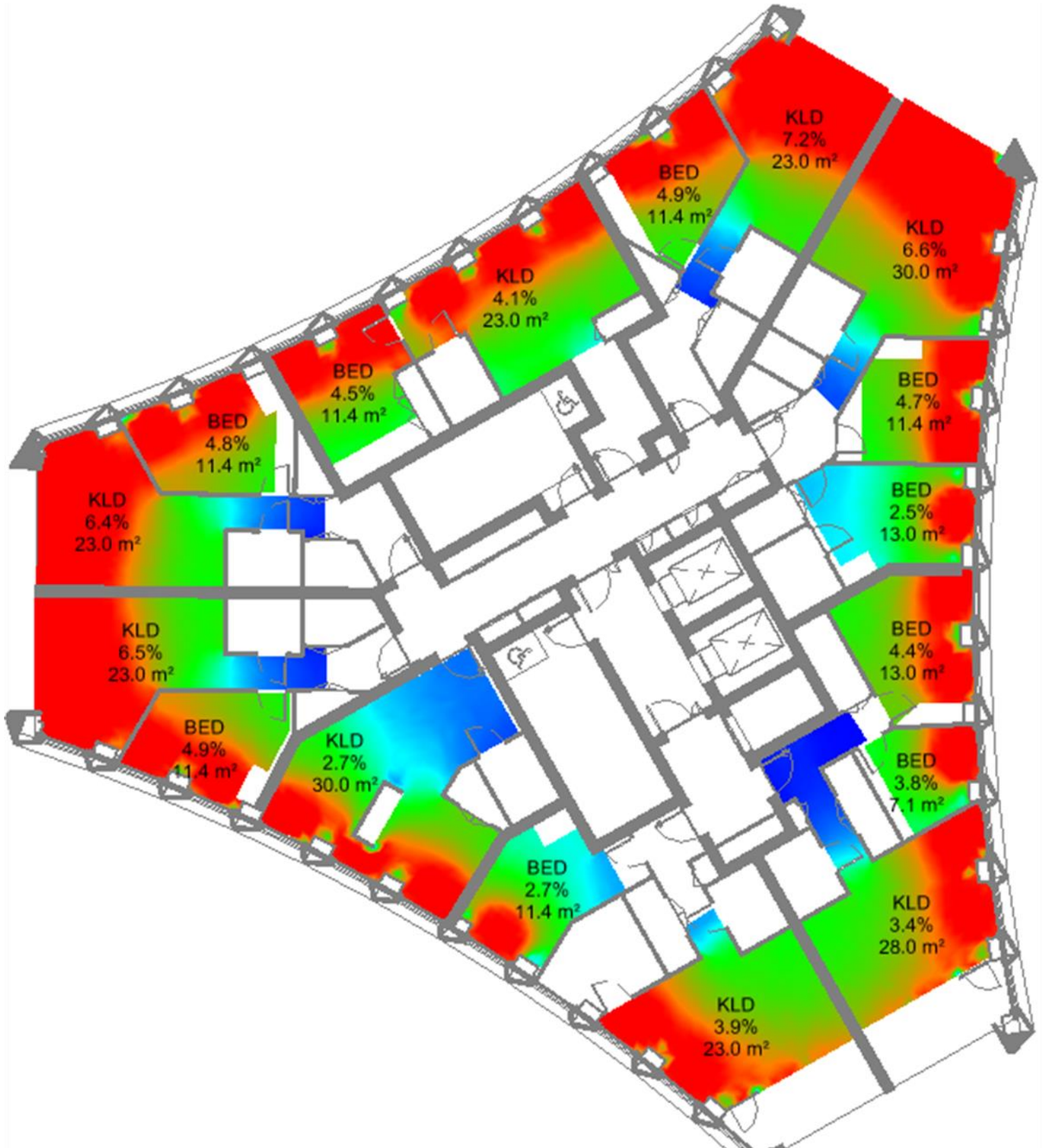
Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 23rd Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



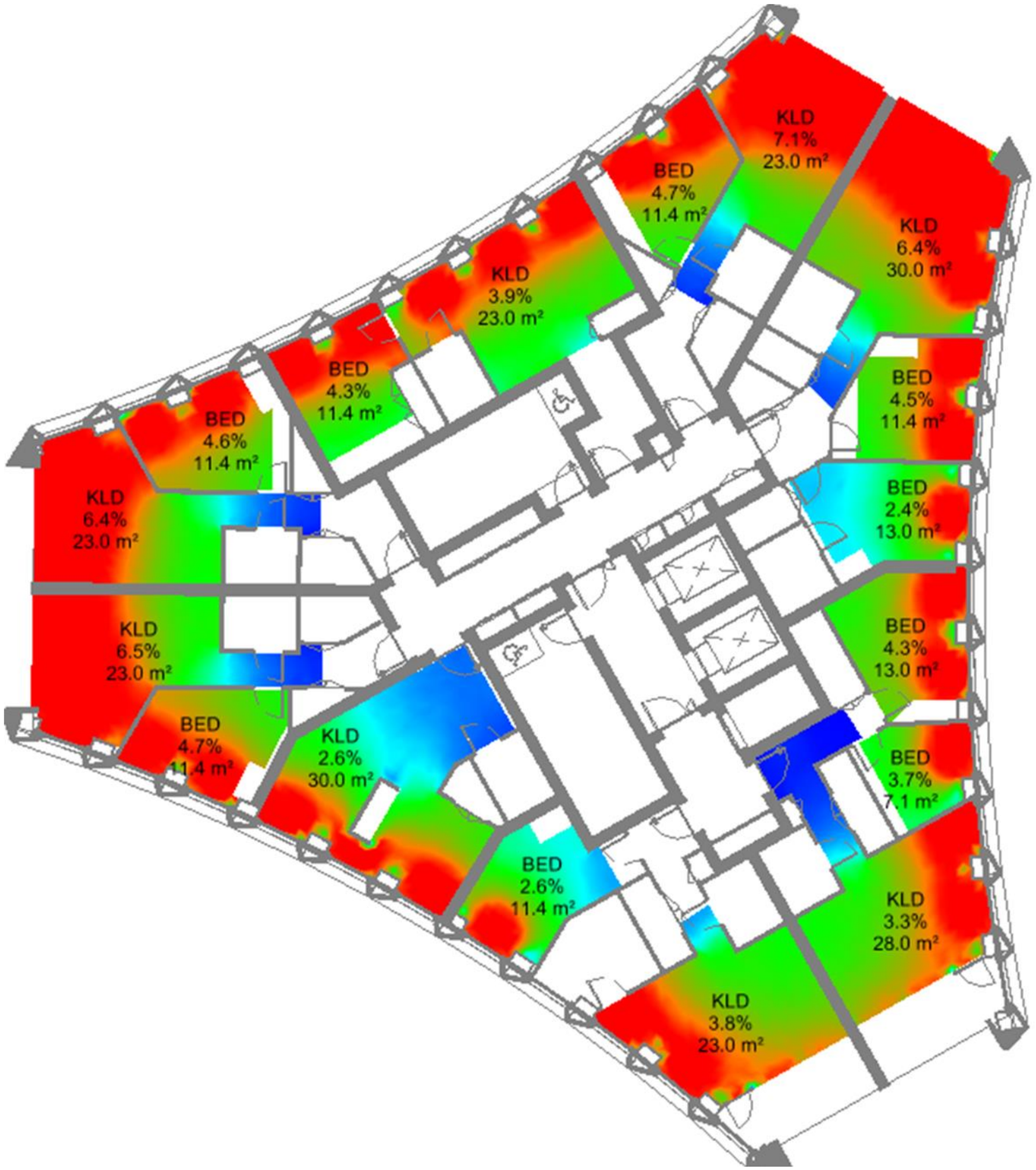
Key

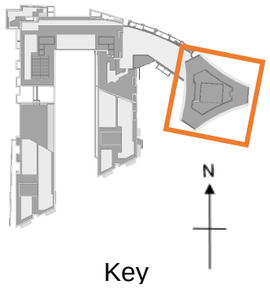


Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 24th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



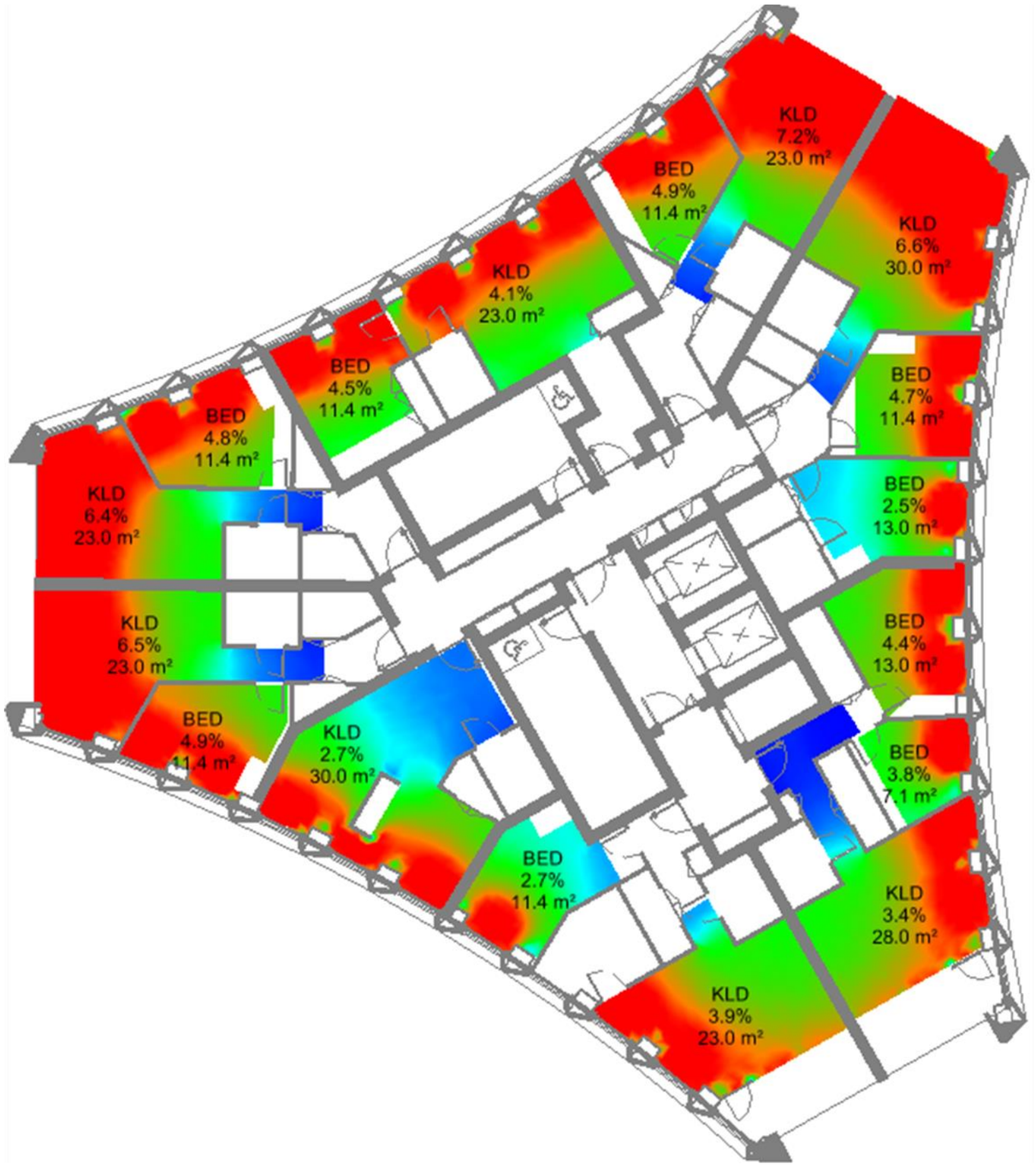


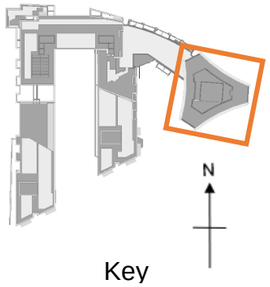
Key

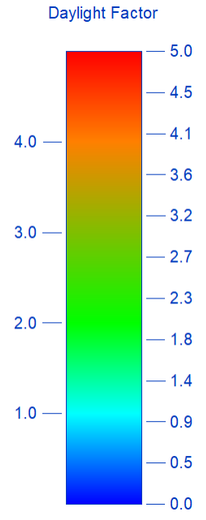
Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 25th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



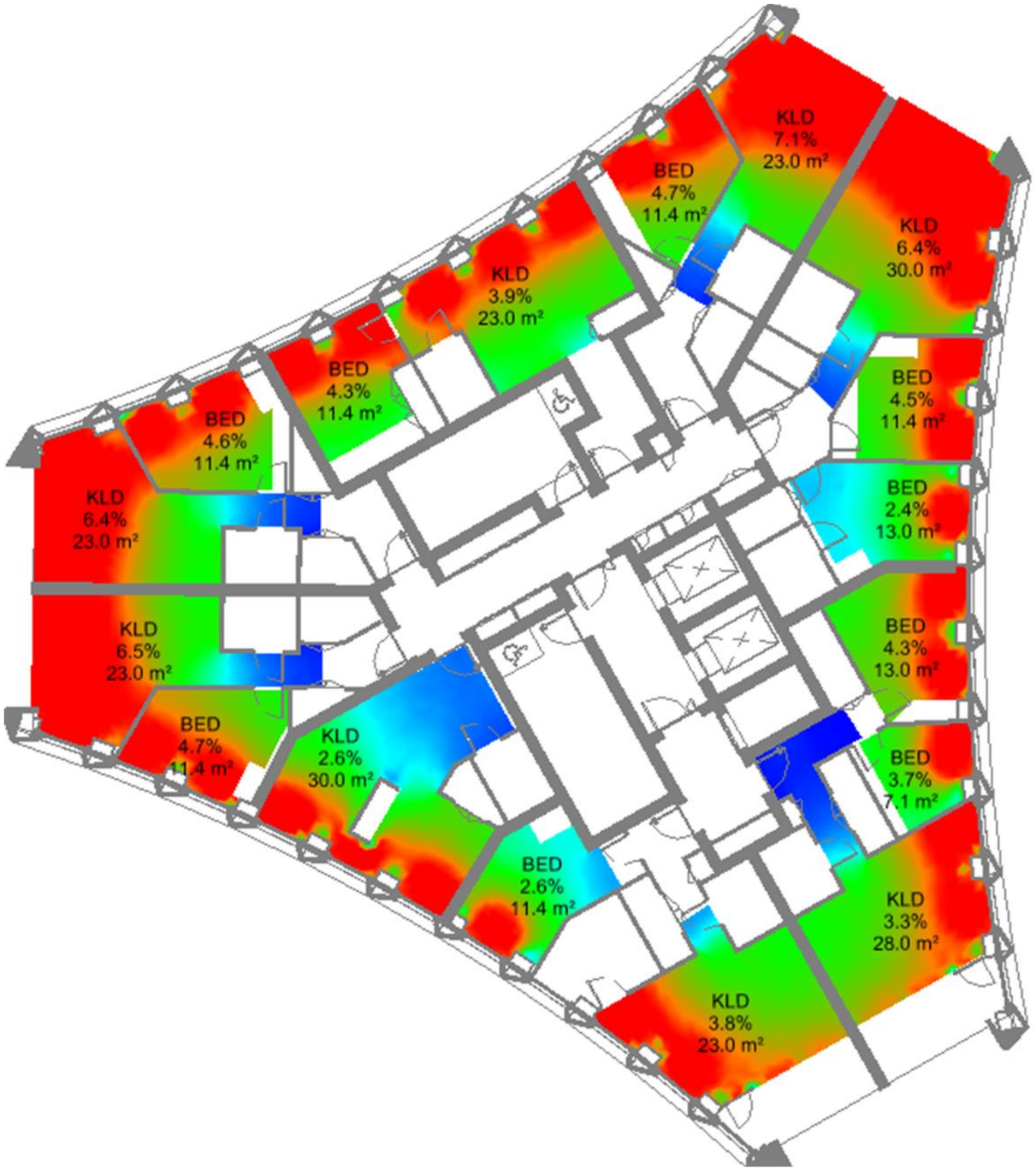


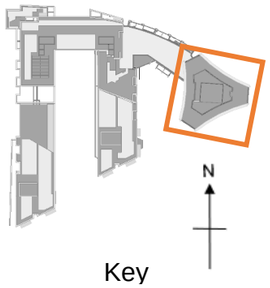


Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

Results: Block A (ADF) – 26th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



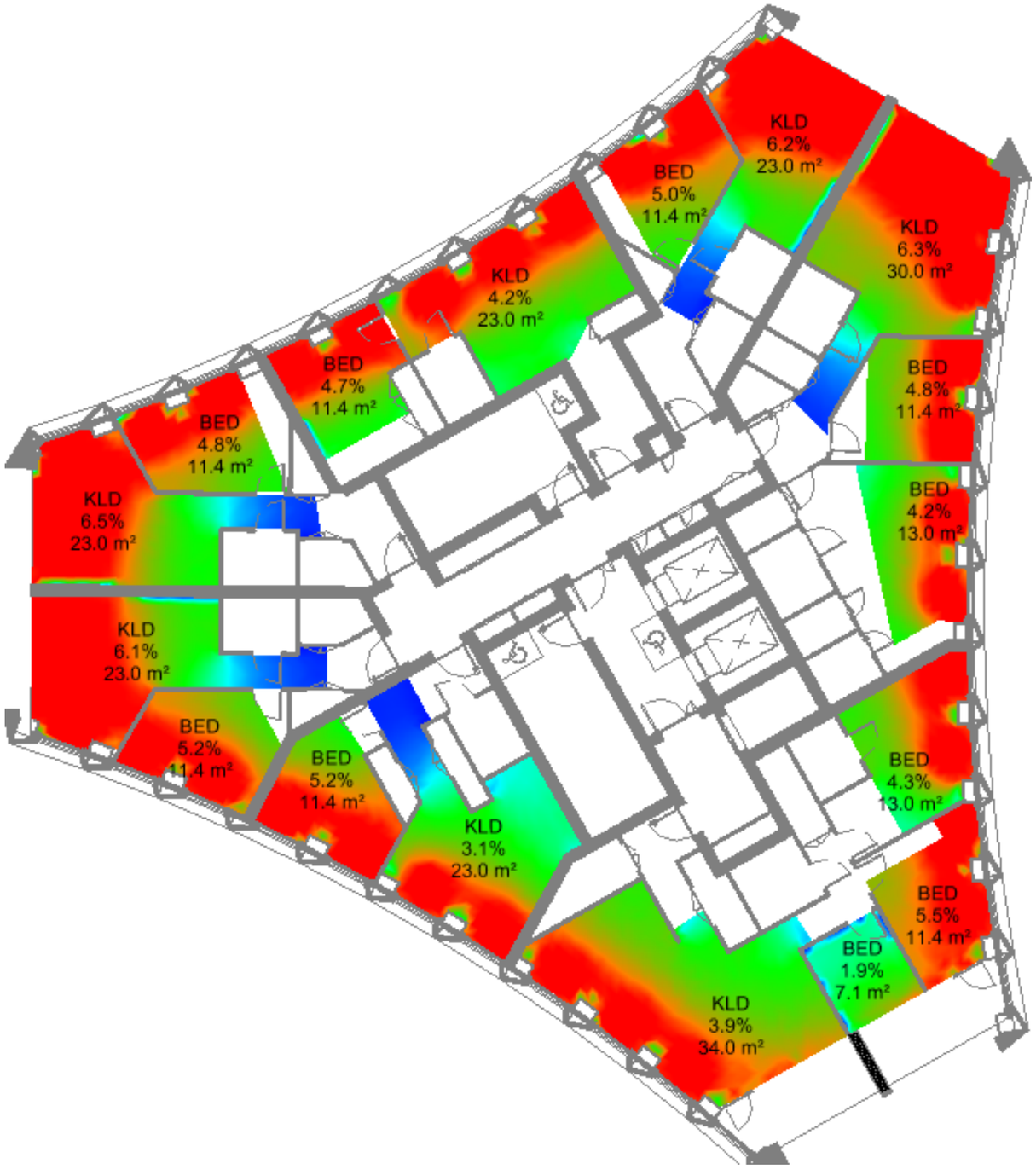


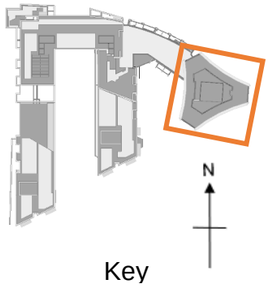
Key

Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

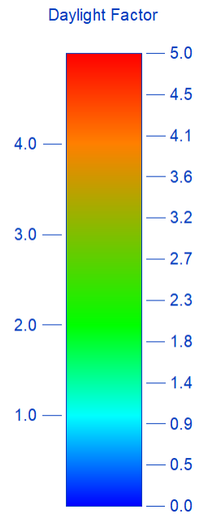
Results: Block A (ADF) – 27th Floor

Daylight analysis results are illustrated below.
Every room was determined to be compliant for ADF on this floor.



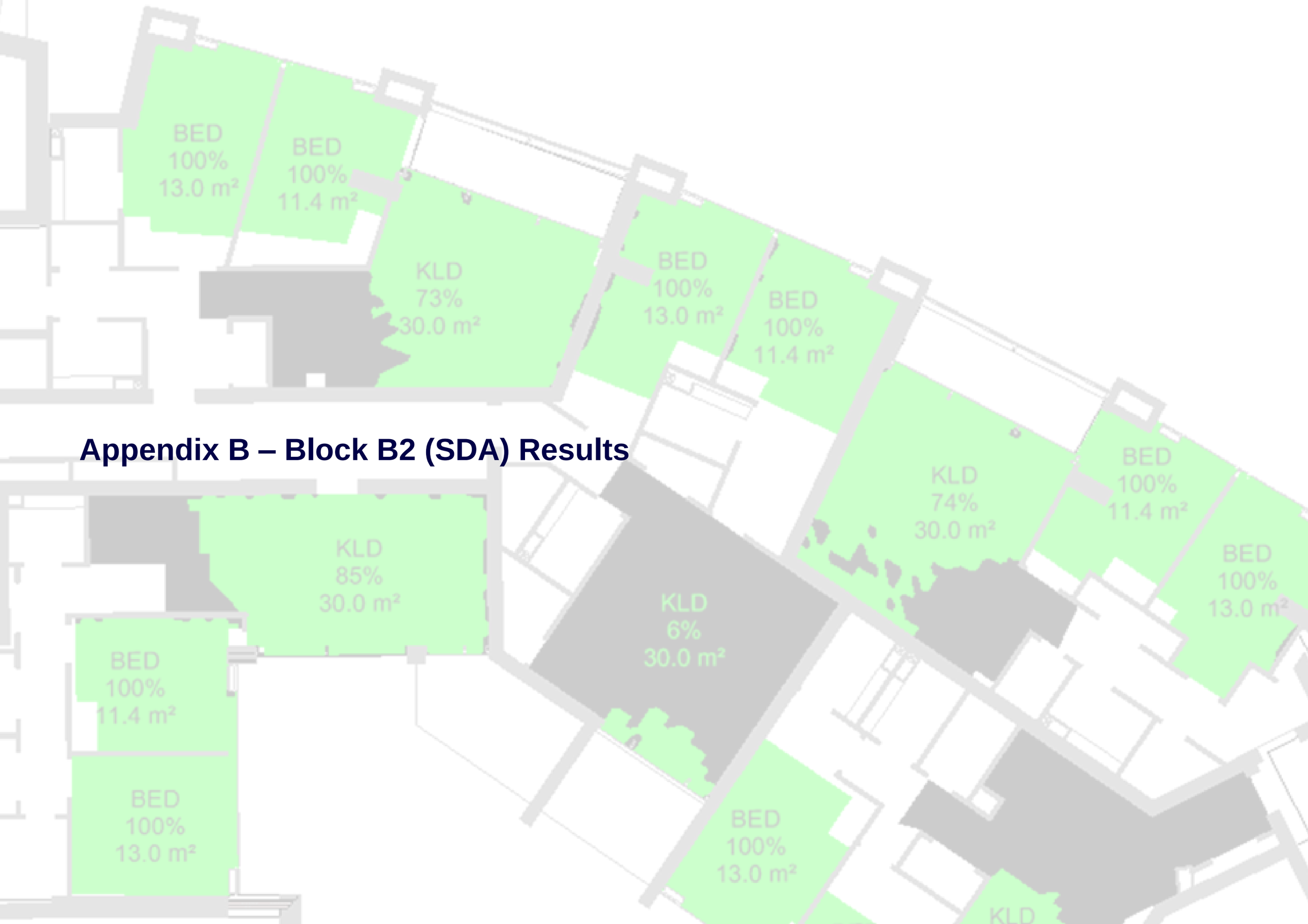


Key



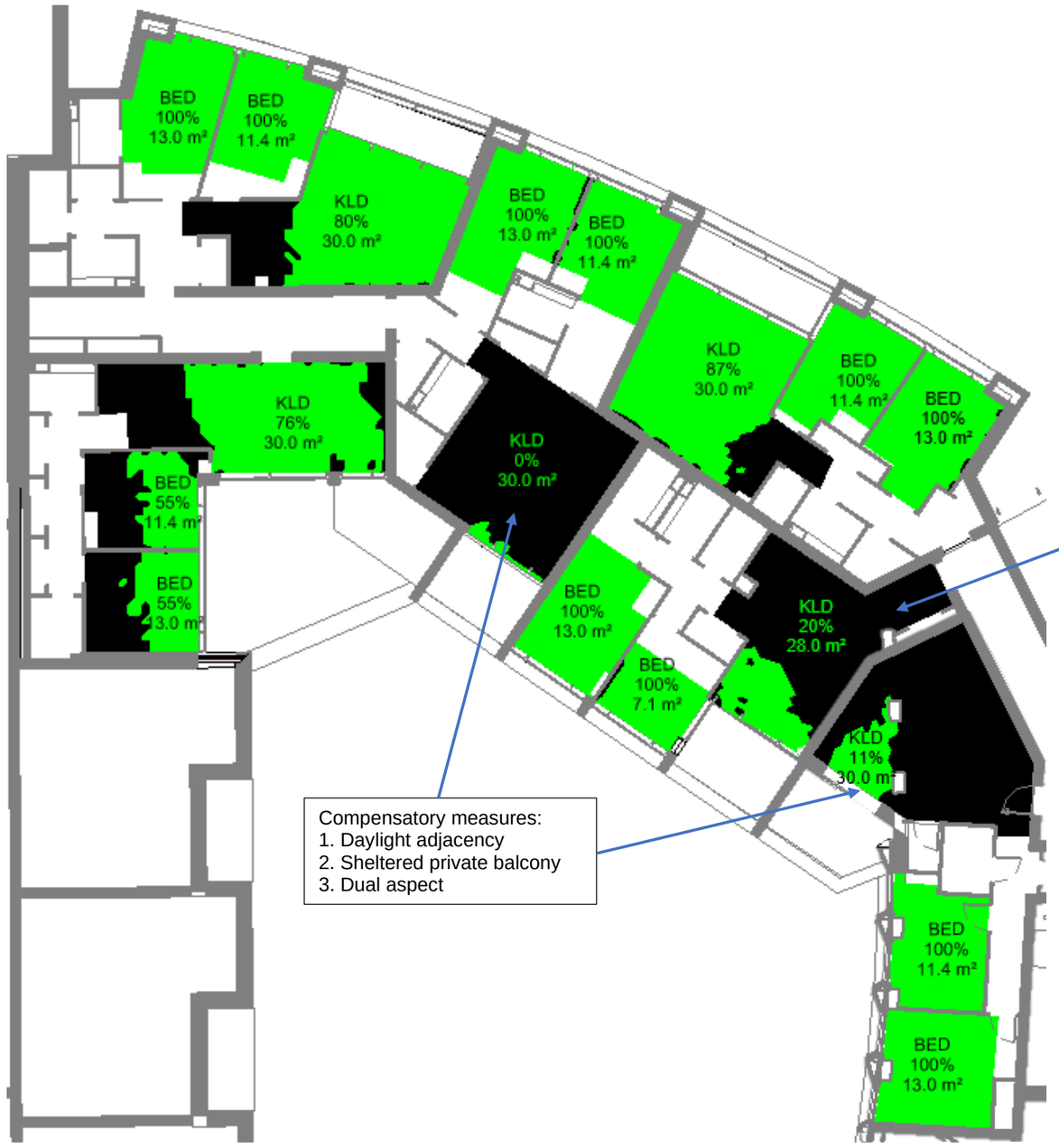
Space	Pass
Bedroom	>1%
Living \ Dining	>1.5%

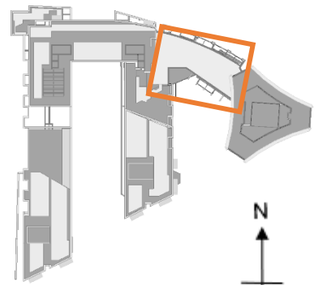
Appendix B – Block B2 (SDA) Results



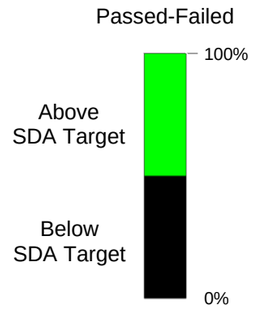
Results: Block B2 (SDA) – 1st Floor

Daylight analysis results are illustrated below with green shaded area receiving targeted illuminance, 200Lux for KLDs, 150Lux for Living room, and 100Lux for Bedrooms. Black shade is showing area where it's receiving less than targeted illuminance. A space is deemed compliant where >50% of areas achieve target illuminance.
15 out of 18 rooms were determined to be compliant for SDA on this floor.





Key Map

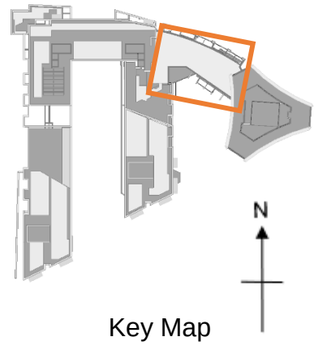


SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

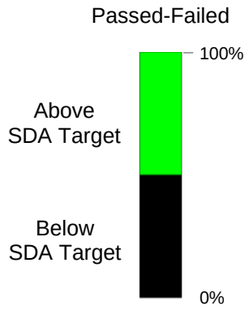
Block B2	Number of rooms		
	Pass	Fail	Total
Level 1	15	3	18
Level 2	15	3	18
Level 3	15	3	18
Level 4	15	3	18
Level 5	15	3	18
Level 6	15	3	18
Level 7	15	3	18
Level 8	17	1	18
	122	**22**	**144**
	85%	**15%**	

Results: Block B2 (SDA) – 2nd Floor

Daylight analysis results are illustrated below with green shaded area receiving targeted illuminance, 200Lux for KLDs, 150Lux for Living room, and 100Lux for Bedrooms. Black shade is showing area where it's receiving less than targeted illuminance. A space is deemed compliant where >50% of areas achieve target illuminance.
15 out of 18 rooms were determined to be compliant for SDA on this floor.



Key Map

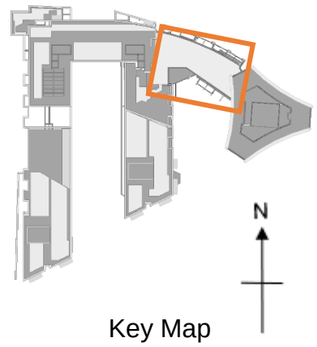


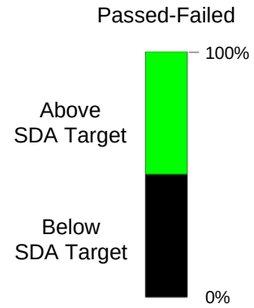
SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B2	Number of rooms		
	Pass	Fail	Total
Level 1	15	3	18
Level 2	15	3	18
Level 3	15	3	18
Level 4	15	3	18
Level 5	15	3	18
Level 6	15	3	18
Level 7	15	3	18
Level 8	17	1	18
	122	**22**	**144**
	85%	**15%**	

Results: Block B2 (SDA) – 3rd Floor

Daylight analysis results are illustrated below with green shaded area receiving targeted illuminance, 200Lux for KLDs, 150Lux for Living room, and 100Lux for Bedrooms. Black shade is showing area where it's receiving less than targeted illuminance. A space is deemed compliant where >50% of areas achieve target illuminance.
15 out of 18 rooms were determined to be compliant for SDA on this floor.



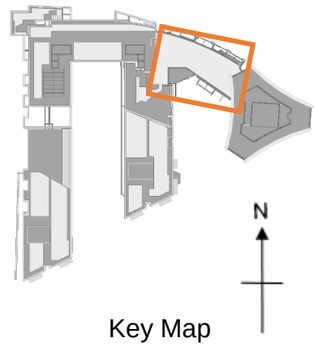


SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

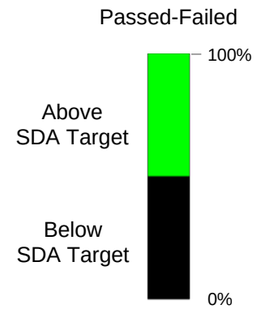
Block B2	Number of rooms		
	Pass	Fail	Total
Level 1	15	3	18
Level 2	15	3	18
Level 3	15	3	18
Level 4	15	3	18
Level 5	15	3	18
Level 6	15	3	18
Level 7	15	3	18
Level 8	17	1	18
	122	**22**	**144**
	85%	**15%**	

Results: Block B2 (SDA) – 4th Floor

Daylight analysis results are illustrated below with green shaded area receiving targeted illuminance, 200Lux for KLDs, 150Lux for Living room, and 100Lux for Bedrooms. Black shade is showing area where it's receiving less than targeted illuminance. A space is deemed compliant where >50% of areas achieve target illuminance.
15 out of 18 rooms were determined to be compliant for SDA on this floor.



Key Map

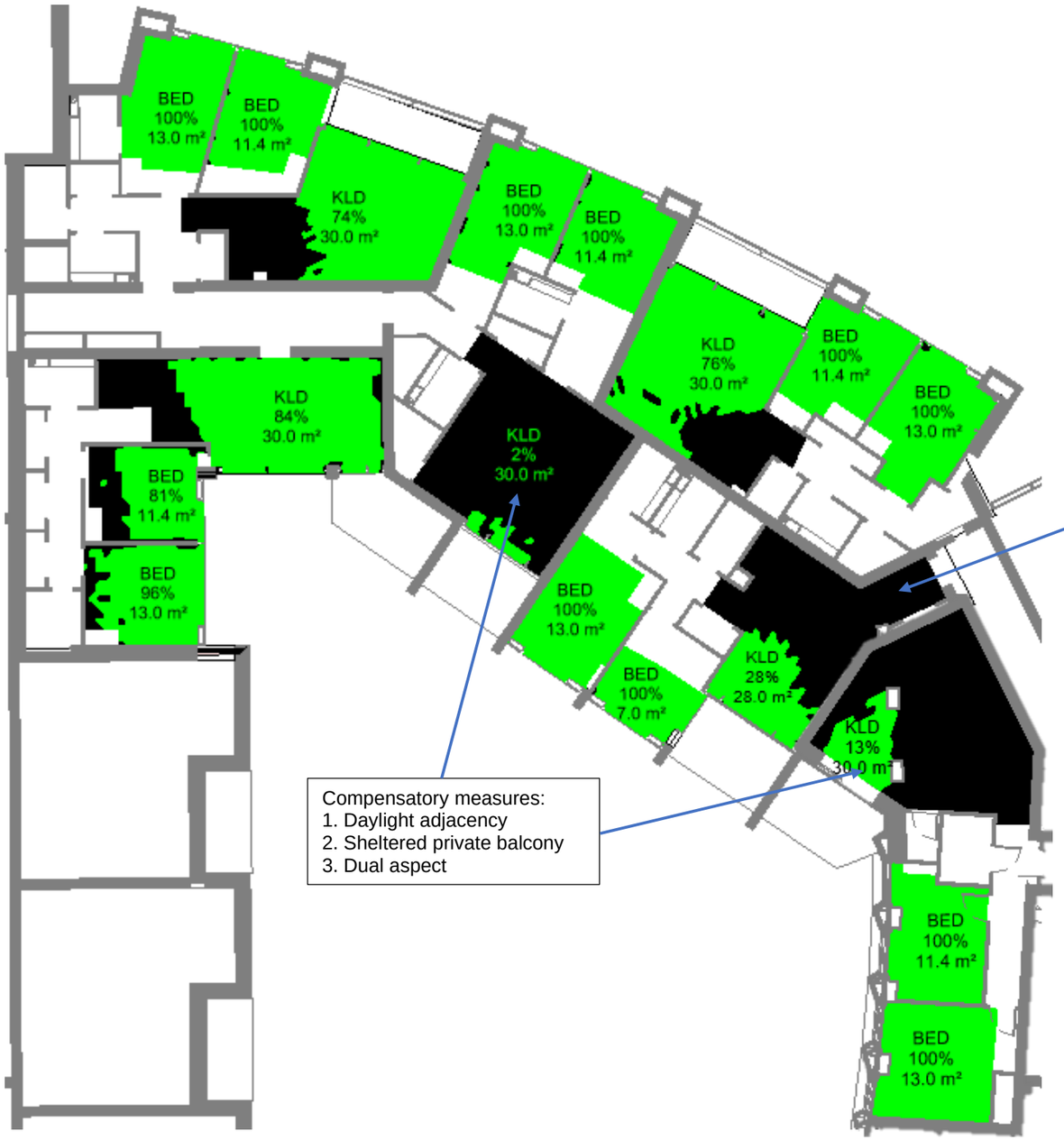


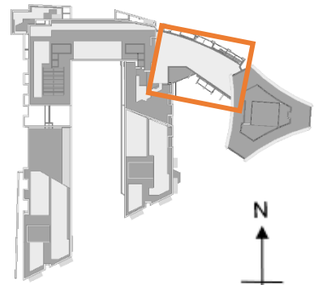
SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B2	Number of rooms		
	Pass	Fail	Total
Level 1	15	3	18
Level 2	15	3	18
Level 3	15	3	18
Level 4	15	3	18
Level 5	15	3	18
Level 6	15	3	18
Level 7	15	3	18
Level 8	17	1	18
	122	**22**	**144**
	85%	**15%**	

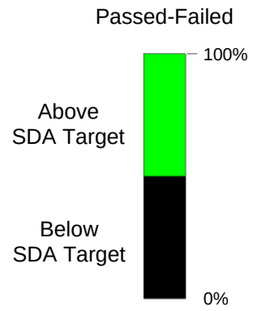
Results: Block B2 (SDA) – 5th Floor

Daylight analysis results are illustrated below with green shaded area receiving targeted illuminance, 200Lux for KLDs, 150Lux for Living room, and 100Lux for Bedrooms. Black shade is showing area where it's receiving less than targeted illuminance. A space is deemed compliant where >50% of areas achieve target illuminance.
15 out of 18 rooms were determined to be compliant for SDA on this floor.





Key Map

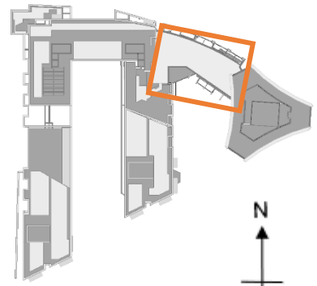


SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B2	Number of rooms		
	Pass	Fail	Total
Level 1	15	3	18
Level 2	15	3	18
Level 3	15	3	18
Level 4	15	3	18
Level 5	15	3	18
Level 6	15	3	18
Level 7	15	3	18
Level 8	17	1	18
	122	**22**	**144**
	85%	**15%**	

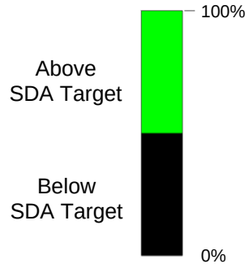
Results: Block B2 (SDA) – 6th Floor

Daylight analysis results are illustrated below with green shaded area receiving targeted illuminance, 200Lux for KLDs, 150Lux for Living room, and 100Lux for Bedrooms. Black shade is showing area where it's receiving less than targeted illuminance. A space is deemed compliant where >50% of areas achieve target illuminance.
15 out of 18 rooms were determined to be compliant for SDA on this floor.



Key Map

Passed-Failed

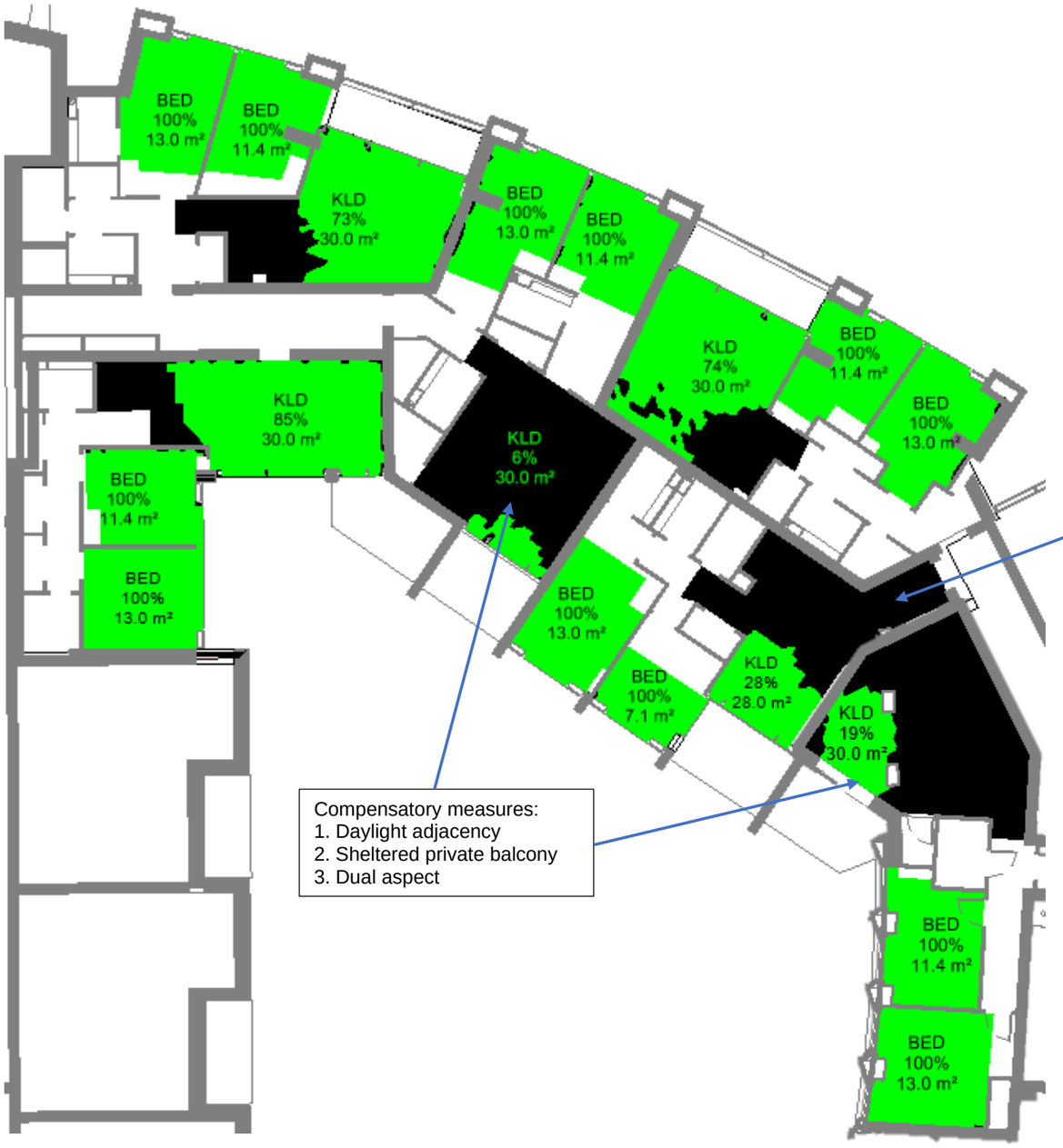


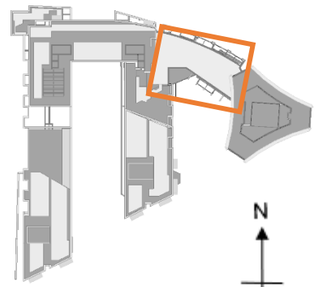
SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

Block B2	Number of rooms		
	Pass	Fail	Total
Level 1	15	3	18
Level 2	15	3	18
Level 3	15	3	18
Level 4	15	3	18
Level 5	15	3	18
Level 6	15	3	18
Level 7	15	3	18
Level 8	17	1	18
	122	**22**	**144**
	85%	**15%**	

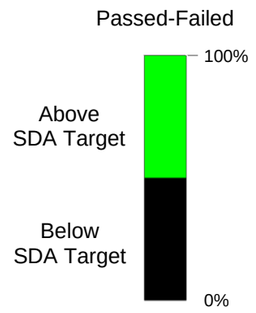
Results: Block B2 (SDA) – 7th Floor

Daylight analysis results are illustrated below with green shaded area receiving targeted illuminance, 200Lux for KLDs, 150Lux for Living room, and 100Lux for Bedrooms. Black shade is showing area where it's receiving less than targeted illuminance. A space is deemed compliant where >50% of areas achieve target illuminance.
15 out of 18 rooms were determined to be compliant for SDA on this floor.





Key Map

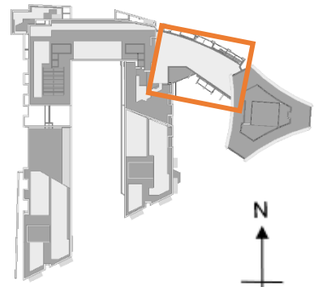


SDA Targets	> 50% at
Bedrooms	> 100 Lux
Living Areas	> 150 Lux
K/L/D / Kitchen	> 200 Lux

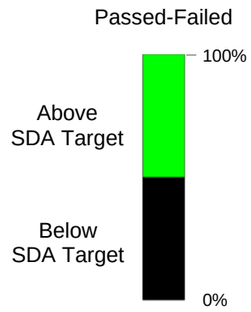
Block B2	Number of rooms		
	Pass	Fail	Total
Level 1	15	3	18
Level 2	15	3	18
Level 3	15	3	18
Level 4	15	3	18
Level 5	15	3	18
Level 6	15	3	18
Level 7	15	3	18
Level 8	17	1	18
	122	**22**	**144**
	85%	**15%**	

Results: Block B2 (SDA) – 8th Floor

Daylight analysis results are illustrated below with green shaded area receiving targeted illuminance, 200Lux for KLDs, 150Lux for Living room, and 100Lux for Bedrooms. Black shade is showing area where it's receiving less than targeted illuminance. A space is deemed compliant where >50% of areas achieve target illuminance.
17 out of 18 rooms were determined to be compliant for SDA on this floor.



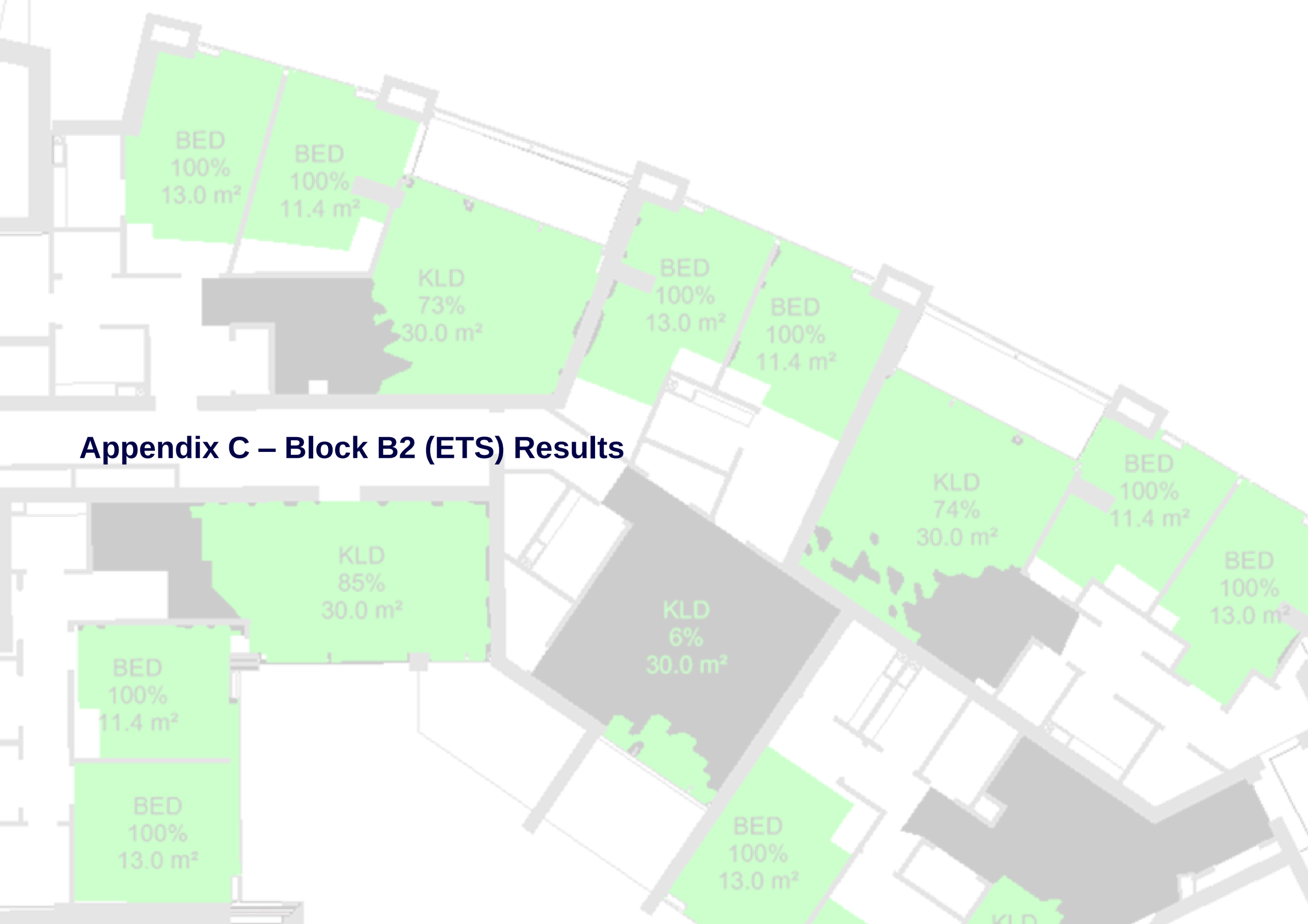
Key Map



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

Block B2	Number of rooms		
	Pass	Fail	Total
Level 1	15	3	18
Level 2	15	3	18
Level 3	15	3	18
Level 4	15	3	18
Level 5	15	3	18
Level 6	15	3	18
Level 7	15	3	18
Level 8	17	1	18
	122	**22**	**144**
	85%	**15%**	

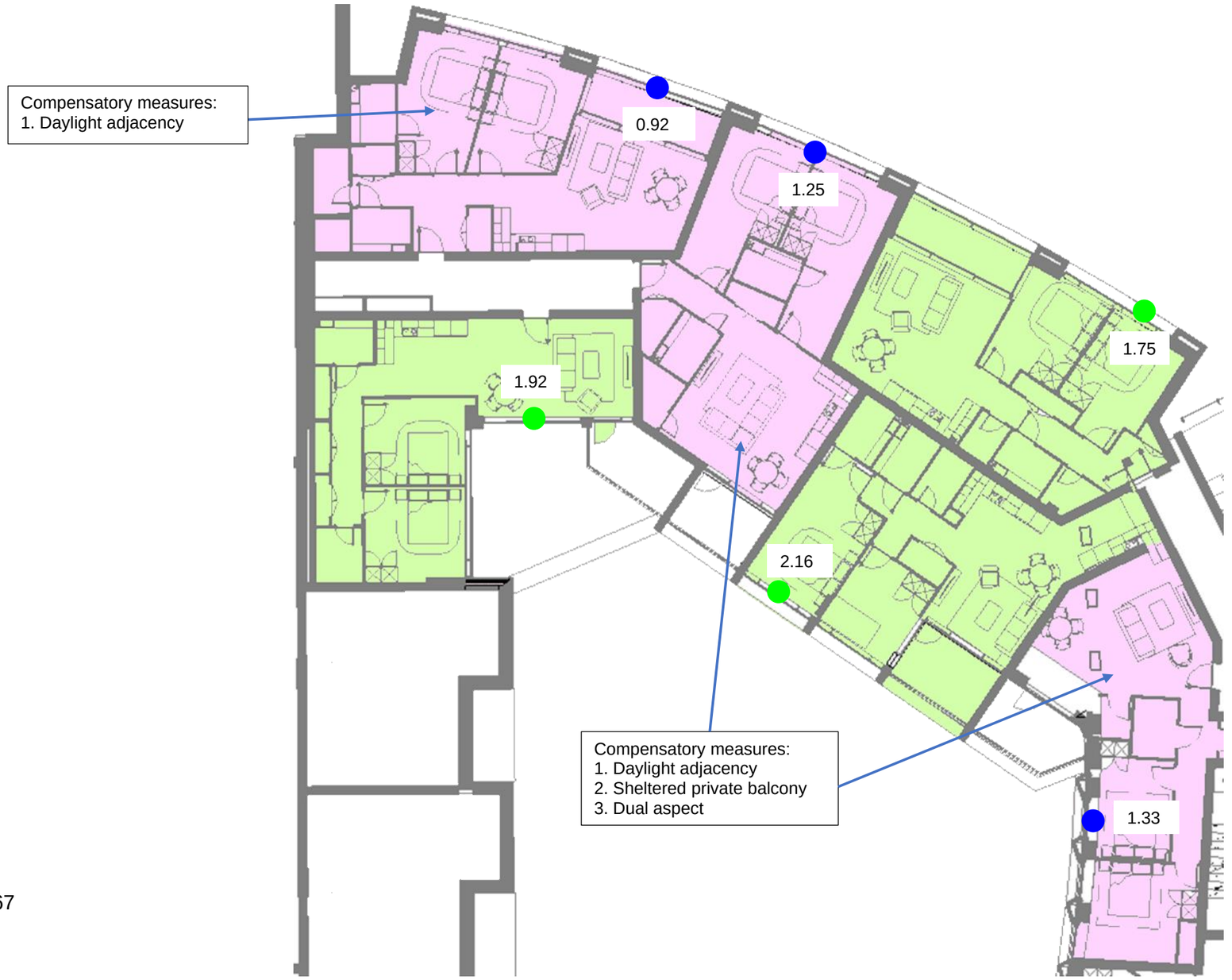
Appendix C – Block B2 (ETS) Results

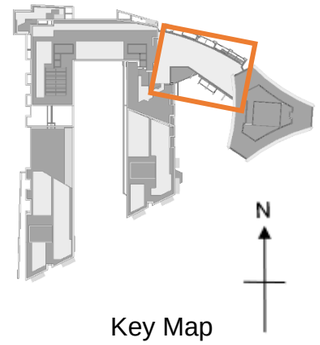


Results: Block B2 (ETS) – 1st Floor

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded is showing units where it's receiving less than targeted number of hours, which is less than 1.5 hours. A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).

3 out of 6 units were determined to be compliant for ETS for this floor.





Key Map

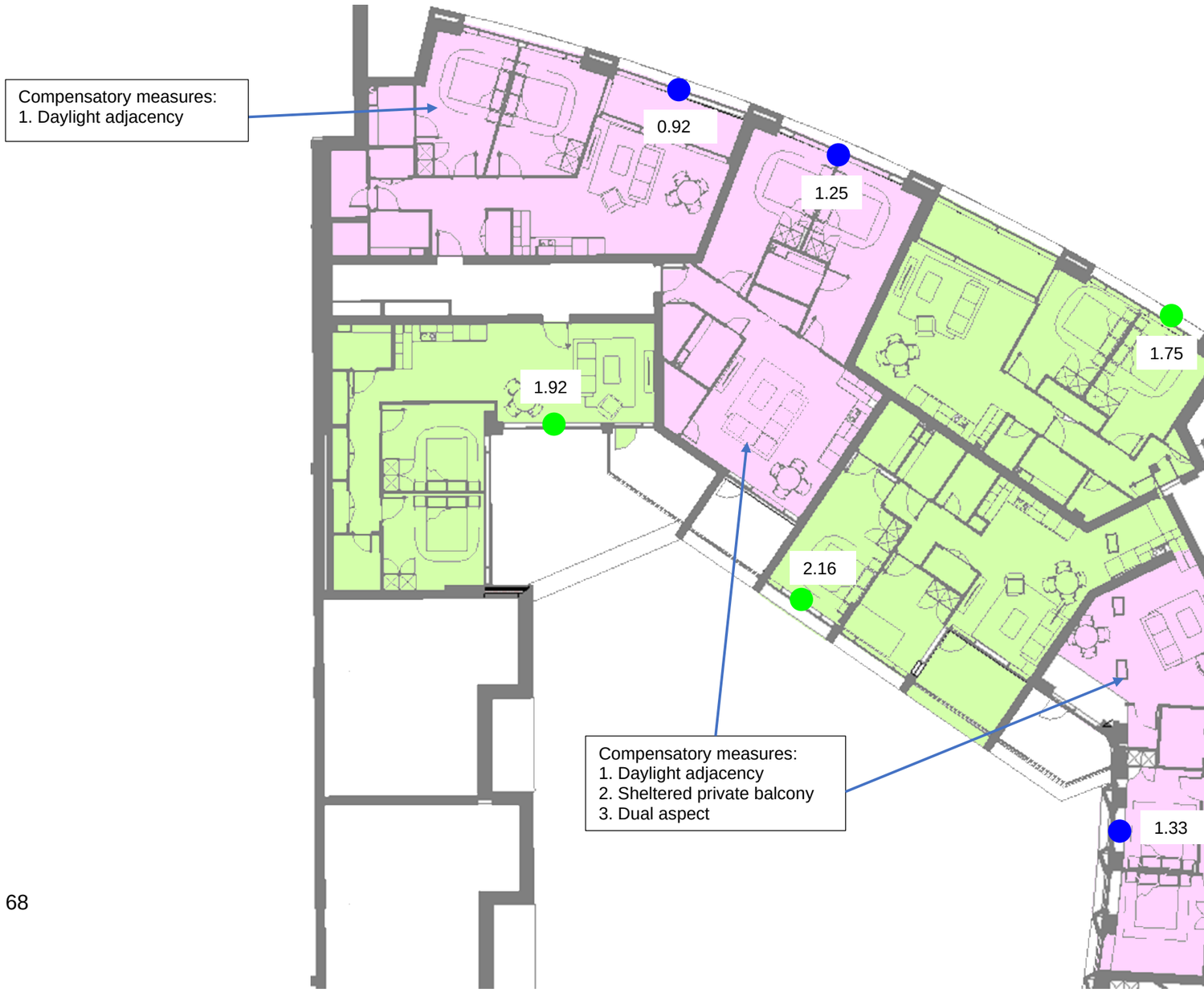
Exposure to Sunlight			
Compliant	High	≥ 4.0 hrs	
	Medium	3.0 – 4.0 hrs	
	Minimum	1.5 – 3.0 hrs	
Non-Compliant	Low	< 1.5 hrs	

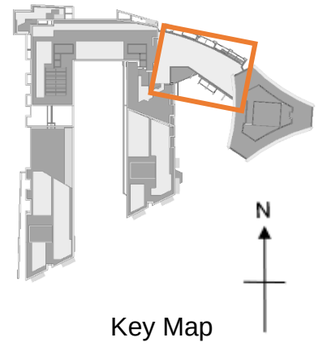
B2	Number of units		
Levels	Pass	Fail	Total
1	3	3	6
2	3	3	6
3	3	3	6
4	3	3	6
5	4	2	6
6	4	2	6
7	4	2	6
8	4	2	6
	28	20	48
	58%	42%	

Results: Block B2 (ETS) – 2nd Floor

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded is showing units where it's receiving less than targeted number of hours, which is less than 1.5 hours. A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).

3 out of 6 units were determined to be compliant for ETS for this floor.





Key Map

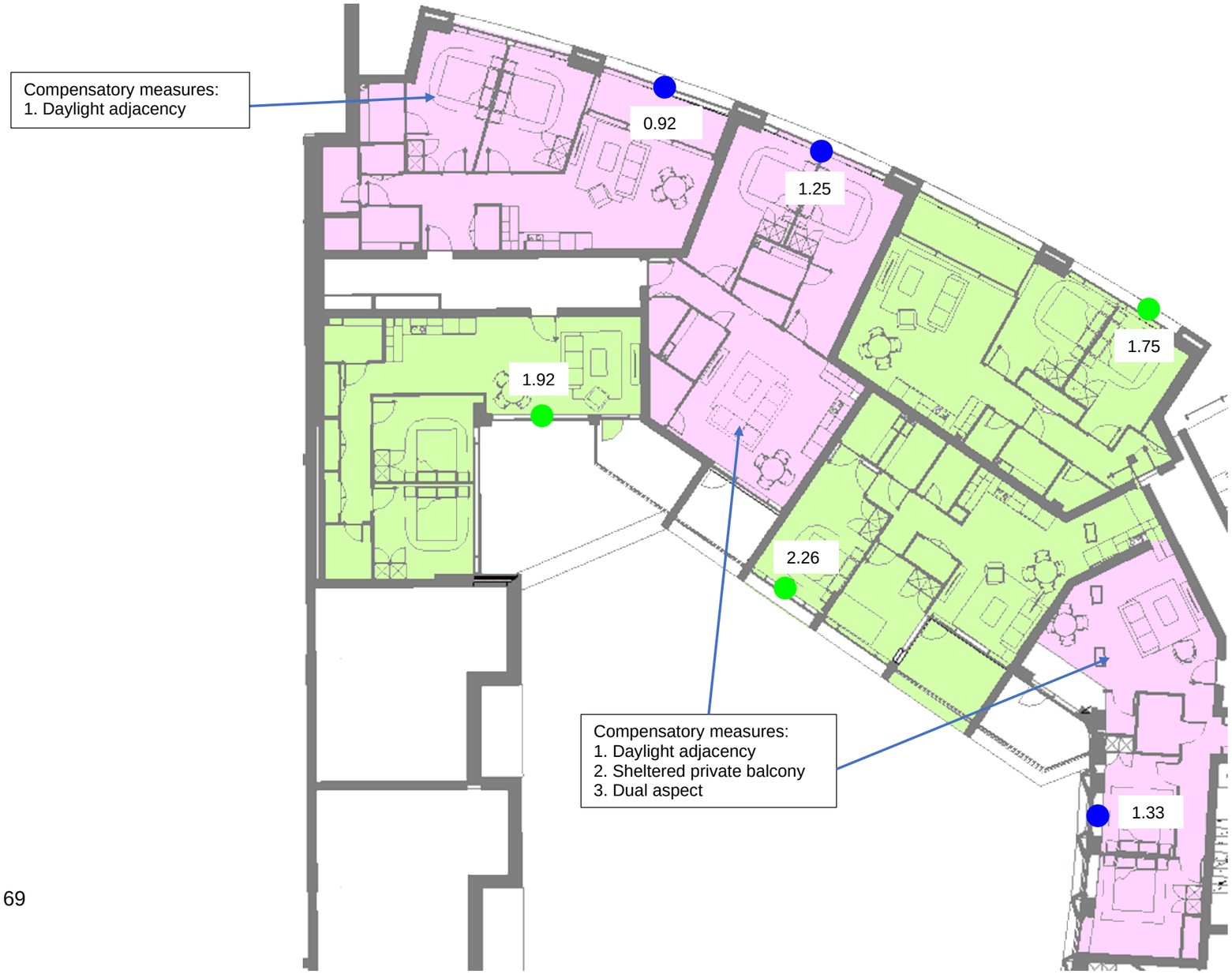
Exposure to Sunlight		
Compliant	High	≥ 4.0 hrs
	Medium	3.0 – 4.0 hrs
	Minimum	1.5 – 3.0 hrs
Non-Compliant	Low	< 1.5 hrs

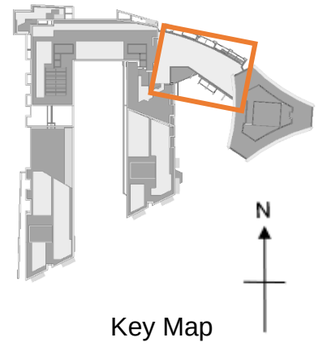
B2	Number of units		
Levels	Pass	Fail	Total
1	3	3	6
2	3	3	6
3	3	3	6
4	3	3	6
5	4	2	6
6	4	2	6
7	4	2	6
8	4	2	6
	28	20	48
	58%	42%	

Results: Block B2 (ETS) – 3rd Floor

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded is showing units where it's receiving less than targeted number of hours, which is less than 1.5 hours. A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).

3 out of 6 units were determined to be compliant for ETS for this floor.





Key Map

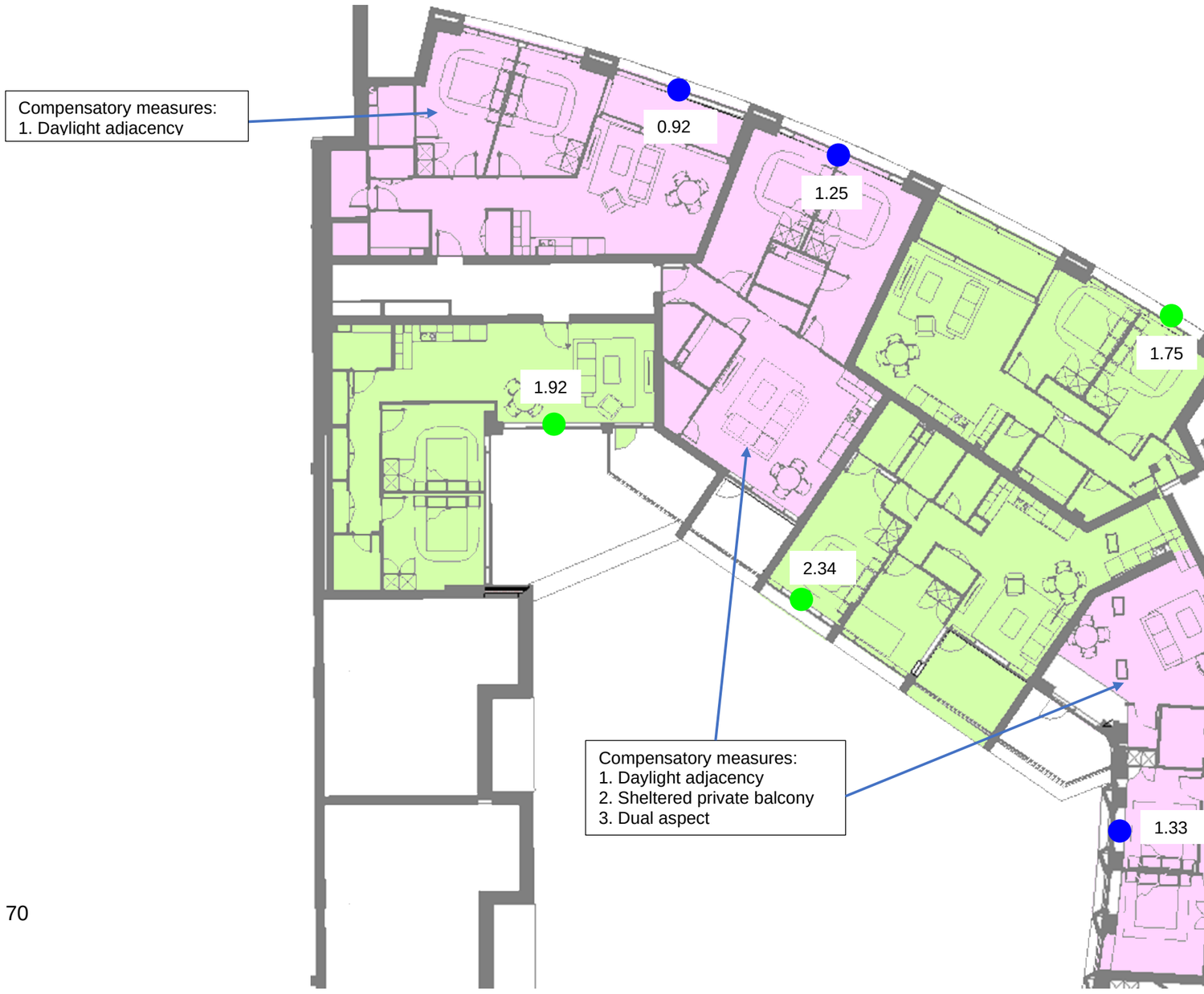
Exposure to Sunlight			
Compliant	High	≥ 4.0 hrs	
	Medium	3.0 – 4.0 hrs	
	Minimum	1.5 – 3.0 hrs	
Non-Compliant	Low	< 1.5 hrs	

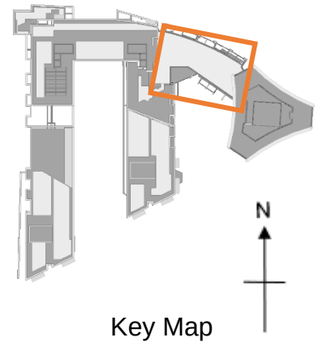
B2	Number of units		
Levels	Pass	Fail	Total
1	3	3	6
2	3	3	6
3	3	3	6
4	3	3	6
5	4	2	6
6	4	2	6
7	4	2	6
8	4	2	6
	28	20	48
	58%	42%	

Results: Block B2 (ETS) – 4th Floor

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded is showing units where it's receiving less than targeted number of hours, which is less than 1.5 hours. A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).

3 out of 6 units were determined to be compliant for ETS for this floor.





Key Map

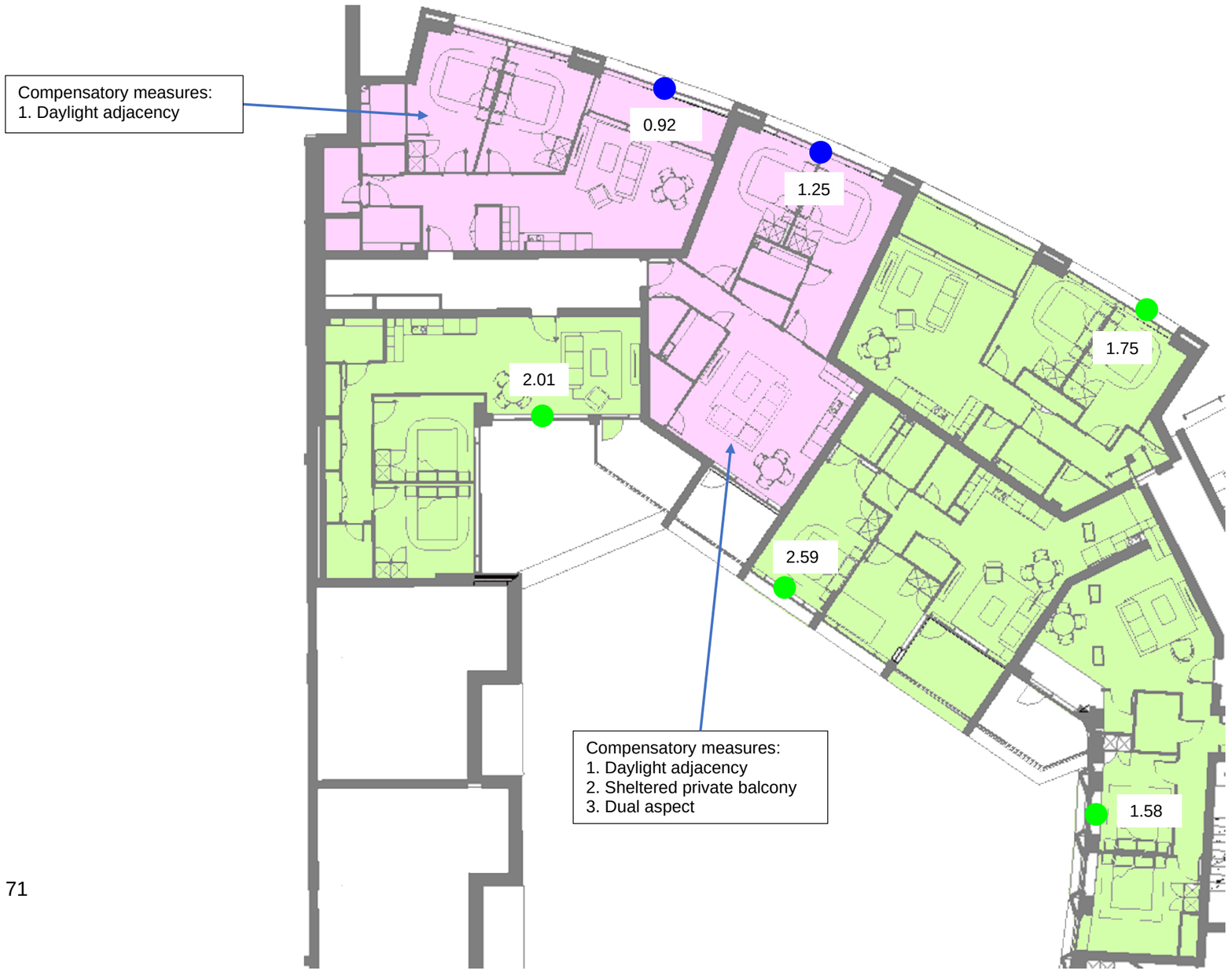
Exposure to Sunlight			
Compliant	High	≥ 4.0 hrs	
	Medium	3.0 – 4.0 hrs	
	Minimum	1.5 – 3.0 hrs	
Non-Compliant	Low	< 1.5 hrs	

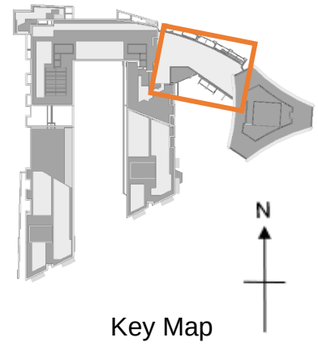
B2	Number of units		
Levels	Pass	Fail	Total
1	3	3	6
2	3	3	6
3	3	3	6
4	3	3	6
5	4	2	6
6	4	2	6
7	4	2	6
8	4	2	6
	28	20	48
	58%	42%	

Results: Block B2 (ETS) – 5th Floor

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded is showing units where it's receiving less than targeted number of hours, which is less than 1.5 hours. A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).

4 out of 6 units were determined to be compliant for ETS for this floor.





Key Map

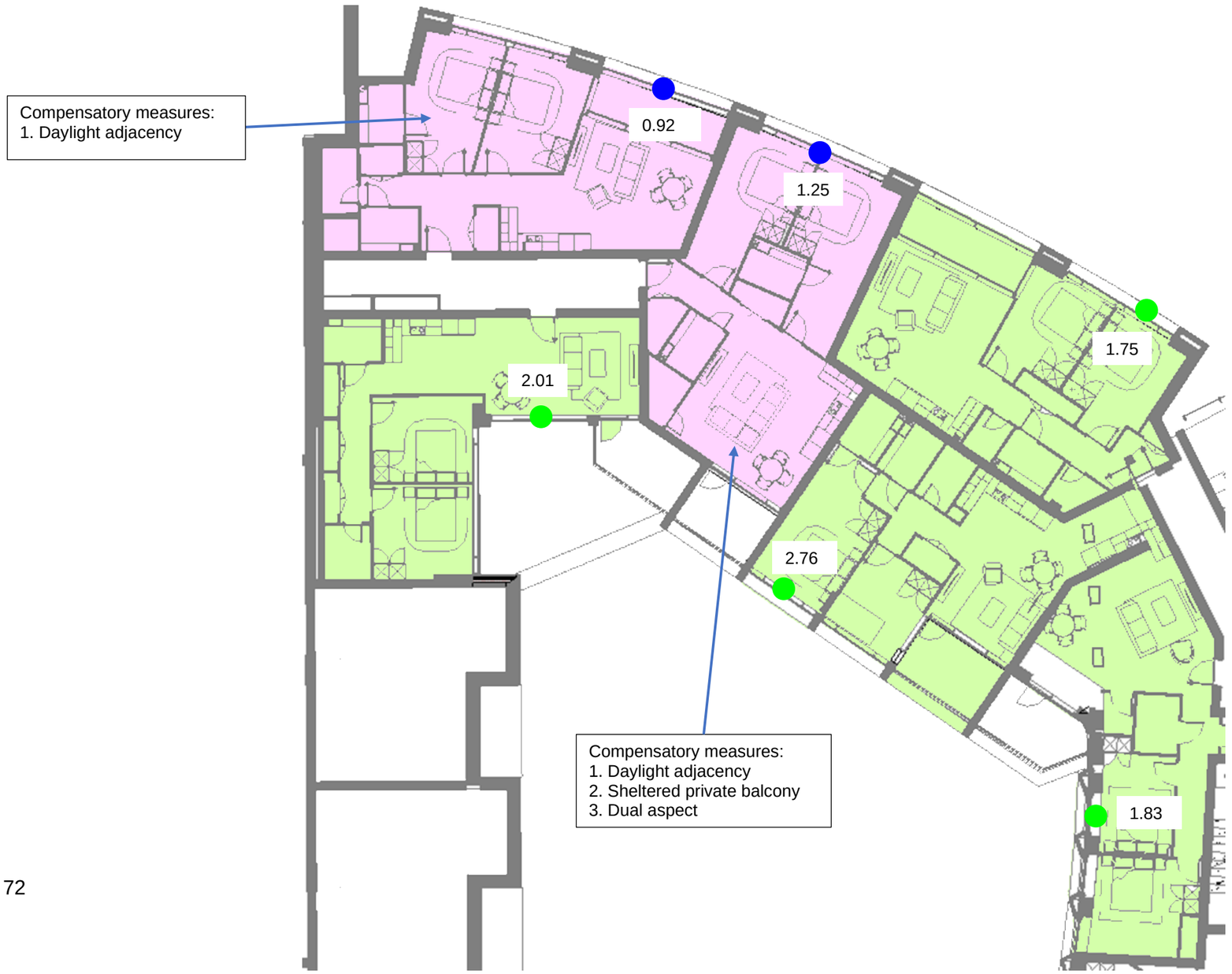
Exposure to Sunlight			
Compliant	High	≥ 4.0 hrs
	Medium	3.0 – 4.0 hrs
	Minimum	1.5 – 3.0 hrs
Non-Compliant	Low	< 1.5 hrs

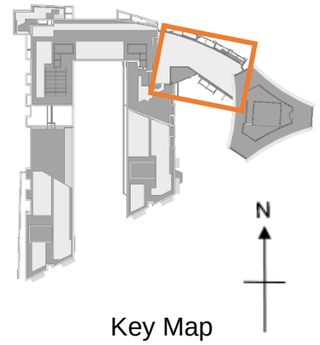
B2	Number of units		
Levels	Pass	Fail	Total
1	3	3	6
2	3	3	6
3	3	3	6
4	3	3	6
5	4	2	6
6	4	2	6
7	4	2	6
8	4	2	6
	28	20	48
	58%	42%	

Results: Block B2 (ETS) – 6th Floor

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded is showing units where it's receiving less than targeted number of hours, which is less than 1.5 hours. A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).

4 out of 6 units were determined to be compliant for ETS for this floor.





Key Map

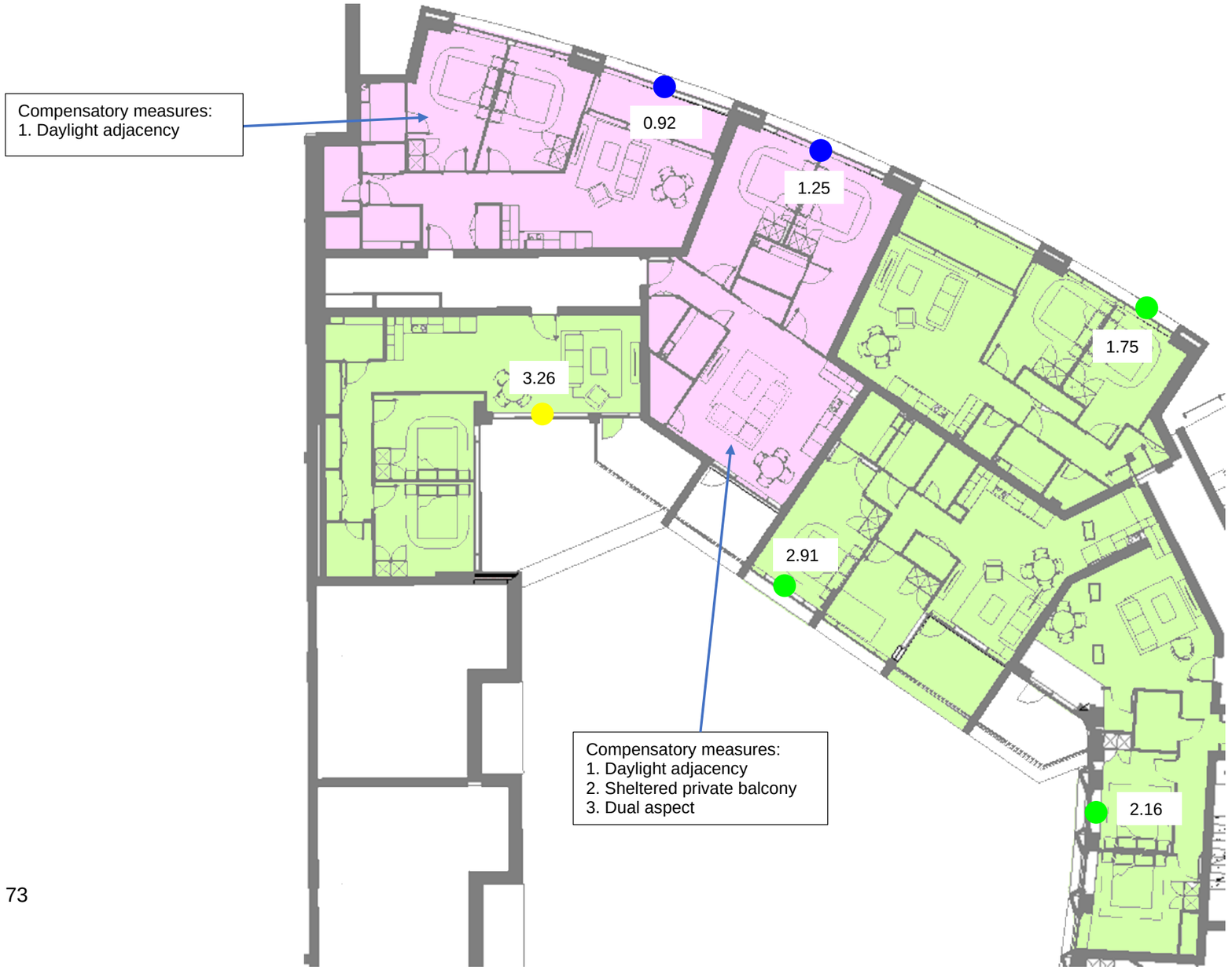
Exposure to Sunlight		
Compliant	High	≥ 4.0 hrs
	Medium	3.0 – 4.0 hrs
	Minimum	1.5 – 3.0 hrs
Non-Compliant	Low	< 1.5 hrs

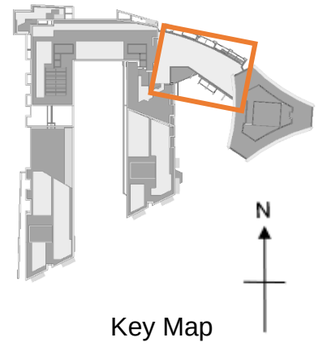
B2	Number of units		
Levels	Pass	Fail	Total
1	3	3	6
2	3	3	6
3	3	3	6
4	3	3	6
5	4	2	6
6	4	2	6
7	4	2	6
8	4	2	6
	28	20	48
	58%	42%	

Results: Block B2 (ETS) – 7th Floor

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded is showing units where it's receiving less than targeted number of hours, which is less than 1.5 hours. A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).

4 out of 6 units were determined to be compliant for ETS for this floor.





Key Map

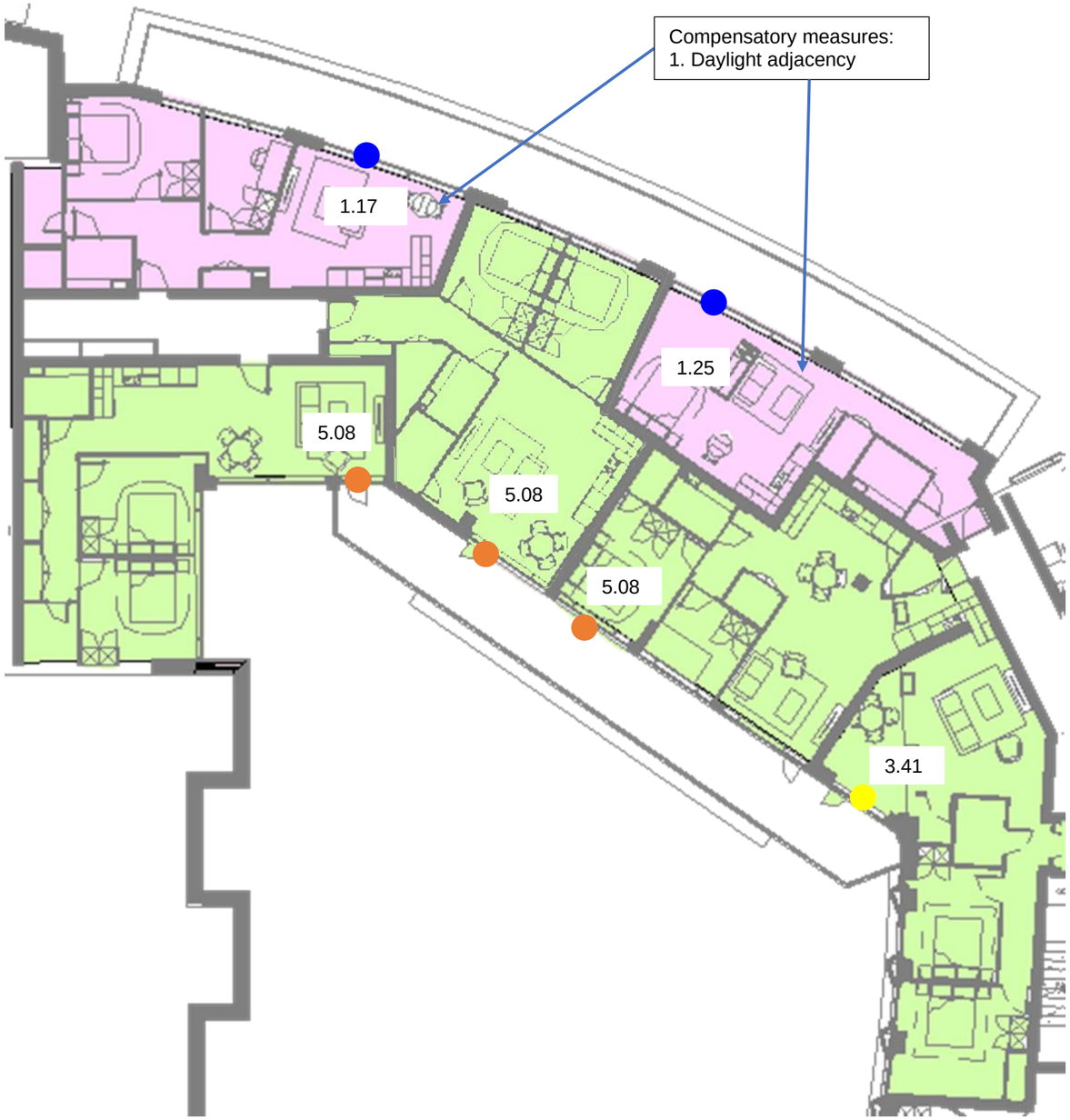
Exposure to Sunlight			
Compliant	High	≥ 4.0 hrs	
	Medium	3.0 – 4.0 hrs	
	Minimum	1.5 – 3.0 hrs	
Non-Compliant	Low	< 1.5 hrs	

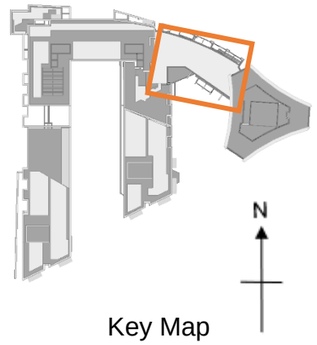
B2	Number of units		
Levels	Pass	Fail	Total
1	3	3	6
2	3	3	6
3	3	3	6
4	3	3	6
5	4	2	6
6	4	2	6
7	4	2	6
8	4	2	6
	28	20	48
	58%	42%	

Results: Block B2 (ETS) – 8th Floor

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded is showing units where it's receiving less than targeted number of hours, which is less than 1.5 hours. A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).

4 out of 6 units were determined to be compliant for ETS for this floor.



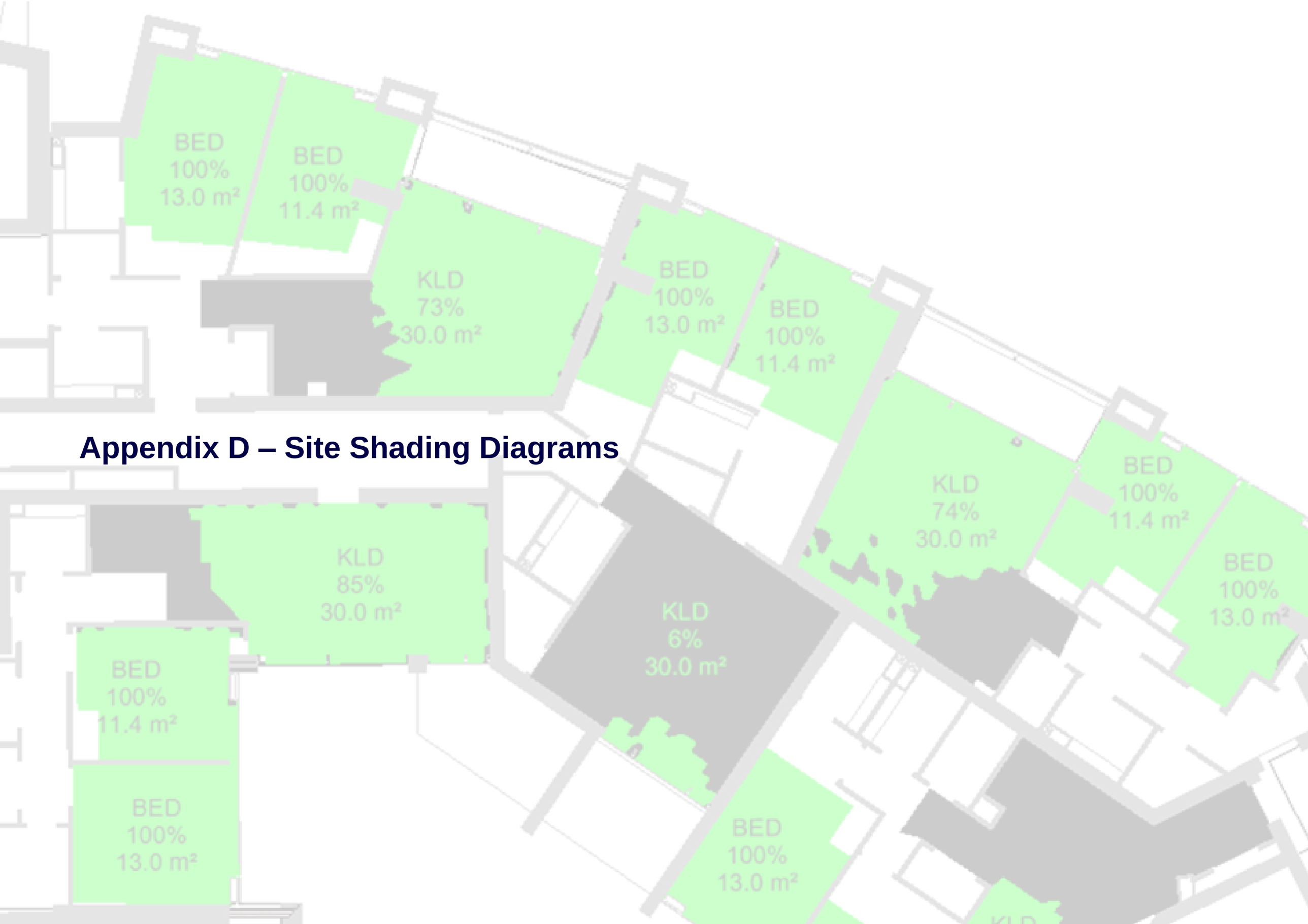


Key Map

Exposure to Sunlight			
Compliant	High	≥ 4.0 hrs
	Medium	3.0 – 4.0 hrs
	Minimum	1.5 – 3.0 hrs
Non-Compliant	Low	< 1.5 hrs

B2	Number of units		
Levels	Pass	Fail	Total
1	3	3	6
2	3	3	6
3	3	3	6
4	3	3	6
5	4	2	6
6	4	2	6
7	4	2	6
8	4	2	6
	28	20	48
	58%	42%	

Appendix D – Site Shading Diagrams

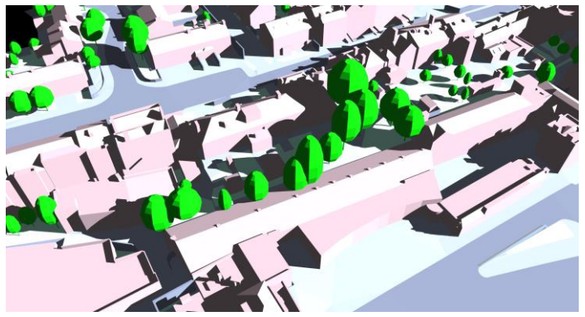
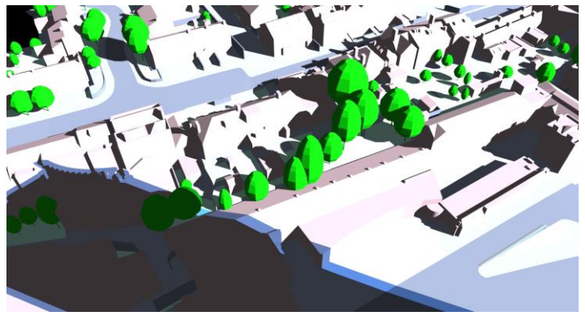
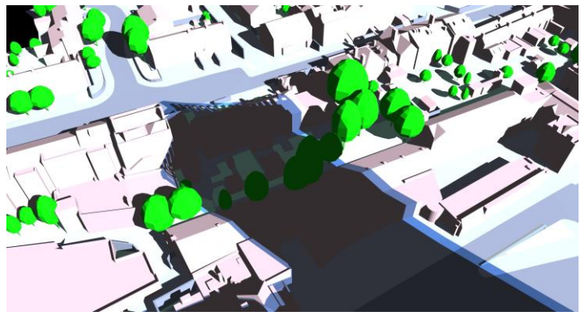
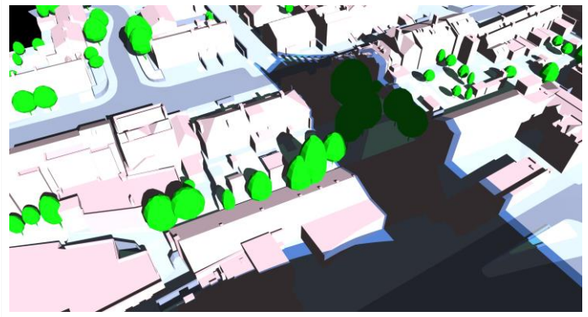
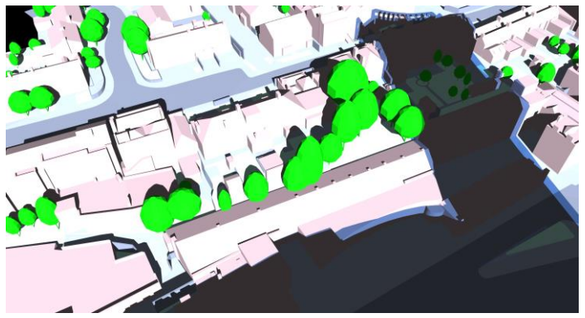
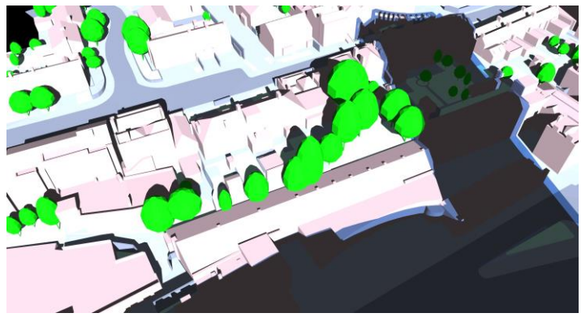
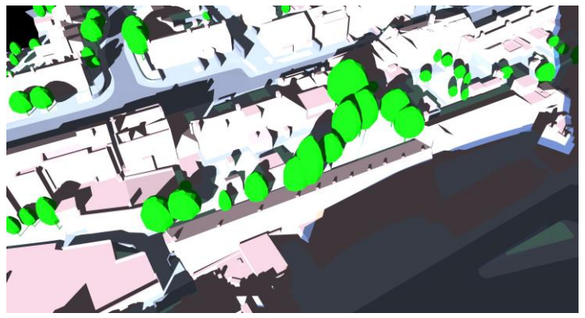
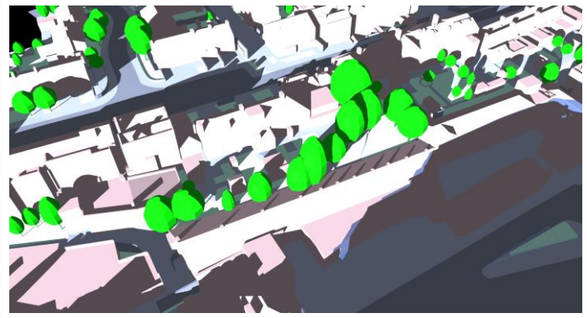


Site Shading Diagram Equinox March 21st

Extent of Existing Shadow	
Extent of Additional Shadow	

The images below illustrate the incident shadow on the receiving area on the 21st of March.

As illustrated in the shadow diagrams below, the proposed amendment to the consented Block A and Block B2 (permitted under ABP-310567-21, as amended by LRD6042/23) will have minimal bearing onto its receiving environment.

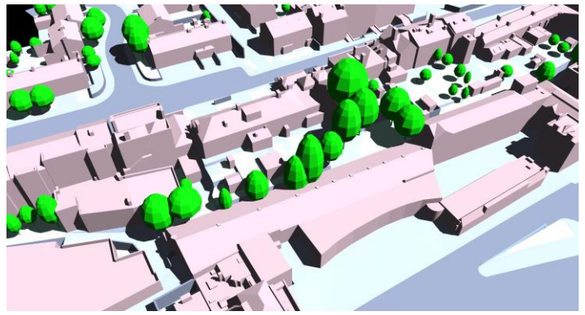
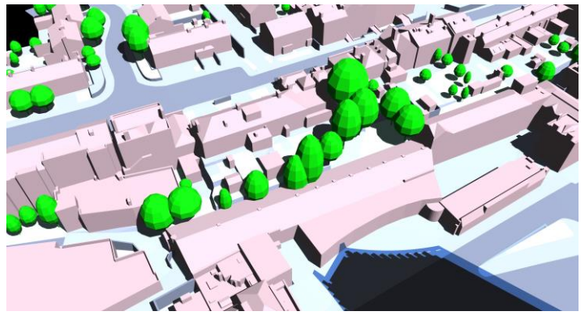
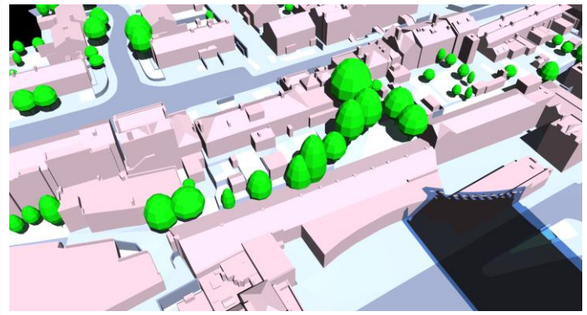
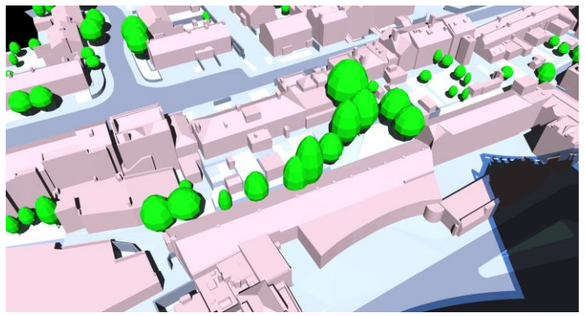
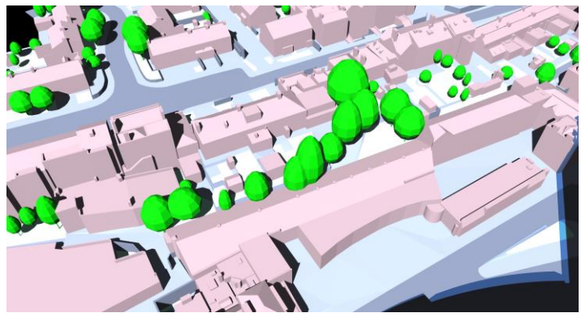
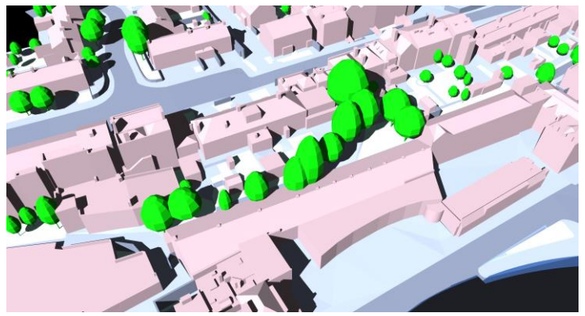
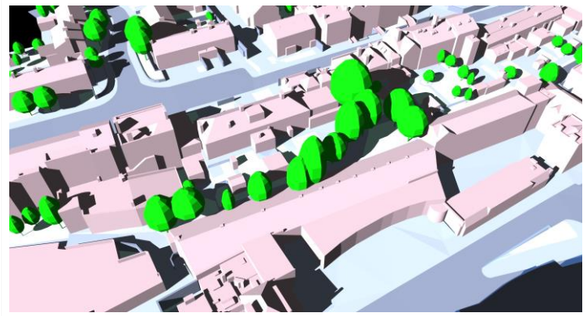
			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Site Shading Diagram Summer Solstice June 21st

Extent of Existing Shadow	
Extent of Additional Shadow	

The images below illustrate the incident shadow on the receiving area on the 21st of June.

As illustrated in the shadow diagrams below, the proposed amendment to the consented Block A and Block B2 (permitted under ABP-310567-21, as amended by LRD6042/23) will have minimal bearing onto its receiving environment.

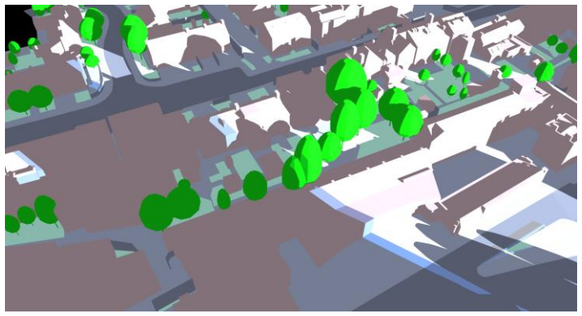
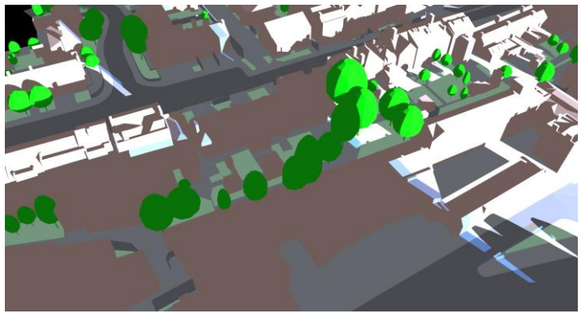
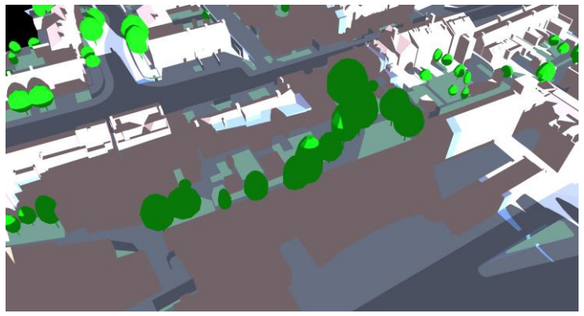
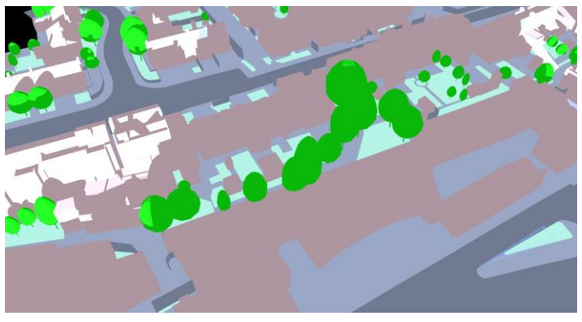
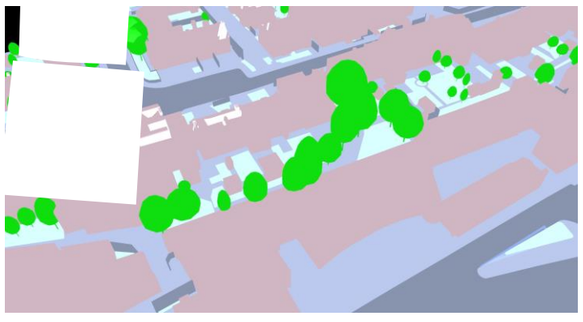
			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Site Shading Diagram Winter Solstice December 21st

Extent of Existing Shadow	
Extent of Additional Shadow	

The images below illustrate the incident shadow on the receiving area on the 21st of December.

As illustrated in the shadow diagrams below, the proposed amendment to the consented Block A and Block B2 (permitted under ABP-310567-21, as amended by LRD6042/23) will have minimal bearing onto its receiving environment.

<table>
<tr><td>  </td><td>  </td><td>  </td><td>  </td></tr>
<tr><td>10:00</td><td>11:00</td><td>12:00</td><td>13:00</td></tr>
<tr><td>  </td><td>  </td><td>  </td><td>  </td></tr>
<tr><td>14:00</td><td>15:00</td><td>16:00</td><td>17:00</td></tr>
</table>

Whilst both winter and summer months 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.

Shadow Analysis Montpelier Hill

The images below illustrate the predicted shadowing of the local environs as a result of inclusion of the massing of the proposed amended Block A (tower) on the 21st March (Solar Equinox: Sun's annual mean height in the sky) for the concurrent four hours when the tower shadow is in proximity to the dwellings on Montpelier Hill. It is worth noting that while there is proposed adjustment to the footprint of Block A, there is no change to its height under this application.

As shown, the shadow of the tower, shown as blue, will shade the dwellings on Montpelier Hill, however this will only be for part of one hour. Additionally,

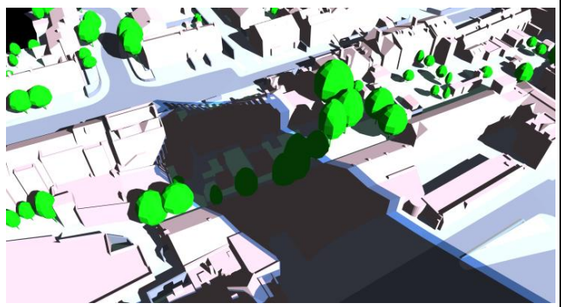
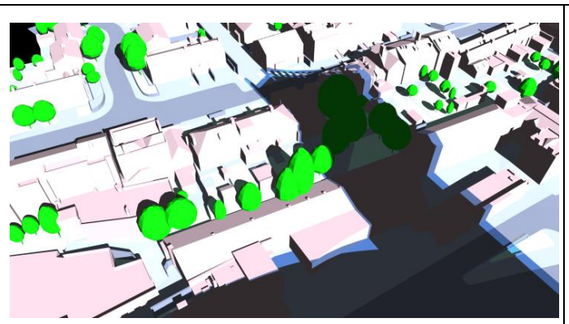
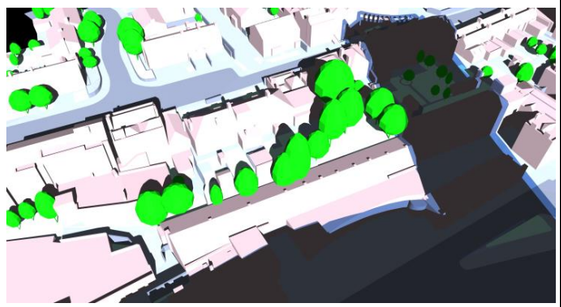
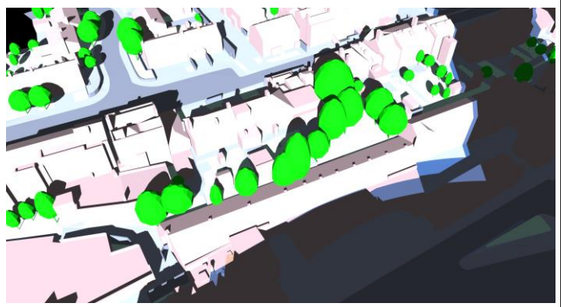
			
21st March @ 12:00	21st March @ 13:00	21st March @ 14:00	21st March @ 15:00

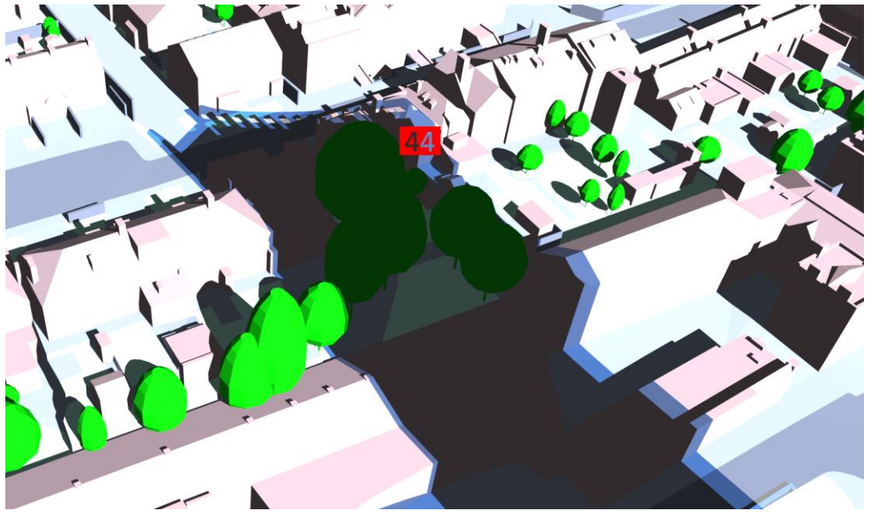
Fig D4 – Shadow Diagram – March 21st @ 12:00,13:00,14:00 & 15:00

Extent of Existing Shadow	
Extent of Additional Shadow	

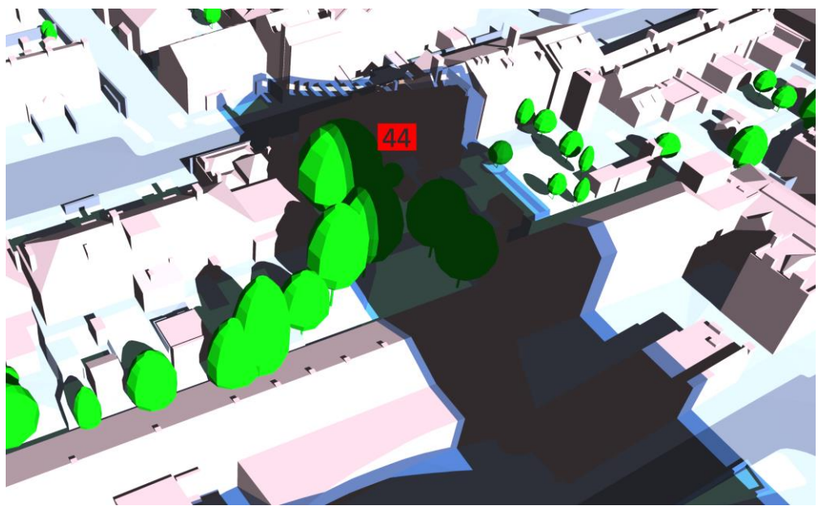
Part of one Hour Shadow Analysis

Extent of Existing Shadow	
Extent of Additional Shadow	

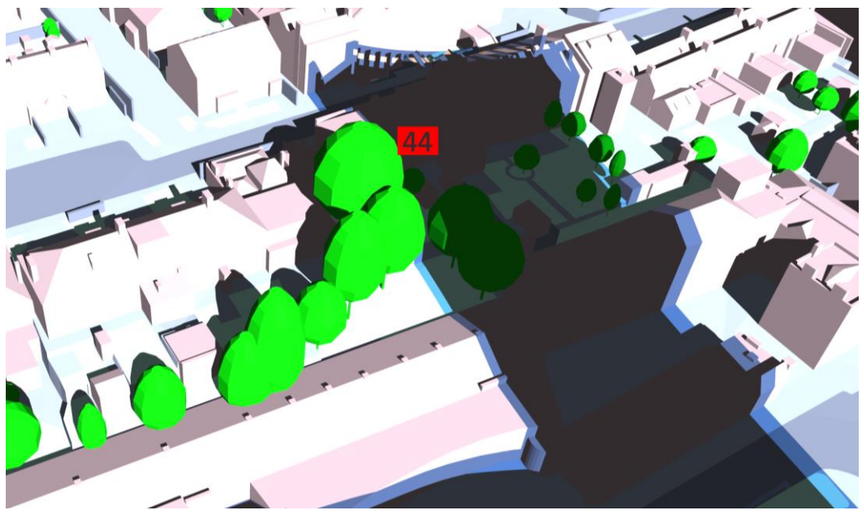
The images below illustrate the incident shadow on the receiving area on the 21st of March from 13:00 to 14:00 in 20-minute intervals with emphasis on number 44.



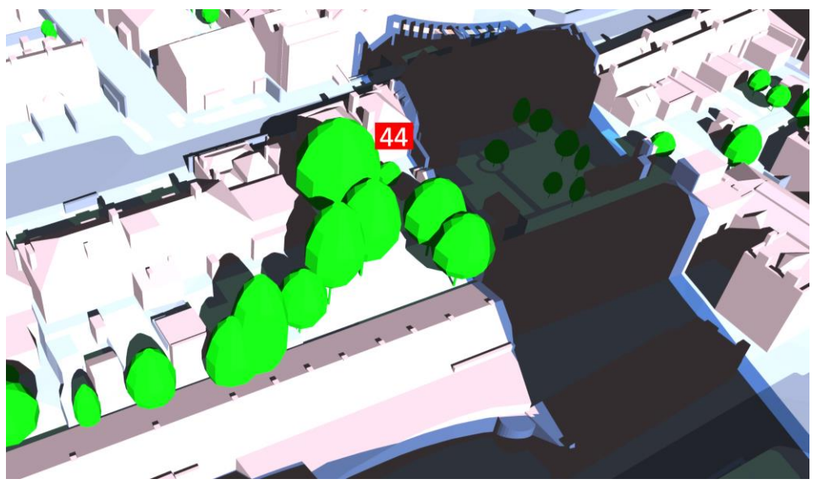
13:00



13:20



13:40

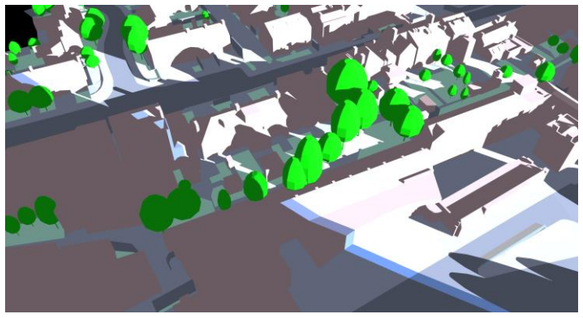
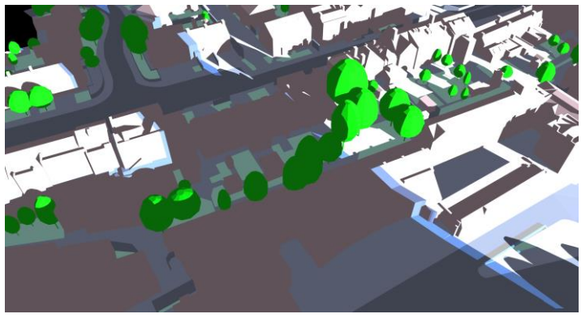
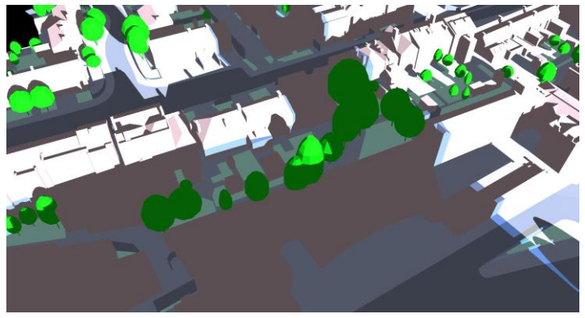
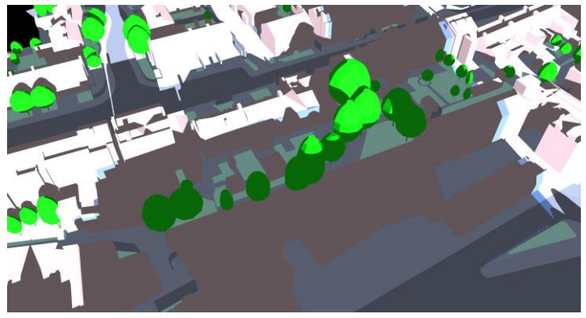
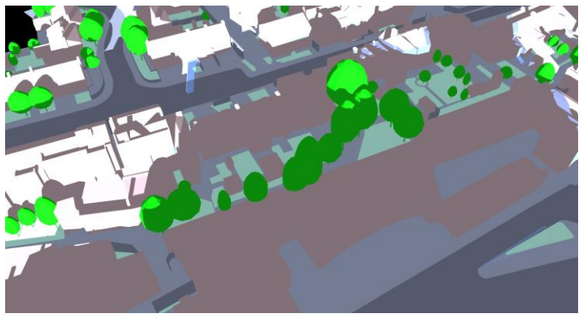
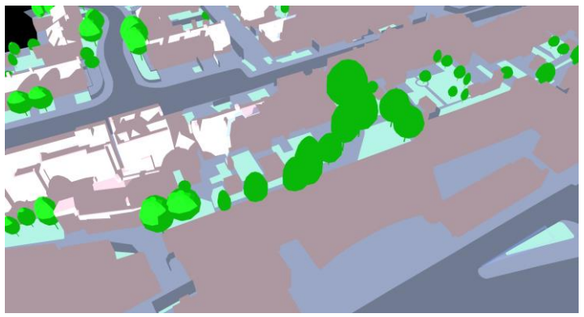


14:00

Site Shading Diagram January 21st

Extent of Existing Shadow
Extent of Additional Shadow

The images below illustrate the incident shadow on the receiving area on the 21st of January.

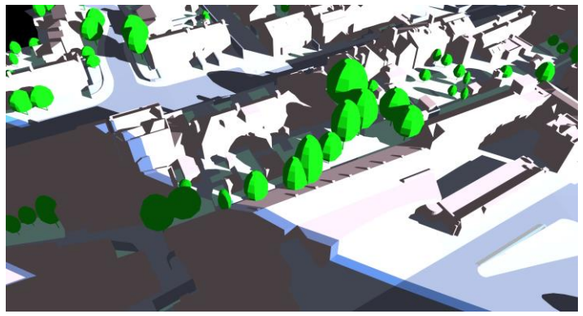
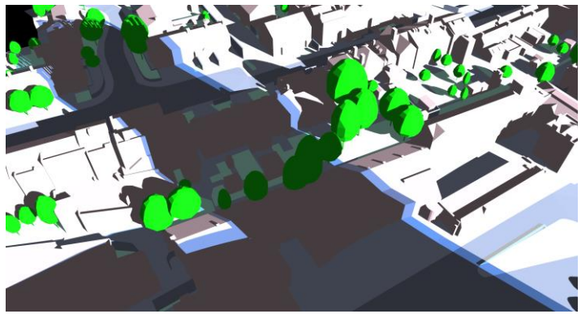
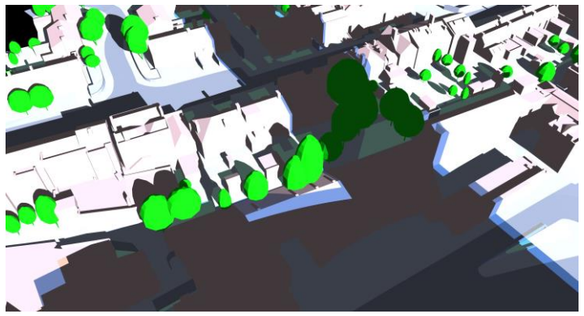
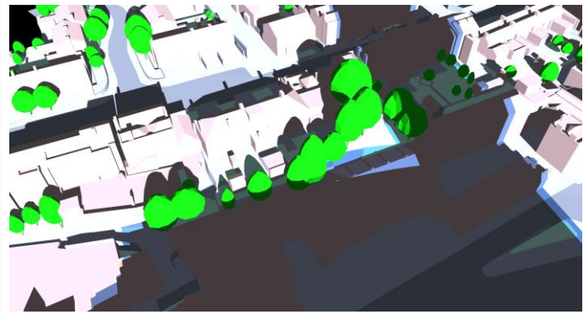
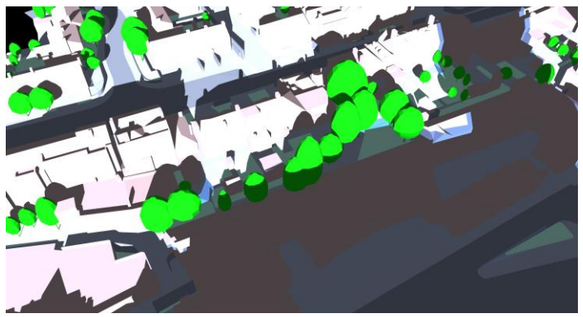
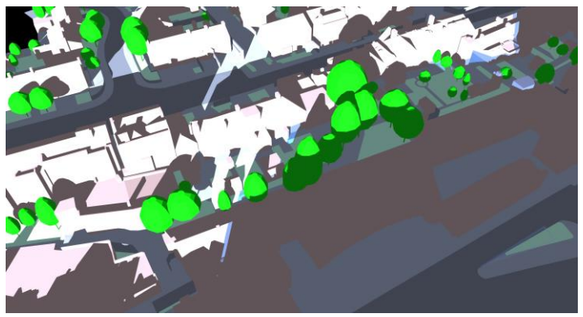
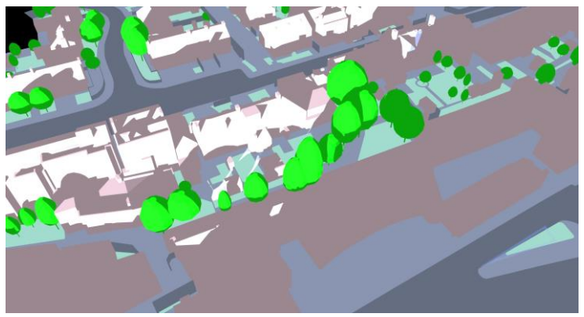
			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Whilst both winter and summer months 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.

Site Shading Diagram February 21st

The images below illustrate the incident shadow on the receiving area on the 21st of February.

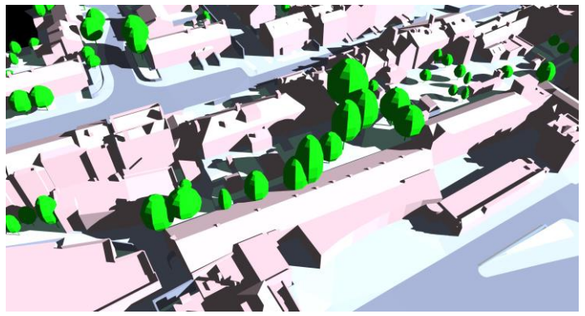
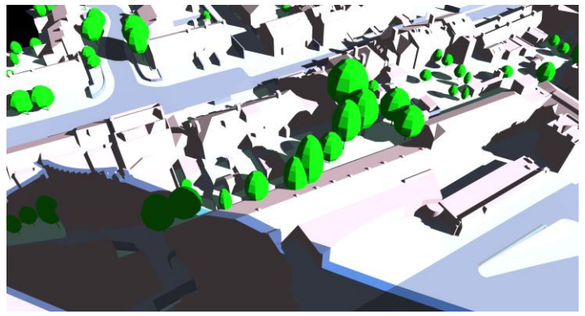
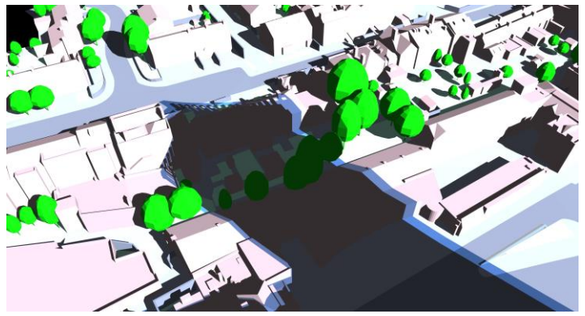
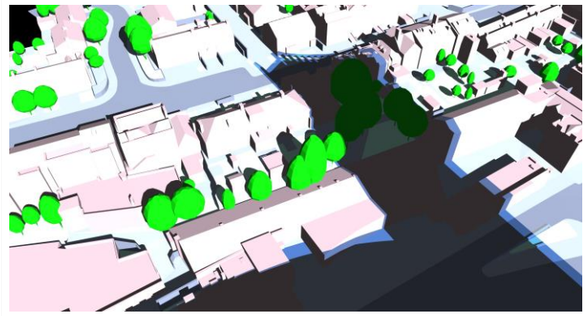
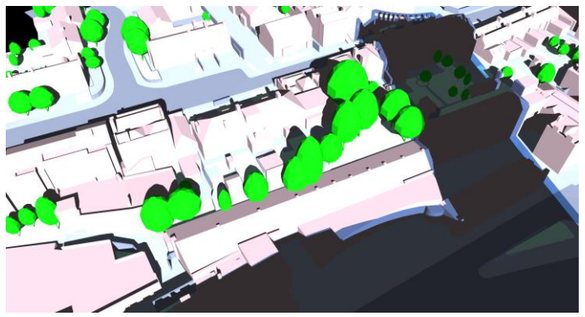
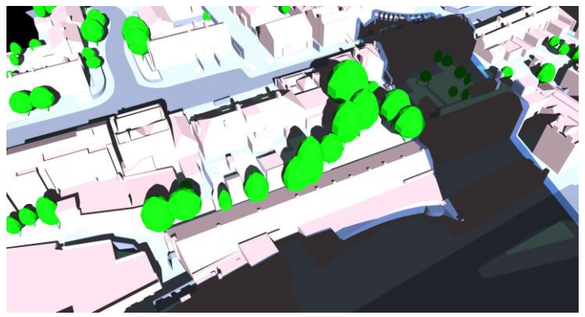
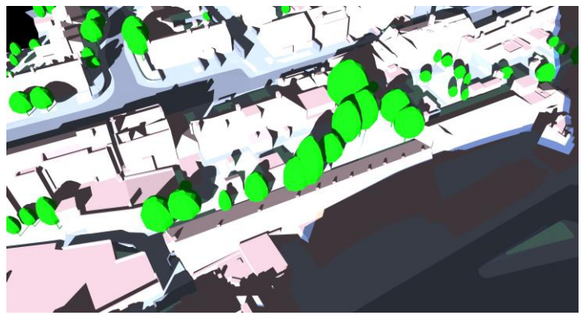
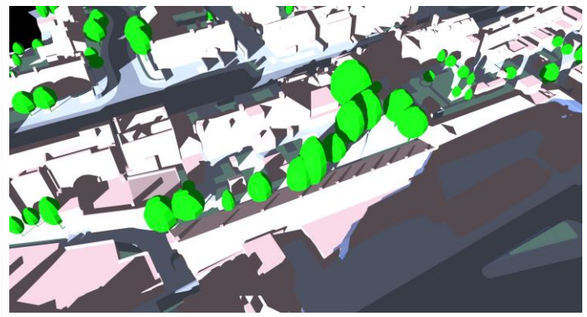
Extent of Existing Shadow	
Extent of Additional Shadow	

			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Site Shading Diagram March 21st

Extent of Existing Shadow
Extent of Additional Shadow

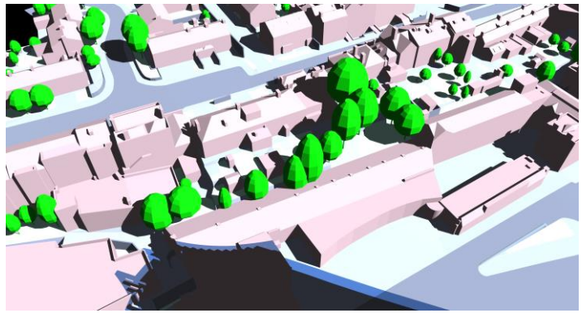
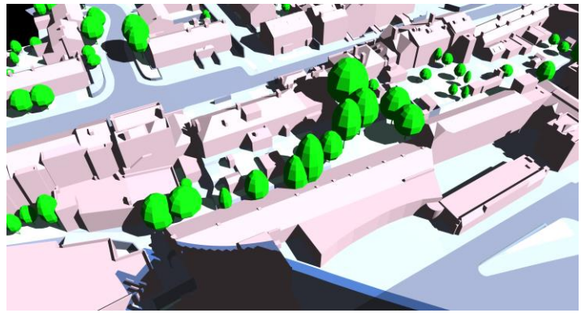
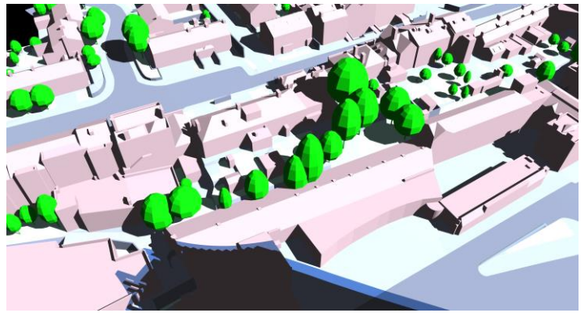
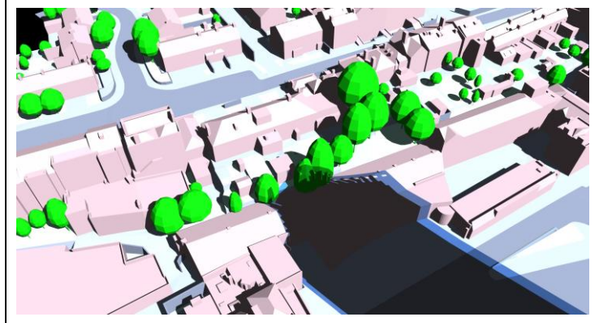
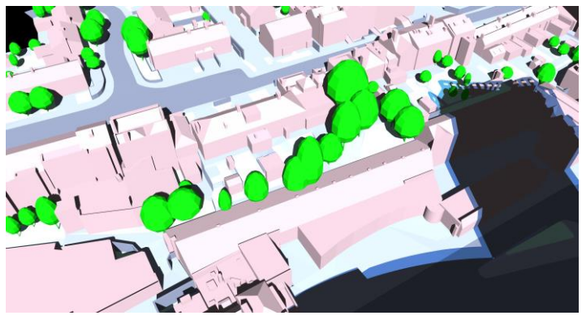
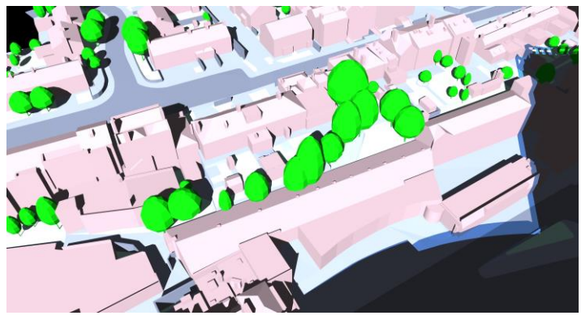
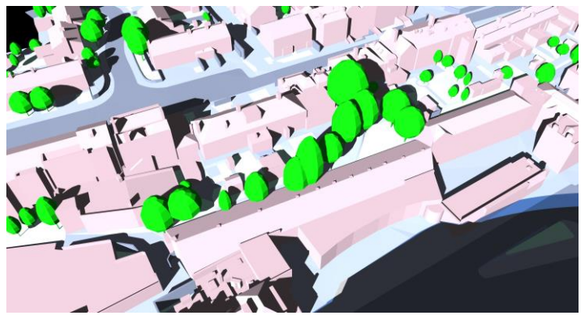
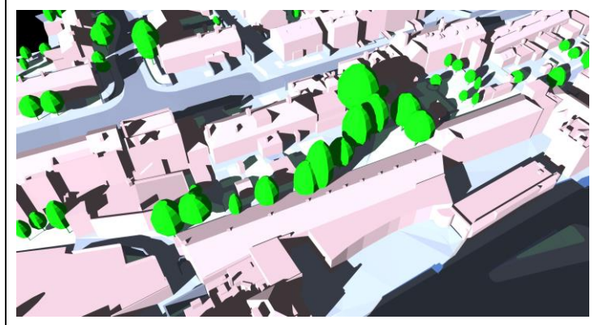
The images below illustrate the incident shadow on the receiving area on the 21st of March. (Note change due to daylight savings).

			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Site Shading Diagram April 21st

The images below illustrate the incident shadow on the receiving area on the 21st of April.

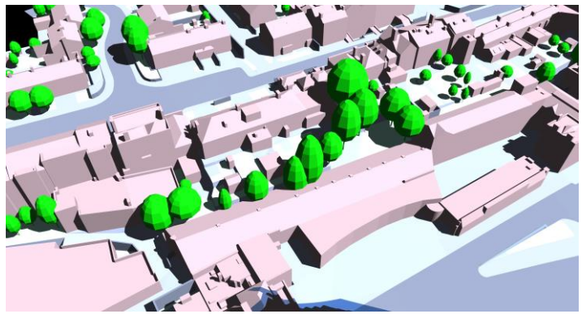
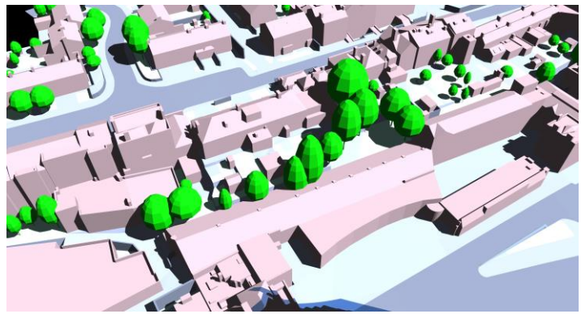
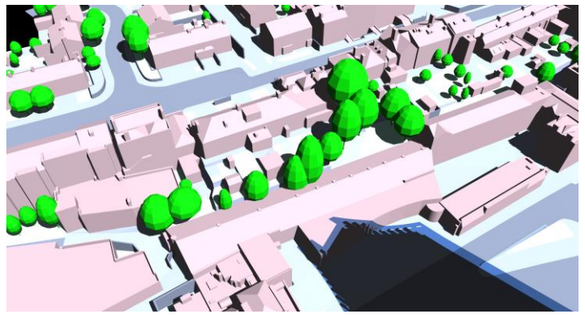
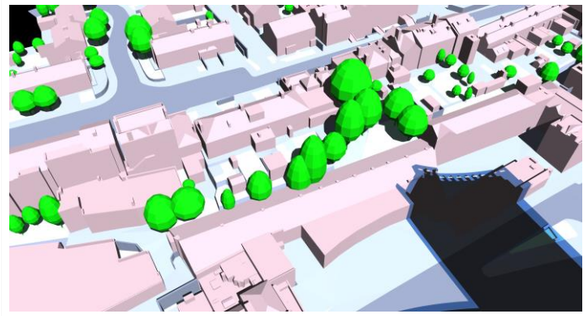
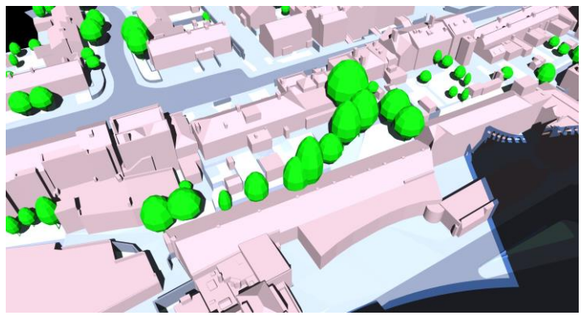
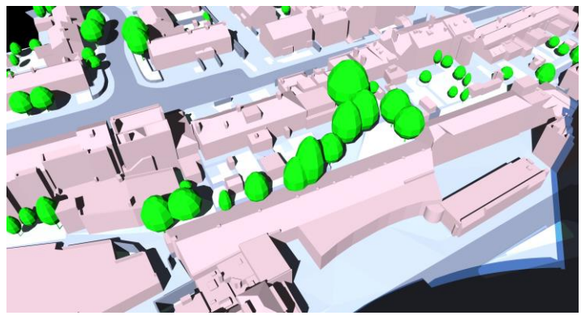
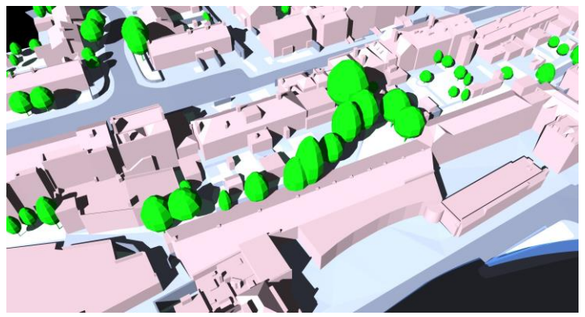
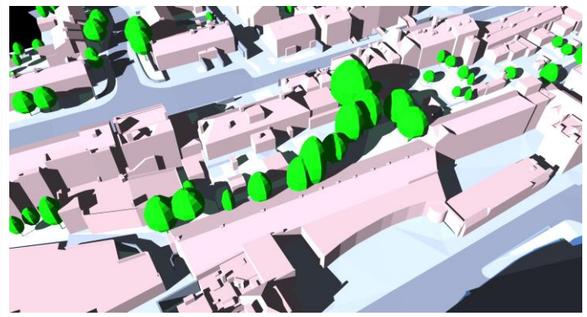
Extent of Existing Shadow
Extent of Additional Shadow

			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Site Shading Diagram May 21st

The images below illustrate the incident shadow on the receiving area on the 21st of May.

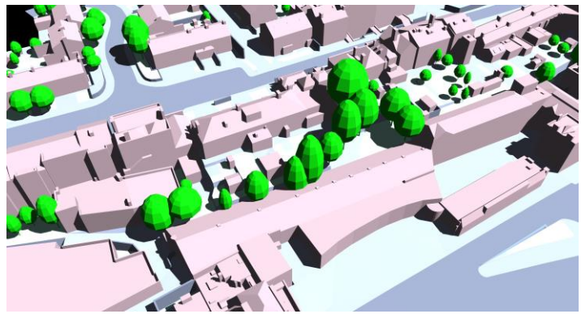
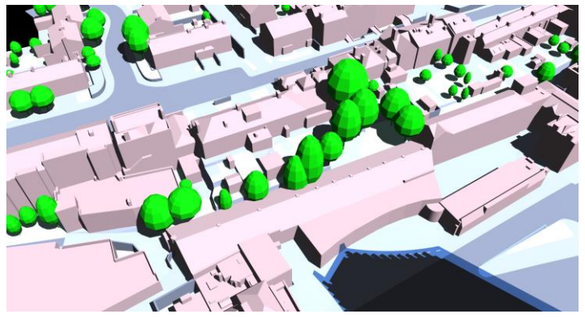
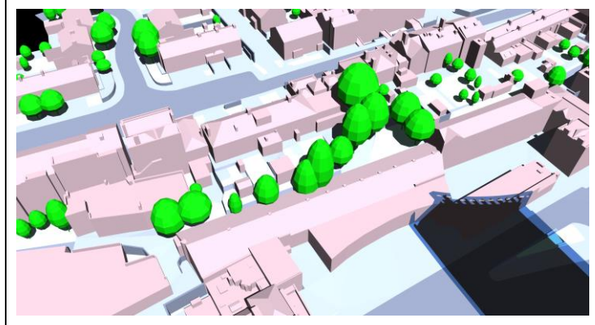
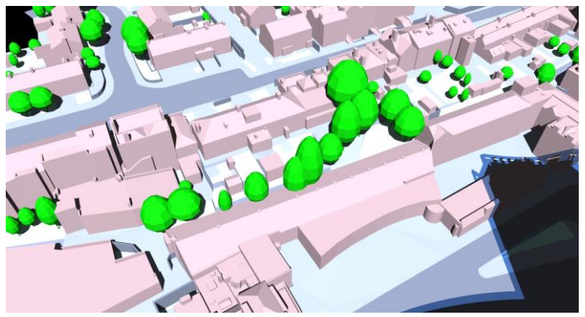
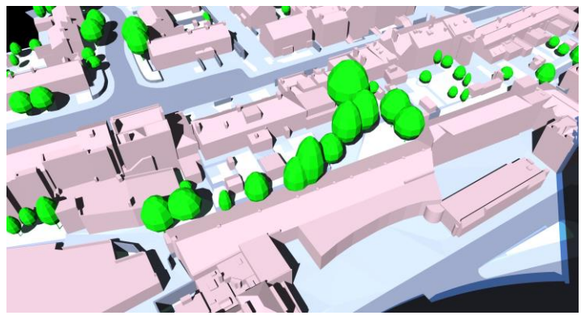
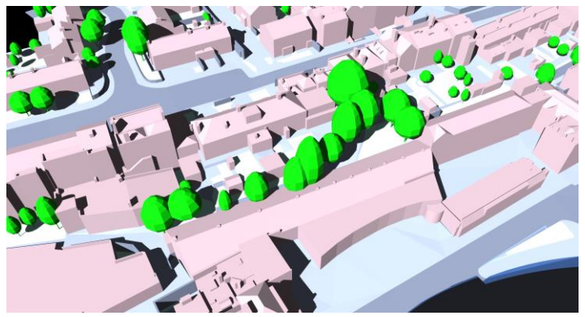
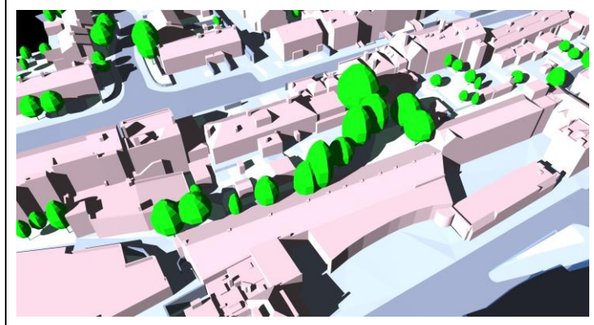
Extent of Existing Shadow	
Extent of Additional Shadow	

			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Site Shading Diagram June 21st

The images below illustrate the incident shadow on the receiving area on the 21st of June.

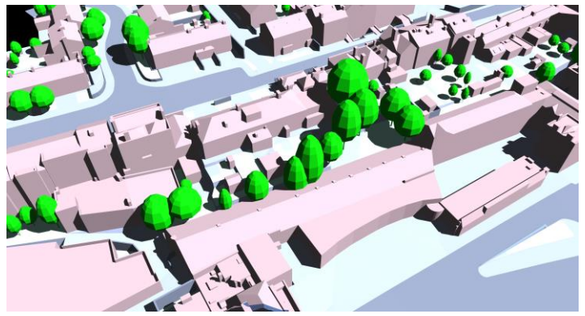
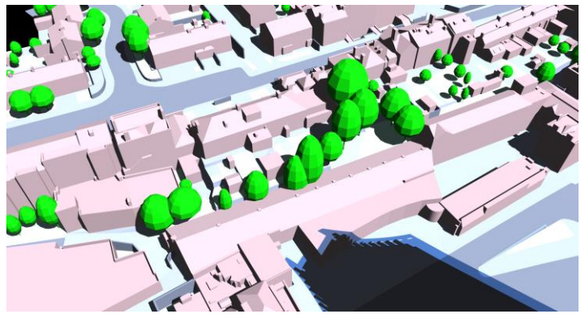
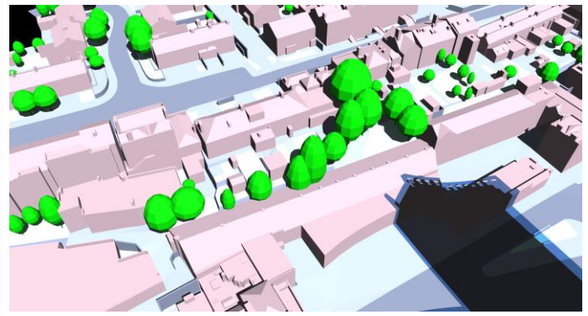
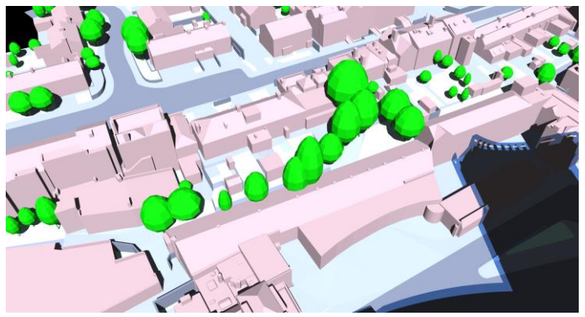
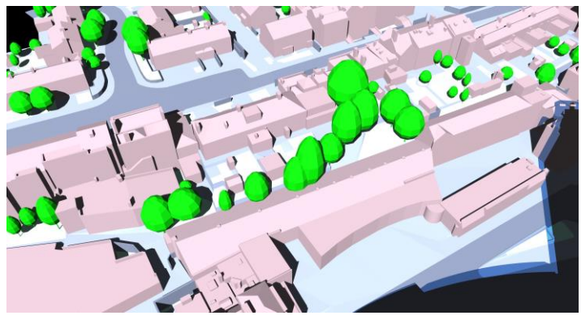
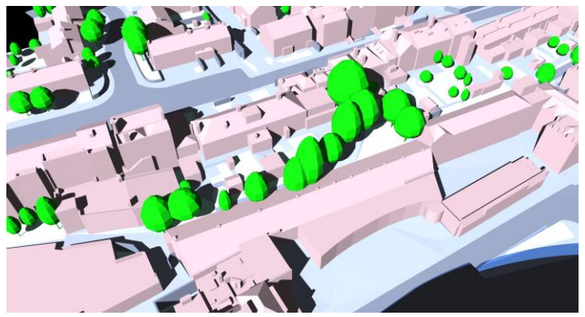
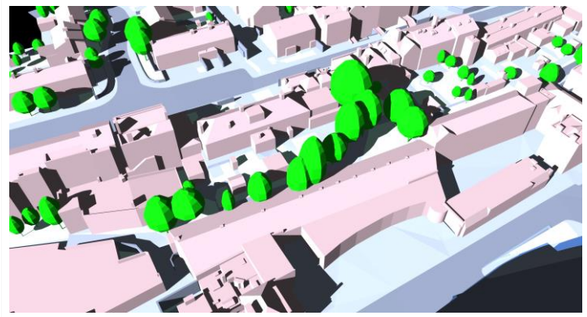
Extent of Existing Shadow
Extent of Additional Shadow

			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Site Shading Diagram July 21st

The images below illustrate the incident shadow on the receiving area on the 21st of July.

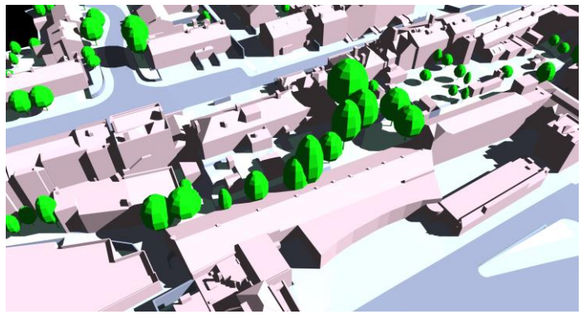
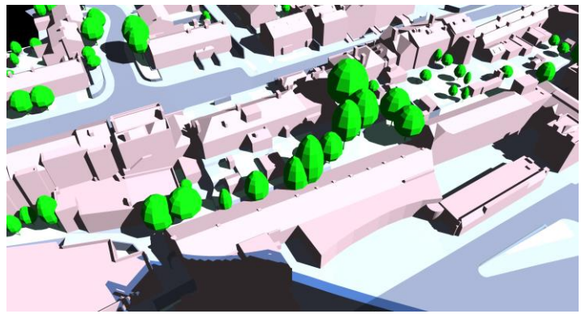
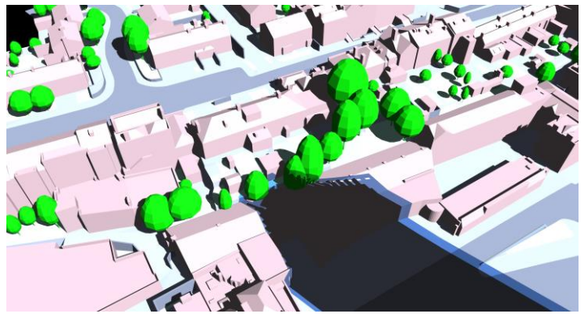
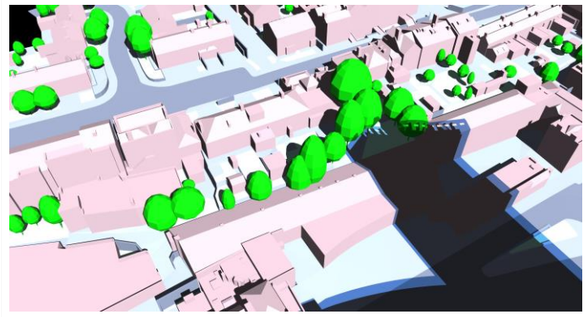
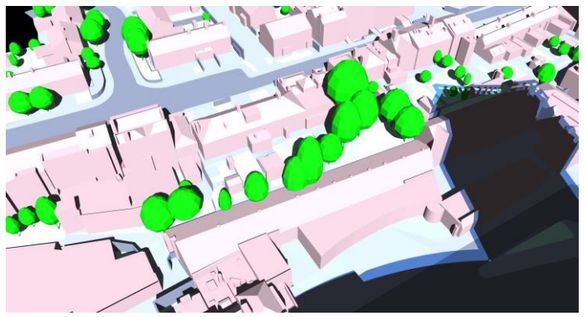
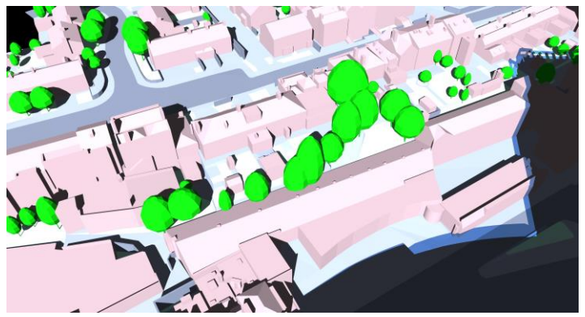
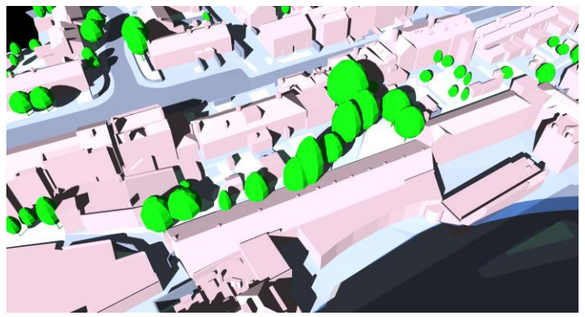
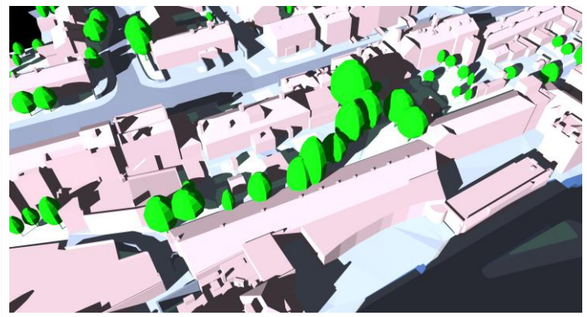
Extent of Existing Shadow
Extent of Additional Shadow

			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Site Shading Diagram August 21st

The images below illustrate the incident shadow on the receiving area on the 21st of August.

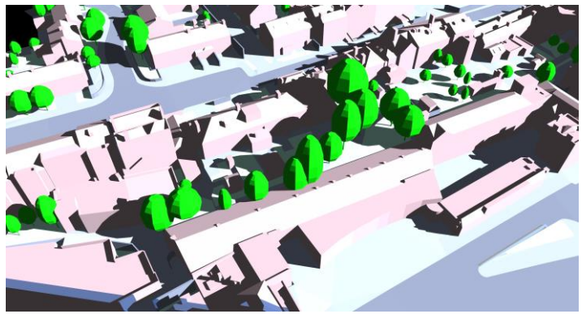
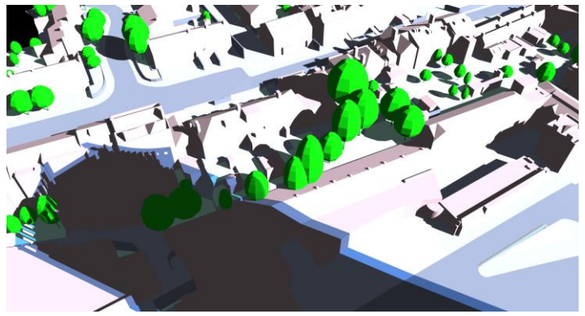
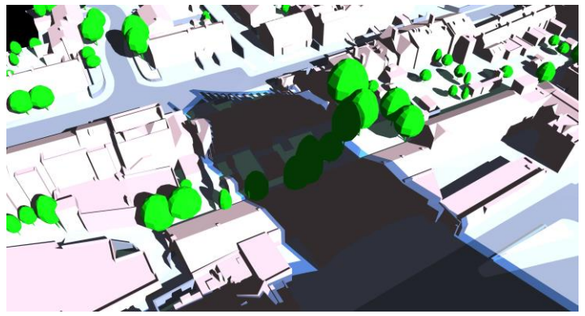
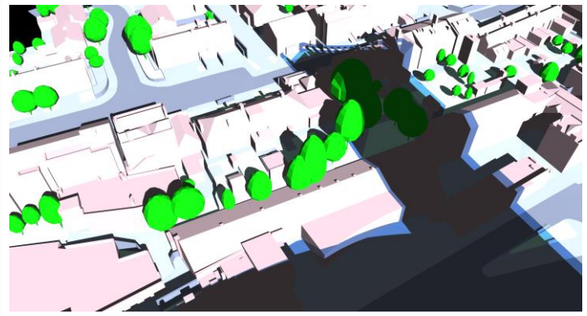
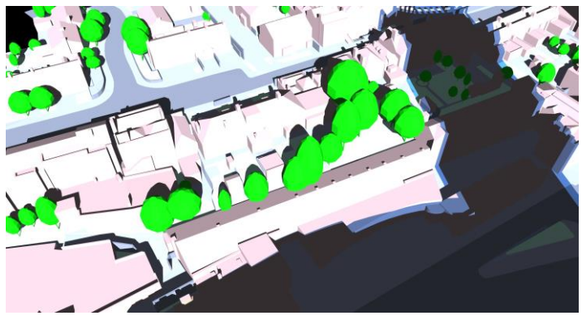
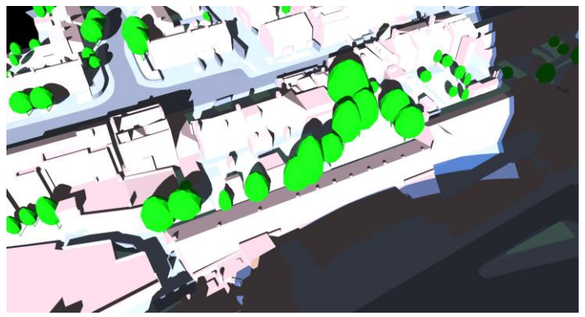
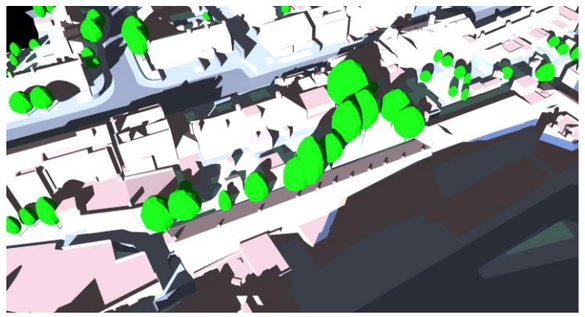
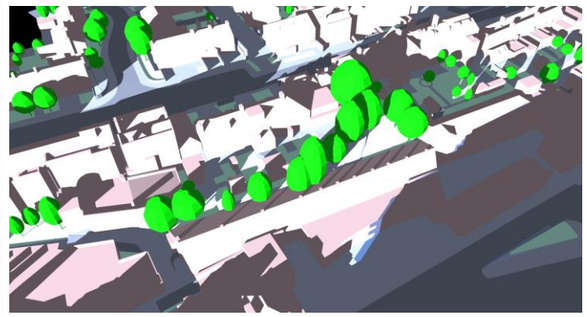
Extent of Existing Shadow
Extent of Additional Shadow

			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Site Shading Diagram September 21st

The images below illustrate the incident shadow on the receiving area on the 21st of September.

Extent of Existing Shadow
Extent of Additional Shadow

			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Parkgate Street Residential Blocks A and B2

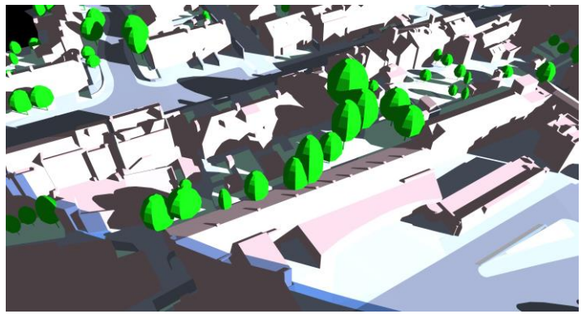
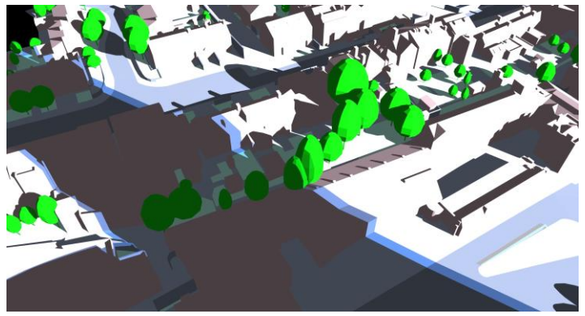
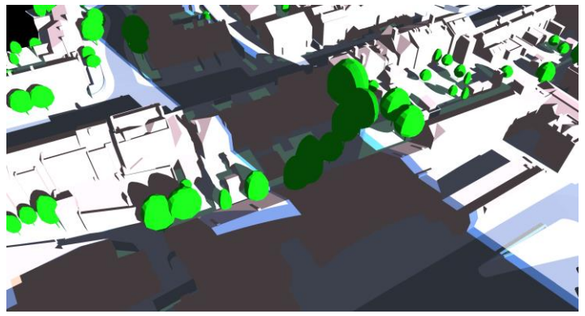
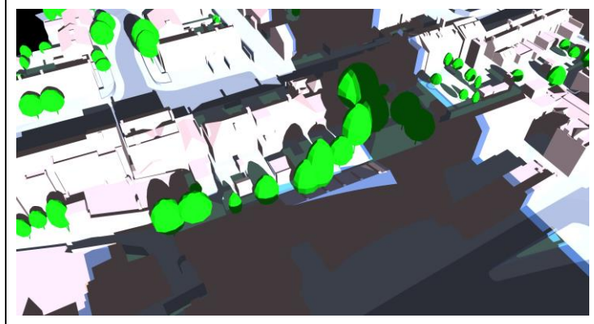
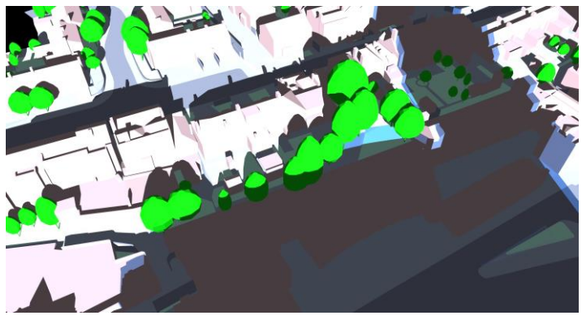
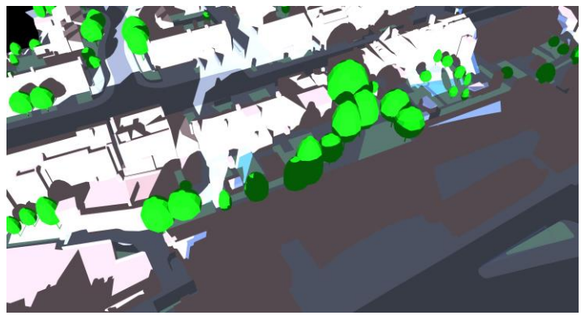
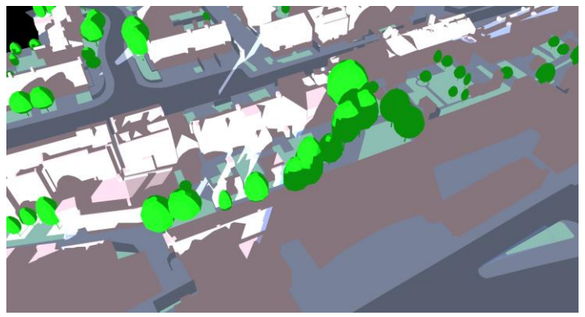
Daylight and Sunlight Analysis – Planning Amendment

IN2

Site Shading Diagram October 21st

The images below illustrate the incident shadow on the receiving area on the 21st of October.

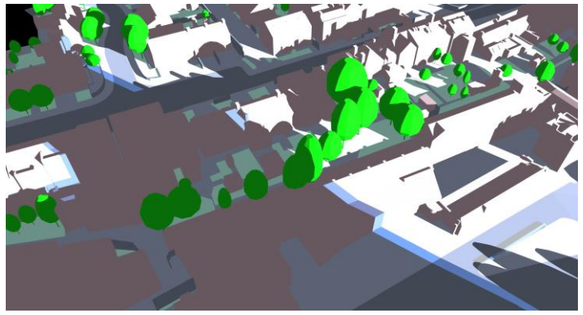
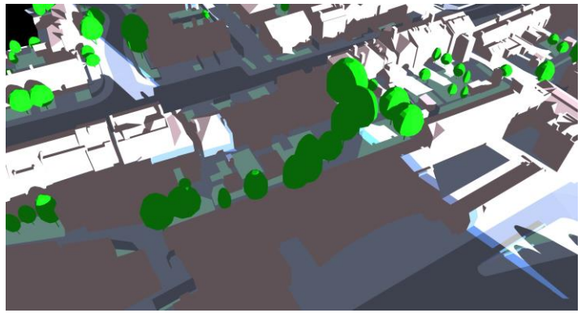
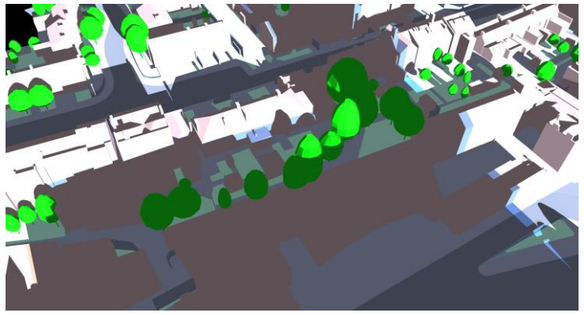
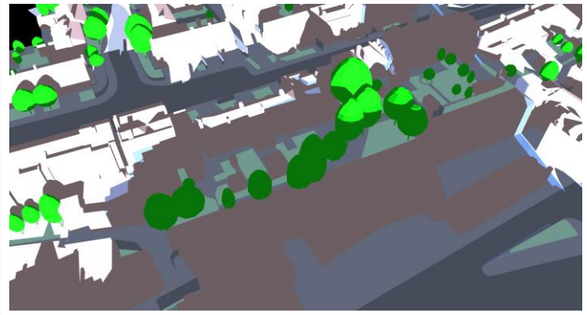
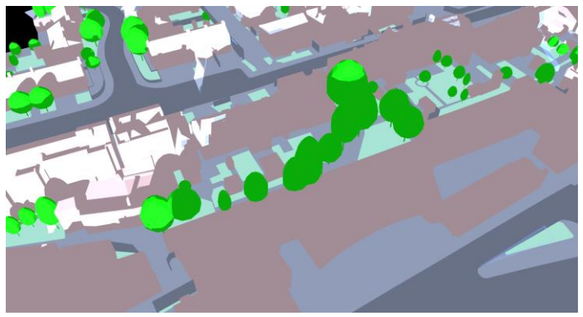
Extent of Existing Shadow	
Extent of Additional Shadow	

			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Site Shading Diagram November 21st

The images below illustrate the incident shadow on the receiving area on the 21st of November.

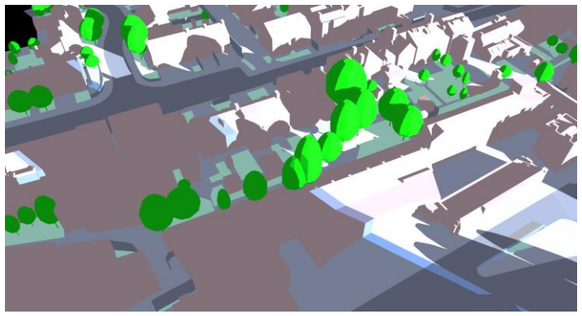
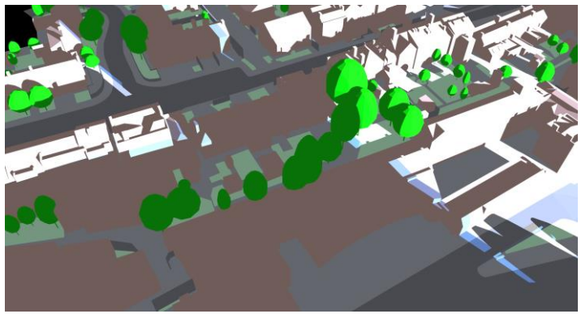
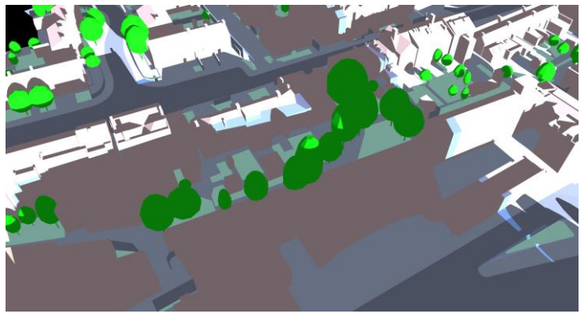
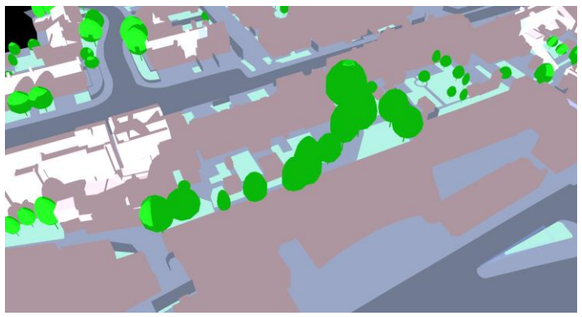
Extent of Existing Shadow
Extent of Additional Shadow

			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Site Shading Diagram December 21st

Extent of Existing Shadow	
Extent of Additional Shadow	

The images below illustrate the incident shadow on the receiving area on the 21st of December.

			
10:00	11:00	12:00	13:00
			
14:00	15:00	16:00	17:00

Whilst both winter and summer months 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.

IN2 Design Partnership Limited
Unit E&F Mount Pleasant Business Centre
Ranelagh, Dublin D06 P5N8

+353 (0)1 496 0900 | info@in2.ie | www.in2.ie