

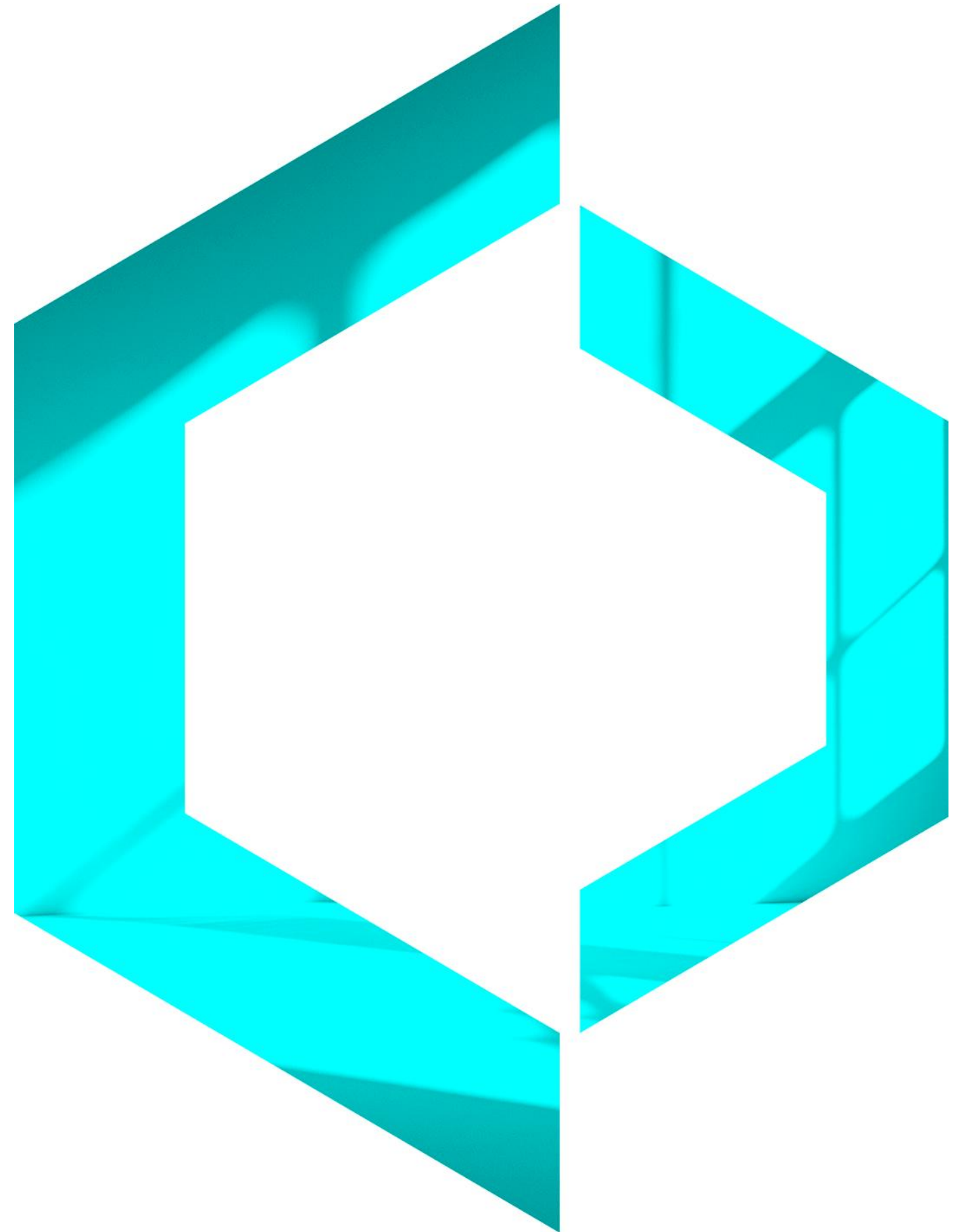


Ballymastone Phase 3, Donabate

Daylight & Sunlight Analysis Report Planning RFI

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Glossary



1. Glossary

BRE Guide

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"). This document is specifically designed to facilitate good building design within the planning context. The BRE Guide clarifies and expands on the methodologies contained in IS EN 17037 and BS EN 17037 with specific relevance to residential buildings, and as such has been deemed to take precedence over these other documents.

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 850 mm above floor level.

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 of due East, and North of due 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 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 include 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 of 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.

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 of March.

Executive Summary & Conclusion



2. Executive Summary & Conclusion

This report identifies the daylight and sunlight analysis undertaken by IN2 Engineering Design Partnership for the proposed development at Ballymastone Phase 3, Donabate. The report has been updated to account for the design changes as a result of the RFI and to respond directly to the RFI as it relates to Daylight and Sunlight, which is also carried through to the EIAR. All sections of the report have been updated to reflect the proposed RFI response. The compensatory measures for Spatial Daylight Autonomy and Exposure to Sunlight are outlined in Section 6.3 and 7.3, respectively. This report has been prepared as a desktop exercise, with 3D massing and survey information provided by other members of the design team. No site visits took place, as the provided information 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 and TAS by EDSL.

Daylight and sunlight assessments will generally consist of two parts, being (a) how the proposed development performs and (b) how the proposed development impacts levels of daylight and sunlight availability in surrounding existing buildings. 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
Sunlight	Existing Neighbouring Amenity Spaces	Sunlight Hours	BRE Guide BR209 (2022 Edition)	Section 4 - Impact on Neighbouring Buildings
Sunlight	Existing Neighbouring Buildings	Vertical Sky Component	BRE Guide BR209 (2022 Edition)	Section 4 - Impact on Neighbouring Buildings
Daylight	Existing Neighbouring Buildings	Annual Probable Sunlight Hours	BRE Guide BR209 (2022 Edition)	Section 4 - Impact on Neighbouring Buildings
Sunlight	Proposed Development Amenity Spaces	Sunlight Hours	BRE Guide BR209 (2022 Edition)	Section 5 - Site Sunlight and Shading
Daylight	Proposed Development	Spatial Daylight Autonomy	BRE Guide BR209 (2022 Edition)	Section 6 - Internal Daylight Analysis
Sunlight	Proposed Development	Sunlight Exposure	BRE Guide BR209 (2022 Edition)	Section 7 - Exposure to Sunlight

Section 3 introduces the various Standards and Guidelines utilised throughout the Daylight / Sunlight analysis. The specific methodology for each relevant topic is detailed in the corresponding section in the body of this report, as identified below.

Section 4 discusses the potential impact of the proposed development on the existing neighbouring buildings. The relevant selected neighbouring buildings were assessed for both Vertical Sky Component (VSC), a measure of the potential sunlight, and Annual Probable Sunlight Hours (APSH), a measure of the direct sunlight as detailed in Section 4.2. The selected neighbouring windows were found not to be impacted by the proposed development, and the detailed results are presented in Section 4.3 and Appendix A & B. There are no additional neighbouring dwellings to assess, as there are no additional dwellings within the potential impact zone. This is further discussed on Section 4.2. Methodology (Potential Impact Zone). The selected neighbouring outdoor spaces and potential solar panel locations were found not to be impacted by the proposed development which are presented in Section 4.4.2, and 4.5.2 respectively.

Section 5 outlines the results of the assessed amenity spaces of the proposed development in accordance with the BRE Guide. All of the spaces were comfortably compliant with the BRE criteria to receive at least 2 hours of sunlight on March 21st, for at least 50% of the spaces. The overall sunlit percentage for Communal Open Space (COS) and Public Open Space (POS) are **96.1%** and **99.9%**, respectively, which are well over the 50% compliance rate. Results updated for design changes as a result of the RFI process have been identified and noted in Section 5.2.

Section 6 includes daylight analysis that has been undertaken for the kitchen/living/dining (KLD) and bedroom spaces in the assessed units (Apartments and Duplexes).

All units were assessed for Spatial Daylight Autonomy (SDA) methodology as detailed in the BRE Guide. A very high compliance rate of **99.6%** of the rooms were found to be compliant for the BRE Guide recommendation and detailed results are presented in Appendix C. Results updated for design changes as a result of the RFI process have been identified, specifically the changes to apartment blocks BA07, BA08, and BA09. For any rooms not achieving minimum compliance for SDA, these have been identified, and compensatory measures have been provided in Section 6.3 page 36, and the detailed results are shown in Appendix C.

Section 7 included the results for the Exposure to Sunlight analysis. This metric assesses the sunlight availability to each unit. The proposed development achieves a high compliance rate, with **91.6%** of the units exceeding the minimum recommendations. Detailed results are included in Appendix D. Results updated for design changes as a result of the RFI process have been identified, specifically the changes to apartment blocks BA07, BA08, and BA09. For any units not achieving minimum compliance for ETS, these have been identified and compensatory measures have been provided in Section 7.3 page 40, and the detailed results are shown in Appendix D.

Appendix E provides clarifications on the impact of trees, view out, and the protection against glare.

In conclusion, this report confirms that the best practice Daylight & Sunlight availability has been ensured for the proposed development at Ballymastone Phase 3, Donabate, with no impact on the existing neighbouring environment.

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Standards & Guidelines



3. Standards & Guidelines

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

- a) Planning Design Standards for Apartments: Guidelines for Planning Authorities, 2025 (the “**Apartment Guidelines**”). These are guidelines issued under Section 28 of the 2000 Planning and Development Act (as amended).
- b) Urban Development and Building Height Guidelines, 2018 (the “**UDBHG**”)
- c) Sustainable Residential Development and Compact Settlements: Guidelines for Planning Authorities, Section 5.3.7 (the “**SRDCSG**”)
- d) Fingal County Council Development Plan 2023-2029 (the “**FCCDP**”)
- 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**”).
- f) British Standard BS EN 17037:2018 – Daylight in Buildings (+A1:2021) (Incorporating corrigendum October 2021) (the “**British EN Standard**”). Irish Standard IS EN 17037:2018 &AC:2021 (the “**Irish EN Standard**”).

It should be noted at the outset that the 2008 British Standard has been superseded by the 2018 British Standard, and BRE Guide 2nd Edition has been superseded by the 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 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**”). This document is specifically designed to facilitate good building design within the planning context and is referenced in the Apartment Guidelines. The BRE Guide clarifies and expands on the methodologies contained in IS EN 17037 and BS EN 17037 with specific relevance to residential buildings, and as such has been deemed to take precedence over these other documents.

The key daylight concerns from each of these relevant documents is set out of the following pages. The intent is not to provide a comprehensive reprint of these documents, but a summary of highlight of some relevant text.

The key considerations in the 2025 Apartment Guidelines are:

Section 3.1 of the 2025 Apartment Guidelines states:

“Building heights are the subject of separate guidance to planning authorities contained within the Urban Development and Building Heights Guidelines, issued in December 2018. The SRDCSGs (2024) also set out minimum separation distances for housing, duplexes and apartments. Separation distances for apartments will also need to be based on achieving satisfactory levels of daylight/sunlight for future occupiers of the apartments and for neighbouring occupiers (see also Section 6.1 below), and where there is a need to accommodate centralised areas of communal open space within a perimeter block.”

Section 6.1 of the 2025 Apartment Guidelines states:

“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. It is also important to safeguard against a detrimental impact on the amenity of other sensitive occupiers of adjacent properties. Section 5.3.7 of the SRDCSGs outlines requirements for the provision of acceptable levels of daylight in new residential developments and adjoining properties.

Planning authorities are requested to practically and flexibly apply the general requirements of these Guidelines in relation to refurbishment schemes, particularly in historic buildings, some urban townscapes and ‘over the shop’ type or other existing building conversion or refurbishment projects, where property owners must work with existing building fabric and dimensions. Ultimately, Building Regulations must be complied with and planning authorities must prioritise the objective of more effective usage of existing underutilised accommodation, including empty buildings and vacant upper floors.”

The key considerations in the 2018 Urban Development and Building Heights Guidelines (UDBHG) are:

Section 3.2 of the UDBHG notes the following in relation to daylight and compensatory measures. Note the BRE Guide 2nd edition has been superseded and replaced by the 3rd edition as discussed above.

“At the scale of the site/building:

- (a) The form, massing and height of proposed developments should be carefully modulated so as to maximise access to natural daylight, ventilation and views and minimise overshadowing and loss of light.*
- (b) Appropriate and reasonable regard should be taken of quantitative performance approaches to daylight provision outlined in guides like the Building Research Establishment’s ‘Site Layout Planning for Daylight and Sunlight’ (2nd edition) or BS 8206-2: 2008 – ‘Lighting for Buildings – Part 2: Code of Practice for Daylighting’.*
- (c) Where a proposal may not be able to fully meet all 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, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution.”*

The key considerations in the Sustainable Residential and Compact Settlement Guideline (SRDCSG) for Planning Authorities 2024 are:

“The provision of acceptable levels of daylight in new residential developments is an important planning consideration, in the interests of ensuring a high quality living environment for future residents. It is also important to safeguard against a detrimental impact on the amenity of other sensitive occupiers of adjacent properties.

- (a) The potential for poor daylight performance in a proposed development or for a material impact on neighbouring properties will generally arise in cases where the buildings are close together, where higher buildings are involved, or where there are other obstructions to daylight. Planning authorities do not need to undertake a detailed technical assessment in relation to daylight performance in all cases. It should be clear from the assessment of architectural drawings (including sections) in the case of low-rise housing with good separation from existing and proposed buildings that undue impact would not arise, and planning authorities may apply a level of discretion in this regard.*
- (b) In cases where a technical assessment of daylight performance is considered by the planning authority to be necessary regard should be had to quantitative performance approaches to daylight provision outlined in guides like A New European Standard for Daylighting in Buildings IS EN17037:2018, UK National Annex BS EN17037:2019 and the associated BRE Guide 209 2022 Edition (June 2022), or any relevant future standards or guidance specific to the Irish context.*

In drawing conclusions in relation to daylight performance, planning authorities must weigh up the overall quality of the design and layout of the scheme and the measures proposed to maximise daylight provision, against the location of the site and the general presumption in favour of increased scales of urban residential development. Poor performance may arise due to design constraints associated with the site or location and there is a need to balance that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution.”

The key considerations in the Fingal County Council Development Plan (FCCDP), 2023-2029 are:

Whilst not of specific relevance, to the SDZ, the development plan has been referenced for continuity of deliverables with regards to Daylight and Sunlight.

The Fingal County Council Development Plan states that the daylighting and sunlighting of Developments shall be guided by principles set out in *“Site Layout Planning for Daylight and Sunlight, A Guide to Good Practice – (Building Research Establishment Report) 2011’ or any updated guidance” (EMPHASIS ADDED).*

Section 14.6.6.1 of the FCC Development Plan states that,

“All applications for residential development must ensure that the layout and design of individual units and accompanying public realms are designed in a manner which maximises daylight and sunlight.”

It is noted that,

“A Daylight and Sunlight Assessment may be necessary to assess the impacts of the proposed development on surrounding properties and amenity areas outside the site boundaries of an application and in order to assess the likely daylight and sunlight reaching proposed units and associated private, communal and public open spaces.”

This leads to ‘Objective DMSO22 – Daylight and Sunlight Analysis’ which requires,

“Daylight and Sunlight analysis for all proposed developments of 50+ units or as required by the Planning Authority, depending on the context of the site and neighbouring property as well as the design of the development.”

As ‘Site Layout Planning for Daylight and Sunlight’ (2nd edition): A Guidelines to Good Practice (BRE 2011’) has been superseded, the quantitative performance approaches and recommendations set out in, ‘The Building Research Establishment’s (BRE) Site Layout Planning for Daylight and Sunlight: A guide to good practice (BRE 209) 3rd edition / 2022 edition’, this being the current document, have been used to guide this report.

The guidance set out in the BRE Guide (2022) is summarised below.

The key considerations in the BRE Guide are:

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, note section 1.6 above. 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 key considerations in the 2018 British and Irish Versions of the EN Standards are:

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 (+A1:2021) (Incorporating corrigendum October 2021) standard varies from the IS EN 17037 &AC:2021 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 reflectance; 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 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 lux; living room at 150 lux; and kitchen at 200 lux, 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.”

Impact on Neighbouring Buildings



4. 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.

The BRE Guide states:

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, kitchens, living rooms, 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.”*



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

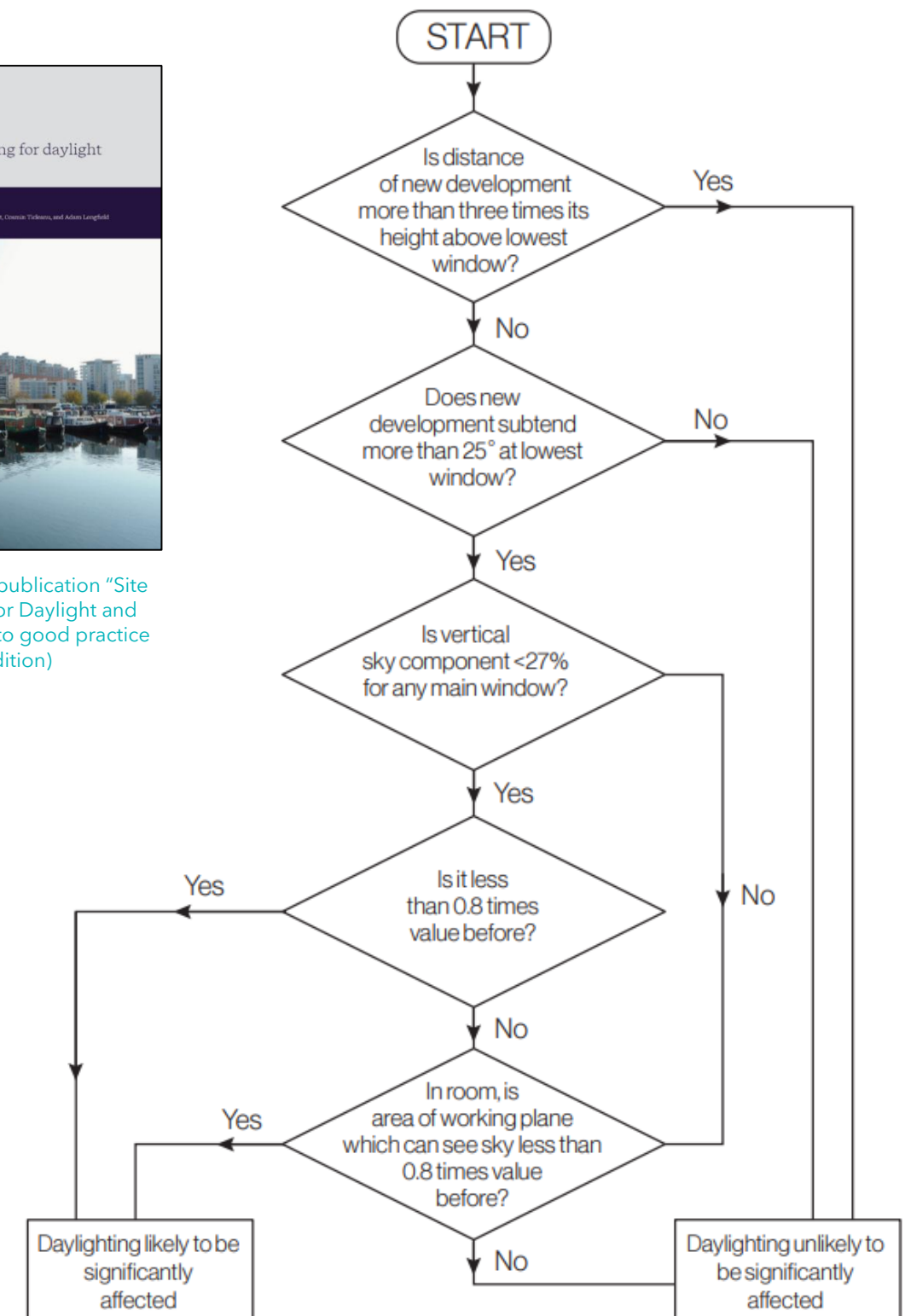


Figure 4.1.2 – BRE publication “Site Layout Planning for Daylight and Sunlight – A guide to good practice (Third Edition) Decision Chart

4.2. Methodology

Analysis was undertaken by calculating the daylight & sunlight availability for window locations on the neighbouring buildings, which have the potential to be impacted with the proposed development as highlighted in yellow and cyan in Figure 4.2.1.

The following neighbouring dwellings were assessed:

1. 61 The Priory
2. 64 & 65 Priory Wood
3. 80-87 Priory Wood
4. Ballymastone Phase 2 BZ16
5. Ballymastone Phase 2 BA06

There are no additional neighbouring dwellings to assess resulting from the proposed RFI response, as they are no additional dwellings within the potential impact zone. This is further discussed on Section 4.2. Methodology (Potential Impact Zone).

The analysis assesses the main windows including living rooms and conservatories. Windows to intermittently utilised spaces such as corridors or WC's were excluded from the analysis.

It may be noted that daylight availability (Vertical Sky Component, VSC) is applicable to all windows, regardless of orientation. Sunlight availability (Annual Probable Sunlight Hours, APSH) is only applicable to windows facing 90° of due south, due to the sun path in the northern hemisphere. Therefore, the dwellings highlighted in cyan are not applicable for a sunlight availability assessment.

The analysis assesses main windows and conservatories. The analysis was carried out on the existing neighbouring residential buildings that could be impacted by the proposed development. Analysis was undertaken by calculating the daylight & sunlight availability for the existing conditions versus proposed scheme for indicative window locations on the façade of each dwelling. It may be noted that daylight availability (VSC) is applicable to all windows, regardless of orientation.



Figure 4.2.1 – Site map with adjacent dwellings identified

4.2. Methodology (Potential Impact Zone - Updated)

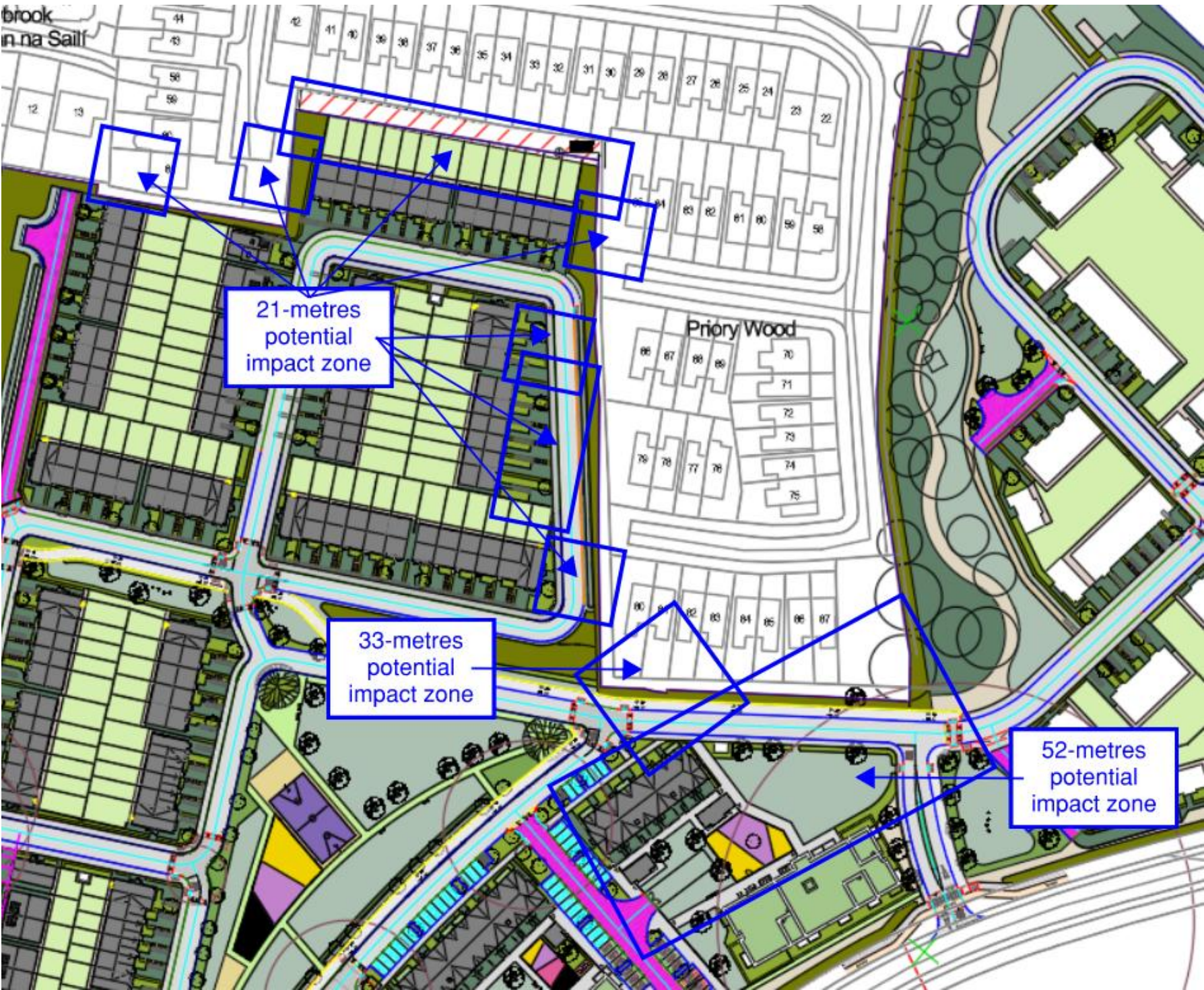


Figure 4.2.2 - Indicative site map showing the potential impact zones for the North area

As per the BRE decision chart (Figure 4.1.2) any neighbouring window that is within a distance 3 times the height of the proposed building from the centre point of the existing window should be assessed for impact. Figure 4.2.2 illustrates the potential impact zones for each of the proposed buildings.

The house to the north of the site that are located within these impact zone and were therefore analysed are:

- 61 The Priory
- 64 & 65 Priory Wood
- 80-87 Priory Wood

Both apartment blocks in Ballymastone phase 2 to the south of the site have also been fully assessed due to their proximity. These assessed dwellings were all determined not to be impacted by the proposed development.

As all other dwellings in The Priory and Priory Wood are located further from the proposed development, and not in the potential impact zone, they were not required to be analysed, hence there are no additional neighbouring dwellings to assess for the RFI.

Height above the lowest window	Height above the lowest window times three
7.13m	21.39m
11.04m	33.12m
17.25m	51.75m

Figure 4.2.3 - Table showing the calculation of the potential impact zone

4.2. Methodology (Cont'd)

The figure/s below illustrate/s the assessed dwelling/s:

61 The Priory



Figure 4.2.4 - Google Map image of top view of 61 The Priory

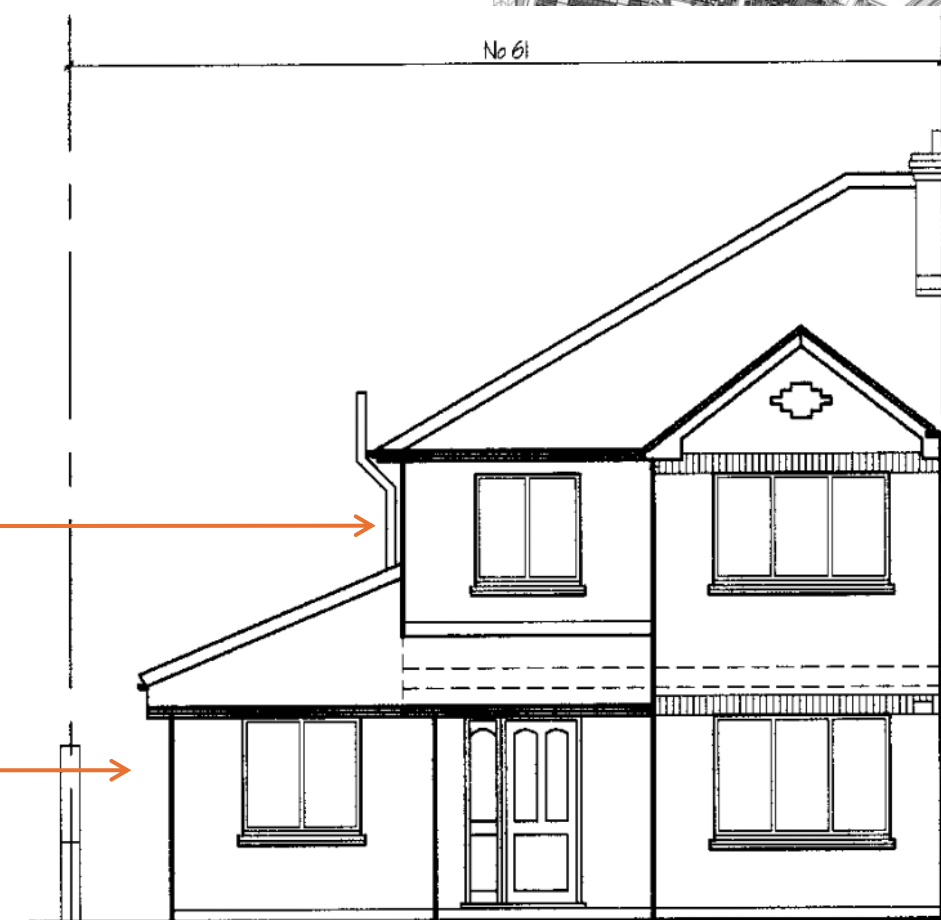
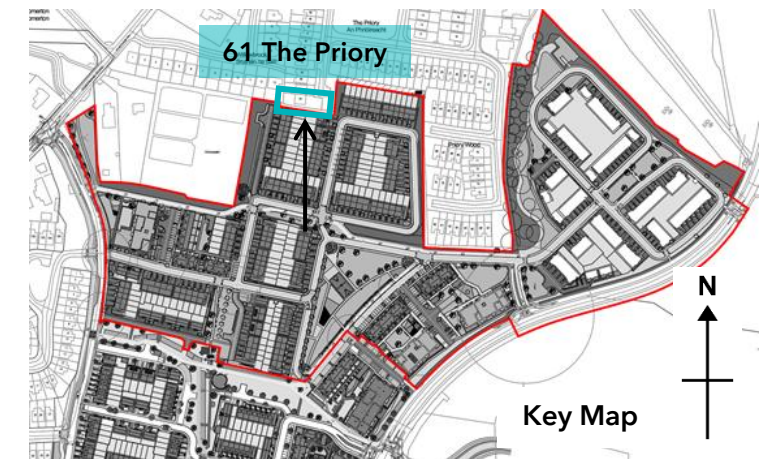


Figure 4.2.5 - East elevation of neighbouring dwelling on 61 The Priory

One indicative window on the south façade on ground floor and one window on the south façade of the first floor were assessed as shown. Only the windows on the south façade were analysed as this is the only façade facing the proposed development.

4.2. Methodology (Cont'd)

The figure/s below illustrate/s the assessed dwelling/s:

64 & 65 Priory Wood



Figure 4.2.6 - South elevation of neighbouring dwelling on 64 & 65 Priory Wood

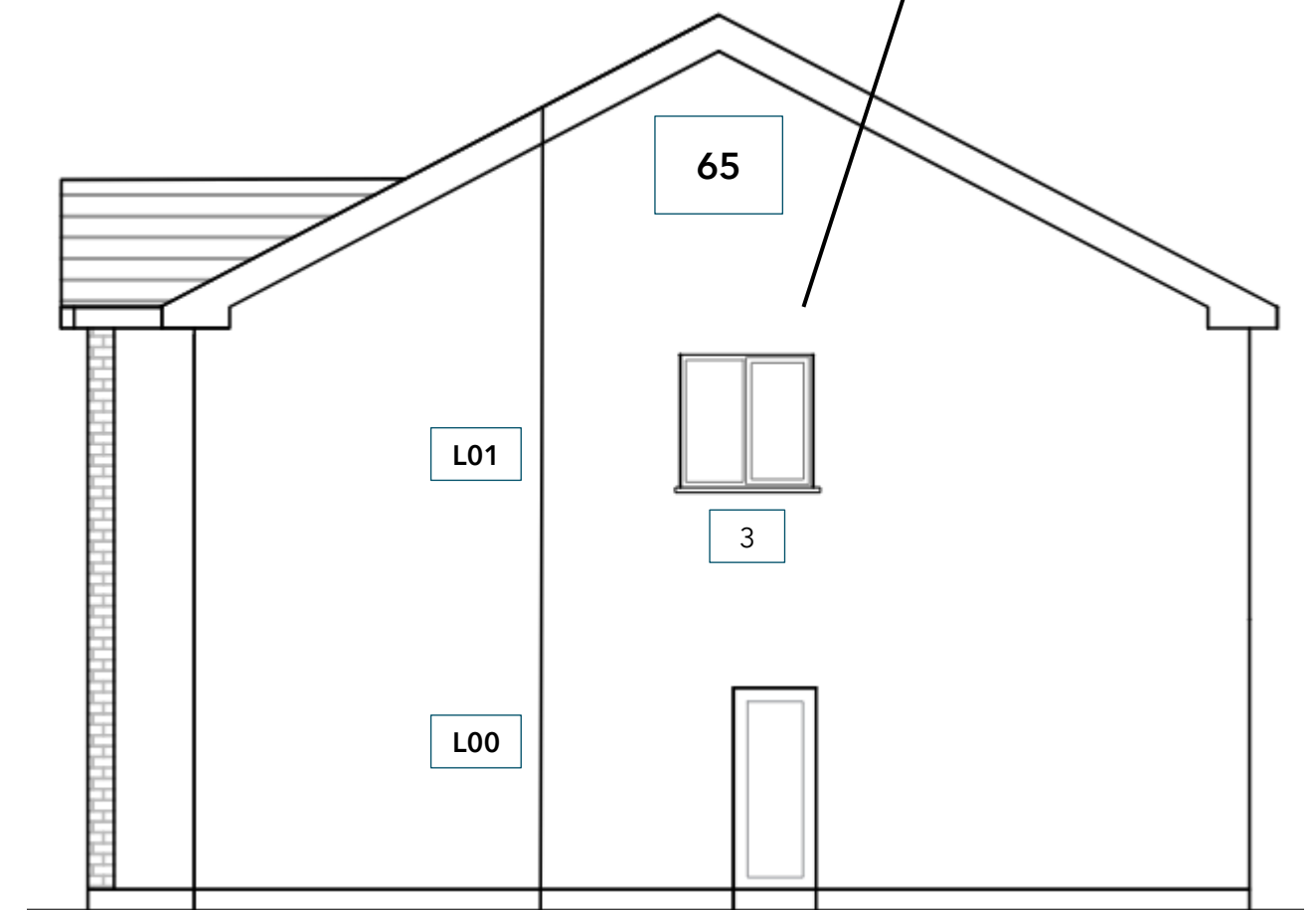


Figure 4.2.7 - West elevation of neighbouring dwelling on 64 & 65 Priory Wood

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4.2. Methodology (Cont'd)

The figure/s below illustrate/s the assessed dwelling/s:

80-87 Priory Wood



Figure 4.2.8 - South elevation of neighbouring dwelling on 80-87 Priory Wood

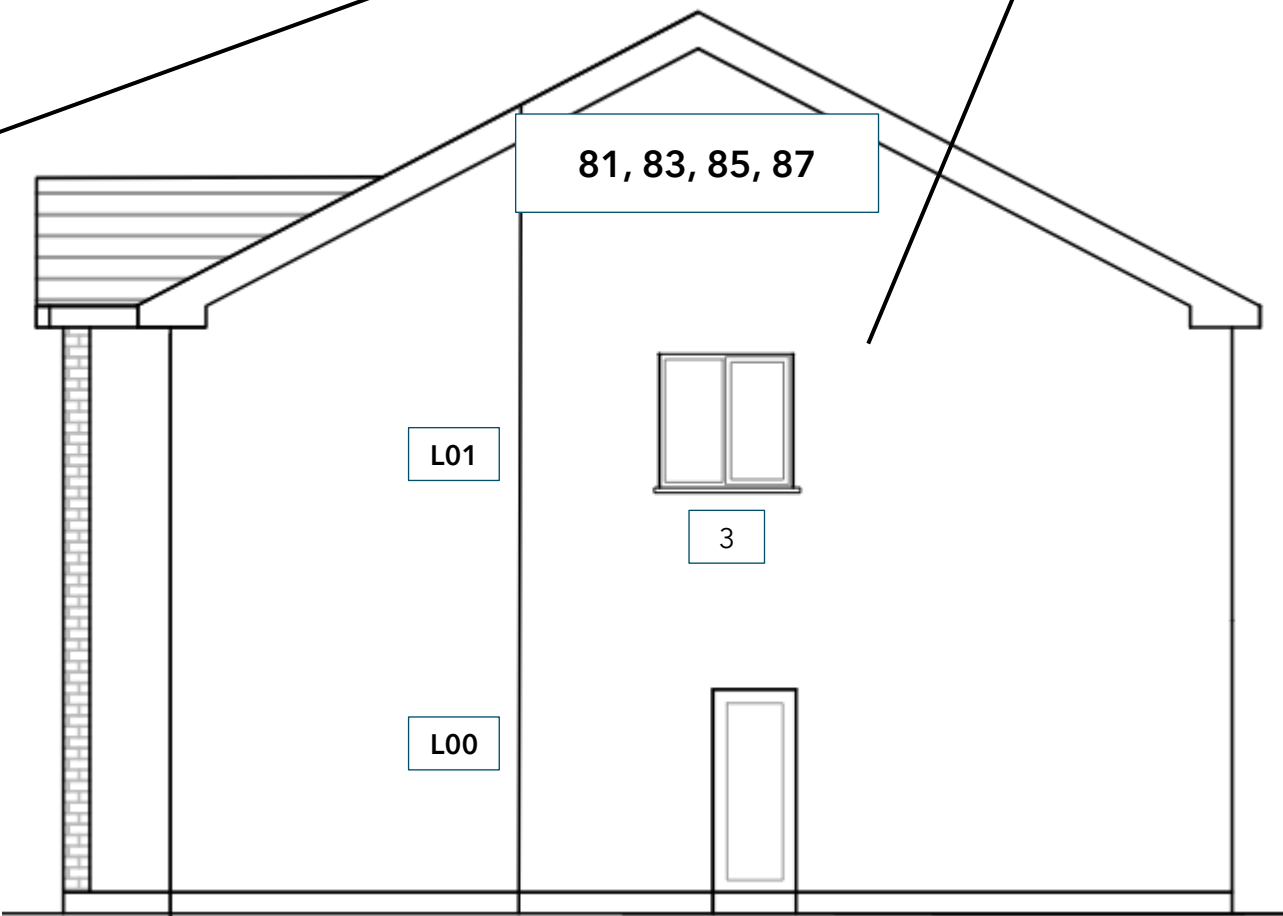


Figure 4.2.9 - East elevation of neighbouring dwelling on 80-87 Priory Wood

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4.2. Methodology (Cont'd)

The figure/s below illustrate/s the assessed dwelling/s:

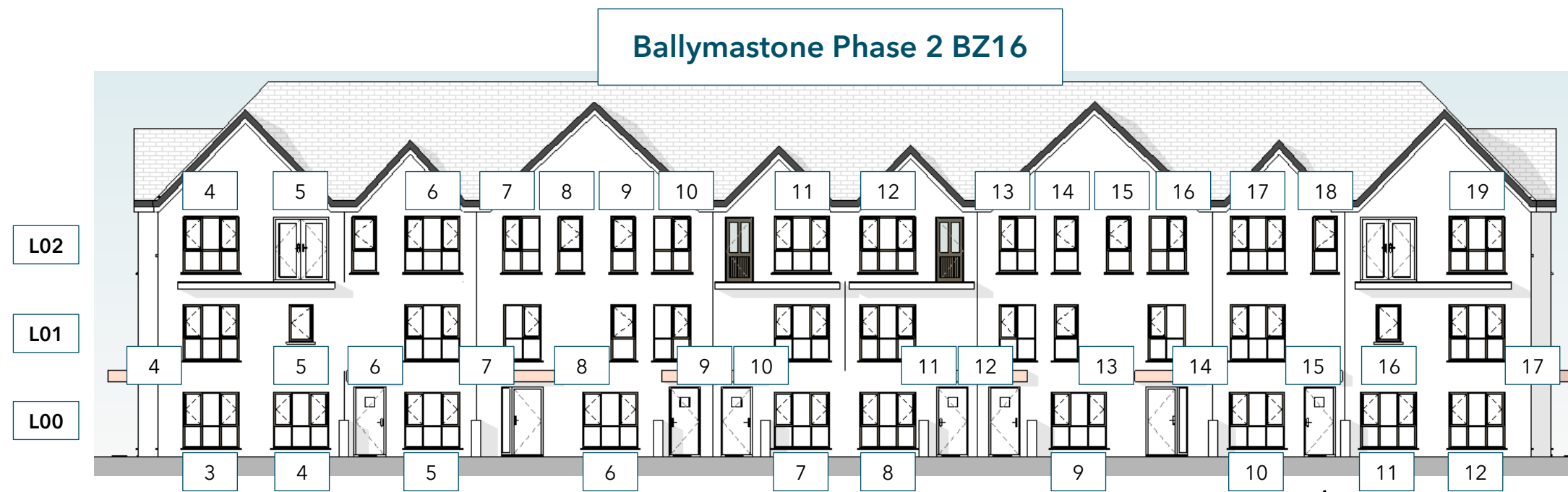
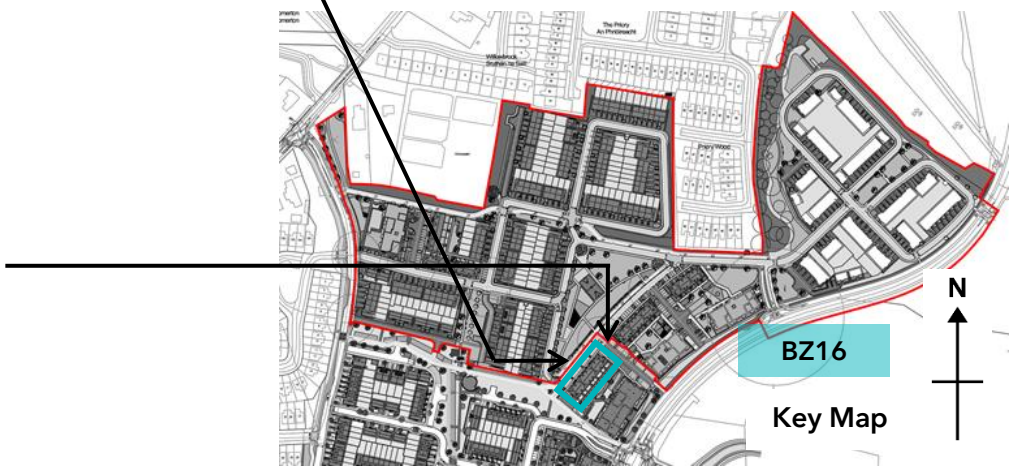


Figure 4.2.10 - Elevations of neighbouring dwellings on Ballymastone Phase 2 West façade



Figure 4.2.11 - Elevations of neighbouring dwellings on Ballymastone Phase 2 North façade



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4.2. Methodology (Cont'd)

The figure/s below illustrate/s the assessed dwelling/s:

Ballymastone Phase 2 BA06

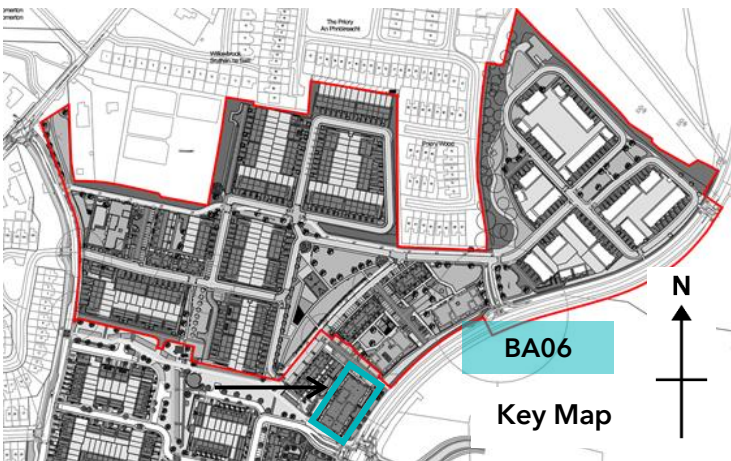


Figure 4.2.12 - Elevations of neighbouring dwellings on Ballymastone Phase 2 BA06 West façade

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4.2. Methodology (Cont'd)

The figure/s below illustrate/s the assessed dwelling/s:



Figure 4.2.13 – Elevations of neighbouring dwellings on Ballymastone Phase 2 BA06 North façade

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4.3. Results – Summary of VSC and APSH (Updated)

The tables below provide a breakdown of the compliance rates for each scenario based on the VSC (Vertical Sky Component, Daylight), and APSH (Annual Probable Sunlight Hours, Sunlight).

APSH (Annual Probable Sunlight Hours) was not calculated for the dwellings on Ballymastone Phase 2 BZ16 and BA06 as APSH is only applicable to windows facing within 90° of due south, due to the sun path in the northern hemisphere and these neighbouring buildings do not meet this criteria.

The analysis determined that all relevant dwellings assessed were deemed to be compliant in accordance with the BRE Guide, with an overall compliance rate of **100%** for both VSC and APSH.

Detailed results are included in Appendix A and B.

VSC Summary		
Number of windows		
Pass	Fail	Total
225	0	225
100%	0%	

Figure 4.3.1 – VSC and APSH Results Summary

APSH Summary		
Number of windows		
Pass	Fail	Total
53	0	53
100%	0%	

VSC 64 & 65 Priory Wood		
Number of windows		
Pass	Fail	Total
9	0	9
100%	0%	

APSH 64 & 65 Priory Wood		
Number of windows		
Pass	Fail	Total
8	0	8
100%	0%	

Figure 4.3.3 – VSC and APSH Results for 64 & 65 Priory Wood

VSC 80-87 Priory Wood		
Number of windows		
Pass	Fail	Total
44	0	44
100%	0%	

APSH 80-87 Priory Wood		
Number of windows		
Pass	Fail	Total
43	0	43
100%	0%	

Figure 4.3.4 – VSC and APSH Results for 80-87 Priory Wood

VSC Ballymastone Phase 2 BZ16		
Number of windows		
Pass	Fail	Total
47	0	47
100%	0%	

Figure 4.3.5 – VSC Results for Ballymastone Phase 2 BZ16

VSC 61 The Priory		
Number of windows		
Pass	Fail	Total
2	0	2
100%	0%	

Figure 4.3.2 – VSC and APSH Results for 61 The Priory

APSH 61 The Priory		
Number of windows		
Pass	Fail	Total
2	0	2
100%	0%	

VSC Ballymastone Phase 2 BA06		
Number of windows		
Pass	Fail	Total
123	0	123
100%	0%	

Figure 4.3.6 – VSC Results for Ballymastone Phase 2 BA06

4.4. Neighbouring Outdoor Spaces (Updated)

In addition to assessing the impact of the proposed buildings on the daylight & sunlight availability for the neighbouring dwellings, it is important to assess the sunlight availability on the neighbouring dwellings' outdoor amenity spaces. There are no additional neighbouring outdoor spaces to assess resulting from the proposed RFI response, as they are no additional outdoor spaces within the potential impact zone. This is further discussed on Section 4.2. Methodology (Potential Impact Zone).

4.4.1. Methodology

The BRE Guide provides guidance with regards to the sunlighting and shading to external amenity spaces within proposed developments.

The guidance recommends

“That for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21st March”. (Criterion 1)”

And,

“If as a result of new development an existing garden or amenity area does not meet the above, and the area which can receive two hours of sun on 21 March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable. If a detailed calculation cannot be carried out, it is recommended that the centre of the area should receive at least two hours of sunlight on 21 March”. (Criterion 2)”

The methodology assesses sunlight performance at the Equinox, as this is the mid solar position throughout the year. It should be noted that only amenity spaces located north of the proposed development were analysed since the shadows lie on the north side of the building.

4.4.2. Results

Figure 4.4.1 illustrates the analysis for the outdoor spaces of the neighbouring dwellings. As a result of the proposed development, the areas which can receive two hours of sunlight on the 21st March are not less than 0.8 times their former value. All areas therefore meet the requirements.



Figure 4.4.1 - Neighbouring Amenity Shading

4.4.2. Results (Cont’d)

Figure 4.4.2 shows the table of results of the neighbouring outdoor spaces on the relevant neighbouring dwellings.

Neighbouring Name	Resultant Sunlight Availability (%)	Criterion 1 Proposed ≥ 50%	Criterion 2 ≥ 80% of Baseline	Overall Compliance
61 The Priory Amenity	98%	YES	YES	PASS
64 Priory Wood Amenity	100%	YES	YES	PASS
65 Priory Wood Amenity	99%	YES	YES	PASS
80 The Priory Amenity	100%	YES	YES	PASS
81 The Priory Amenity	100%	NO	YES	PASS
82 The Priory Amenity	100%	NO	YES	PASS
83 The Priory Amenity	100%	NO	YES	PASS
84 The Priory Amenity	100%	NO	YES	PASS
85 The Priory Amenity	100%	NO	YES	PASS
86 The Priory Amenity	100%	NO	YES	PASS
87 The Priory Amenity	100%	NO	YES	PASS
BZ16 & BA06 Amenity 1	100%	YES	YES	PASS
BZ16 & BA06 Amenity 2	100%	YES	YES	PASS

Figure 4.4.2 – Neighbouring Outdoor Spaces Shading Results

4.5. Impact on Neighbouring Solar Panels (Updated)

4.5.1. Methodology

To ensure completeness in the impact on neighbouring analysis, potential impact on neighbouring solar panels have been assessed. In order to assess this, the annual probable sunlight hours received by the solar panels using the existing/permitted versus proposed conditions have been analysed for all relevant dwellings.

The BRE Guide states the following:

“As an initial check, the annual probable sunlight hours received at the centre of each panel should be calculated with and without the proposed development in place”

Slope of solar panel in degrees to horizontal	Recommended minimum ratio of radiation received after/before
0-30	0.90
30.01-59.99	0.85
60-90	0.80

4.5.1 – Recommended minimum ratios of solar radiation received

The BRE Guide also outlines If the annual probable sunlight hours are found to be reduced to less than 0.9 times the existing conditions, a further assessment is warranted as stated below:

“Where the annual probable sunlight hours received by a solar panel with the new development in place is less than 0.9 times the value before, a more detailed calculation of the loss of solar radiation should be undertaken”.

There are no additional neighbouring potential solar panel locations to assess resulting from the proposed RFI response, as they are no additional potential solar panel locations within the potential impact zone. This is further discussed on Section 4.2. Methodology (Potential Impact Zone).

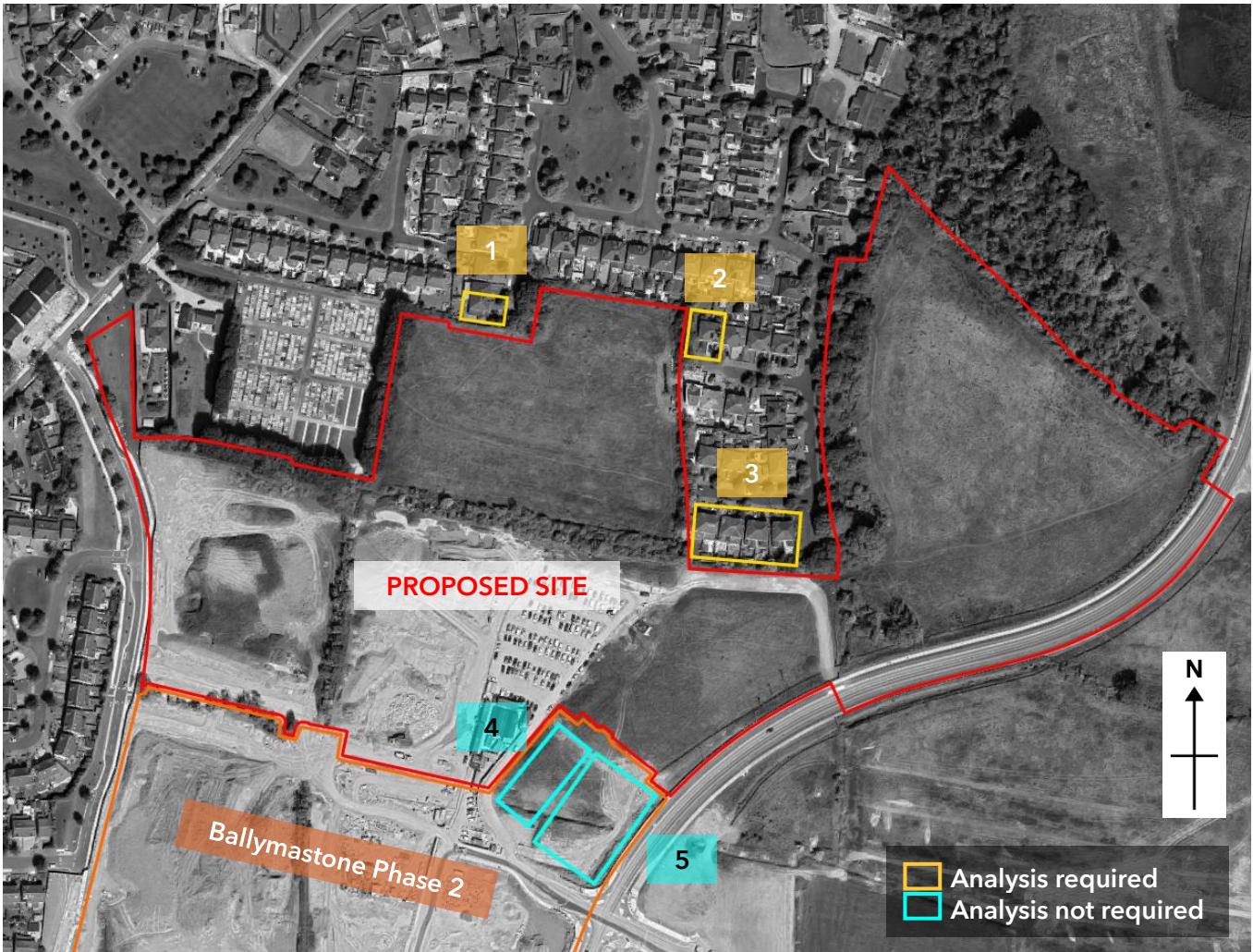


Figure 4.5.2 – Site Map with Adjacent Dwellings Identified

4.5.2. Results – Neighbouring Solar Panels

Figure 4.5.3 presents the APSH (sunlight availability) of the existing vs proposed conditions to the potential solar panels for the relevant neighbouring dwellings. As shown on Figure 4.5.2, the relevant neighbours outlined in cyan will not be impacted by the proposal as the neighbours are not located 90° of due south, and the proposal cannot overshadow them.

For the neighbours outlined in yellow, in Figure 4.5.1, and the solar panel locations shown in Figure 4.5.4 – 4.5.6, the solar panels analysed were determined to continue to receive excellent levels of sunlight availability with minimal impact from the proposed development. Since none of the solar panels have sunlight reduced to less than 0.9 times the permitted conditions, they do not require a further analysis for loss of solar radiation.

Ref	House Name / Number	Annual Existing (%)	Annual Proposed (%)	Proposed / Existing	Impact on Existing [i.e. > 90%]
1	61 The Priory South	94	91	0.96	PASS
2	61 The Priory East	97	94	0.97	PASS
3	65 Priory Wood South	92	92	1.00	PASS
4	64 Priory Wood South	90	89	1.00	PASS
5	64 Priory Wood East	76	76	1.00	PASS
6	80 Priory Wood South	94	91	0.97	PASS
7	81 Priory Wood South	94	92	0.98	PASS
8	81 Priory Wood North	94	92	0.99	PASS
9	82 Priory Wood South	94	92	0.98	PASS
10	83 Priory Wood South	94	92	0.98	PASS
11	83 Priory Wood East	93	91	0.98	PASS
12	84 Priory Wood South	95	93	0.99	PASS
13	85 Priory Wood South	95	93	0.99	PASS
14	85 Priory Wood North	92	91	0.99	PASS
15	86 Priory Wood South	95	94	0.99	PASS
16	87 Priory Wood South	95	94	0.99	PASS

Figure 4.5.3 – APSH Results for Solar Panels (Existing vs Proposed Development)



Figure 4.5.4 – Existing or Potential Future Solar Panels Locations on 61 The Priory

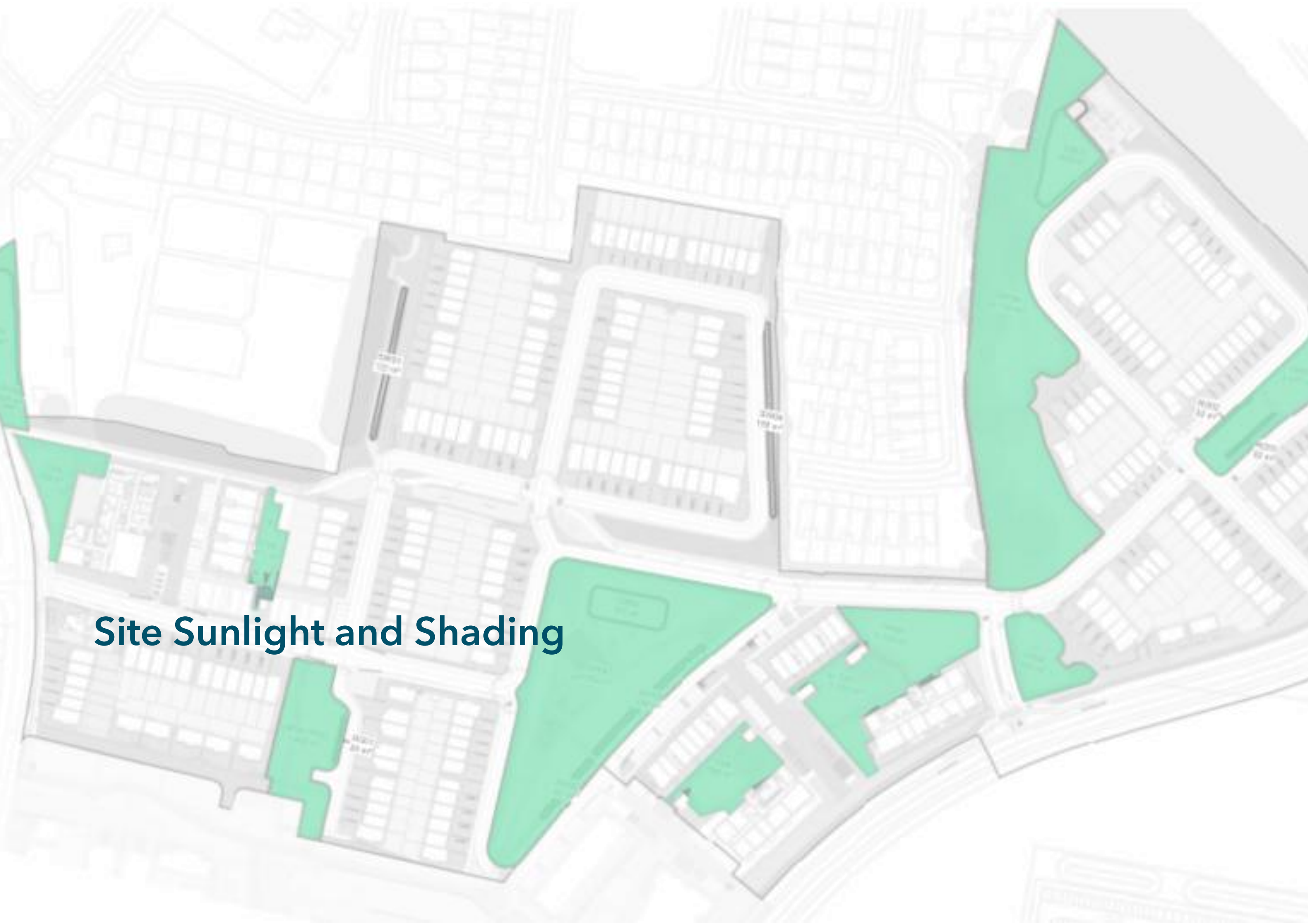


Figure 4.5.5 – Existing or Potential Future Solar Panels Locations on 61 The Priory



Figure 4.5.6 – Existing or Potential Future Solar Panels Locations on 61 The Priory

Site Sunlight and Shading



5. Site Sunlight and Shading

5.1. Methodology

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

The guide recommends:

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

The methodology assesses sunlight performance at the Equinox, as this is the mid solar position throughout the year (as illustrated in Figure 5.1.1), with compliance indicative of spaces that will receive adequate sunlight and appealing useful spaces, including that the following attributes will be achieved as identified in BRE Guide:

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

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

An example analysis of the amenity spaces is indicated in Figure 5.1.2. In this sample development, the main amenity space is located to the North of the building block which provides some degree of overshadowing (dark green contours).

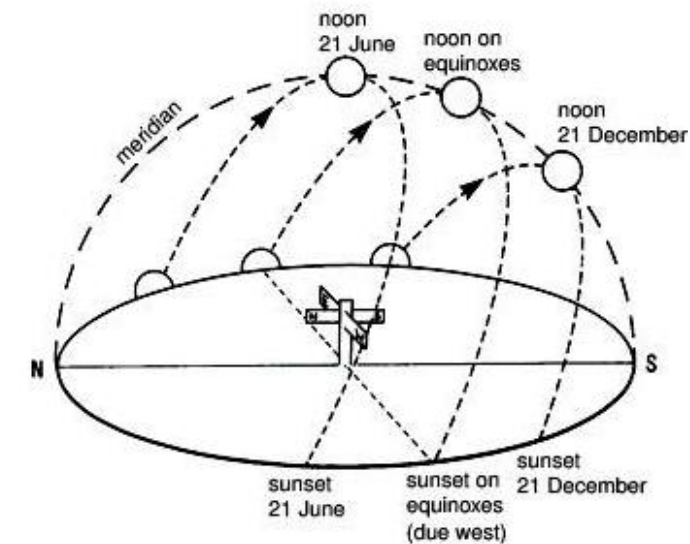


Figure 5.1.1 – Solar position throughout the year



Figure 5.1.2 – Example amenity spaces

5.2. Results (Updated)

Figure 5.2.1 illustrates that all amenity spaces were found to be compliant with the BRE Guide. All proposed amenity spaces receive at least 2 hours of direct sunlight on March 21st. Green contours indicate areas that receive at least 2 hours of sunlight on March 21st, while darker contours indicate some degree of overshadowing.

The COS is identified by pink numeric labels, and POS is identified by purple numeric labels.



Figure 5.2.1 - Sunlight Availability to Amenity Spaces for the Proposed Development

Ref	Amenity Space	Level	Amenity Area (m ²)	Sunlit Area (m ²)	Sunlit Percentage
1	COS 4	0	729	729	100%
2	COS 5	0	411	341	83%
3	COS 6	0	780	761	98%
4	COS 7	0	1122	1092	97%
*Sunlit Area - Area receiving at least 2 hours of potential sunlight during 21st March Equinox, in accordance with BR.209 3rd Edition					
TOTAL			3042	2923	96.1%

Figure 5.2.2 - Table of Communal Open Space (COS) Results Summary

Ref	Amenity Space	Level	Amenity Area (m ²)	Sunlit Area (m ²)	Sunlit Percentage
5	SP04 (PH3)	0	1433	1433	100%
6	SP05	0	6252	6252	100%
7	SP06	0	6746	6746	100%
8	PP06	0	701	701	100%
9	PP07	0	1477	1477	100%
10	PP08	0	1110	1089	98%
11	PP09	0	1358	1358	100%
*Sunlit Area - Area receiving at least 2 hours of potential sunlight during 21st March Equinox, in accordance with BR.209 3rd Edition					
TOTAL			19077	19056	99.9%

Figure 5.2.3 - Table of Public Open Space (POS) Results Summary



6. Internal Daylight Analysis

6.1. Spatial Daylight Autonomy Methodology

As described in the Housing (Miscellaneous Provisions) Act 2009, Part 4, 50, “apartment” means a separate and self-contained dwelling in an apartment complex which requires arrangements for the upkeep and management of all or any part of the common areas, structures, works or services other than by the owner of the apartment;”

Spatial Daylight Autonomy (SDA), method 2 EN17037, has been utilised for the assessment of internal daylight for the proposed development as it determines a more accurate result for building orientation and location as detailed in BRE Guide. These guidelines and standards have been outlined in Section 3.0.

The methodology utilises historic climate data (Dublin IWEA 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.

Figure 6.1.1 indicates overall compliance comparison, with green contours illustrating where daylight was predicted to achieve 100 Lux for bedroom 150 Lux for living room and 200 Lux for kitchen and KLD. 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 exemplified in Figure 6.1.2 such as balcony structures, window frames, reveal and cill depth 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 illuminance for each spaces 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 6.1.3), the median of which was then determined the space compliance.

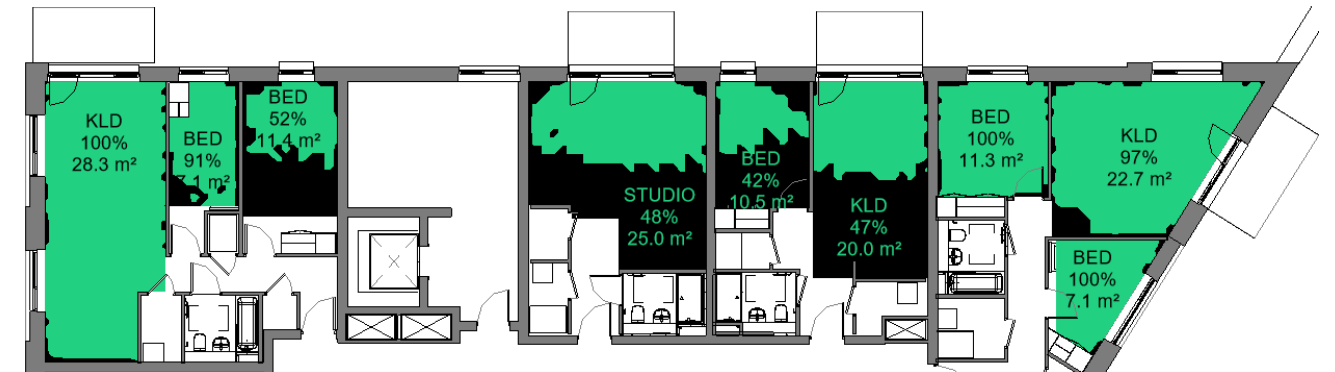


Figure 6.1.1 – Daylight Analysis Results

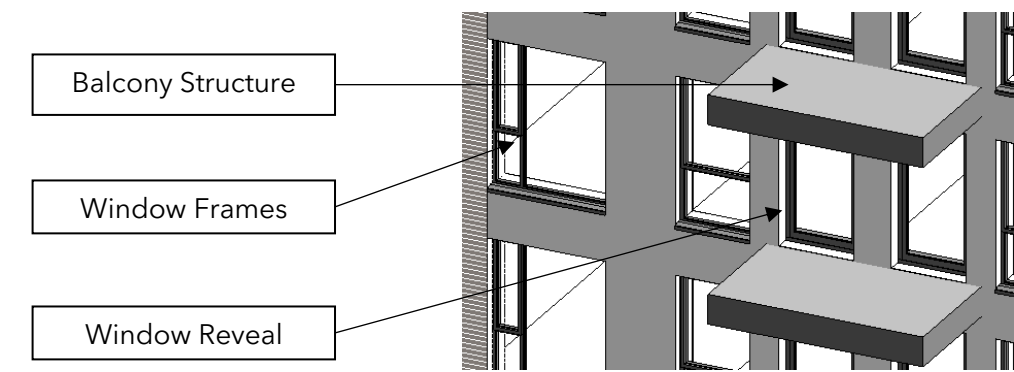


Figure 6.1.2 – Building details included within the Daylight Analysis (Sample)

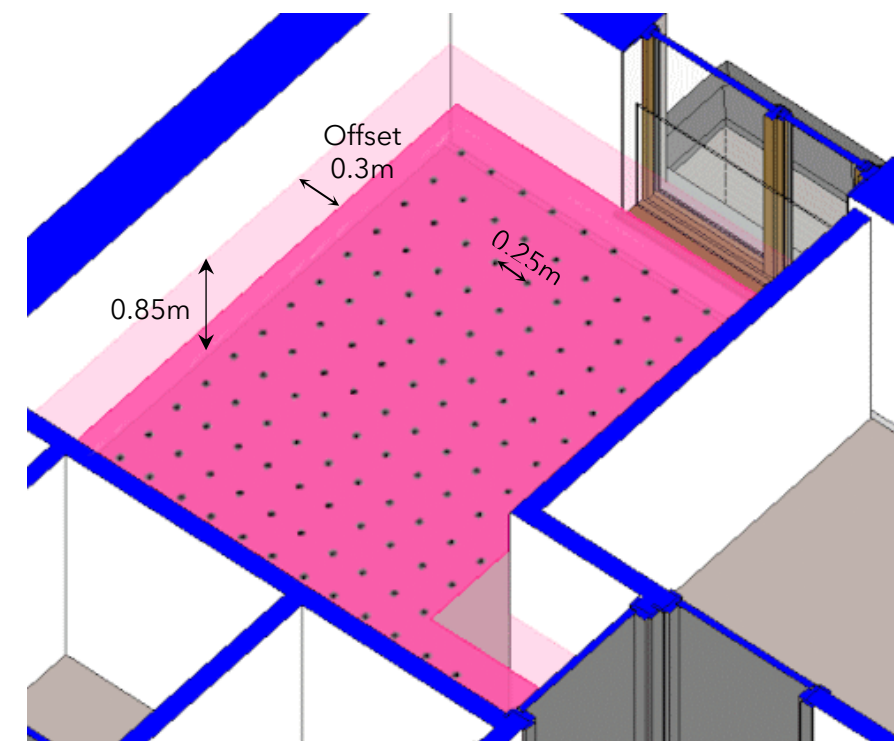


Figure 6.1.3 – Calculating Working Plane

6.1. Spatial Daylight Autonomy Methodology (Cont'd)

The rooms have been assessed to take into 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 Figure 6.1.4.

- Inclusion of kitchen area within KLD (i.e. assessment to rear of room).
- Exclusion of circulation/annexed entrances (i.e., adjacent to doors illustrated).

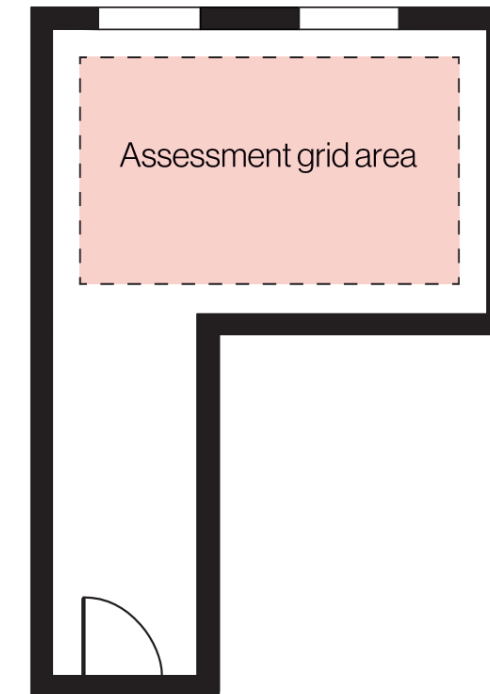


Figure 6.1.4 – BRE Guide Figure C3 – Assessment Area Excluding Corridor

6.2. Results - Summary of SDA (Updated)

The tables below provide a breakdown of the compliance rates for each room based on Spatial Daylight Autonomy (SDA) and an overall SDA. **99.6%** of the analysed rooms were determined to be compliant with the methodology utilised.

The apartment blocks (BA07, BA08, BA09) were updated for design changes, while the duplex blocks (BZ04, BZ08, BZ10, BZ16, BZ25) have not been updated as there was no design changes made to them.

Detailed results are included in Appendix C.

BA07	Number of rooms		
	Pass	Fail	Total
Level 0	13	0	13
Level 1	19	1	20
Level 2	20	0	20
Level 3	20	0	20
Level 4	19	0	19
Level 5	11	0	11
	102	1	103
	99%	1%	

Figure 6.2.1 - Updated SDA for BA07

BA08	Number of rooms		
	Pass	Fail	Total
Level 0	15	0	15
Level 1	24	0	24
Level 2	24	0	24
Level 3	24	0	24
Level 4	23	0	23
Level 5	12	0	12
	122	0	122
	100%	0%	

Figure 6.2.2 - Updated SDA for BA08

BA09	Number of rooms		
	Pass	Fail	Total
Level 1	24	0	24
Level 2	24	0	24
Level 3	24	0	24
Level 4	15	0	15
	87	0	87
	100%	0%	

Figure 6.2.3 - Updated SDA for BA09

BZ04	Number of rooms		
	Pass	Fail	Total
Level 0	15	0	15
Level 1	5	0	5
Level 2	15	0	15
	35	0	35
	100%	0%	

Figure 6.2.4 - SDA for BZ04

BZ08	Number of rooms		
	Pass	Fail	Total
Level 0	2	0	2
Level 1	6	0	6
Level 2	4	0	4
	12	0	12
	100%	0%	

Figure 6.2.5 - SDA for BZ08

BZ10	Number of rooms		
	Pass	Fail	Total
Level 0	12	0	12
Level 1	14	0	14
Level 2	9	0	9
	35	0	35
	100%	0%	

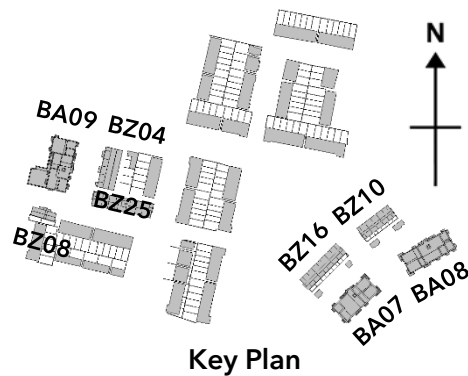
Figure 6.2.6 - SDA for BZ10

BZ16	Number of rooms		
	Pass	Fail	Total
Level 0	16	0	16
Level 1	20	0	20
Level 2	14	0	14
	50	0	50
	100%	0%	

Figure 6.2.7 - SDA for BZ16

BZ25	Number of rooms		
	Pass	Fail	Total
Level 0	15	1	16
Level 1	20	0	20
Level 2	14	0	14
	49	1	50
	98%	2%	

Figure 6.2.8 - SDA for BZ25



Summary	Number of rooms		
	Pass	Fail	Total
BA07	102	1	103
BA08	122	0	122
BA09	87	0	87
BZ04	35	0	35
BZ08	12	0	12
BZ10	35	0	35
BZ16	50	0	50
BZ25	49	1	50
	492	2	494
	99.6%	0.4%	

Figure 6.2.9 - Overall SDA for All Blocks

6.3. SDA Compensatory Measures (Updated)

The Building Height Guidelines state the following:

“Where a proposal may not be able to fully meet all 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, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution.”

The Apartment Guidelines state the following:

Minimum overall apartment floor areas

Studio	32 sq.m	(n/a) ^a
One bedroom	45 sq.m	(38 sq.m) ^a
Two bedrooms (3 person)	63 sq.m	(55 sq.m) ^a
Two bedrooms (4 person)	73 sq.m	
Three bedrooms (4 person)	76 sq.m	(70 sq.m) ^a
Three bedrooms (5 person)	90 sq.m	

^a Figures in brackets refer to 1995 Guidelines

Minimum recommended floor areas for private amenity space, where provided

Studio	4 sq.m
One bedroom	5 sq.m
Two bedrooms (3 person)	6 sq.m
Two bedrooms (4 person)	7 sq.m
Three bedrooms (4 person)	7 sq.m
Three bedrooms (5 person)	9 sq.m

Compensatory Design Solutions

Where units are determined to not achieve the quantitative assessment for daylight, they are identified, and compensatory measures are provided. The compensatory measures look to determine a balance between the spaces with reduced daylight by identifying how other metrics for daylight and/or the unit’s aspects or development design can compensate for this reduction in daylight.

It is proposed that the following compensatory measures are applied in accordance with the requirements of the Building Height Guidelines and the Apartment Guidelines.

1. Daylight Adjacency

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

2. Sunlight

Where a room is below the SDA target, the units have the benefit of receiving over 3 hours of sunlight (medium exposure). Therefore, whilst the room will be found to be non-compliant for daylight, the apartment unit will achieve above the requisite sunlight availability.

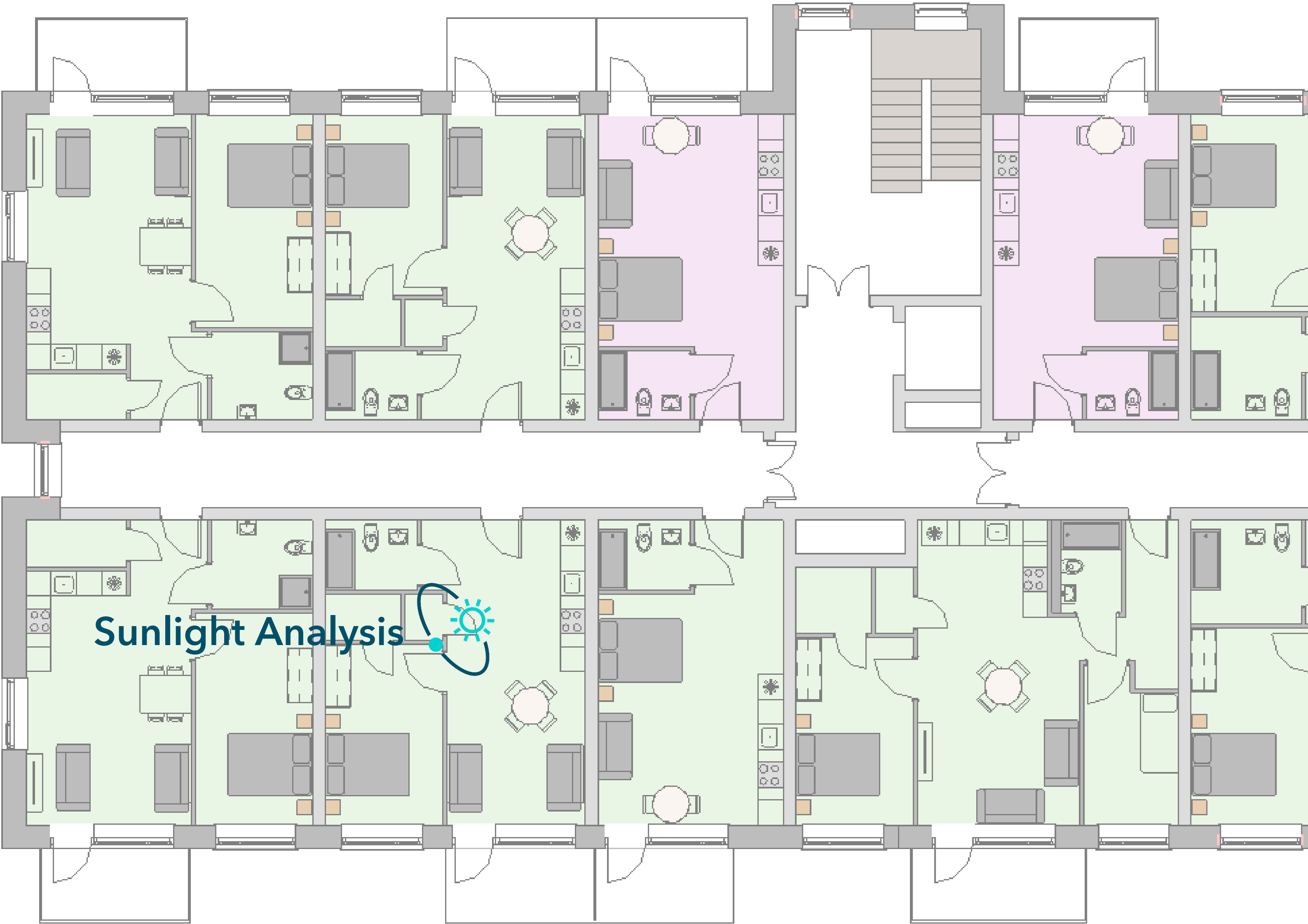
3. Aspect

In addition to their private amenity space, the failing rooms have direct aspect out onto a well-lit landscaped communal or public open space providing an excellent view from the KLD space.

4. Open Space

The proposed development includes the provision of a large quantum of **1.91 Ha** of public open space, exceeding the requirement (see CSR Landscape Design Statement for details) meaning that each of the units had easy access to quality public open space provision.

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Sunlight Analysis

7. Sunlight Analysis

7.1. 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
- at habitable room, preferably a main living room, can receive a total of a least 1.5 hours of sunlight on 21st 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 Guide 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.”

The analysis was undertaken for each unit of the proposed development to determine the exposure to sunlight that they will receive. It may be noted therefore that the tables and diagrams below indicate compliance for Exposure to Sunlight based on assessment of units as opposed to individual rooms, as is the case for Daylight analysis.

Figure 7.1.2 shows an example of how the results are illustrated, as presented within the report to indicate their Exposure to Sunlight classification in accordance with the BRE Guide / EN 17037 may be interpreted as follows:

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

Figure 7.1.1 – Exposure to Sunlight (ETS) Index Table



Figure 7.1.2 – ETS Results – Example

In the example above (Figure 7.1.2), most of the units were determined to receive Minimum to High range of Exposure to Sunlight and identified in green. One unit was determined non-compliant and identified in pink.

7.2. Results - Summary of ETS (Updated)

The tables below provide a breakdown of the compliance rates for each unit based on the Exposure to Sunlight (ETS) and an overall ETS. **91.6%** of the analysed units were determined to be compliant with the methodology utilised.

The apartment blocks (BA07, BA08, BA09) were updated for design changes, while the duplex blocks (BZ04, BZ08, BZ10, BZ16, BZ25) have not been updated as there was no design changes made to them.

Detailed results are included in Appendix D.

BA07	Number of units		
	Pass	Fail	Total
Level 0	6	0	6
Level 1	8	2	10
Level 2	9	1	10
Level 3	9	1	10
Level 4	9	0	9
Level 5	6	0	6
	47	4	51
	92%	8%	

Figure 7.2.1 - Updated ETS for BA07

BA08	Number of units		
	Pass	Fail	Total
Level 0	7	0	7
Level 1	8	4	12
Level 2	9	3	12
Level 3	10	2	12
Level 4	9	2	11
Level 5	4	2	6
	47	13	60
	78%	22%	

Figure 7.2.2 - Updated ETS for BA08

BA09	Number of units		
	Pass	Fail	Total
Level 1	12	0	12
Level 2	12	0	12
Level 3	12	0	12
Level 4	8	0	8
	44	0	44
	100%	0%	

Figure 7.2.3 - Updated ETS for BA09

BZ04	Number of units		
	Pass	Fail	Total
Level 0	5	0	5
Level 1	5	0	5
Level 2	0	0	0
	10	0	10
	100%	0%	

Figure 7.2.4 - ETS for BZ04

BZ08	Number of units		
	Pass	Fail	Total
Level 0	2	0	2
Level 1	0	0	0
Level 2	2	0	2
	4	0	4
	100%	0%	

Figure 7.2.5 - ETS for BZ08

BZ10	Number of units		
	Pass	Fail	Total
Level 0	6	0	6
Level 1	0	0	0
Level 2	3	0	3
	9	0	9
	100%	0%	

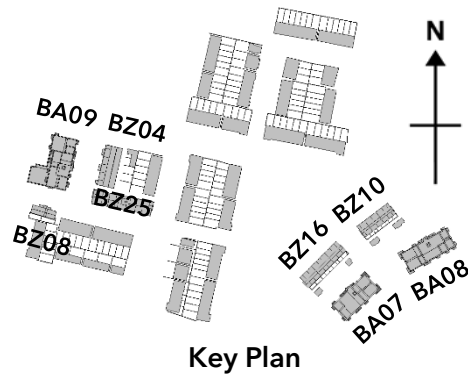
Figure 7.2.6 - ETS for BZ10

BZ16	Number of units		
	Pass	Fail	Total
Level 0	8	0	8
Level 1	0	0	0
Level 2	4	0	4
	12	0	12
	100%	0%	

Figure 7.2.7 - ETS for BZ16

BZ25	Number of units		
	Pass	Fail	Total
Level 0	8	0	8
Level 1	0	0	0
Level 2	4	0	4
	12	0	12
	100%	0%	

Figure 7.2.8 - ETS for BZ25



Summary	Number of units		
	Pass	Fail	Total
BA07	47	4	51
BA08	47	13	60
BA09	44	0	44
BZ04	10	0	10
BZ08	4	0	4
BZ10	9	0	9
BZ16	12	0	12
BZ25	12	0	12
	185	17	202
	91.6%	8.4%	

Figure 7.2.9 - Overall ETS for All Blocks

7.3. ETS Compensatory Measures (Updated)

The Building Height Guidelines state the following:

“Where a proposal may not be able to fully meet all 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, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution.”

The Apartment Guidelines state the following:

Minimum overall apartment floor areas

Studio	32 sq.m	(n/a) ^a
One bedroom	45 sq.m	(38 sq.m) ^a
Two bedrooms (3 person)	63 sq.m	(55 sq.m) ^a
Two bedrooms (4 person)	73 sq.m	
Three bedrooms (4 person)	76 sq.m	(70 sq.m) ^a
Three bedrooms (5 person)	90 sq.m	

^a Figures in brackets refer to 1995 Guidelines

Minimum recommended floor areas for private amenity space, where provided

Studio	4 sq.m
One bedroom	5 sq.m
Two bedrooms (3 person)	6 sq.m
Two bedrooms (4 person)	7 sq.m
Three bedrooms (4 person)	7 sq.m
Three bedrooms (5 person)	9 sq.m

Compensatory Design Solutions

Where units are determined to not achieve the quantitative assessment for daylight, they will be/are identified, and compensatory measures are provided. The compensatory measures look to determine a balance between the spaces with reduced sunlight by identifying how other metrics for sunlight and/or the unit’s aspects or development design can compensate for this reduction in sunlight.

It is proposed that the following compensatory measures are applied in accordance with the requirements of the Building Height Guidelines and the Apartment Guidelines.

1. Daylight

Where a unit is below the ETS target, the rooms within have the benefit of exceeding the daylight requirement. Therefore, whilst the unit will be found to be non-compliant for sunlight, the unit will achieve above the requisite daylight availability.

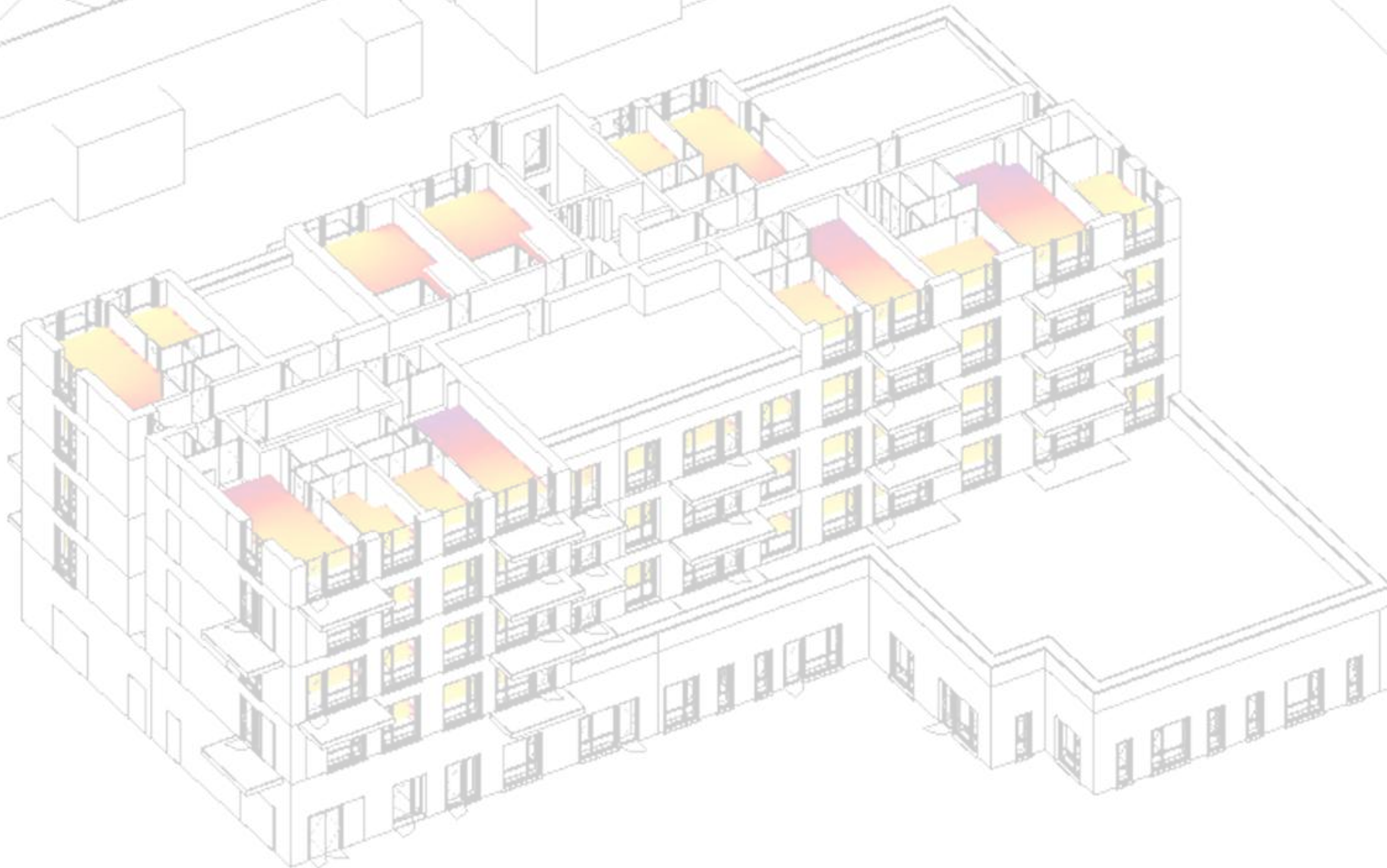
2. Aspect

In addition to their private amenity space, a number of rooms have direct aspect out onto a well-lit landscaped communal or public open space, providing an excellent view from the KLD space.

3. Open Space

The proposed development includes the provision of a large quantum of **1.91 Ha** of public open space, exceeding the requirement (see CSR Landscape Design Statement for details) meaning that each of the units had easy access to quality public open space provision.

Appendix A - Vertical Sky Component Results (VSC)



Results – VSC for 61 The Priory

The table/s below present/s the VSC (Daylight) results for the assessed windows on the listed neighbouring dwellings in Section 4.2.
The analysis determined that the daylight (VSC) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	VSC Existing (%)	VSC Proposed (%)	Proposed/ Existing	Criterion 1 VSC Proposed ≥ 27%	Criterion 2 VSC Proposed ≥ 80% of VSC Existing	OVERALL COMPLIANCE
61 The Priory L00	30.0	25.9	0.87	No	Yes	Pass
61 The Priory L01	38.7	33.7	0.88	Yes	Yes	Pass

Figure A.1 – VSC Results for 61 The Priory

Results – VSC for 64 & 65 Priory Wood

The table/s below present/s the VSC (Daylight) results for the assessed windows on the listed neighbouring dwellings in Section 4.2.
The analysis determined that the daylight (VSC) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	VSC Existing (%)	VSC Proposed (%)	Proposed/ Existing	Criterion 1 VSC Proposed ≥ 27%	Criterion 2 VSC Proposed ≥ 80% of VSC Existing	OVERALL COMPLIANCE
64 Priory Wood L00 1	31.6	31.6	1.00	Yes	Yes	Pass
64 Priory Wood L00 2	22.3	22.3	1.00	No	Yes	Pass
65 Priory Wood L00 1	33.1	32.6	0.99	Yes	Yes	Pass
65 Priory Wood L00 2	23.4	23.0	0.99	No	Yes	Pass
64 Priory Wood L01 1	37.4	36.7	0.99	Yes	Yes	Pass
64 Priory Wood L01 2	37.5	36.8	0.99	Yes	Yes	Pass
65 Priory Wood L01 1	37.8	36.9	0.98	Yes	Yes	Pass
65 Priory Wood L01 2	37.7	36.8	0.98	Yes	Yes	Pass
65 Priory Wood L01 3	38.9	36.0	0.93	Yes	Yes	Pass

Figure A.2 – VSC Results for 64 & 65 Priory Wood

Results – VSC for 80-87 Priory Wood L00

The table/s below present/s the VSC (Daylight) results for the assessed windows on the listed neighbouring dwellings in Section 4.2.
The analysis determined that the daylight (VSC) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	VSC Existing (%)	VSC Proposed (%)	Proposed/ Existing	Criterion 1 VSC Proposed ≥ 27%	Criterion 2 VSC Proposed ≥ 80% of VSC Existing	OVERALL COMPLIANCE
80 Priory Wood L00 1	34.7	32.5	0.94	Yes	Yes	Pass
80 Priory Wood L00 2	27.7	27.2	0.99	Yes	Yes	Pass
80 Priory Wood L00 2	23.6	23.1	0.99	No	Yes	Pass
81 Priory Wood L00 1	34.0	31.8	0.94	Yes	Yes	Pass
81 Priory Wood L00 2	23.7	21.8	0.92	No	Yes	Pass
81 Priory Wood L00 2	27.6	25.9	0.94	No	Yes	Pass
82 Priory Wood L00 1	33.5	30.6	0.92	Yes	Yes	Pass
82 Priory Wood L00 2	27.3	26.0	0.96	No	Yes	Pass
82 Priory Wood L00 2	23.5	22.5	0.96	No	Yes	Pass
83 Priory Wood L00 1	33.7	31.2	0.93	Yes	Yes	Pass
83 Priory Wood L00 2	22.9	21.2	0.93	No	Yes	Pass
83 Priory Wood L00 2	27.2	25.3	0.93	No	Yes	Pass
84 Priory Wood L00 1	33.9	31.2	0.93	Yes	Yes	Pass
84 Priory Wood L00 2	27.9	26.7	0.96	No	Yes	Pass
84 Priory Wood L00 2	23.8	23.0	0.97	No	Yes	Pass
85 Priory Wood L00 1	33.8	31.3	0.93	Yes	Yes	Pass
85 Priory Wood L00 2	23.2	21.7	0.94	No	Yes	Pass
85 Priory Wood L00 2	27.2	25.7	0.95	No	Yes	Pass
86 Priory Wood L00 1	34.1	31.9	0.94	Yes	Yes	Pass
86 Priory Wood L00 2	27.9	26.1	0.94	No	Yes	Pass
86 Priory Wood L00 2	24.2	22.9	0.95	No	Yes	Pass
87 Priory Wood L00 1	32.8	30.5	0.94	Yes	Yes	Pass
87 Priory Wood L00 2	22.8	21.4	0.94	No	Yes	Pass
87 Priory Wood L00 2	27.0	25.6	0.95	No	Yes	Pass

Figure A.3 – VSC Results for 80-87 Priory Wood L00

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Results – VSC for 80-87 Priory Wood L01

The table/s below present/s the VSC (Daylight) results for the assessed windows on the listed neighbouring dwellings in Section 4.2.
The analysis determined that the daylight (VSC) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	VSC Existing (%)	VSC Proposed (%)	Proposed/ Existing	Criterion 1 VSC Proposed ≥ 27%	Criterion 2 VSC Proposed ≥ 80% of VSC Existing	OVERALL COMPLIANCE
80 Priory Wood L01 1	38.6	35.8	0.93	Yes	Yes	Pass
80 Priory Wood L01 2	38.6	35.8	0.93	Yes	Yes	Pass
81 Priory Wood L01 1	38.7	35.4	0.92	Yes	Yes	Pass
81 Priory Wood L01 2	38.6	35.6	0.93	Yes	Yes	Pass
81 Priory Wood L01 3	23.4	23.2	1.00	No	Yes	Pass
82 Priory Wood L01 1	38.6	35.1	0.91	Yes	Yes	Pass
82 Priory Wood L01 2	38.6	34.9	0.91	Yes	Yes	Pass
83 Priory Wood L01 1	38.6	35.3	0.92	Yes	Yes	Pass
83 Priory Wood L01 2	38.6	35.1	0.91	Yes	Yes	Pass
83 Priory Wood L01 3	23.7	23.5	1.00	No	Yes	Pass
84 Priory Wood L01 1	38.6	35.3	0.92	Yes	Yes	Pass
84 Priory Wood L01 2	38.7	35.1	0.91	Yes	Yes	Pass
85 Priory Wood L01 1	38.7	35.4	0.92	Yes	Yes	Pass
85 Priory Wood L01 2	38.6	35.3	0.92	Yes	Yes	Pass
85 Priory Wood L01 3	26.0	25.5	0.99	No	Yes	Pass
86 Priory Wood L01 1	38.6	35.3	0.92	Yes	Yes	Pass
86 Priory Wood L01 2	38.6	35.3	0.92	Yes	Yes	Pass
87 Priory Wood L01 1	38.6	35.5	0.92	Yes	Yes	Pass
87 Priory Wood L01 2	38.6	35.4	0.92	Yes	Yes	Pass
87 Priory Wood L01 3	39.0	38.1	0.98	Yes	Yes	Pass

Figure A.4 – VSC Results for 80-87 Priory Wood L00

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Results – VSC for Ballymastone Phase 2 BZ16 L00-01

The table/s below present/s the VSC (Daylight) results for the assessed windows on the listed neighbouring dwellings in Section 4.2.

The analysis determined that the daylight (VSC) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	VSC Existing (%)	VSC Proposed (%)	Proposed/ Existing	Criterion 1 VSC Proposed ≥ 27%	Criterion 2 VSC Proposed ≥ 80% of VSC Existing	OVERALL COMPLIANCE
Ballymastone1_BZ16_00_1	38.7	32.0	0.83	Yes	Yes	Pass
Ballymastone1_BZ16_02_1	38.9	35.5	0.92	Yes	Yes	Pass
Ballymastone1_BZ16_00_2	38.8	32.7	0.85	Yes	Yes	Pass
Ballymastone1_BZ16_00_3	38.7	37.3	0.97	Yes	Yes	Pass
Ballymastone1_BZ16_00_4	38.7	36.9	0.96	Yes	Yes	Pass
Ballymastone1_BZ16_00_5	38.7	37.0	0.96	Yes	Yes	Pass
Ballymastone1_BZ16_00_6	38.6	36.7	0.95	Yes	Yes	Pass
Ballymastone1_BZ16_00_7	38.6	36.6	0.95	Yes	Yes	Pass
Ballymastone1_BZ16_00_8	38.6	36.5	0.95	Yes	Yes	Pass
Ballymastone1_BZ16_00_9	38.5	36.4	0.95	Yes	Yes	Pass
Ballymastone1_BZ16_00_10	38.4	36.4	0.95	Yes	Yes	Pass
Ballymastone1_BZ16_00_11	38.4	36.5	0.95	Yes	Yes	Pass
Ballymastone1_BZ16_00_12	38.5	36.4	0.95	Yes	Yes	Pass
Ballymastone1_BZ16_01_2	38.9	33.9	0.87	Yes	Yes	Pass
Ballymastone1_BZ16_01_3	38.9	34.4	0.89	Yes	Yes	Pass
Ballymastone1_BZ16_01_4	38.7	37.8	0.98	Yes	Yes	Pass
Ballymastone1_BZ16_01_5	38.8	37.8	0.98	Yes	Yes	Pass
Ballymastone1_BZ16_01_6	38.8	37.7	0.98	Yes	Yes	Pass
Ballymastone1_BZ16_01_7	38.8	37.8	0.98	Yes	Yes	Pass
Ballymastone1_BZ16_01_8	38.8	37.7	0.98	Yes	Yes	Pass
Ballymastone1_BZ16_01_9	38.8	37.7	0.98	Yes	Yes	Pass
Ballymastone1_BZ16_01_10	38.7	37.7	0.98	Yes	Yes	Pass
Ballymastone1_BZ16_01_11	38.7	37.7	0.98	Yes	Yes	Pass
Ballymastone1_BZ16_01_12	38.7	37.7	0.98	Yes	Yes	Pass
Ballymastone1_BZ16_01_13	38.7	37.7	0.98	Yes	Yes	Pass
Ballymastone1_BZ16_01_14	38.7	37.6	0.98	Yes	Yes	Pass
Ballymastone1_BZ16_01_15	38.6	37.6	0.98	Yes	Yes	Pass
Ballymastone1_BZ16_01_16	38.7	37.8	0.98	Yes	Yes	Pass
Ballymastone1_BZ16_01_17	38.6	37.7	0.98	Yes	Yes	Pass

Figure A.5 – VSC Results for Ballymastone Phase 2 BZ16 L00-01

Results – VSC for Ballymastone Phase 2 BZ16 L02

The table/s below present/s the VSC (Daylight) results for the assessed windows on the listed neighbouring dwellings in Section 4.2.
The analysis determined that the daylight (VSC) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	VSC Existing (%)	VSC Proposed (%)	Proposed/ Existing	Criterion 1 VSC Proposed ≥ 27%	Criterion 2 VSC Proposed ≥ 80% of VSC Existing	OVERALL COMPLIANCE
Ballymastone1_BZ16_02_2	38.9	35.7	0.92	Yes	Yes	Pass
Ballymastone1_BZ16_02_3	38.9	36.1	0.93	Yes	Yes	Pass
Ballymastone1_BZ16_02_4	38.9	38.6	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_5	38.9	38.6	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_6	38.9	38.6	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_7	38.9	38.5	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_8	38.9	38.6	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_9	38.9	38.6	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_10	38.9	38.6	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_11	38.9	38.6	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_12	38.9	38.5	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_13	38.9	38.5	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_14	38.9	38.5	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_15	38.9	38.5	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_16	38.9	38.5	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_17	38.9	38.5	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_18	38.9	38.5	1.00	Yes	Yes	Pass
Ballymastone1_BZ16_02_19	38.9	38.5	1.00	Yes	Yes	Pass

Figure A.6 – VSC Results for Ballymastone Phase 2 BZ16 L02

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Results – VSC for Ballymastone Phase 2 BA06 L00

The table/s below present/s the VSC (Daylight) results for the assessed windows on the listed neighbouring dwellings in Section 4.2.
The analysis determined that the daylight (VSC) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	VSC Existing (%)	VSC Proposed (%)	Proposed/ Existing	Criterion 1 VSC Proposed ≥ 27%	Criterion 2 VSC Proposed ≥ 80% of VSC Existing	OVERALL COMPLIANCE
BA06 Phase 2 L00 1	38.7	28.9	0.75	Yes	No	Pass
BA06 Phase 2 L00 2	38.7	28.9	0.75	Yes	No	Pass
BA06 Phase 2 L00 3	38.7	28.5	0.74	Yes	No	Pass
BA06 Phase 2 L00 4	38.7	29.4	0.77	Yes	No	Pass
BA06 Phase 2 L00 5	38.7	29.6	0.77	Yes	No	Pass
BA06 Phase 2 L00 6	38.7	30.3	0.79	Yes	No	Pass
BA06 Phase 2 L00 7	33.1	31.9	0.97	Yes	Yes	Pass
BA06 Phase 2 L00 8	32.4	31.5	0.98	Yes	Yes	Pass
BA06 Phase 2 L00 9	32.4	31.6	0.98	Yes	Yes	Pass
BA06 Phase 2 L00 10	32.0	31.4	0.99	Yes	Yes	Pass
BA06 Phase 2 L00 11	28.7	28.6	1.00	Yes	Yes	Pass
BA06 Phase 2 L00 12	31.8	31.3	0.99	Yes	Yes	Pass
BA06 Phase 2 L00 13	31.7	31.4	0.99	Yes	Yes	Pass
BA06 Phase 2 L00 14	27.9	27.5	0.99	Yes	Yes	Pass
BA06 Phase 2 L00 15	32.4	32.1	1.00	Yes	Yes	Pass
BA06 Phase 2 L00 16	32.8	32.6	1.00	Yes	Yes	Pass
BA06 Phase 2 L00 17	33.2	33.0	1.00	Yes	Yes	Pass
BA06 Phase 2 L00 18	33.7	33.5	1.00	Yes	Yes	Pass
BA06 Phase 2 L00 19	34.2	33.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L00 20	34.7	34.3	1.00	Yes	Yes	Pass
BA06 Phase 2 L00 21	34.7	34.4	0.99	Yes	Yes	Pass
BA06 Phase 2 L00 22	34.8	34.4	0.99	Yes	Yes	Pass
BA06 Phase 2 L00 23	34.9	34.5	0.99	Yes	Yes	Pass

Figure A.7 – VSC Results for Ballymastone Phase 2 BA06 L00

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Results – VSC for Ballymastone Phase 2 BA06 L01

The table/s below present/s the VSC (Daylight) results for the assessed windows on the listed neighbouring dwellings in Section 4.2.
The analysis determined that the daylight (VSC) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	VSC Existing (%)	VSC Proposed (%)	Proposed/ Existing	Criterion 1 VSC Proposed ≥ 27%	Criterion 2 VSC Proposed ≥ 80% of VSC Existing	OVERALL COMPLIANCE
BA06 Phase 2 L01 1	38.9	30.9	0.80	Yes	Yes	Pass
BA06 Phase 2 L01 2	38.9	30.4	0.79	Yes	No	Pass
BA06 Phase 2 L01 3	38.9	30.7	0.80	Yes	Yes	Pass
BA06 Phase 2 L01 4	38.9	31.1	0.81	Yes	Yes	Pass
BA06 Phase 2 L01 5	38.9	31.7	0.82	Yes	Yes	Pass
BA06 Phase 2 L01 6	38.8	32.2	0.83	Yes	Yes	Pass
BA06 Phase 2 L01 7	35.3	34.6	0.99	Yes	Yes	Pass
BA06 Phase 2 L01 8	35.0	34.4	0.99	Yes	Yes	Pass
BA06 Phase 2 L01 9	34.8	34.4	0.99	Yes	Yes	Pass
BA06 Phase 2 L01 10	34.7	34.3	0.99	Yes	Yes	Pass
BA06 Phase 2 L01 11	31.5	31.5	1.00	Yes	Yes	Pass
BA06 Phase 2 L01 12	34.5	34.2	1.00	Yes	Yes	Pass
BA06 Phase 2 L01 13	34.4	34.1	1.00	Yes	Yes	Pass
BA06 Phase 2 L01 14	30.3	30.2	1.00	Yes	Yes	Pass
BA06 Phase 2 L01 15	35.2	35.1	1.00	Yes	Yes	Pass
BA06 Phase 2 L01 16	35.4	35.3	1.00	Yes	Yes	Pass
BA06 Phase 2 L01 17	35.6	35.5	1.00	Yes	Yes	Pass
BA06 Phase 2 L01 18	35.9	35.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L01 19	36.2	36.1	1.00	Yes	Yes	Pass
BA06 Phase 2 L01 20	36.4	36.2	1.00	Yes	Yes	Pass
BA06 Phase 2 L01 21	36.4	36.2	1.00	Yes	Yes	Pass
BA06 Phase 2 L01 22	36.7	36.4	1.00	Yes	Yes	Pass
BA06 Phase 2 L01 23	36.7	36.5	1.00	Yes	Yes	Pass

Figure A.8 – VSC Results for Ballymastone Phase 2 BA06 L01

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Results – VSC for Ballymastone Phase 2 BA06 L02

The table/s below present/s the VSC (Daylight) results for the assessed windows on the listed neighbouring dwellings in Section 4.2.
The analysis determined that the daylight (VSC) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	VSC Existing (%)	VSC Proposed (%)	Proposed/ Existing	Criterion 1 VSC Proposed ≥ 27%	Criterion 2 VSC Proposed ≥ 80% of VSC Existing	OVERALL COMPLIANCE
BA06 Phase 2 L02 1	38.9	32.9	0.85	Yes	Yes	Pass
BA06 Phase 2 L02 2	38.9	32.6	0.84	Yes	Yes	Pass
BA06 Phase 2 L02 3	38.9	32.7	0.85	Yes	Yes	Pass
BA06 Phase 2 L02 4	38.9	33.5	0.87	Yes	Yes	Pass
BA06 Phase 2 L02 5	38.9	33.7	0.87	Yes	Yes	Pass
BA06 Phase 2 L02 6	38.9	34.3	0.89	Yes	Yes	Pass
BA06 Phase 2 L02 7	37.2	36.8	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 8	36.9	36.7	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 9	36.9	36.7	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 10	36.8	36.7	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 11	33.3	33.3	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 12	36.9	36.8	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 13	36.8	36.7	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 14	32.6	32.5	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 15	37.4	37.3	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 16	37.6	37.5	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 17	37.7	37.6	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 18	37.7	37.7	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 19	37.9	37.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 20	38.0	37.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 21	38.0	37.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 22	38.1	37.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L02 23	38.1	38.0	1.00	Yes	Yes	Pass

Figure A.9 – VSC Results for Ballymastone Phase 2 BA06 L02

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Results – VSC for Ballymastone Phase 2 BA06 L03

The table/s below present/s the VSC (Daylight) results for the assessed windows on the listed neighbouring dwellings in Section 4.2.
The analysis determined that the daylight (VSC) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	VSC Existing (%)	VSC Proposed (%)	Proposed/ Existing	Criterion 1 VSC Proposed ≥ 27%	Criterion 2 VSC Proposed ≥ 80% of VSC Existing	OVERALL COMPLIANCE
BA06 Phase 2 L03 1	38.9	34.9	0.90	Yes	Yes	Pass
BA06 Phase 2 L03 2	38.9	34.5	0.89	Yes	Yes	Pass
BA06 Phase 2 L03 3	38.9	34.6	0.89	Yes	Yes	Pass
BA06 Phase 2 L03 4	38.9	35.3	0.91	Yes	Yes	Pass
BA06 Phase 2 L03 5	38.9	35.4	0.91	Yes	Yes	Pass
BA06 Phase 2 L03 6	38.9	36.1	0.93	Yes	Yes	Pass
BA06 Phase 2 L03 7	38.5	38.4	1.00	Yes	Yes	Pass
BA06 Phase 2 L03 8	38.5	38.4	1.00	Yes	Yes	Pass
BA06 Phase 2 L03 9	38.4	38.4	1.00	Yes	Yes	Pass
BA06 Phase 2 L03 10	38.4	38.4	1.00	Yes	Yes	Pass
BA06 Phase 2 L03 11	34.9	34.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L03 12	37.8	37.8	1.00	Yes	Yes	Pass
BA06 Phase 2 L03 13	37.8	37.7	1.00	Yes	Yes	Pass
BA06 Phase 2 L03 14	33.5	33.4	1.00	Yes	Yes	Pass
BA06 Phase 2 L03 15	38.5	38.4	1.00	Yes	Yes	Pass
BA06 Phase 2 L03 16	38.5	38.5	1.00	Yes	Yes	Pass
BA06 Phase 2 L03 17	38.5	38.5	1.00	Yes	Yes	Pass
BA06 Phase 2 L03 18	38.6	38.6	1.00	Yes	Yes	Pass
BA06 Phase 2 L03 19	38.6	38.6	1.00	Yes	Yes	Pass

Figure A.10 – VSC Results for Ballymastone Phase 2 BA06 L03

Results – VSC for Ballymastone Phase 2 BA06 L04

The table/s below present/s the VSC (Daylight) results for the assessed windows on the listed neighbouring dwellings in Section 4.2.
The analysis determined that the daylight (VSC) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	VSC Existing (%)	VSC Proposed (%)	Proposed/ Existing	Criterion 1 VSC Proposed ≥ 27%	Criterion 2 VSC Proposed ≥ 80% of VSC Existing	OVERALL COMPLIANCE
BA06 Phase 2 L04 1	38.9	36.6	0.95	Yes	Yes	Pass
BA06 Phase 2 L04 2	38.9	36.5	0.94	Yes	Yes	Pass
BA06 Phase 2 L04 3	38.9	36.5	0.94	Yes	Yes	Pass
BA06 Phase 2 L04 4	38.9	36.8	0.95	Yes	Yes	Pass
BA06 Phase 2 L04 5	38.9	37.3	0.96	Yes	Yes	Pass
BA06 Phase 2 L04 6	38.9	37.4	0.97	Yes	Yes	Pass
BA06 Phase 2 L04 7	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L04 8	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L04 9	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L04 10	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L04 11	35.4	35.4	1.00	Yes	Yes	Pass
BA06 Phase 2 L04 12	38.4	38.4	1.00	Yes	Yes	Pass
BA06 Phase 2 L04 13	38.3	38.3	1.00	Yes	Yes	Pass
BA06 Phase 2 L04 14	34.0	34.0	1.00	Yes	Yes	Pass
BA06 Phase 2 L04 15	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L04 16	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L04 17	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L04 18	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L04 19	38.9	38.9	1.00	Yes	Yes	Pass

Figure A.11 – VSC Results for Ballymastone Phase 2 BA06 L04

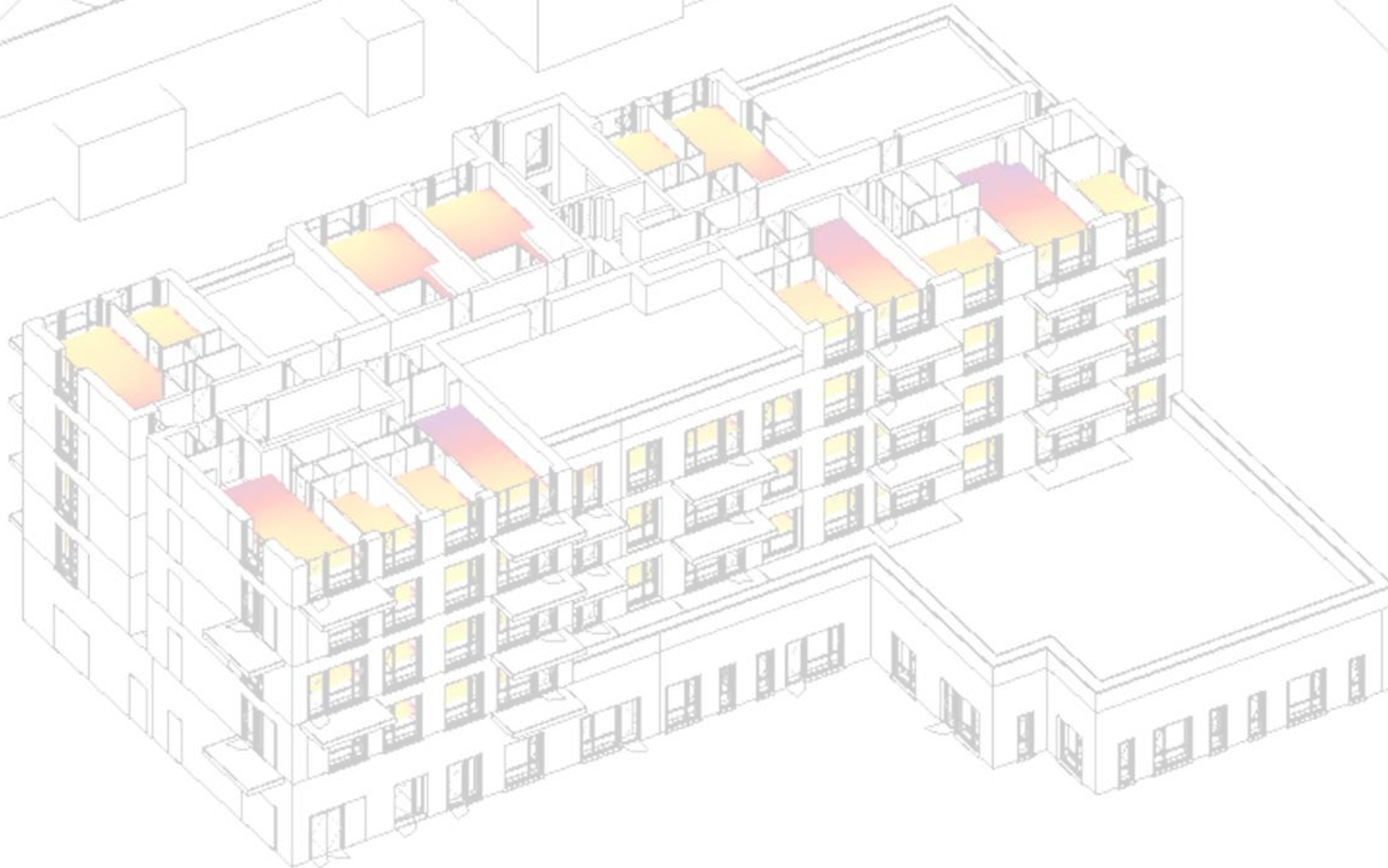
Results – VSC for Ballymastone Phase 2 BA06 L05

The table/s below present/s the VSC (Daylight) results for the assessed windows on the listed neighbouring dwellings in Section 4.2.
The analysis determined that the daylight (VSC) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	VSC Existing (%)	VSC Proposed (%)	Proposed/ Existing	Criterion 1 VSC Proposed ≥ 27%	Criterion 2 VSC Proposed ≥ 80% of VSC Existing	OVERALL COMPLIANCE
BA06 Phase 2 L05 1	38.9	38.3	0.99	Yes	Yes	Pass
BA06 Phase 2 L05 2	38.9	38.2	0.99	Yes	Yes	Pass
BA06 Phase 2 L05 3	38.9	38.3	0.99	Yes	Yes	Pass
BA06 Phase 2 L05 4	38.9	38.3	0.99	Yes	Yes	Pass
BA06 Phase 2 L05 5	38.9	38.3	0.99	Yes	Yes	Pass
BA06 Phase 2 L05 6	38.9	38.4	0.99	Yes	Yes	Pass
BA06 Phase 2 L05 7	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L05 8	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L05 9	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L05 10	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L05 12	34.4	34.4	1.00	Yes	Yes	Pass
BA06 Phase 2 L05 15	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L05 16	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L05 17	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L05 18	38.9	38.9	1.00	Yes	Yes	Pass
BA06 Phase 2 L05 19	38.9	38.9	1.00	Yes	Yes	Pass

Figure A.12 – VSC Results for Ballymastone Phase 2 BA06 L05

Appendix B - Annual Probable Sunlight Hours (APSH)



Results – APSH for 61 The Priory

The table/s below present/s the APSH (sunlight) results for the assessed windows in the applicable neighbouring dwellings listed in Section 4.2.

The analysis determined that sunlight (APSH) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	Annual Existing (%)	Annual Proposed (%)	Annual Proposed/ Existing (%)	Winter Existing (%)	Winter Proposed (%)	Winter Proposed/ Existing (%)	Total Potential Annual Sunny Hours	Max Allowable Annual Reduction	Actual Annual Reduction	Criterion 1: Annual ≥ 25% Or ≥ 80% of Existing	Criterion 2: Winter ≥ 5% Or ≥ 80% of Existing	Criterion 3: Annual reduction ≤ 4%	OVERALL COMPLIANCE
61 The Priory L00	71	64	0.90	18	13	0.74	1832	73	128	Yes	Yes	No	Pass
61 The Priory L01	85	78	0.92	32	25	0.78	1832	73	128	Yes	Yes	No	Pass

Figure B.1 – APSH Results for 61 The Priory

Results – APSH for 64 & 65 Priory Wood

The table/s below present/s the APSH (sunlight) results for the assessed windows in the applicable neighbouring dwellings listed in Section 4.2.

The analysis determined that sunlight (APSH) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	Annual Existing (%)	Annual Proposed (%)	Annual Proposed/ Existing (%)	Winter Existing (%)	Winter Proposed (%)	Winter Proposed/ Existing (%)	Total Potential Annual Sunny Hours	Max Allowable Annual Reduction	Actual Annual Reduction	Criterion 1: Annual ≥ 25% Or ≥ 80% of Existing	Criterion 2: Winter ≥ 5% Or ≥ 80% of Existing	Criterion 3: Annual reduction ≤ 4%	OVERALL COMPLIANCE
64 Priory Wood L00 1	71	71	1.00	21	21	1.00	1832	73	0	Yes	Yes	Yes	Pass
64 Priory Wood L00 2	55	55	1.00	20	20	1.00	1832	73	0	Yes	Yes	Yes	Pass
65 Priory Wood L00 1	72	72	0.99	22	22	1.00	1832	73	0	Yes	Yes	Yes	Pass
65 Priory Wood L00 2	41	41	1.00	11	11	1.00	1832	73	0	Yes	Yes	Yes	Pass
64 Priory Wood L01 1	82	81	0.99	31	30	0.98	1832	73	18	Yes	Yes	Yes	Pass
64 Priory Wood L01 2	82	82	0.99	31	30	0.98	1832	73	0	Yes	Yes	Yes	Pass
65 Priory Wood L01 1	83	82	0.99	31	30	0.99	1832	73	18	Yes	Yes	Yes	Pass
65 Priory Wood L01 2	83	82	0.99	31	30	0.98	1832	73	18	Yes	Yes	Yes	Pass

Figure B.2 – APSH Results for 64 & 65 Priory Wood

Results - APSH for 80-87 Priory Wood L00

The table/s below present/s the APSH (sunlight) results for the assessed windows in the applicable neighbouring dwellings listed in Section 4.2.

The analysis determined that sunlight (APSH) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	Annual Existing (%)	Annual Proposed (%)	Annual Proposed/ Existing (%)	Winter Existing (%)	Winter Proposed (%)	Winter Proposed/ Existing (%)	Total Potential Annual Sunny Hours	Max Allowable Annual Reduction	Actual Annual Reduction	Criterion 1: Annual ≥ 25% Or ≥ 80% of Existing	Criterion 2: Winter ≥ 5% Or ≥ 80% of Existing	Criterion 3: Annual reduction ≤ 4%	OVERALL COMPLIANCE
80 Priory Wood L00 1	76	72	0.95	24	20	0.85	1832	73	73	Yes	Yes	No	Pass
80 Priory Wood L00 2	54	53	0.98	14	13	0.91	1832	73	18	Yes	Yes	Yes	Pass
80 Priory Wood L00 2	42	41	0.98	11	10	0.94	1832	73	18	Yes	Yes	Yes	Pass
81 Priory Wood L00 1	74	70	0.95	22	19	0.85	1832	73	73	Yes	Yes	No	Pass
81 Priory Wood L00 2	58	54	0.92	19	14	0.76	1832	73	73	Yes	Yes	Yes	Pass
81 Priory Wood L00 2	64	60	0.93	20	16	0.79	1832	73	73	Yes	Yes	No	Pass
82 Priory Wood L00 1	75	70	0.93	24	19	0.79	1832	73	92	Yes	Yes	No	Pass
82 Priory Wood L00 2	54	51	0.95	14	11	0.81	1832	73	55	Yes	Yes	Yes	Pass
82 Priory Wood L00 2	42	40	0.95	11	9	0.81	1832	73	37	Yes	Yes	Yes	Pass
83 Priory Wood L00 1	72	68	0.94	22	17	0.80	1832	73	73	Yes	Yes	Yes	Pass
83 Priory Wood L00 2	57	52	0.90	19	14	0.71	1832	73	92	Yes	Yes	No	Pass
83 Priory Wood L00 2	63	58	0.92	20	15	0.74	1832	73	92	Yes	Yes	No	Pass
84 Priory Wood L00 1	76	72	0.94	24	19	0.81	1832	73	73	Yes	Yes	No	Pass
84 Priory Wood L00 2	56	54	0.97	15	14	0.89	1832	73	37	Yes	Yes	Yes	Pass
84 Priory Wood L00 2	44	43	0.98	12	11	0.93	1832	73	18	Yes	Yes	Yes	Pass
85 Priory Wood L00 1	76	72	0.94	24	20	0.82	1832	73	73	Yes	Yes	No	Pass
85 Priory Wood L00 2	57	53	0.93	19	16	0.80	1832	73	73	Yes	Yes	Yes	Pass
85 Priory Wood L00 2	64	60	0.94	20	16	0.80	1832	73	73	Yes	Yes	No	Pass
86 Priory Wood L00 1	79	75	0.94	25	21	0.82	1832	73	73	Yes	Yes	No	Pass
86 Priory Wood L00 2	58	54	0.94	16	13	0.79	1832	73	73	Yes	Yes	Yes	Pass
86 Priory Wood L00 2	50	46	0.93	14	11	0.77	1832	73	73	Yes	Yes	Yes	Pass
87 Priory Wood L00 1	72	69	0.95	21	18	0.84	1832	73	55	Yes	Yes	Yes	Pass
87 Priory Wood L00 2	53	50	0.93	17	13	0.79	1832	73	55	Yes	Yes	Yes	Pass
87 Priory Wood L00 2	62	58	0.94	19	15	0.78	1832	73	73	Yes	Yes	No	Pass

Figure B.3 - APSH Results for 80-87 Priory Wood L00

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Results - APSH for 80-87 Priory Wood L01

The table/s below present/s the APSH (sunlight) results for the assessed windows in the applicable neighbouring dwellings listed in Section 4.2.

The analysis determined that sunlight (APSH) to all assessed neighbouring dwellings will not be adversely impacted and comply with the BRE Guidelines.

Room Ref	Annual Existing (%)	Annual Proposed (%)	Annual Proposed/ Existing (%)	Winter Existing (%)	Winter Proposed (%)	Winter Proposed/ Existing (%)	Total Potential Annual Sunny Hours	Max Allowable Annual Reduction	Actual Annual Reduction	Criterion 1: Annual ≥ 25% Or ≥ 80% of Existing	Criterion 2: Winter ≥ 5% Or ≥ 80% of Existing	Criterion 3: Annual reduction ≤ 4%	OVERALL COMPLIANCE
80 Priory Wood L01 1	84	79	0.95	32	27	0.86	1832	73	92	Yes	Yes	No	Pass
80 Priory Wood L01 2	84	79	0.95	32	28	0.86	1832	73	92	Yes	Yes	No	Pass
81 Priory Wood L01 1	84	80	0.95	32	28	0.88	1832	73	73	Yes	Yes	Yes	Pass
81 Priory Wood L01 2	84	80	0.96	32	28	0.88	1832	73	73	Yes	Yes	Yes	Pass
81 Priory Wood L01 3	34	34	1.00	10	10	1.00	1832	73	0	Yes	Yes	Yes	Pass
82 Priory Wood L01 1	84	81	0.96	32	29	0.90	1832	73	55	Yes	Yes	Yes	Pass
82 Priory Wood L01 2	84	80	0.95	32	28	0.87	1832	73	73	Yes	Yes	Yes	Pass
83 Priory Wood L01 1	84	80	0.95	32	28	0.86	1832	73	73	Yes	Yes	Yes	Pass
83 Priory Wood L01 2	84	80	0.95	32	28	0.86	1832	73	73	Yes	Yes	Yes	Pass
83 Priory Wood L01 3	36	35	1.00	11	11	0.99	1832	73	18	Yes	Yes	Yes	Pass
84 Priory Wood L01 1	86	81	0.95	32	28	0.87	1832	73	92	Yes	Yes	No	Pass
84 Priory Wood L01 2	86	82	0.95	32	28	0.88	1832	73	73	Yes	Yes	No	Pass
85 Priory Wood L01 1	86	82	0.96	32	29	0.89	1832	73	73	Yes	Yes	No	Pass
85 Priory Wood L01 2	86	82	0.96	32	29	0.89	1832	73	73	Yes	Yes	No	Pass
85 Priory Wood L01 3	38	36	0.95	12	10	0.83	1832	73	37	Yes	Yes	Yes	Pass
86 Priory Wood L01 1	87	83	0.95	32	28	0.88	1832	73	73	Yes	Yes	No	Pass
86 Priory Wood L01 2	87	83	0.96	32	28	0.88	1832	73	73	Yes	Yes	No	Pass
87 Priory Wood L01 1	87	84	0.96	32	29	0.89	1832	73	55	Yes	Yes	Yes	Pass
87 Priory Wood L01 2	87	83	0.95	32	28	0.88	1832	73	73	Yes	Yes	No	Pass

Figure B.4 - APSH Results for 80-87 Priory Wood L01

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Appendix C - Spatial Daylight Autonomy (SDA) Results



Results - Summary of SDA (Updated)

The tables below provide a breakdown of the compliance rates for each room based on Spatial Daylight Autonomy (SDA) and an overall SDA. **99.6%** of the analysed rooms were determined to be compliant with the methodology utilised.

The apartment blocks (BA07, BA08, BA09) were updated for design changes, while the duplex blocks (BZ04, BZ08, BZ10, BZ16, BZ25) have not been updated as there was no design changes made to them.

BA07	Number of rooms		
	Pass	Fail	Total
Level 0	13	0	13
Level 1	19	1	20
Level 2	20	0	20
Level 3	20	0	20
Level 4	19	0	19
Level 5	11	0	11
	102	1	103
	99%	1%	

Figure C.2.1 - Updated SDA for BA07

BA08	Number of rooms		
	Pass	Fail	Total
Level 0	15	0	15
Level 1	24	0	24
Level 2	24	0	24
Level 3	24	0	24
Level 4	23	0	23
Level 5	12	0	12
	122	0	122
	100%	0%	

Figure C.2.2 - Updated SDA for BA08

BA09	Number of rooms		
	Pass	Fail	Total
Level 1	24	0	24
Level 2	24	0	24
Level 3	24	0	24
Level 4	15	0	15
	87	0	87
	100%	0%	

Figure C.2.3 - Updated SDA for BA09

BZ04	Number of rooms		
	Pass	Fail	Total
Level 0	15	0	15
Level 1	5	0	5
Level 2	15	0	15
	35	0	35
	100%	0%	

Figure C.2.4 - SDA for BZ04

BZ08	Number of rooms		
	Pass	Fail	Total
Level 0	2	0	2
Level 1	6	0	6
Level 2	4	0	4
	12	0	12
	100%	0%	

Figure C.2.5 - SDA for BZ08

BZ10	Number of rooms		
	Pass	Fail	Total
Level 0	12	0	12
Level 1	14	0	14
Level 2	9	0	9
	35	0	35
	100%	0%	

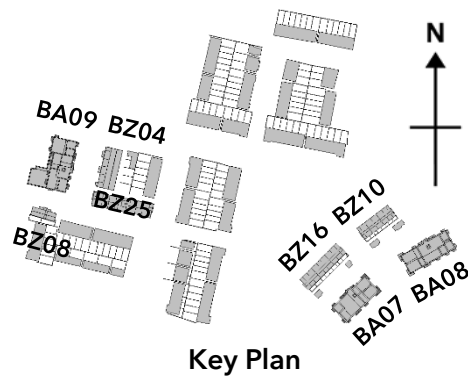
Figure C.2.6 - SDA for BZ10

BZ16	Number of rooms		
	Pass	Fail	Total
Level 0	16	0	16
Level 1	20	0	20
Level 2	14	0	14
	50	0	50
	100%	0%	

Figure C.2.7 - SDA for BZ16

BZ25	Number of rooms		
	Pass	Fail	Total
Level 0	15	1	16
Level 1	20	0	20
Level 2	14	0	14
	49	1	50
	98%	2%	

Figure C.2.8 - SDA for BZ25



Summary	Number of rooms		
	Pass	Fail	Total
BA07	102	1	103
BA08	122	0	122
BA09	87	0	87
BZ04	35	0	35
BZ08	12	0	12
BZ10	35	0	35
BZ16	50	0	50
BZ25	49	1	50
	492	2	494
	99.6%	0.4%	

Figure C.2.9 - Overall SDA for All Blocks

SDA Compensatory Measures (Updated)

The Building Height Guidelines state the following:

“Where a proposal may not be able to fully meet all 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, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution.”

The Apartment Guidelines state the following:

Minimum overall apartment floor areas

Studio	32 sq.m	(n/a) ^a
One bedroom	45 sq.m	(38 sq.m) ^a
Two bedrooms (3 person)	63 sq.m	(55 sq.m) ^a
Two bedrooms (4 person)	73 sq.m	
Three bedrooms (4 person)	76 sq.m	(70 sq.m) ^a
Three bedrooms (5 person)	90 sq.m	

^a Figures in brackets refer to 1995 Guidelines

Minimum recommended floor areas for private amenity space, where provided

Studio	4 sq.m
One bedroom	5 sq.m
Two bedrooms (3 person)	6 sq.m
Two bedrooms (4 person)	7 sq.m
Three bedrooms (4 person)	7 sq.m
Three bedrooms (5 person)	9 sq.m

Compensatory Design Solutions

Where units are determined to not achieve the quantitative assessment for daylight, they are identified, and compensatory measures are provided. The compensatory measures look to determine a balance between the spaces with reduced daylight by identifying how other metrics for daylight and/or the unit’s aspects or development design can compensate for this reduction in daylight.

It is proposed that the following compensatory measures are applied in accordance with the requirements of the Building Height Guidelines and the Apartment Guidelines.

1. Daylight Adjacency

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

2. Sunlight

Where a room is below the SDA target, the units have the benefit of receiving over 3 hours of sunlight (medium exposure). Therefore, whilst the room will be found to be non-compliant for daylight, the apartment unit will achieve above the requisite sunlight availability.

3. Aspect

In addition to their private amenity space, the failing rooms have direct aspect out onto a well-lit landscaped communal or public open space providing an excellent view from the KLD space.

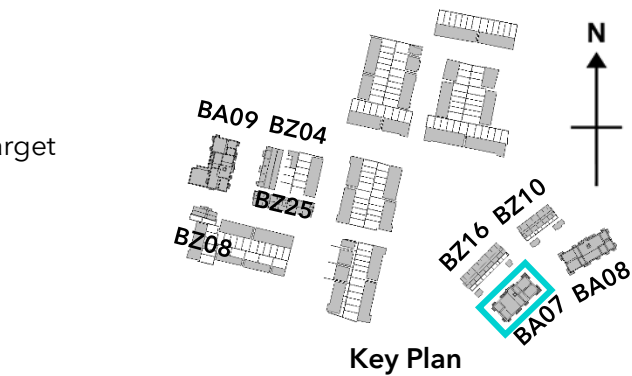
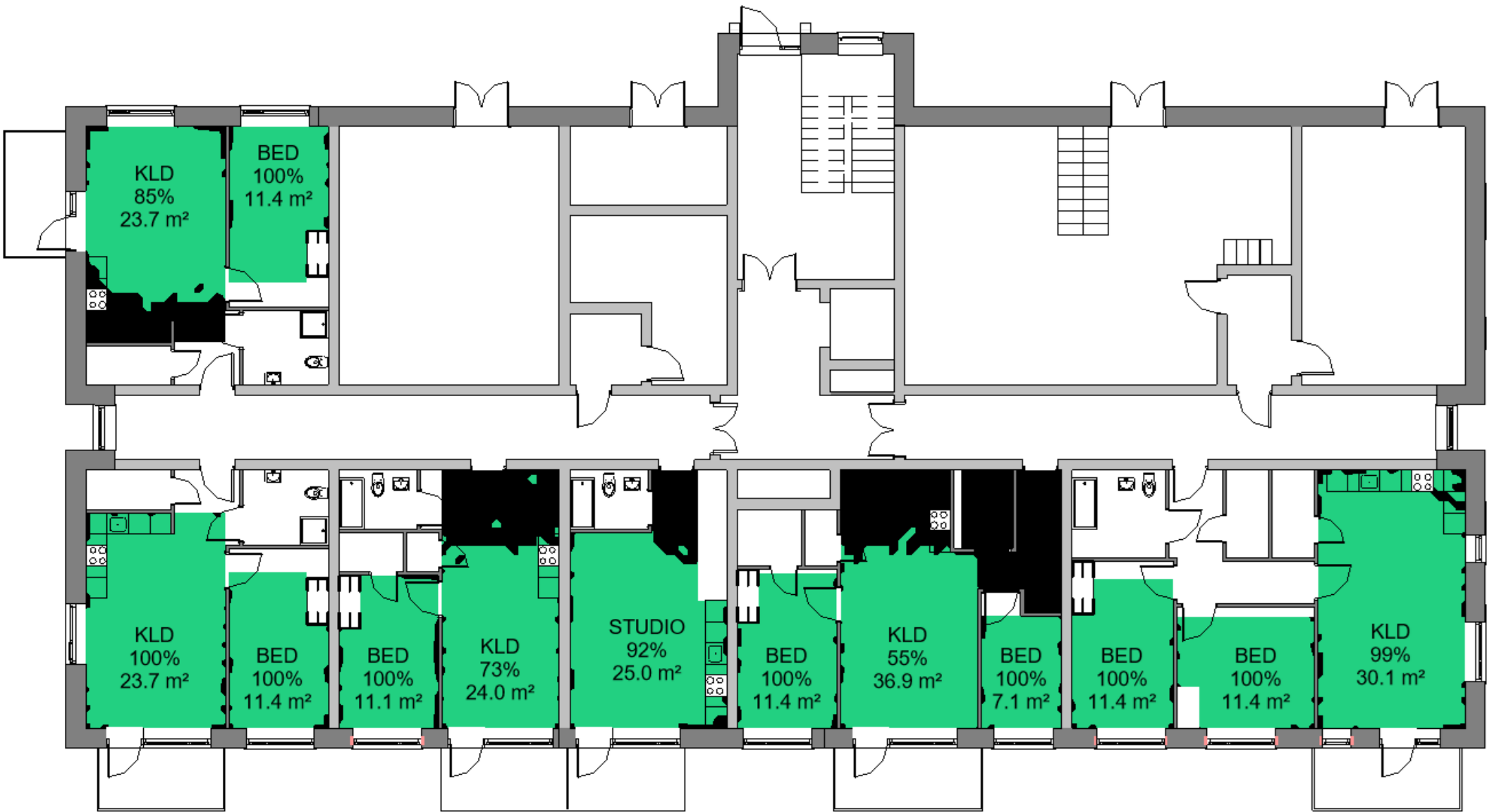
4. Open Space

The proposed development includes the provision of a large quantum of **1.91 Ha** of public open space, exceeding the requirement (see CSR Landscape Design Statement for details) meaning that each of the units had easy access to quality public open space provision.

BA07 (Updated)
SDA - BA07 Level 00

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



Compensatory Measures

1. Daylight Adjacency
2. Sunlight
3. Aspect
4. Open Space

Passed-Failed

SDA Targets

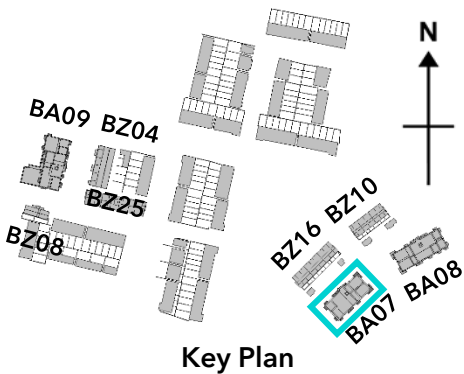
Bedrooms	>100 Lux
Living Areas	>150 Lux
K/L/D / Kitchen	>200 Lux

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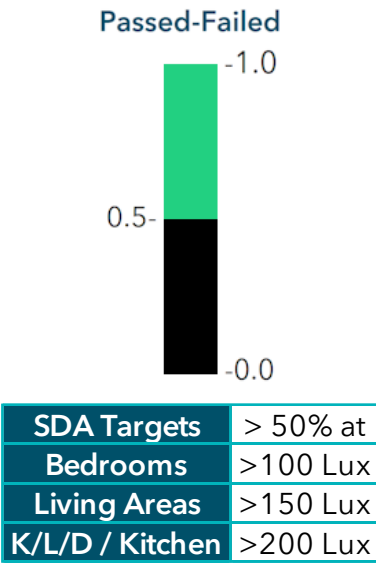
SDA - BA07 Level 01

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- Compensatory Measures**
- 1. Daylight Adjacency
 - 2. Sunlight
 - 3. Aspect
 - 4. Open Space

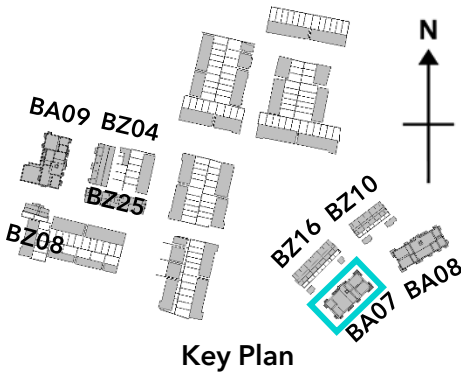


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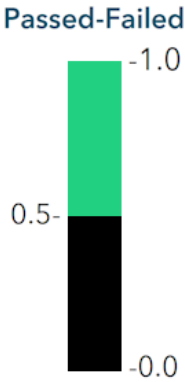
SDA - BA07 Level 02

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



- Compensatory Measures**
- 1. Daylight Adjacency
 - 2. Sunlight
 - 3. Aspect
 - 4. Open Space



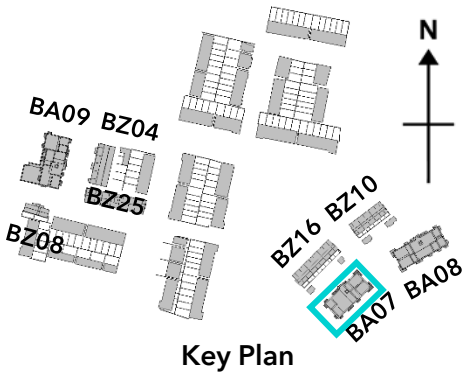
SDA Targets	> 50% at
Bedrooms	>100 Lux
Living Areas	>150 Lux
K/L/D / Kitchen	>200 Lux

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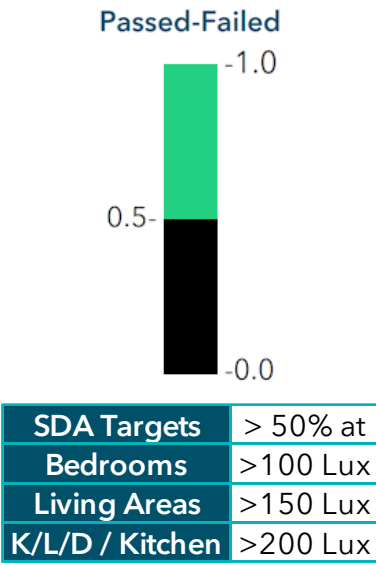
SDA - BA07 Level 03

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- Compensatory Measures**
- 1. Daylight Adjacency
 - 2. Sunlight
 - 3. Aspect
 - 4. Open Space

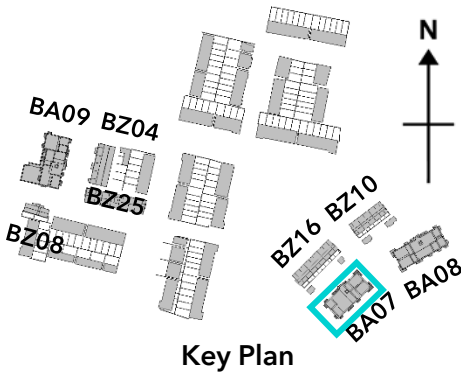


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SDA - BA07 Level 04

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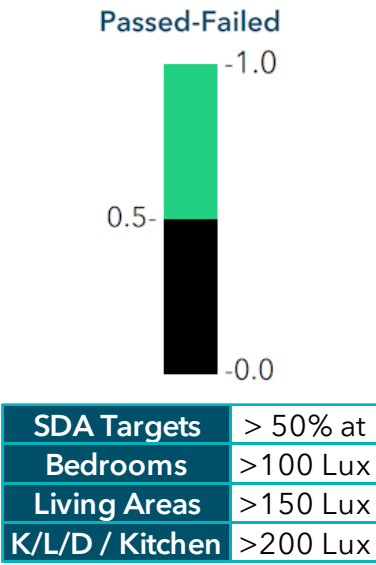
Compensatory Measures

1. Daylight Adjacency

2. Sunlight

3. Aspect

4. Open Space

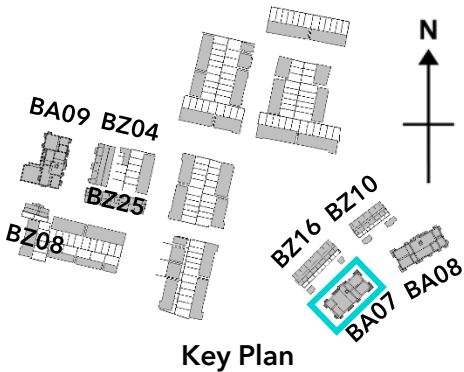


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SDA - BA07 Level 05

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Compensatory Measures

- 1. Daylight Adjacency
- 2. Sunlight
- 3. Aspect
- 4. Open Space

Passed-Failed

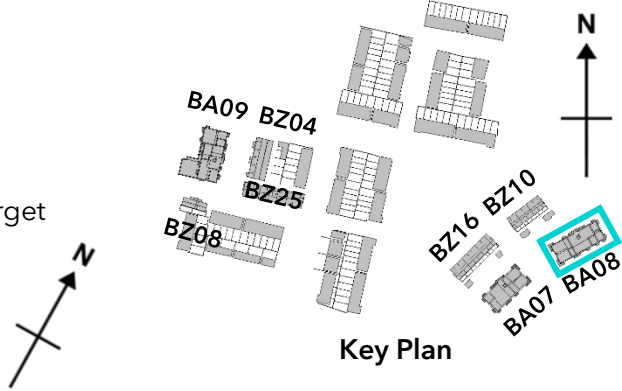
SDA Targets	> 50% at
Bedrooms	>100 Lux
Living Areas	>150 Lux
K/L/D / Kitchen	>200 Lux

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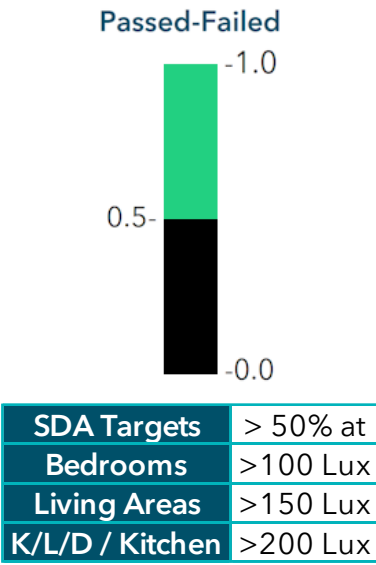
BA08 (Updated)
SDA - BA08 Level 00

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

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- Compensatory Measures**
- 1. Daylight Adjacency
 - 2. Sunlight
 - 3. Aspect
 - 4. Open Space

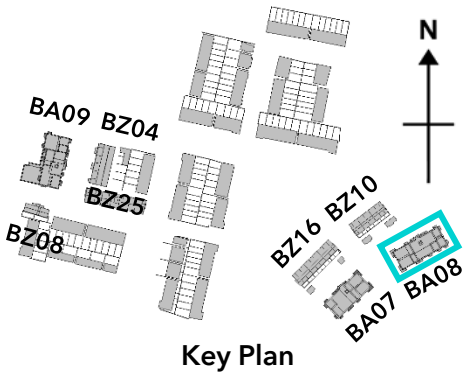


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SDA - BA08 Level 01

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Compensatory Measures

1. Daylight Adjacency
2. Sunlight
3. Aspect
4. Open Space

Passed-Failed

0.5-1.0
-0.0

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

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SDA - BA08 Level 02

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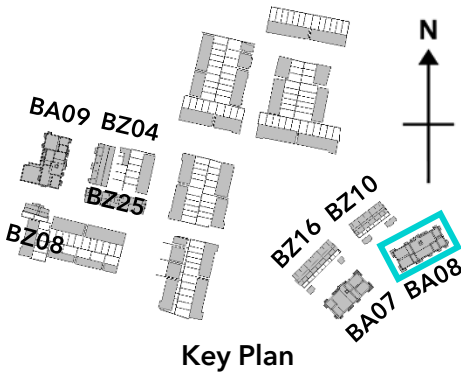


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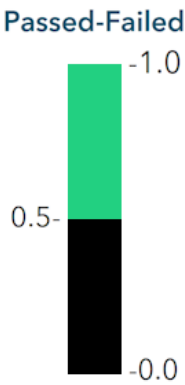
SDA - BA08 Level 03

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

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- Compensatory Measures**
1. Daylight Adjacency
 2. Sunlight
 3. Aspect
 4. Open Space



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

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SDA - BA08 Level 04

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.

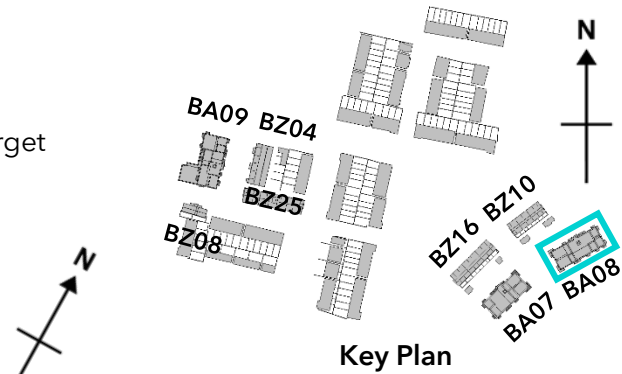


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SDA - BA08 Level 05

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Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



Compensatory Measures

1. Daylight Adjacency
2. Sunlight
3. Aspect
4. Open Space

Passed-Failed

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

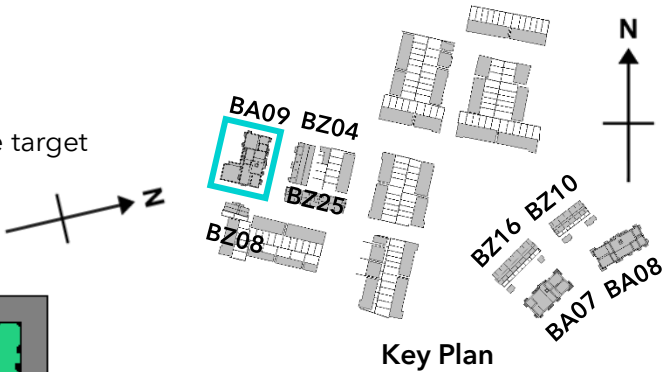
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BA09 (Updated)

SDA - BA09 Level 01

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



Compensatory Measures

1. Daylight Adjacency
2. Sunlight
3. Aspect
4. Open Space

Passed-Failed

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

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SDA - BA09 Level 02

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

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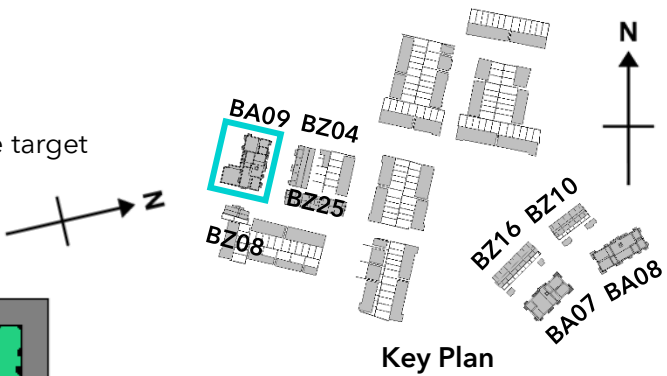


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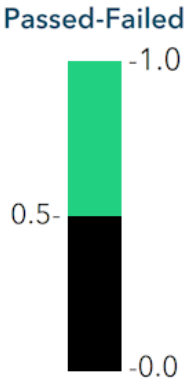
SDA - BA09 Level 03

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



- Compensatory Measures**
- 1. Daylight Adjacency
 - 2. Sunlight
 - 3. Aspect
 - 4. Open Space



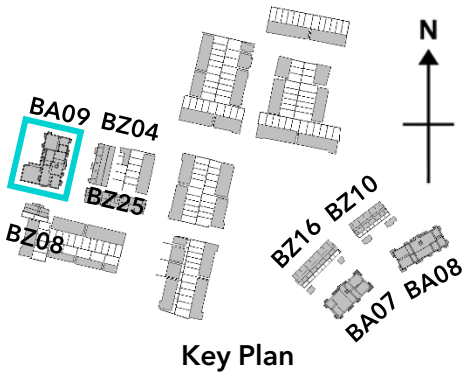
SDA Targets	> 50% at
Bedrooms	>100 Lux
Living Areas	>150 Lux
K/L/D / Kitchen	>200 Lux

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SDA - BA09 Level 04

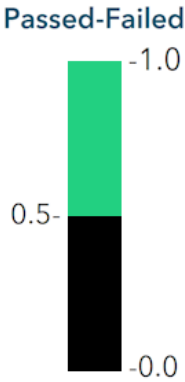
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Compensatory Measures

1. Daylight Adjacency
2. Sunlight
3. Aspect
4. Open Space



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

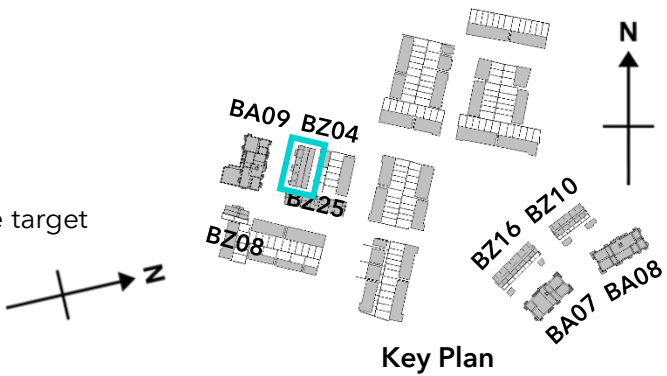
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BZ04

SDA - BZ04 Level 00

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Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



Compensatory Measures

- 1. Daylight Adjacency
- 2. Sunlight
- 3. Aspect
- 4. Open Space

Passed-Failed

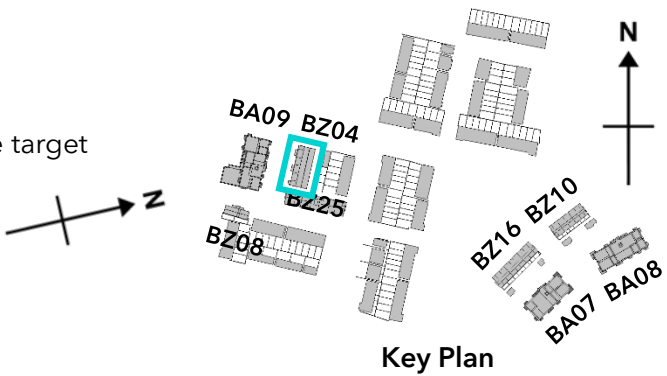
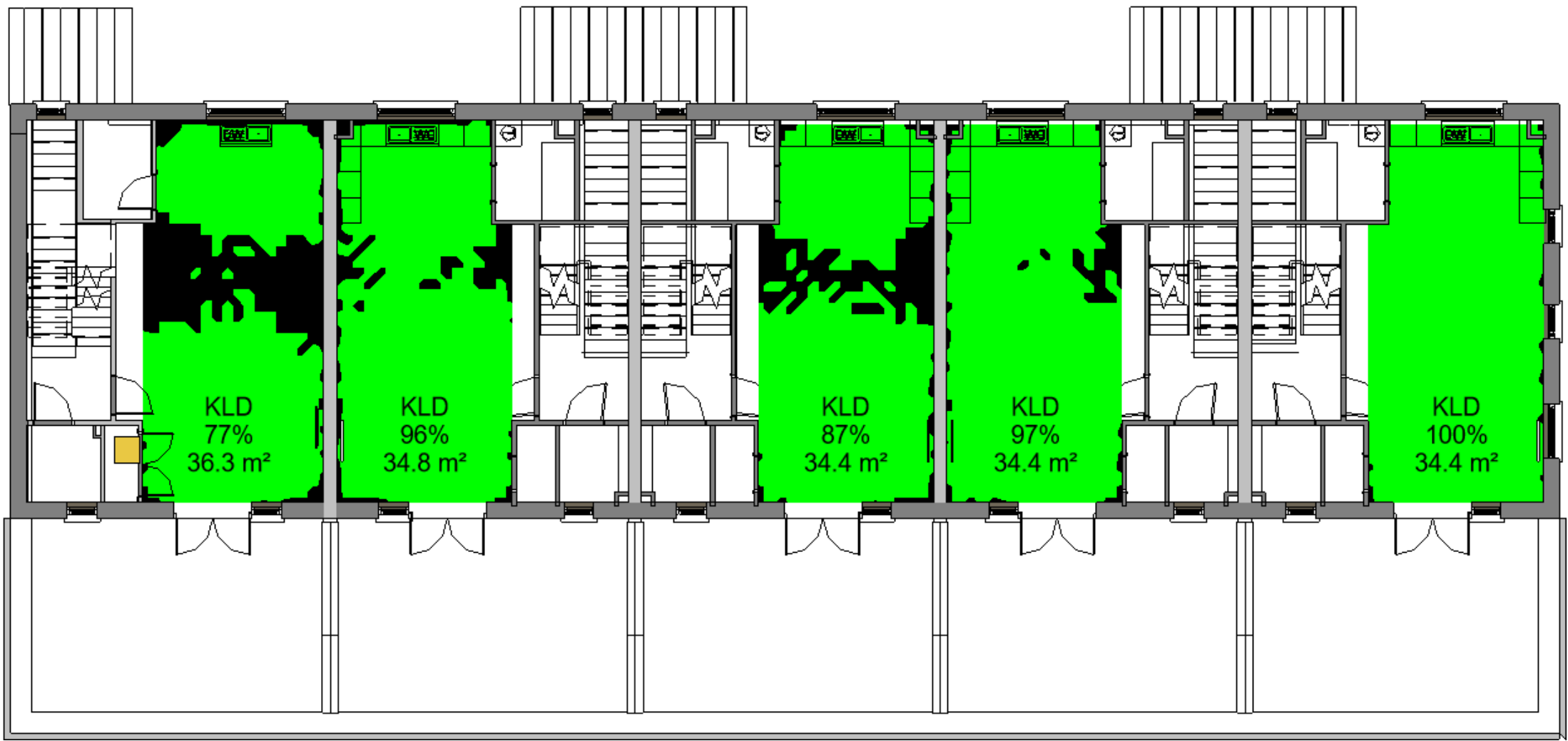
SDA Targets	> 50% at
Bedrooms	>100 Lux
Living Areas	>150 Lux
K/L/D / Kitchen	>200 Lux

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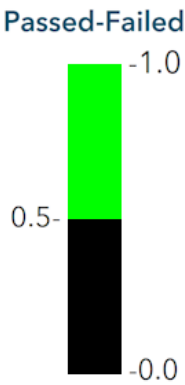
SDA - BZ04 Level 01

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



- Compensatory Measures**
1. Daylight Adjacency
 2. Sunlight
 3. Aspect
 4. Open Space



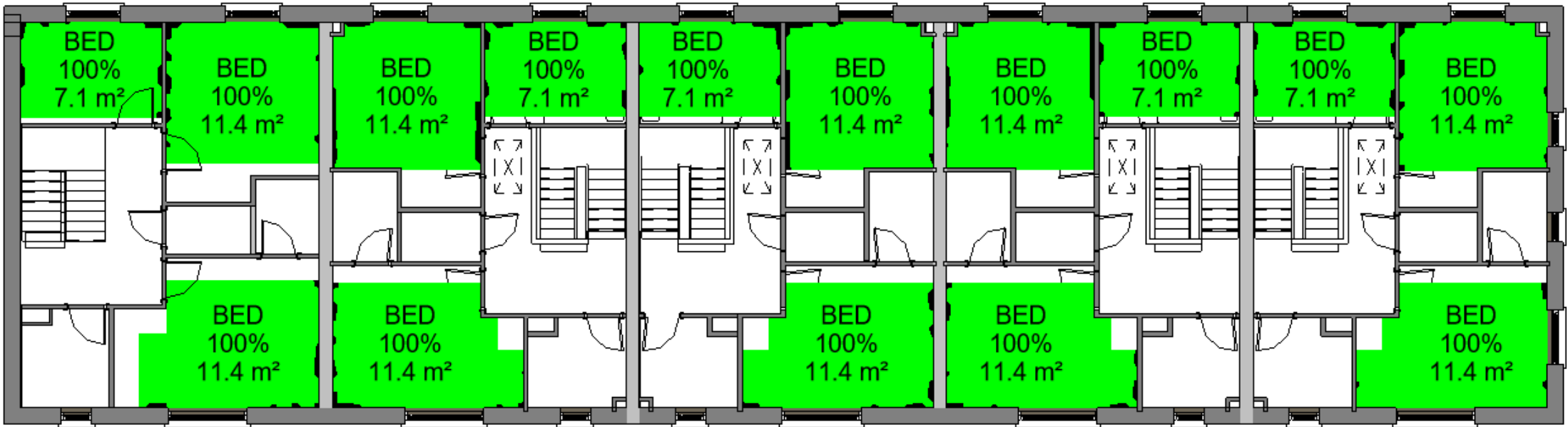
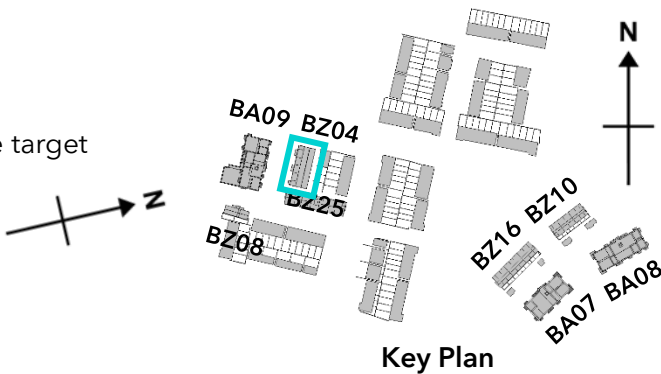
SDA Targets	> 50% at
Bedrooms	>100 Lux
Living Areas	>150 Lux
K/L/D / Kitchen	>200 Lux

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SDA - BZ04 Level 02

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Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



Compensatory Measures

- 1. Daylight Adjacency
- 2. Sunlight
- 3. Aspect
- 4. Open Space

Passed-Failed

0.5-1.0
-0.0

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

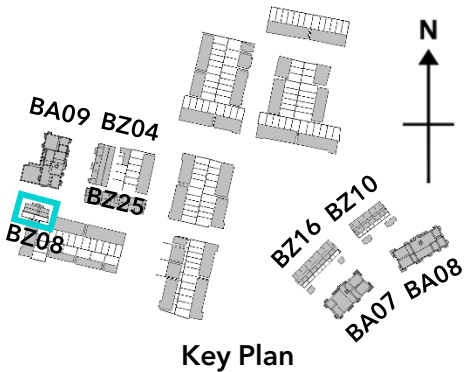
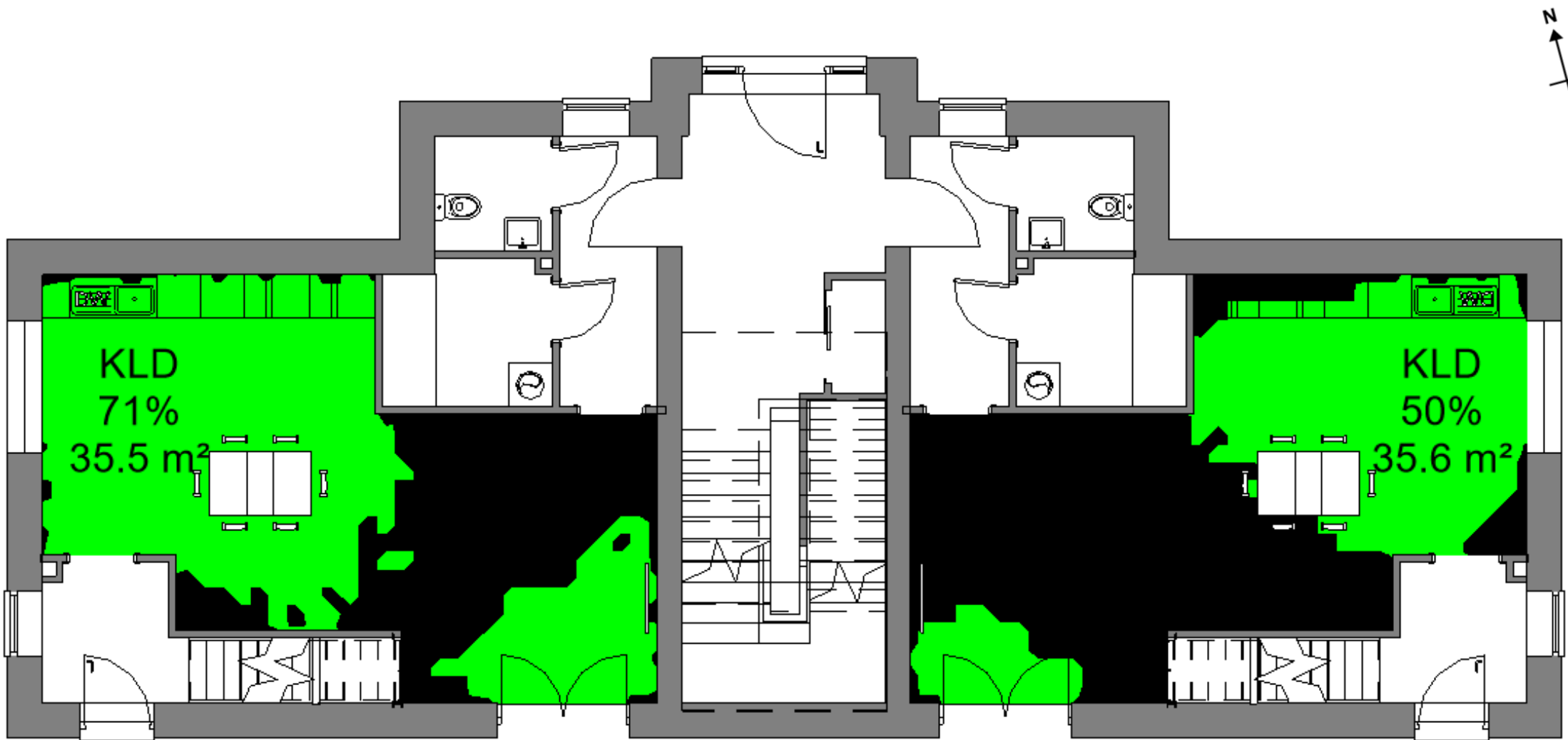
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BZ08

SDA - BZ08 Level 00

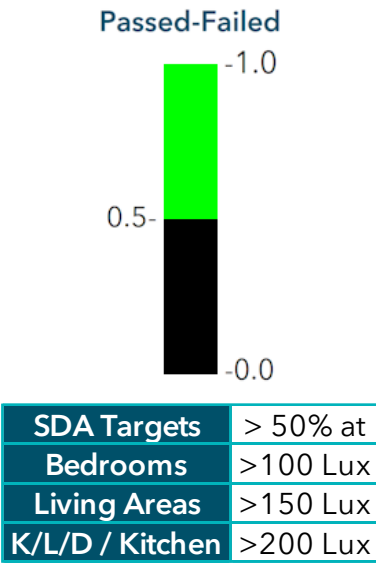
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Compensatory Measures

1. Daylight Adjacency
2. Sunlight
3. Aspect
4. Open Space

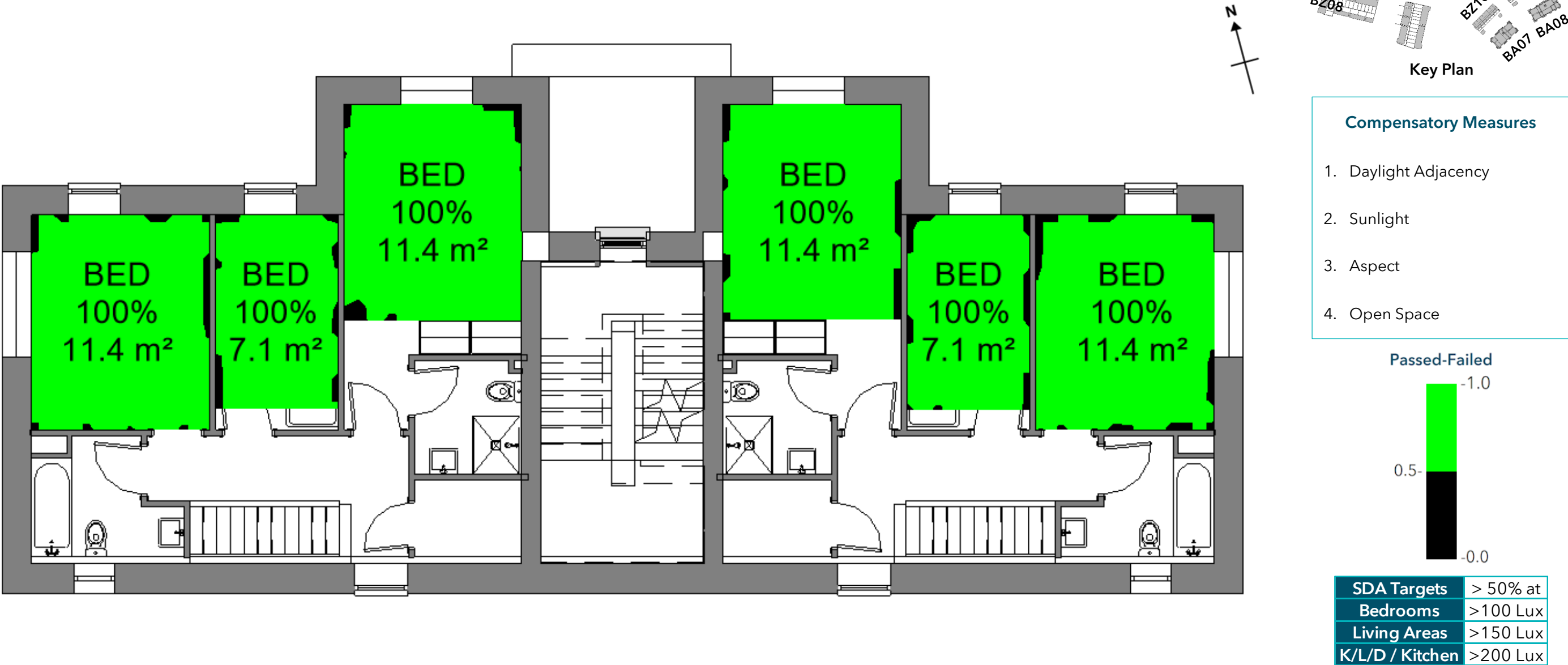


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SDA - BZ08 Level 01

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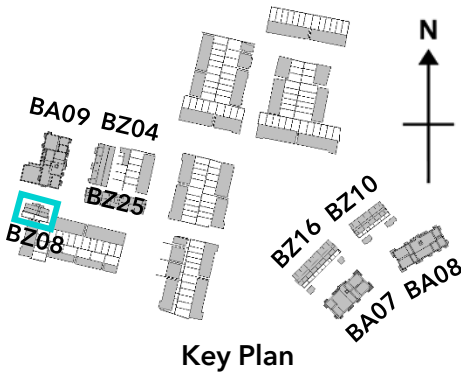
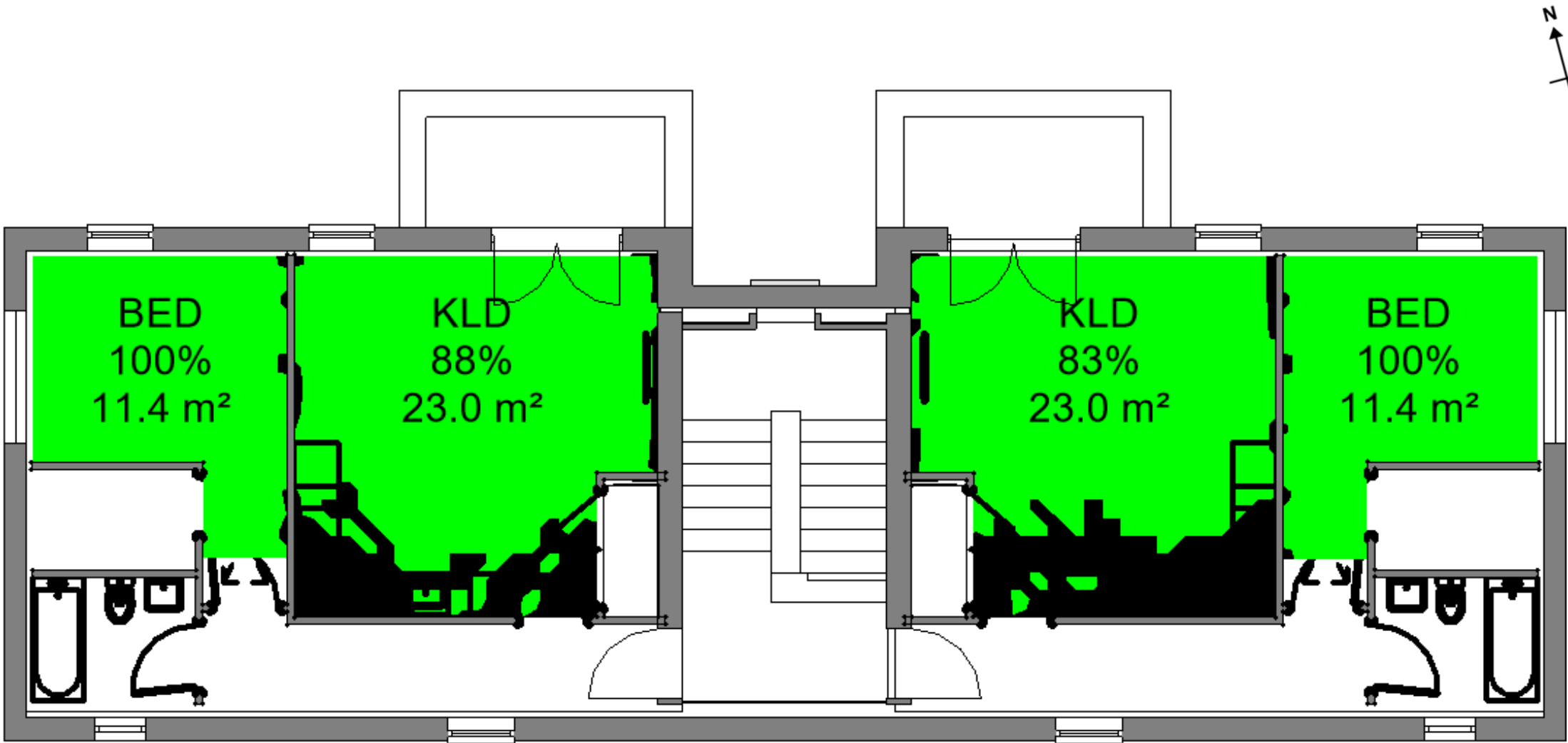


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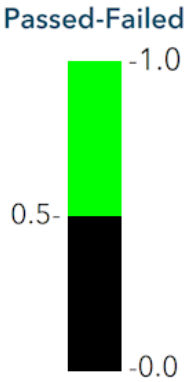
SDA - BZ08 Level 02

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- Compensatory Measures**
- 1. Daylight Adjacency
 - 2. Sunlight
 - 3. Aspect
 - 4. Open Space



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

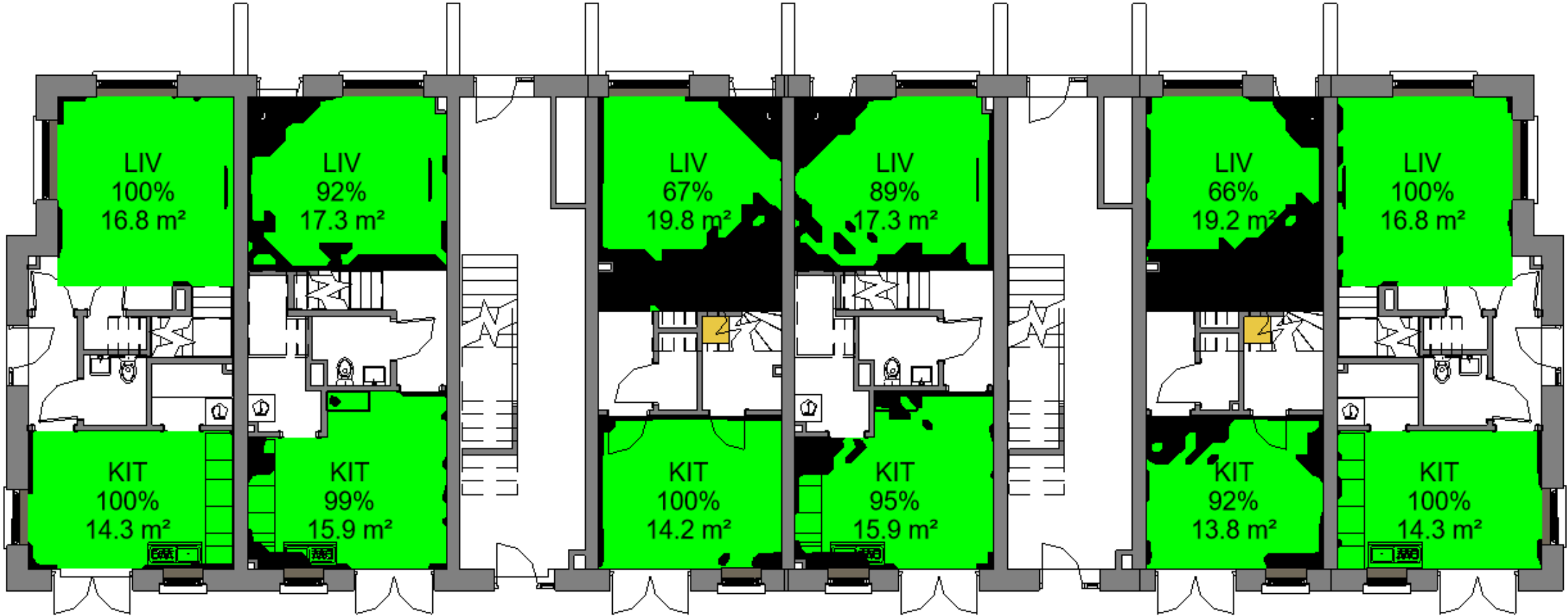
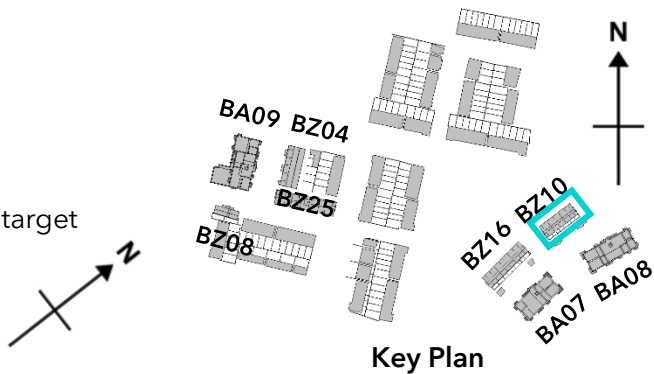
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BZ10

SDA - BZ10 Level 00

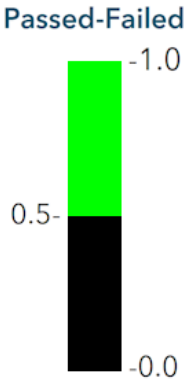
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Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



Compensatory Measures

- 1. Daylight Adjacency
- 2. Sunlight
- 3. Aspect
- 4. Open Space



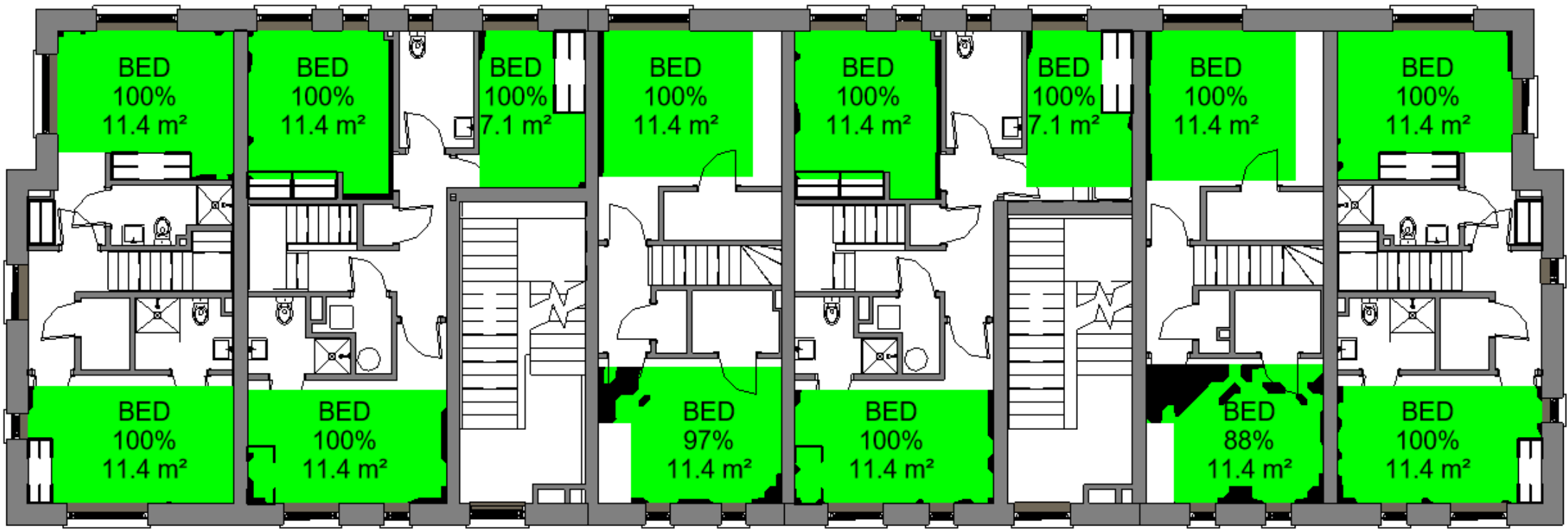
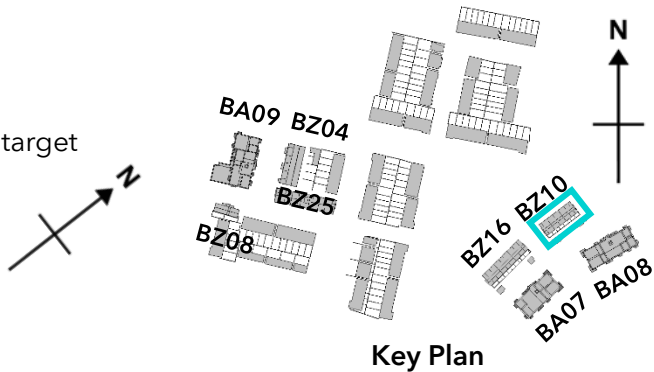
SDA Targets	> 50% at
Bedrooms	>100 Lux
Living Areas	>150 Lux
K/L/D / Kitchen	>200 Lux

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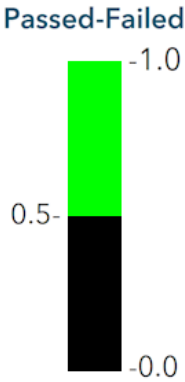
SDA - BZ10 Level 01

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Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



- Compensatory Measures**
- 1. Daylight Adjacency
 - 2. Sunlight
 - 3. Aspect
 - 4. Open Space



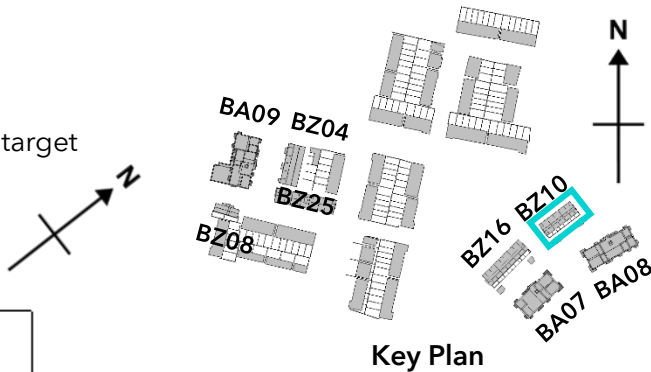
SDA Targets	> 50% at
Bedrooms	>100 Lux
Living Areas	>150 Lux
K/L/D / Kitchen	>200 Lux

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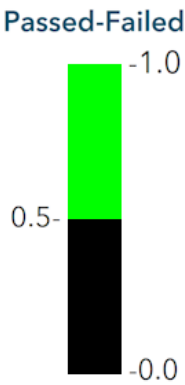
SDA - BZ10 Level 02

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



- Compensatory Measures**
- 1. Daylight Adjacency
 - 2. Sunlight
 - 3. Aspect
 - 4. Open Space



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

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BZ16

SDA - BZ16 Level 00

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

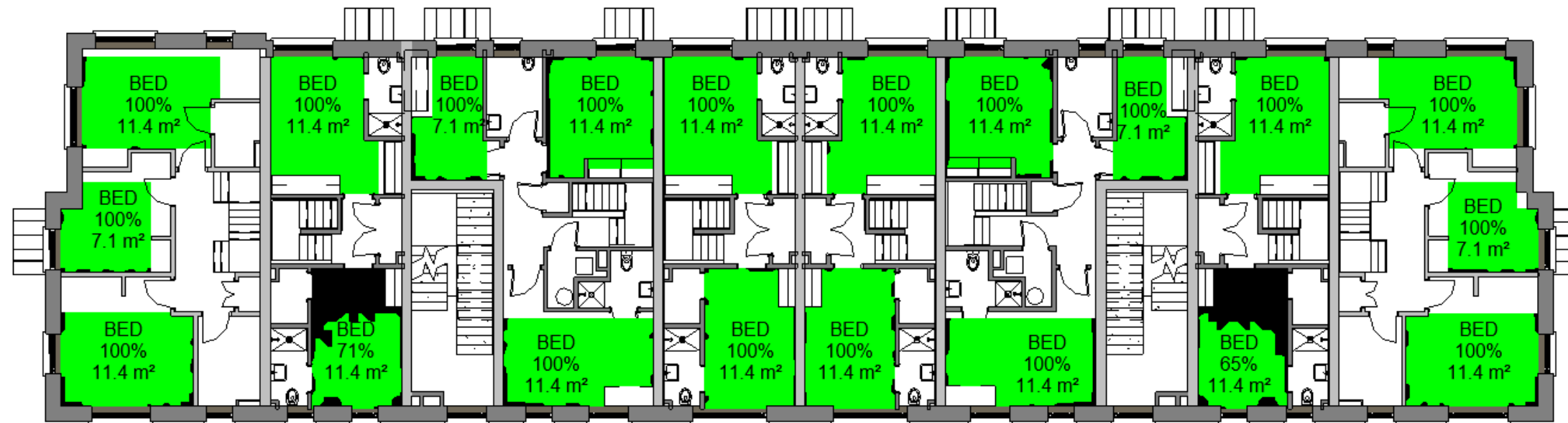
Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



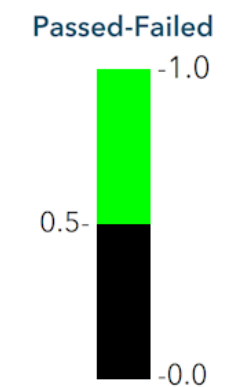
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True target

Key Plan



1. Daylight Adjacency
2. Sunlight
3. Aspect
4. Open Space



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

SDA - BZ16 Level 02

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



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BZ25

SDA - BZ25 Level 00

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



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SDA - BZ25 Level 01

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



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SDA - BZ25 Level 02

Daylight analysis results are illustrated below with the green shaded area receiving target illuminance, 200 Lux for kitchens & KLDs, and 100 Lux for bedrooms.

Black shaded areas illustrate parts of the rooms receiving less than the targeted illuminance. A space is deemed compliant where greater than 50% of areas achieve target illuminance.



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Appendix D - Exposure to Sunlight (ETS) Results



Results - Summary of ETS (Updated)

The tables below provide a breakdown of the compliance rates for each unit based on the Exposure to Sunlight (ETS) and an overall ETS. **91.6%** of the analysed units were determined to be compliant with the methodology utilised.

The apartment blocks (BA07, BA08, BA09) were updated for design changes, while the duplex blocks (BZ04, BZ08, BZ10, BZ16, BZ25) have not been updated as there was no design changes made to them.

BA07	Number of units		
	Pass	Fail	Total
Level 0	6	0	6
Level 1	8	2	10
Level 2	9	1	10
Level 3	9	1	10
Level 4	9	0	9
Level 5	6	0	6
	47	4	51
	92%	8%	

Figure D.2.1 - Updated ETS for BA07

BA08	Number of units		
	Pass	Fail	Total
Level 0	7	0	7
Level 1	8	4	12
Level 2	9	3	12
Level 3	10	2	12
Level 4	9	2	11
Level 5	4	2	6
	47	13	60
	78%	22%	

Figure D.2.2 - Updated ETS for BA08

BA09	Number of units		
	Pass	Fail	Total
Level 1	12	0	12
Level 2	12	0	12
Level 3	12	0	12
Level 4	8	0	8
	44	0	44
	100%	0%	

Figure D.2.3 - Updated ETS for BA09

BZ04	Number of units		
	Pass	Fail	Total
Level 0	5	0	5
Level 1	5	0	5
Level 2	0	0	0
	10	0	10
	100%	0%	

Figure D.2.4 - ETS for BZ04

BZ08	Number of units		
	Pass	Fail	Total
Level 0	2	0	2
Level 1	0	0	0
Level 2	2	0	2
	4	0	4
	100%	0%	

Figure D.2.5 - ETS for BZ08

BZ10	Number of units		
	Pass	Fail	Total
Level 0	6	0	6
Level 1	0	0	0
Level 2	3	0	3
	9	0	9
	100%	0%	

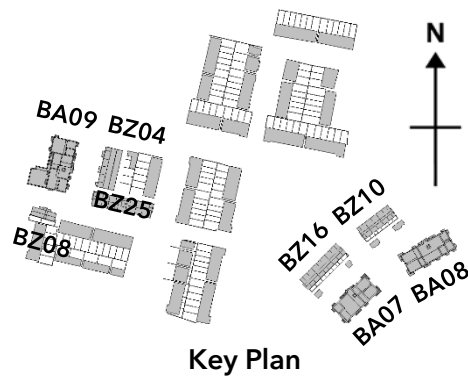
Figure D.2.6 - ETS for BZ10

BZ16	Number of units		
	Pass	Fail	Total
Level 0	8	0	8
Level 1	0	0	0
Level 2	4	0	4
	12	0	12
	100%	0%	

Figure D.2.7 - ETS for BZ16

BZ25	Number of units		
	Pass	Fail	Total
Level 0	8	0	8
Level 1	0	0	0
Level 2	4	0	4
	12	0	12
	100%	0%	

Figure D.2.8 - ETS for BZ25



Summary	Number of units		
	Pass	Fail	Total
BA07	47	4	51
BA08	47	13	60
BA09	44	0	44
BZ04	10	0	10
BZ08	4	0	4
BZ10	9	0	9
BZ16	12	0	12
BZ25	12	0	12
	185	17	202
	91.6%	8.4%	

Figure 7.2.9 - Overall ETS for All Blocks

ETS Compensatory Measures (Updated)

The Building Height Guidelines state the following:

“Where a proposal may not be able to fully meet all 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, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution.”

The Apartment Guidelines state the following:

Minimum overall apartment floor areas

Studio	32 sq.m	(n/a) ^a
One bedroom	45 sq.m	(38 sq.m) ^a
Two bedrooms (3 person)	63 sq.m	(55 sq.m) ^a
Two bedrooms (4 person)	73 sq.m	
Three bedrooms (4 person)	76 sq.m	(70 sq.m) ^a
Three bedrooms (5 person)	90 sq.m	

^a Figures in brackets refer to 1995 Guidelines

Minimum recommended floor areas for private amenity space, where provided

Studio	4 sq.m
One bedroom	5 sq.m
Two bedrooms (3 person)	6 sq.m
Two bedrooms (4 person)	7 sq.m
Three bedrooms (4 person)	7 sq.m
Three bedrooms (5 person)	9 sq.m

Compensatory Design Solutions

Where units are determined to not achieve the quantitative assessment for daylight, they will be/are identified, and compensatory measures are provided. The compensatory measures look to determine a balance between the spaces with reduced sunlight by identifying how other metrics for sunlight and/or the unit’s aspects or development design can compensate for this reduction in sunlight.

It is proposed that the following compensatory measures are applied in accordance with the requirements of the Building Height Guidelines and the Apartment Guidelines.

1. Daylight

Where a unit is below the ETS target, the rooms within have the benefit of exceeding the daylight requirement. Therefore, whilst the unit will be found to be non-compliant for sunlight, the unit will achieve above the requisite daylight availability.

2. Aspect

In addition to their private amenity space, a number of rooms have direct aspect out onto a well-lit landscaped communal or public open space, providing an excellent view from the KLD space.

3. Open Space

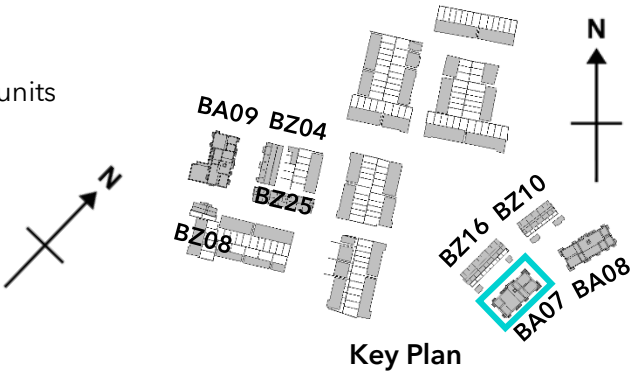
The proposed development includes the provision of a large quantum of **1.91 Ha** of public open space, exceeding the requirement (see CSR Landscape Design Statement for details) meaning that each of the units had easy access to quality public open space provision.

BA07 (Updated)

ETS - BA07 Level 00

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded area/s is/are showing units where it's receiving less than the 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).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

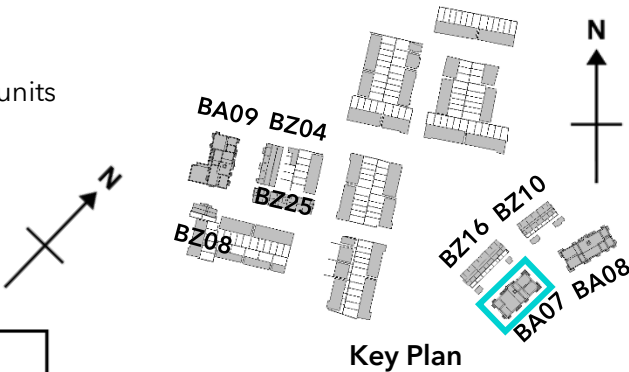
BA07	Number of units		
	Pass	Fail	Total
Level 0	6	0	6
Level 1	8	2	10
Level 2	9	1	10
Level 3	9	1	10
Level 4	9	0	9
Level 5	6	0	6
	47	4	51
	92%	8%	

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ETS - BA07 Level 01

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

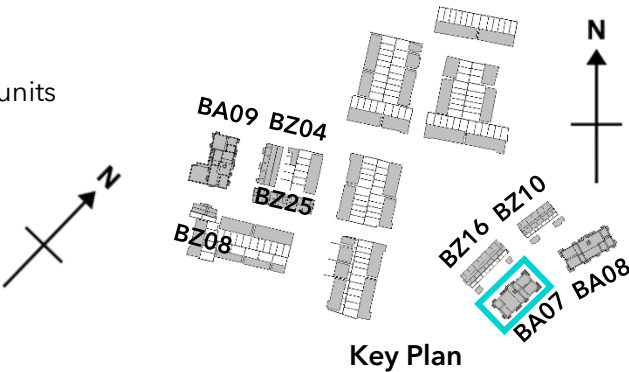
BA07	Number of units		
	Pass	Fail	Total
Level 0	6	0	6
Level 1	8	2	10
Level 2	9	1	10
Level 3	9	1	10
Level 4	9	0	9
Level 5	6	0	6
	47	4	51
	92%	8%	

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ETS - BA07 Level 02

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

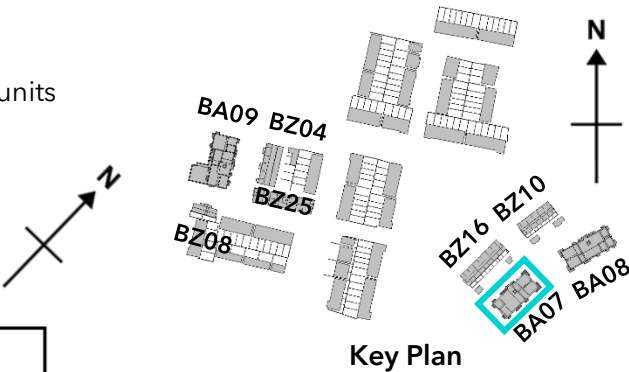
BA07	Number of units		
	Pass	Fail	Total
Level 0	6	0	6
Level 1	8	2	10
Level 2	9	1	10
Level 3	9	1	10
Level 4	9	0	9
Level 5	6	0	6
	47	4	51
	92%	8%	

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ETS - BA07 Level 03

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded area/s is/are showing units where it's receiving less than the 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).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

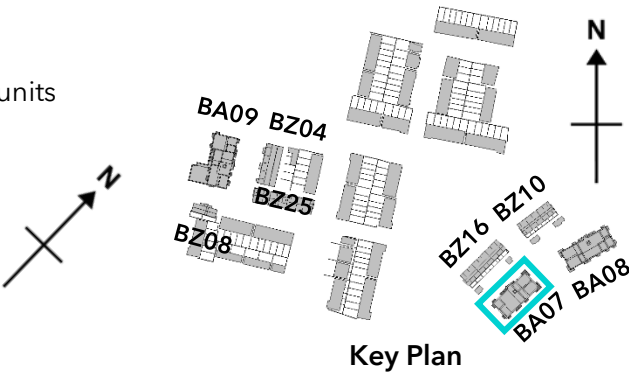
BA07	Number of units		
	Pass	Fail	Total
Level 0	6	0	6
Level 1	8	2	10
Level 2	9	1	10
Level 3	9	1	10
Level 4	9	0	9
Level 5	6	0	6
	47	4	51
	92%	8%	

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ETS - BA07 Level 04

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded area/s is/are showing units where it's receiving less than the 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).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

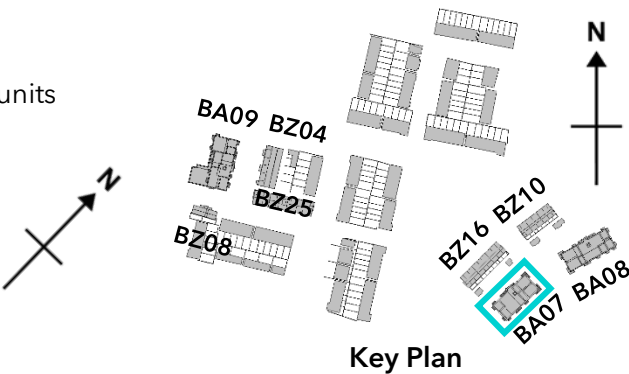
BA07	Number of units		
	Pass	Fail	Total
Level 0	6	0	6
Level 1	8	2	10
Level 2	9	1	10
Level 3	9	1	10
Level 4	9	0	9
Level 5	6	0	6
	47	4	51
	92%	8%	

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ETS - BA07 Level 05

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded area/s is/are showing units where it's receiving less than the 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).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

BA07	Number of units		
	Pass	Fail	Total
Level 0	6	0	6
Level 1	8	2	10
Level 2	9	1	10
Level 3	9	1	10
Level 4	9	0	9
Level 5	6	0	6
	47	4	51
	92%	8%	

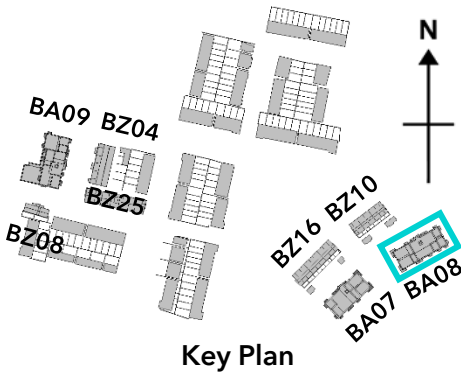
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BA08 (Updated)

ETS - BA08 Level 00

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space



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

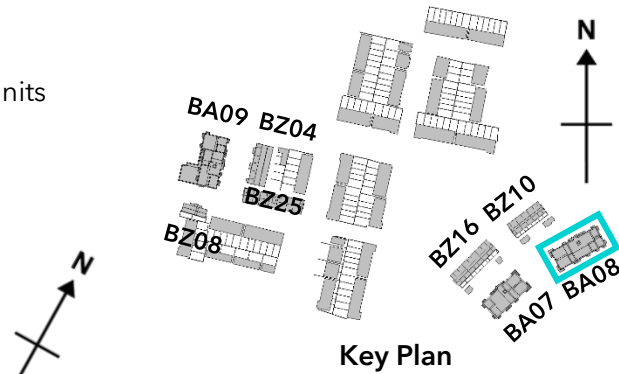
BA08	Number of units		
	Pass	Fail	Total
Level 0	7	0	7
Level 1	8	4	12
Level 2	9	3	12
Level 3	10	2	12
Level 4	9	2	11
Level 5	4	2	6
	47	13	60
	78%	22%	

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ETS - BA08 Level 01

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded area/s is/are showing units where it's receiving less than the 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).



Compensatory Measures

1. Daylight
2. Aspect
3. Open Space

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

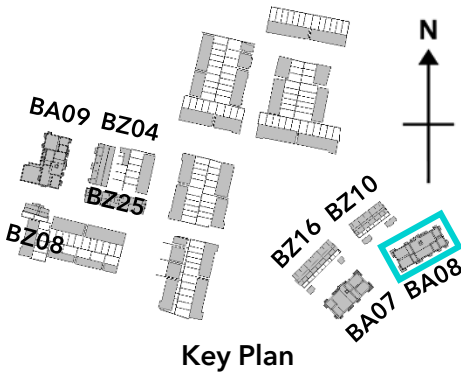
BA08	Number of units		
	Pass	Fail	Total
Level 0	7	0	7
Level 1	8	4	12
Level 2	9	3	12
Level 3	10	2	12
Level 4	9	2	11
Level 5	4	2	6
	47	13	60
	78%	22%	

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ETS - BA08 Level 02

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded area/s is/are showing units where it's receiving less than the 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).



Compensatory Measures

- Daylight
- Aspect
- Open Space

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

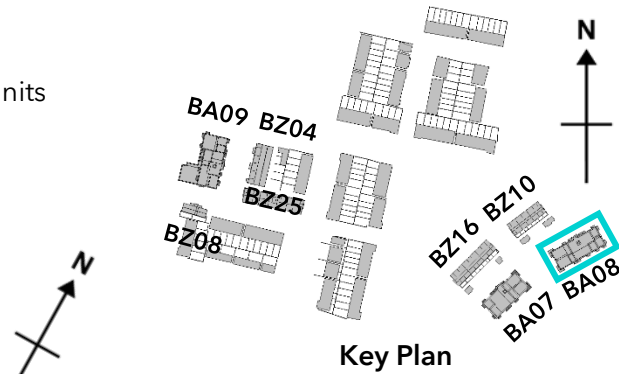
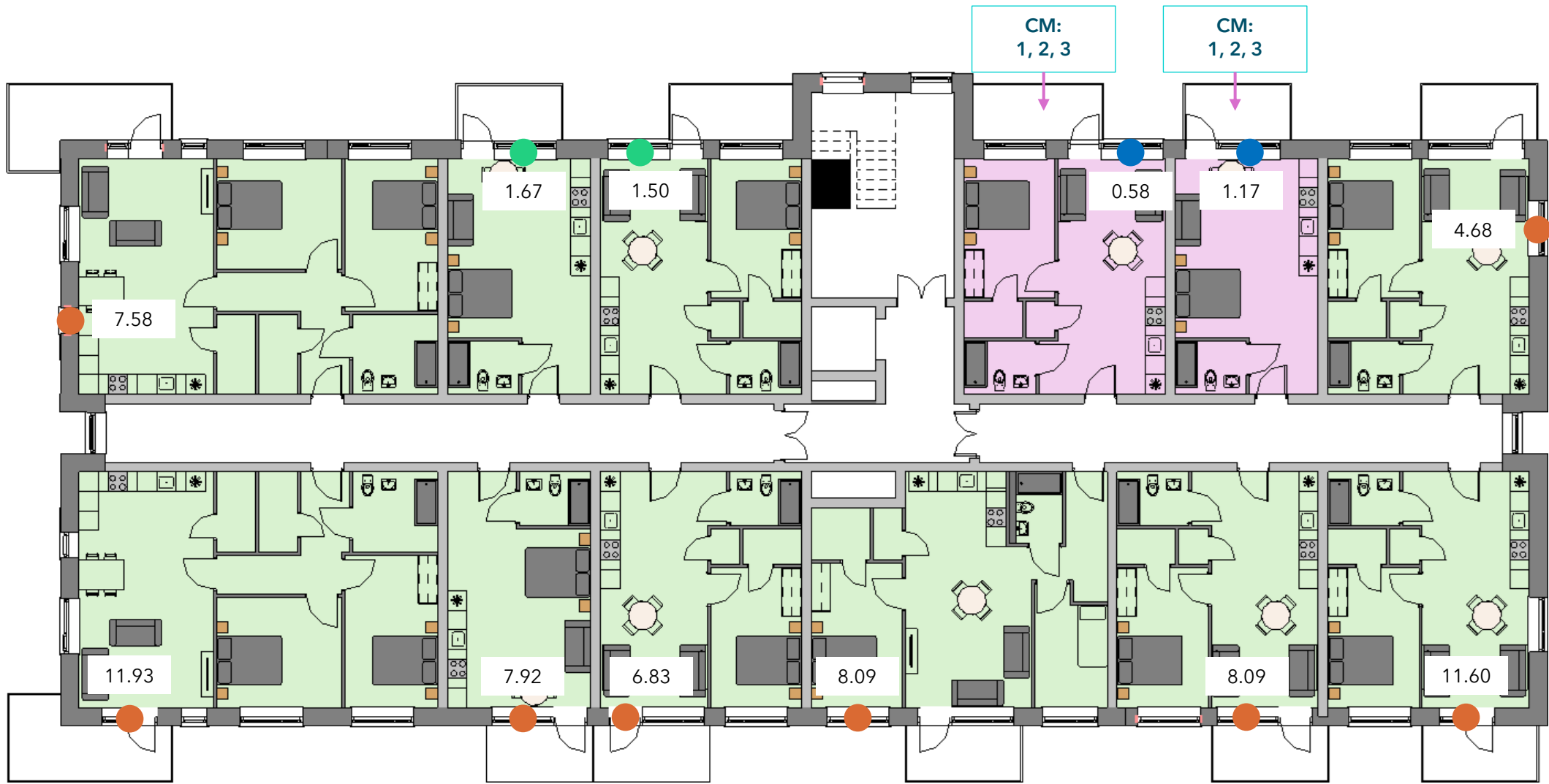
BA08	Number of units		
	Pass	Fail	Total
Level 0	7	0	7
Level 1	8	4	12
Level 2	9	3	12
Level 3	10	2	12
Level 4	9	2	11
Level 5	4	2	6
	47	13	60
	78%	22%	

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ETS - BA08 Level 03

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded area/s is/are showing units where it's receiving less than the 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).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

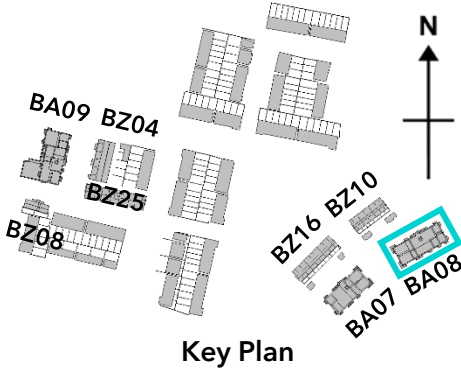
BA08	Number of units		
	Pass	Fail	Total
Level 0	7	0	7
Level 1	8	4	12
Level 2	9	3	12
Level 3	10	2	12
Level 4	9	2	11
Level 5	4	2	6
	47	13	60
	78%	22%	

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ETS - BA08 Level 04

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded area/s is/are showing units where it's receiving less than the 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).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

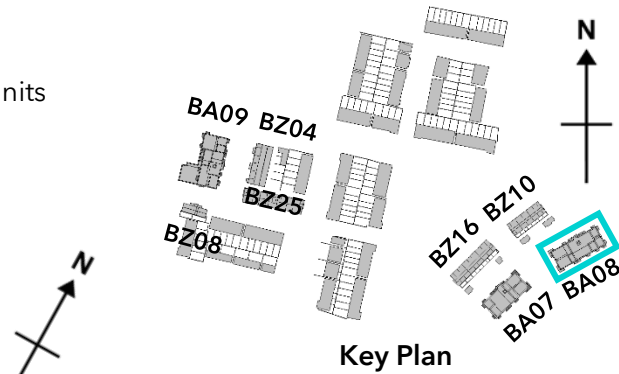
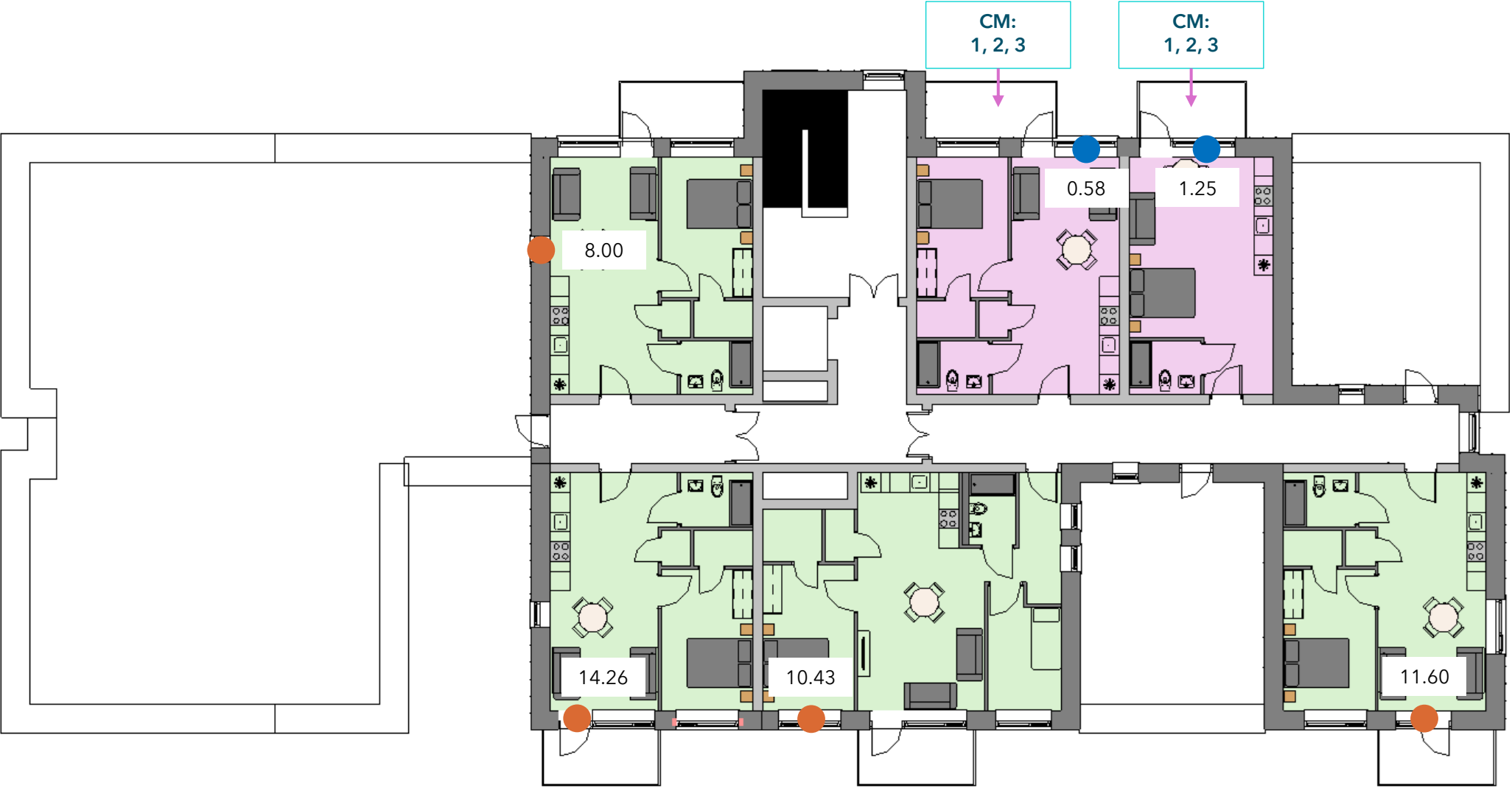
BA08	Number of units		
	Pass	Fail	Total
Level 0	7	0	7
Level 1	8	4	12
Level 2	9	3	12
Level 3	10	2	12
Level 4	9	2	11
Level 5	4	2	6
	47	13	60
	78%	22%	

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ETS - BA08 Level 05

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

BA08	Number of units		
	Pass	Fail	Total
Level 0	7	0	7
Level 1	8	4	12
Level 2	9	3	12
Level 3	10	2	12
Level 4	9	2	11
Level 5	4	2	6
	47	13	60
	78%	22%	

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BA09 (Updated)

ETS - BA09 Level 01

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded area/s is/are showing units where it's receiving less than the 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).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

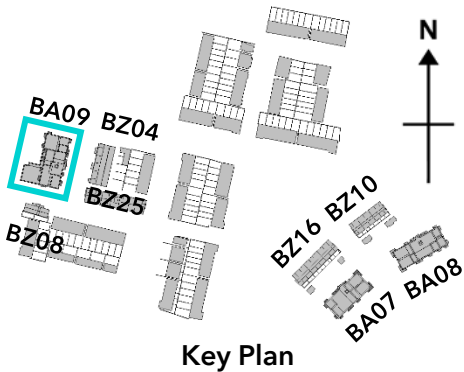
BA09	Number of units		
	Pass	Fail	Total
Level 1	12	0	12
Level 2	12	0	12
Level 3	12	0	12
Level 4	8	0	8
	44	0	44
	100%	0%	

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ETS - BA09 Level 02

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

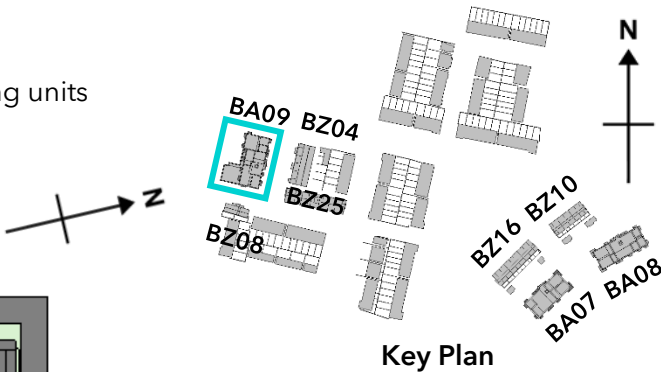
BA09	Number of units		
	Pass	Fail	Total
Level 1	12	0	12
Level 2	12	0	12
Level 3	12	0	12
Level 4	8	0	8
	44	0	44
	100%	0%	

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ETS - BA09 Level 03

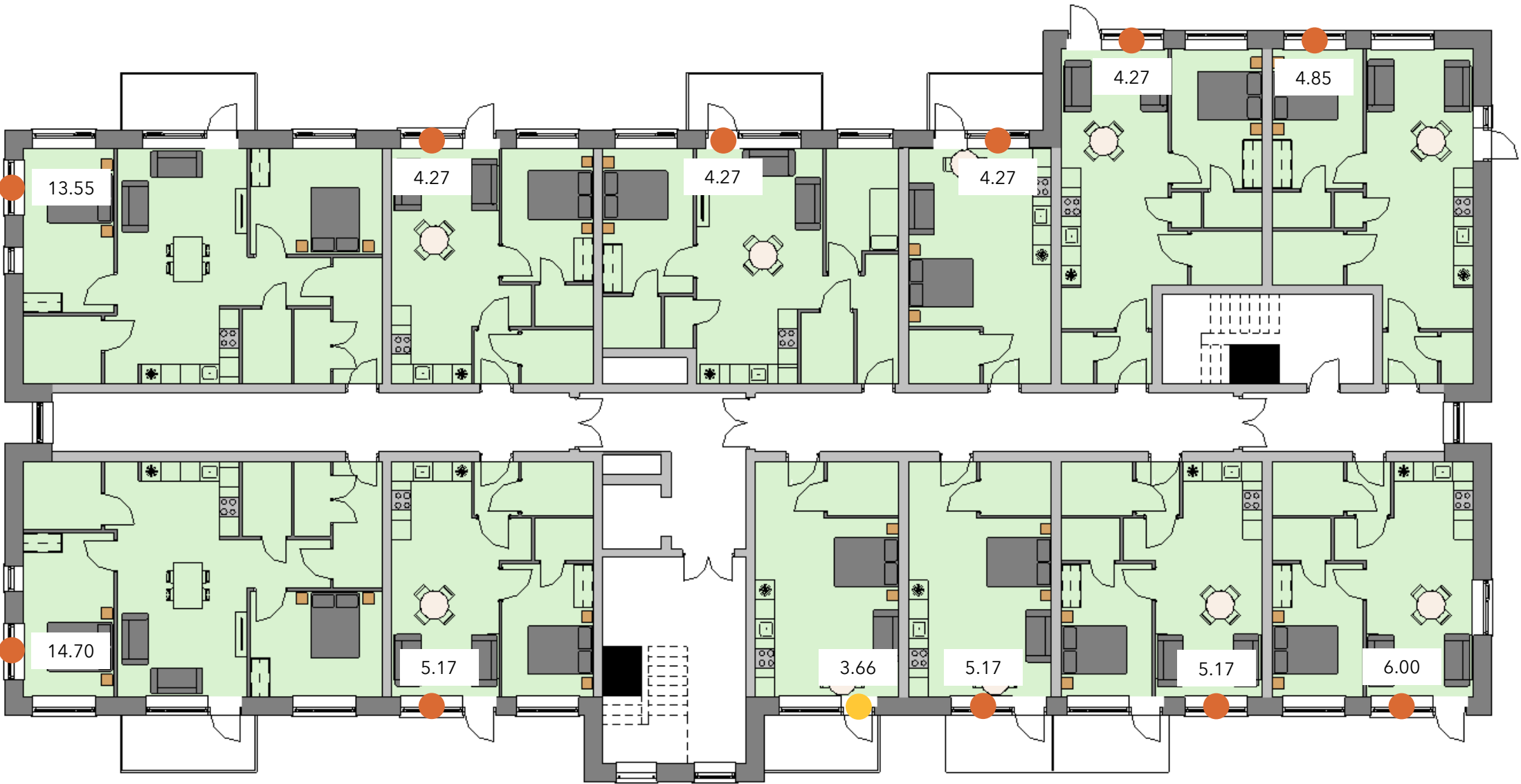
Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded area/s is/are showing units where it's receiving less than the targeted number of hours, which is less than 1.5 hours.

A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space



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

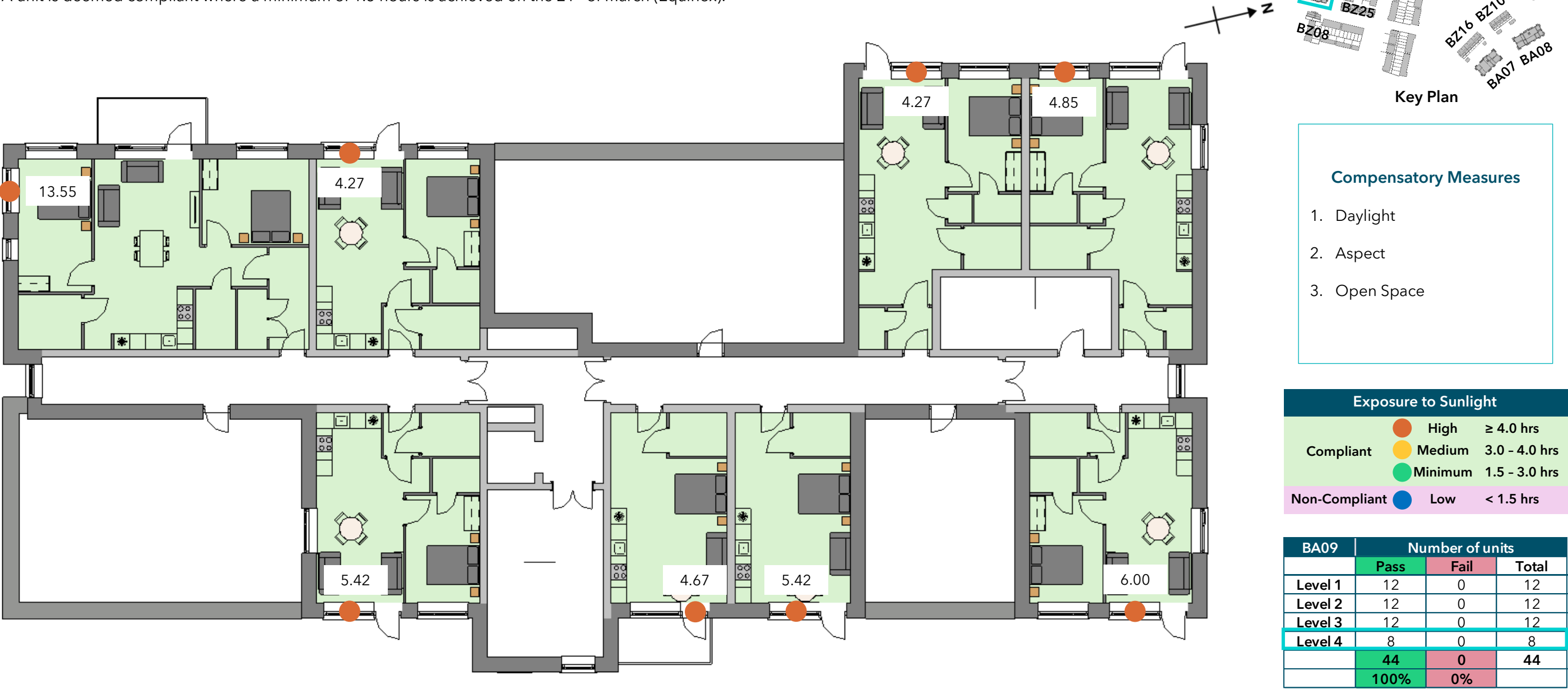
BA09	Number of units		
	Pass	Fail	Total
Level 1	12	0	12
Level 2	12	0	12
Level 3	12	0	12
Level 4	8	0	8
	44	0	44
	100%	0%	

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ETS - BA09 Level 04

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



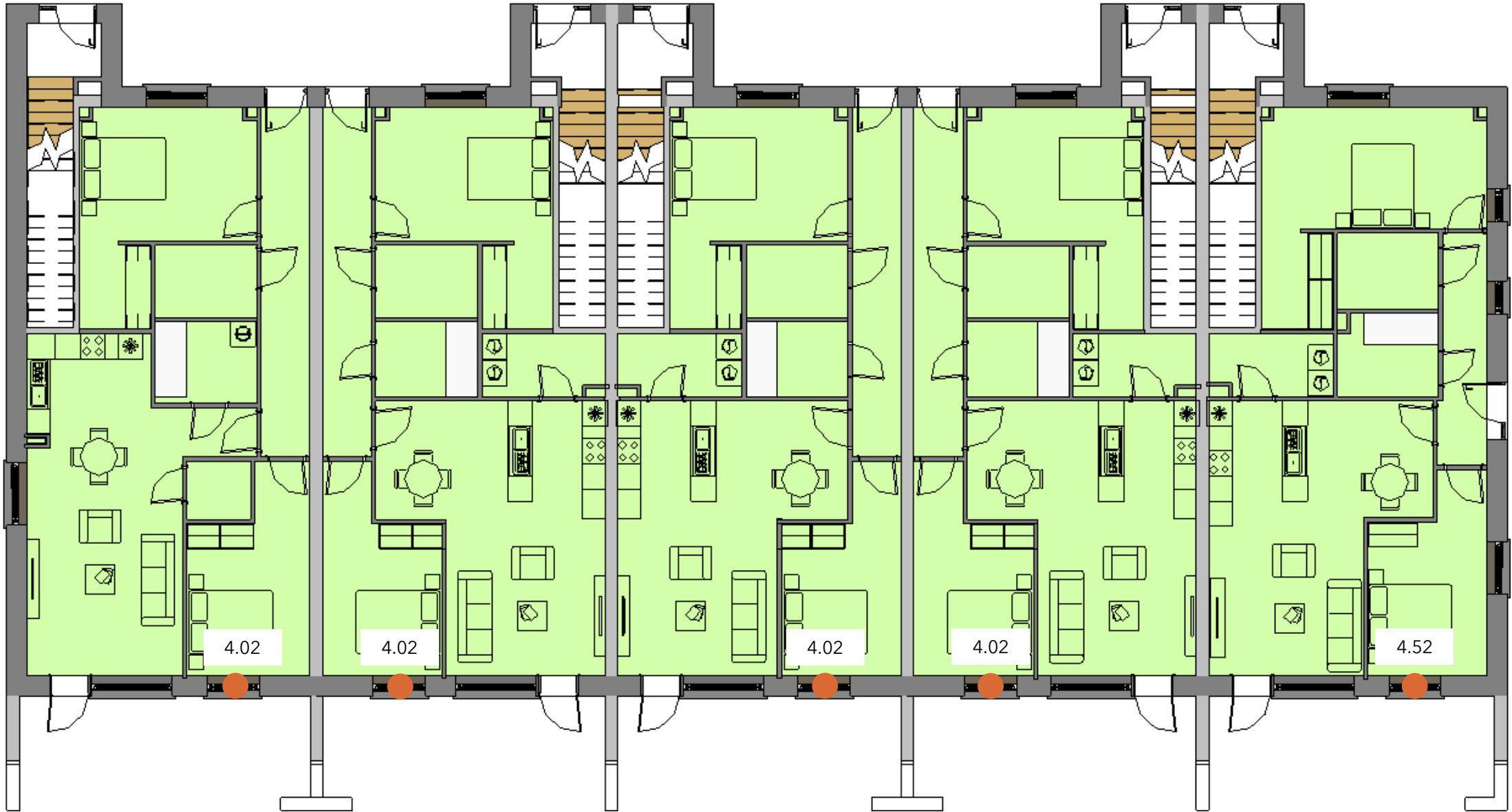
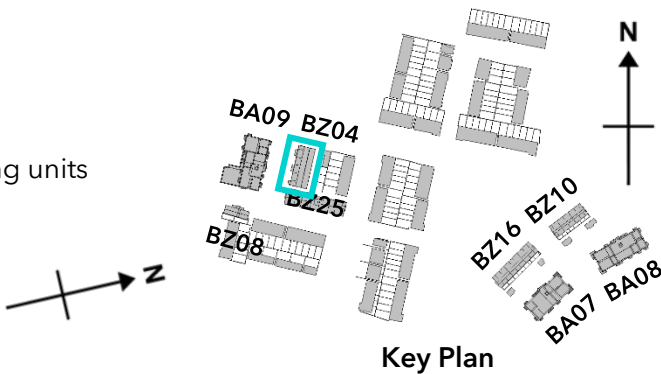
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BZ04

ETS - BZ04 Level 00

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

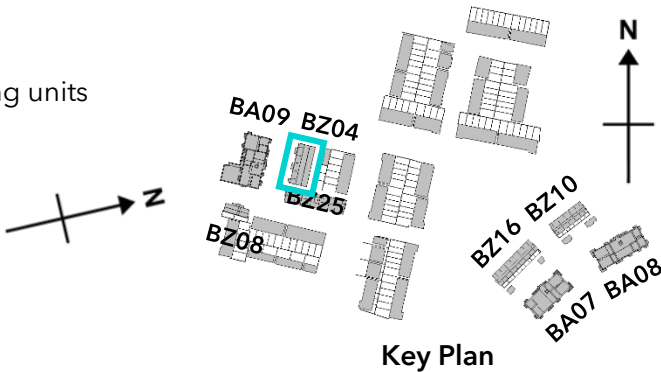
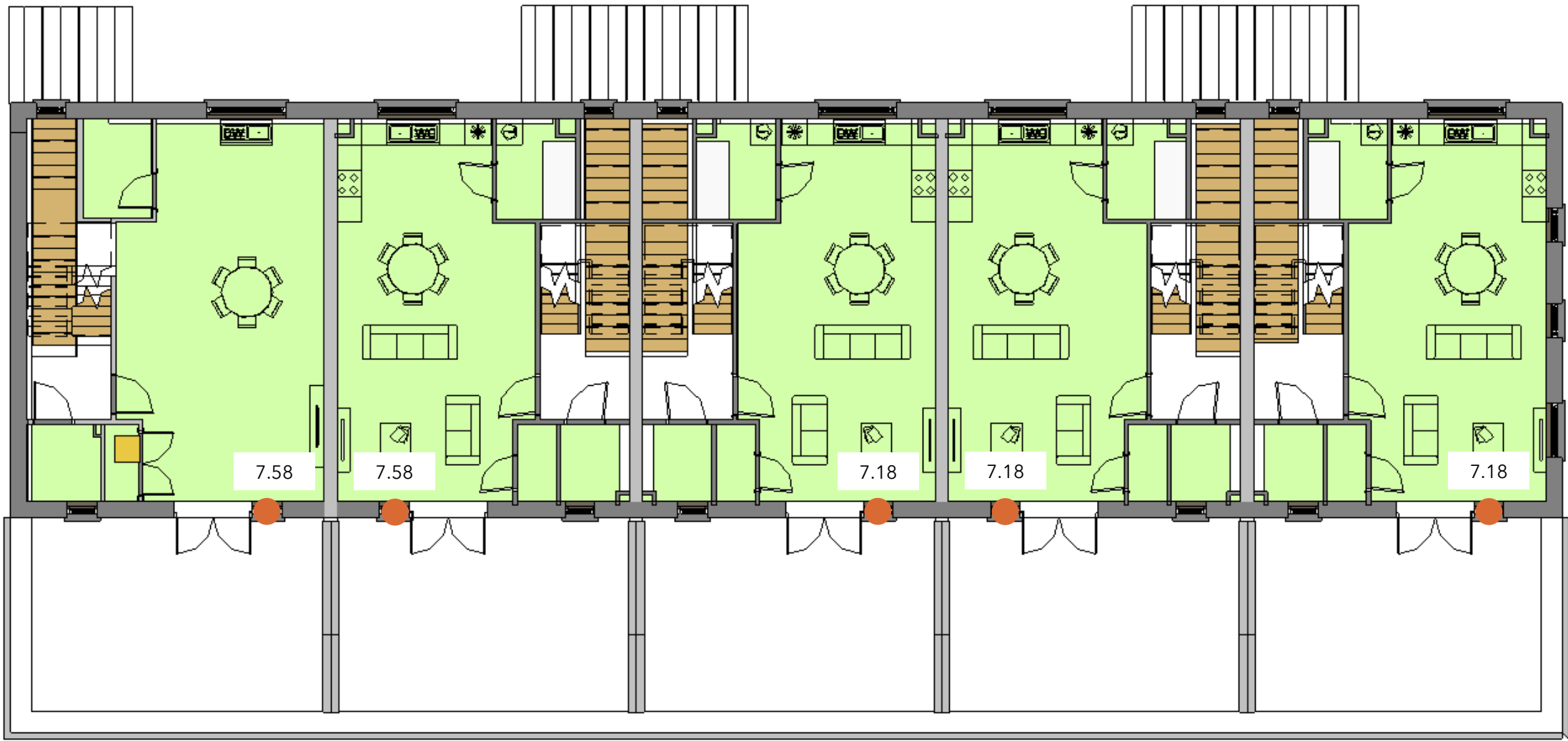
BZ04	Number of units		
	Pass	Fail	Total
Level 0	5	0	5
Level 1	5	0	5
Level 2	0	0	0
	10	0	10
	100%	0%	

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ETS - BZ04 Level 01

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

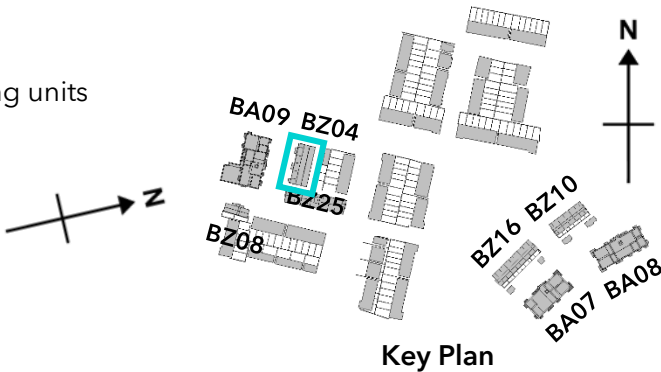
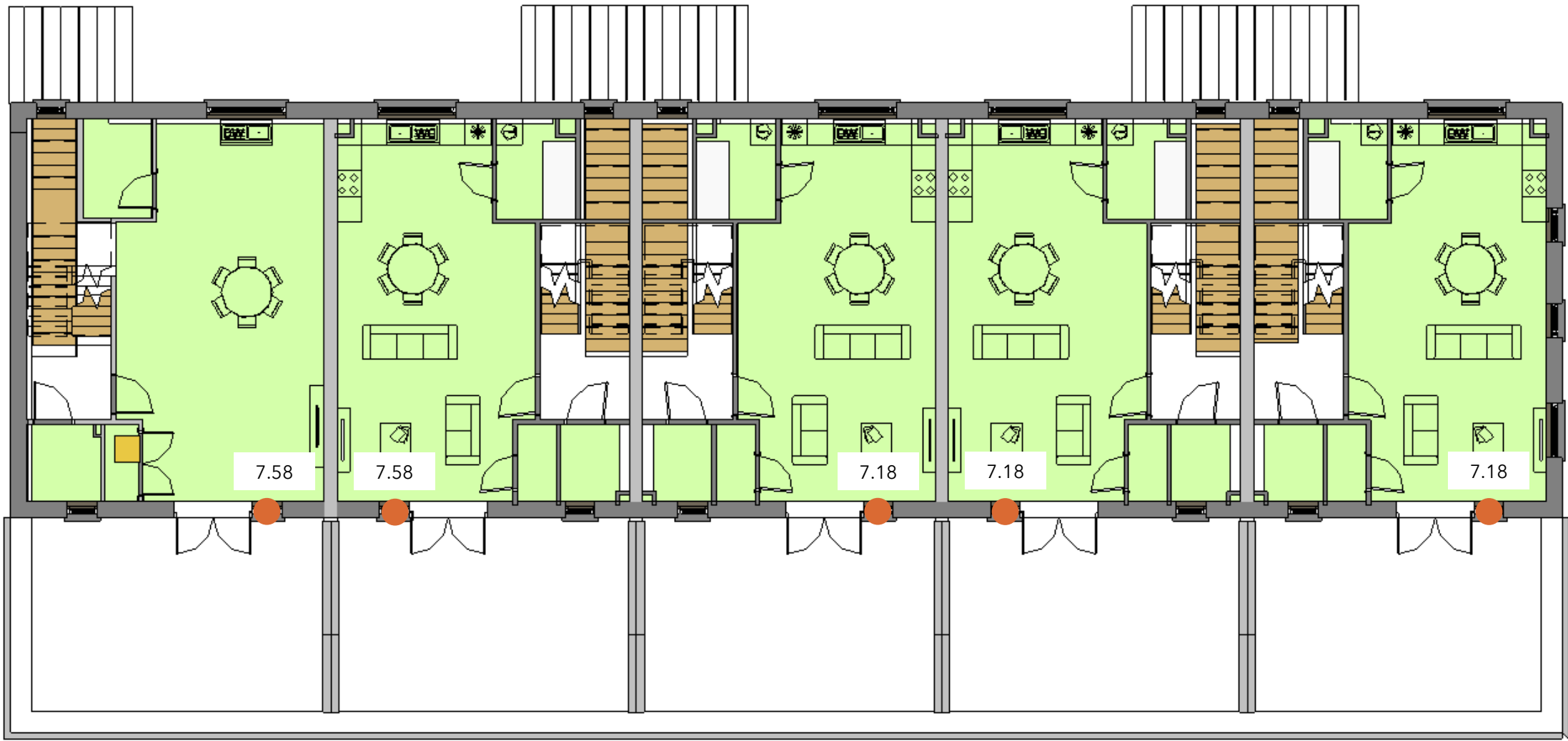
BZ04	Number of units		
	Pass	Fail	Total
Level 0	5	0	5
Level 1	5	0	5
Level 2	0	0	0
	10	0	10
	100%	0%	

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ETS - BZ04 Level 02

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

BZ04	Number of units		
	Pass	Fail	Total
Level 0	5	0	5
Level 1	5	0	5
Level 2	0	0	0
	10	0	10
	100%	0%	

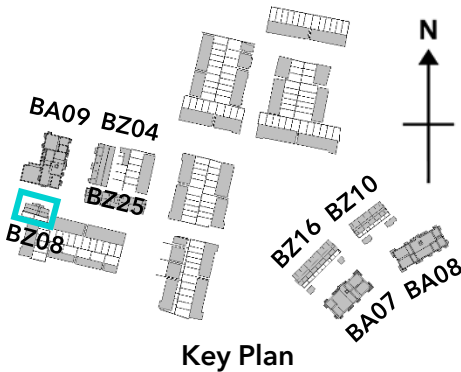
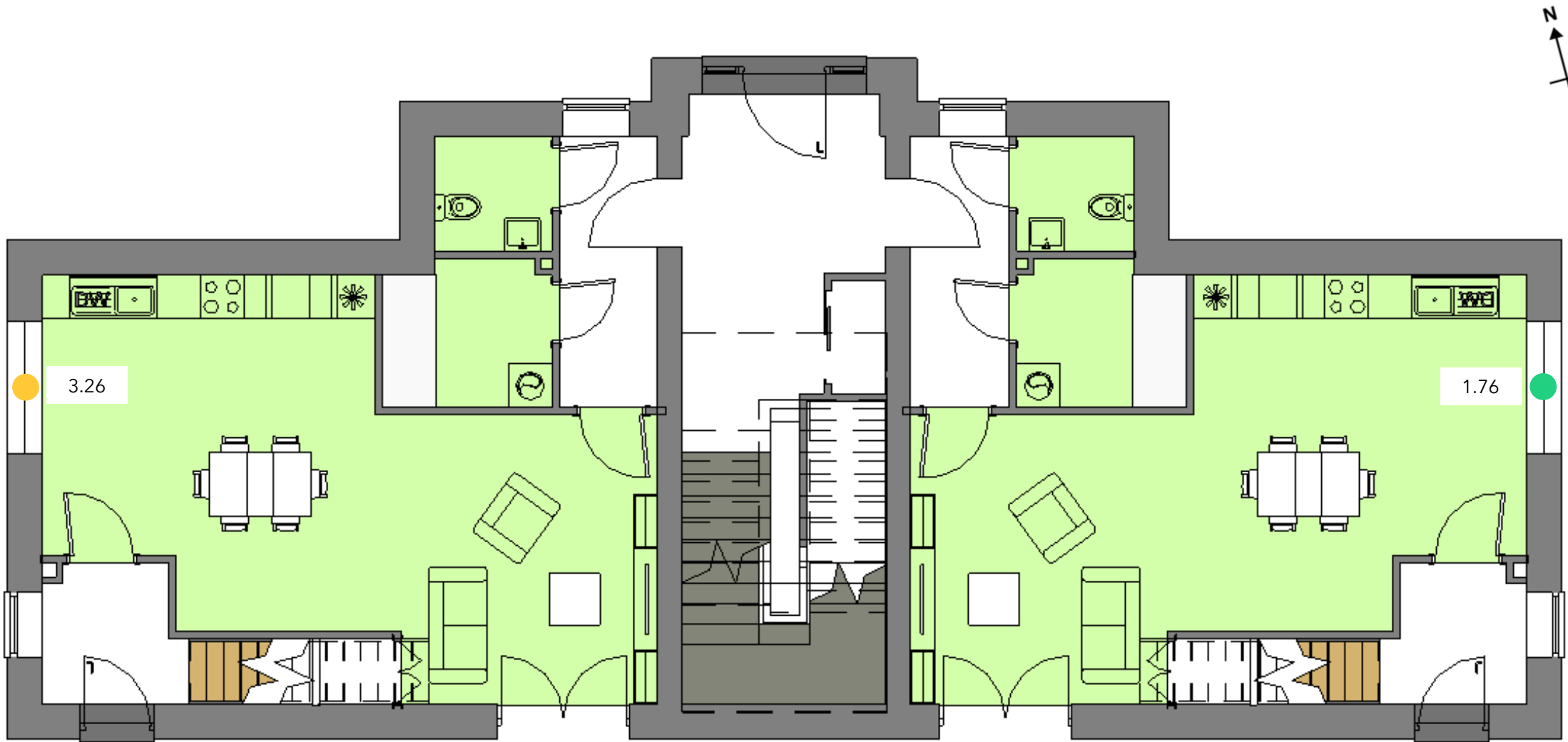
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BZ08

ETS - BZ08 Level 01

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded area/s is/are showing units where it's receiving less than the 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).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

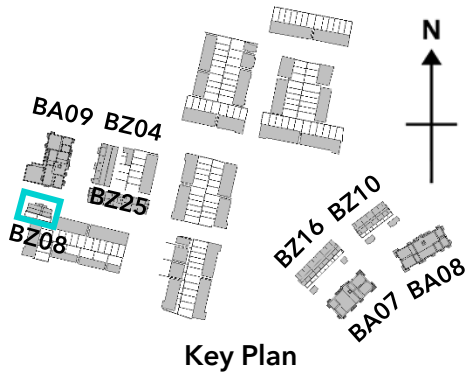
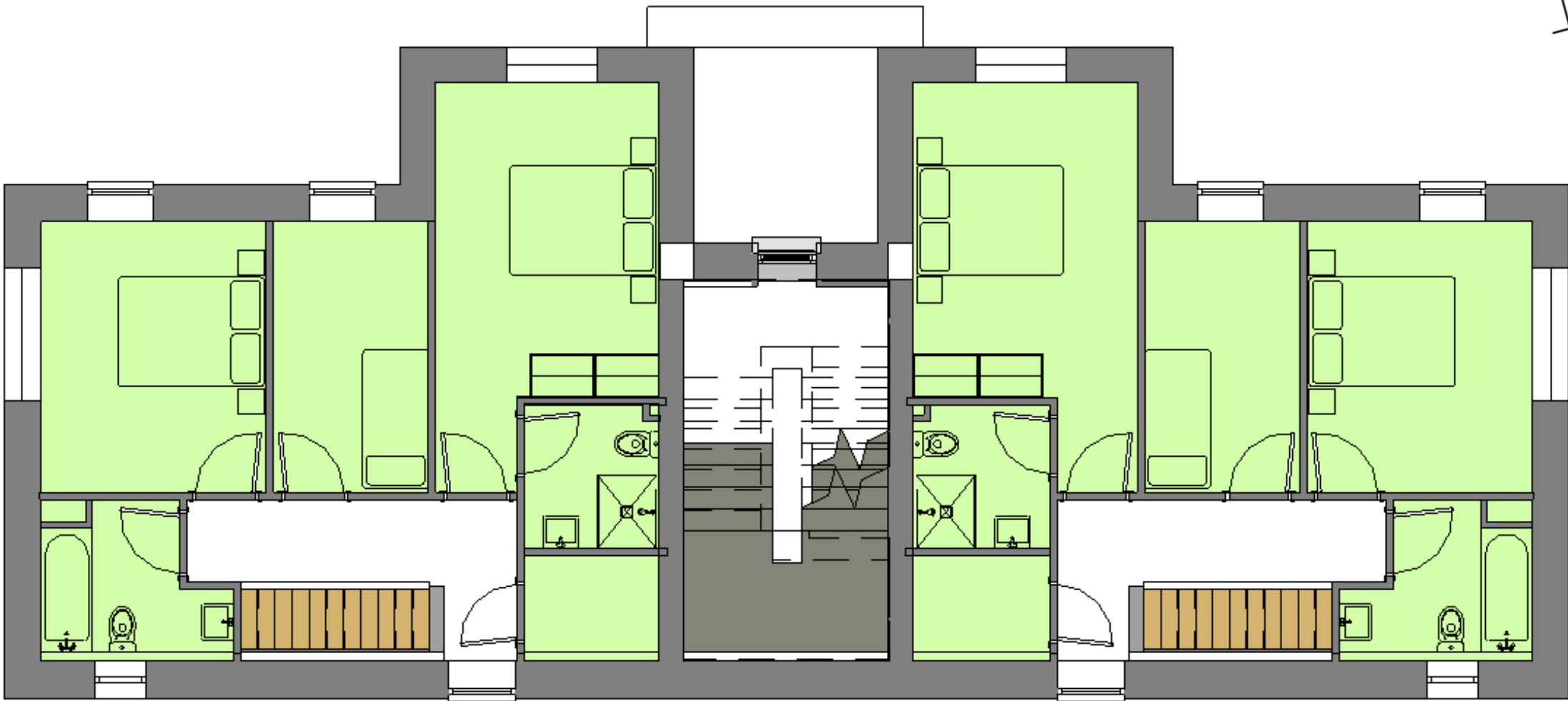
BZ08	Number of units		
	Pass	Fail	Total
Level 0	2	0	2
Level 1	0	0	0
Level 2	2	0	2
	4	0	4
	100%	0%	

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ETS - BZ08 Level 01

Sunlight analysis results are illustrated below with green shaded units receiving targeted number of hours, at minimum of 1.5 hours. Pink shaded area/s is/are showing units where it's receiving less than the 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).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

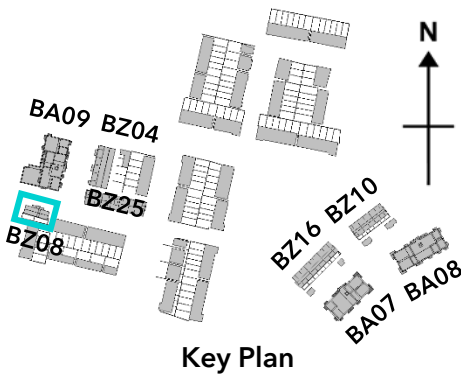
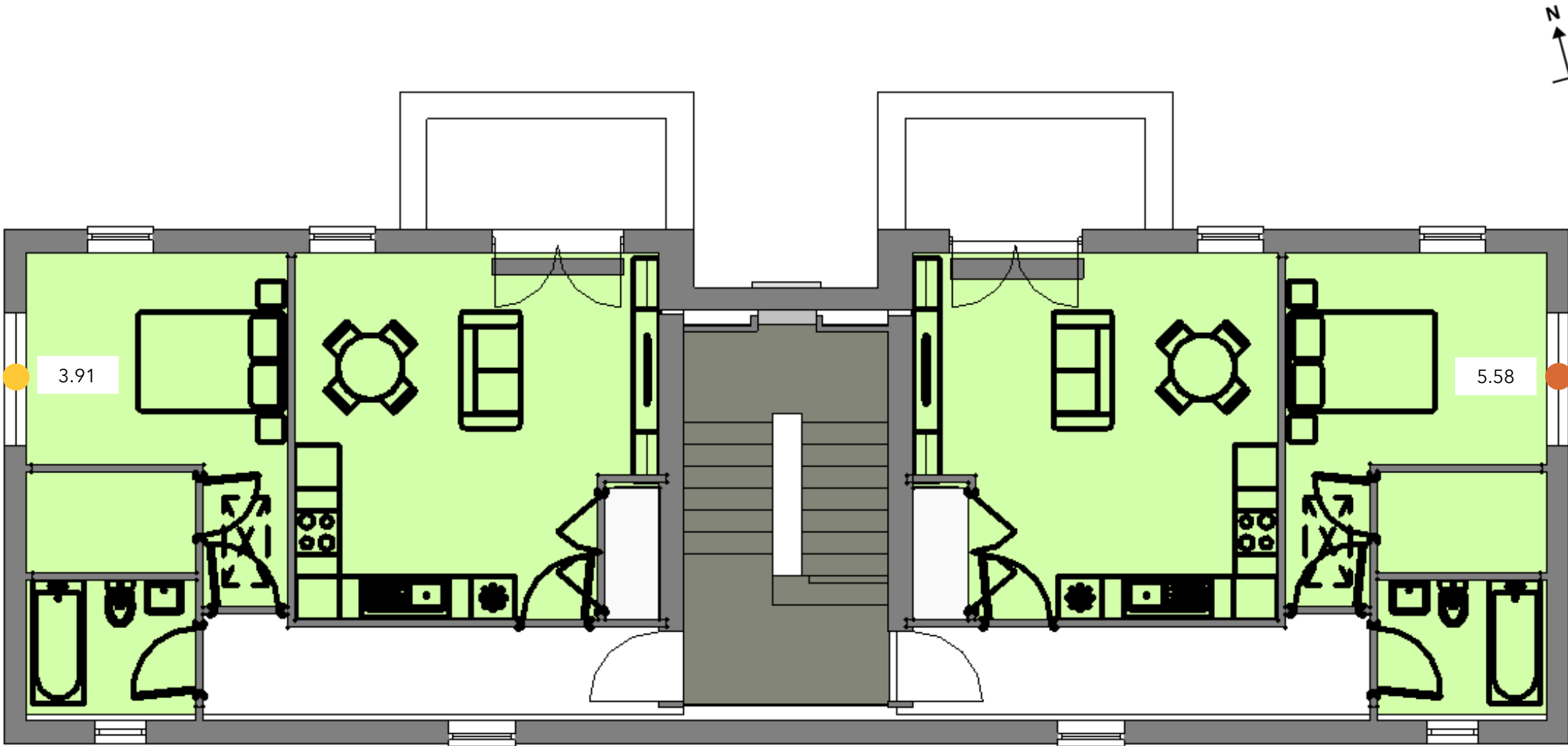
BZ08	Number of units		
	Pass	Fail	Total
Level 0	2	0	2
Level 1	0	0	0
Level 2	2	0	2
	4	0	4
	100%	0%	

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ETS - BZ08 Level 02

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

BZ08	Number of units		
	Pass	Fail	Total
Level 0	2	0	2
Level 1	0	0	0
Level 2	2	0	2
	4	0	4
	100%	0%	

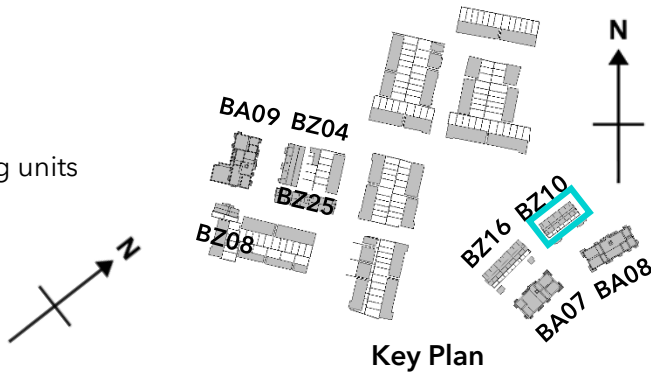
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BZ10

ETS - BZ10 Level 00

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

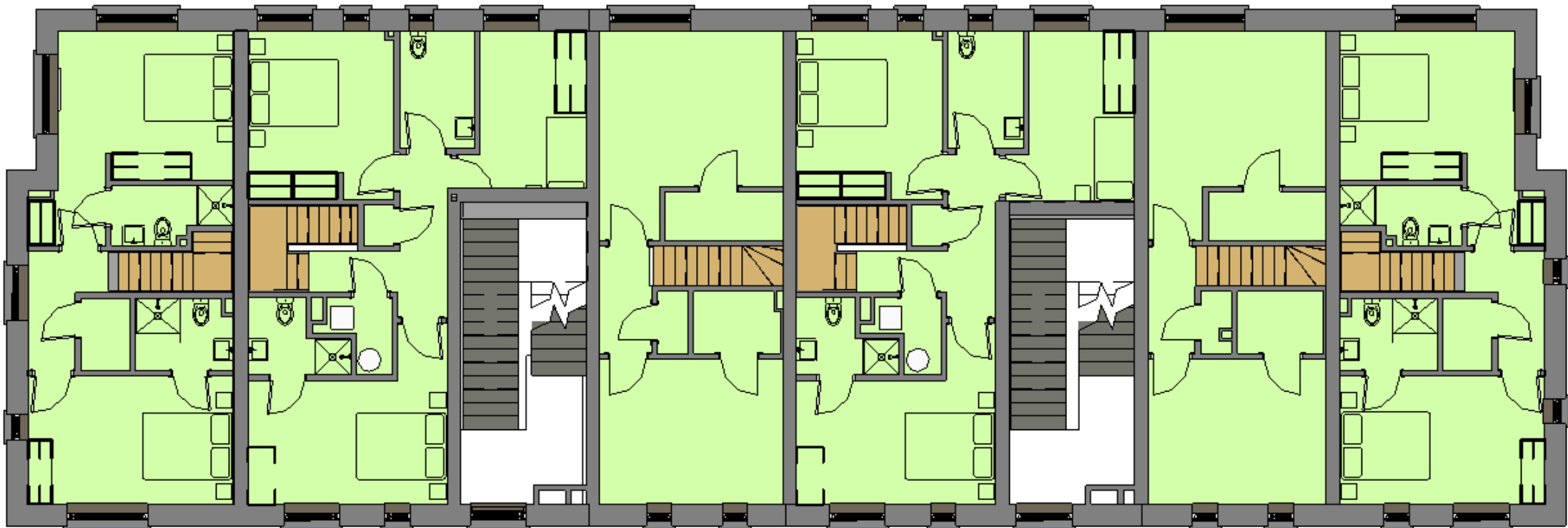
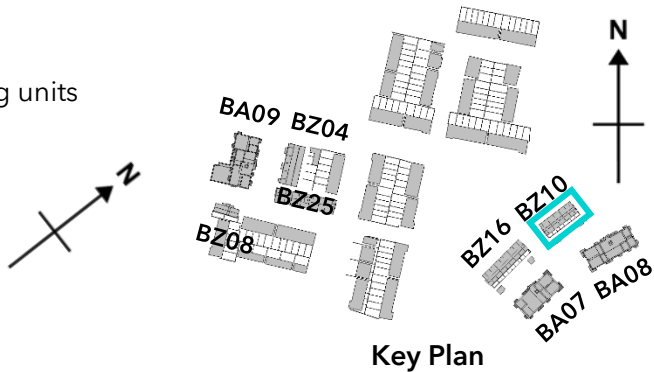
BZ10	Number of units		
	Pass	Fail	Total
Level 0	6	0	6
Level 1	0	0	0
Level 2	3	0	3
	9	0	9
	100%	0%	

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ETS - BZ10 Level 01

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

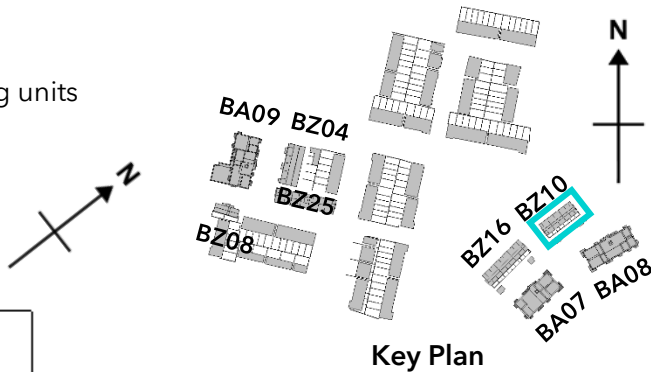
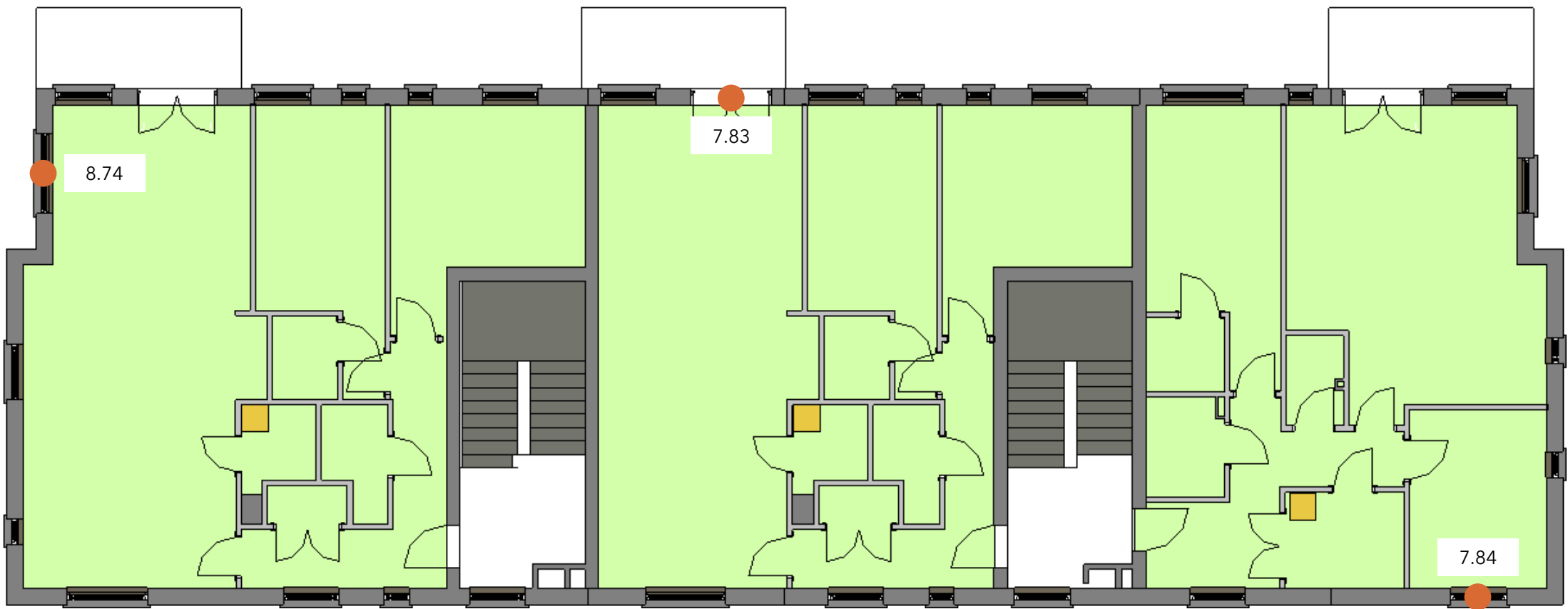
BZ10	Number of units		
	Pass	Fail	Total
Level 0	6	0	6
Level 1	0	0	0
Level 2	3	0	3
	9	0	9
	100%	0%	

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ETS - BZ10 Level 02

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

BZ10	Number of units		
	Pass	Fail	Total
Level 0	6	0	6
Level 1	0	0	0
Level 2	3	0	3
	9	0	9
	100%	0%	

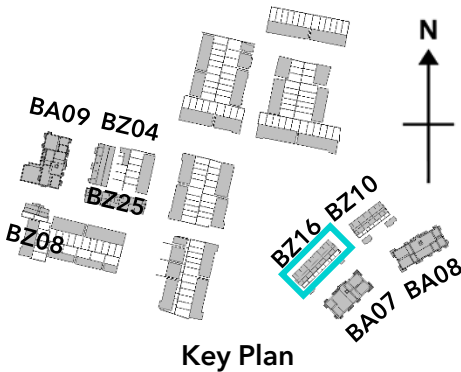
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BZ16

ETS - BZ16 Level 00

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

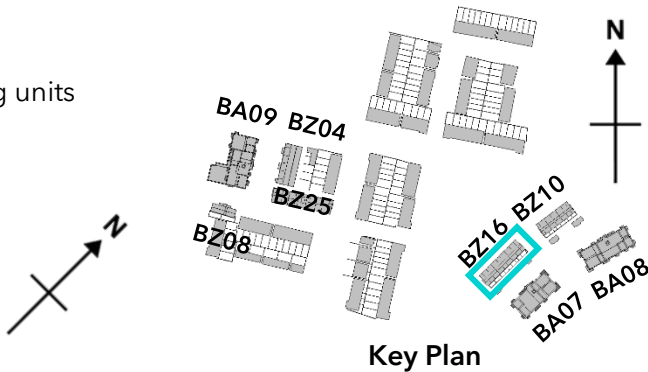
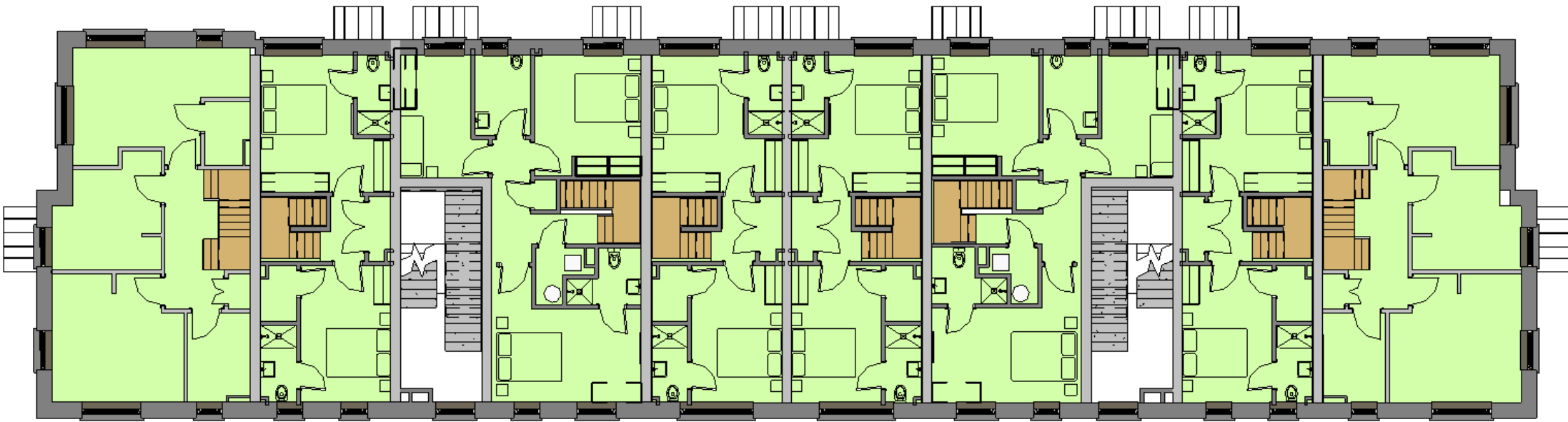
BZ16	Number of units		
	Pass	Fail	Total
Level 0	8	0	8
Level 1	0	0	0
Level 2	4	0	4
	12	0	12
	100%	0%	

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ETS - BZ16 Level 01

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

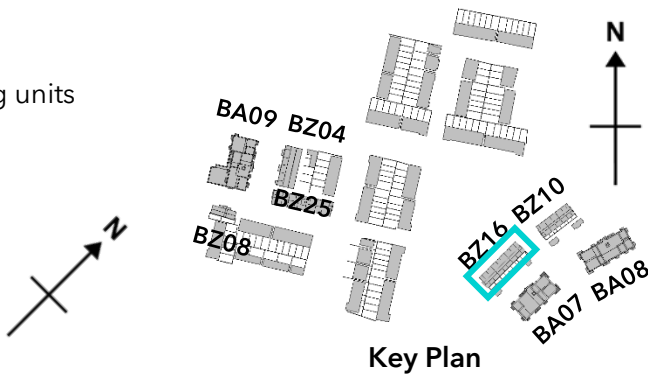
BZ16	Number of units		
	Pass	Fail	Total
Level 0	8	0	8
Level 1	0	0	0
Level 2	4	0	4
	12	0	12
	100%	0%	

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ETS - BZ16 Level 02

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

BZ16	Number of units		
	Pass	Fail	Total
Level 0	8	0	8
Level 1	0	0	0
Level 2	4	0	4
	12	0	12
	100%	0%	

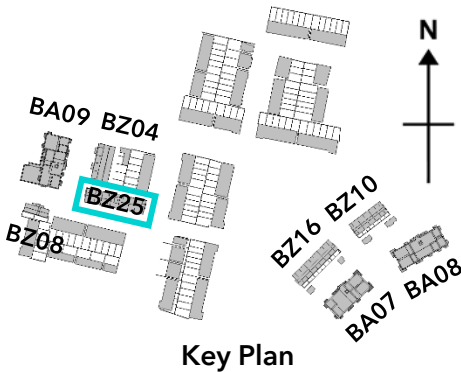
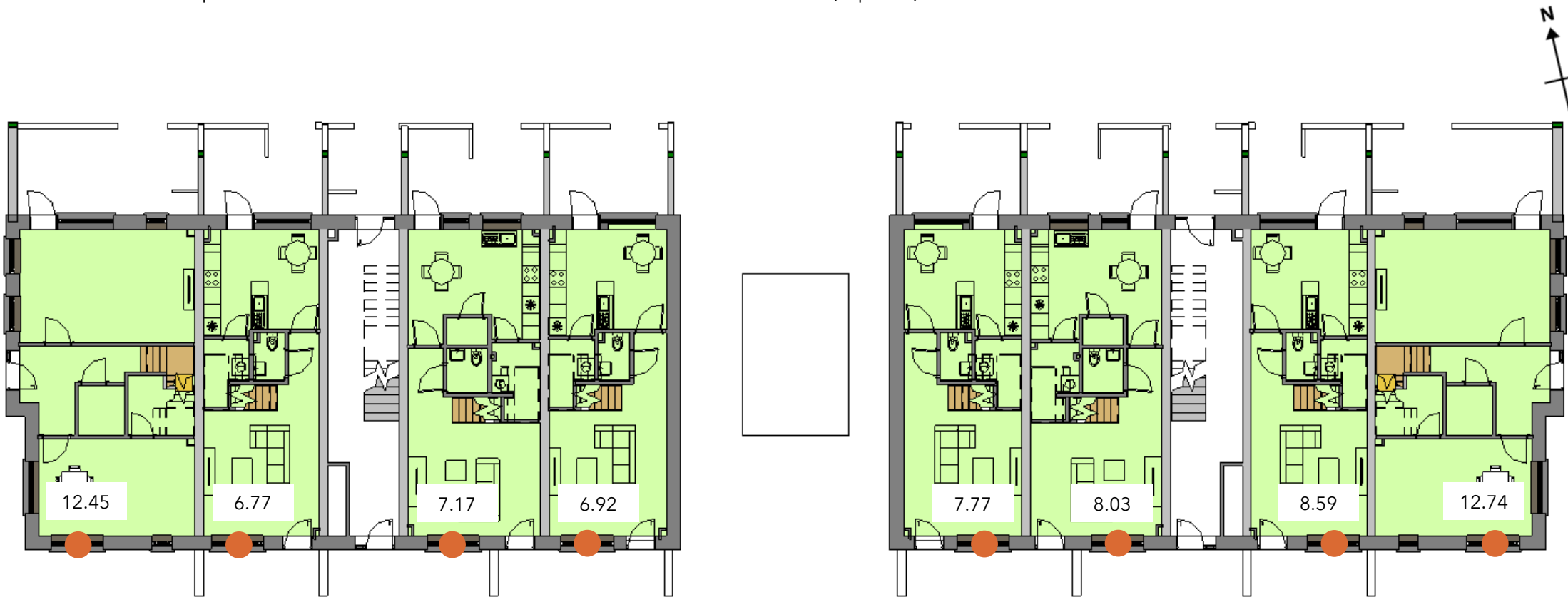
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BZ25

ETS - BZ25 Level 01

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

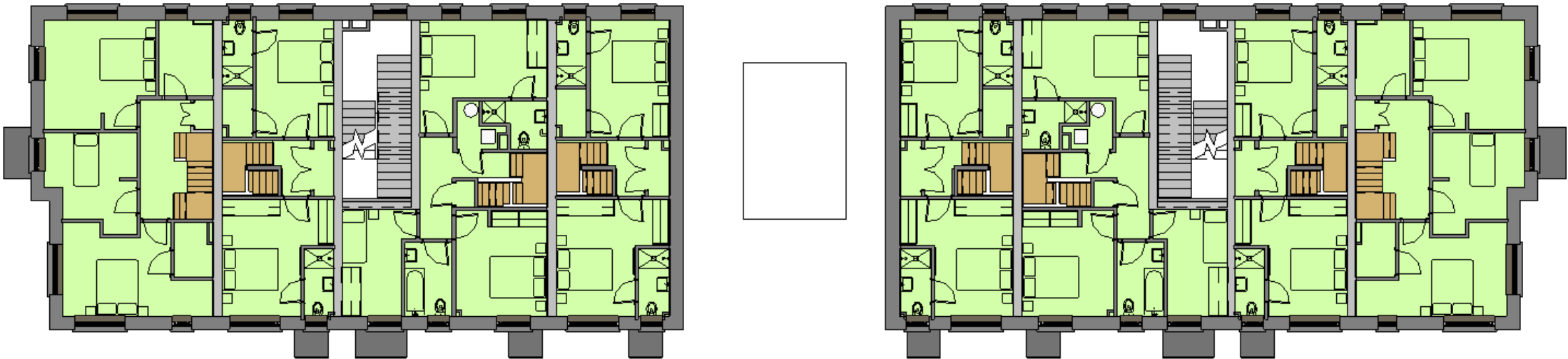
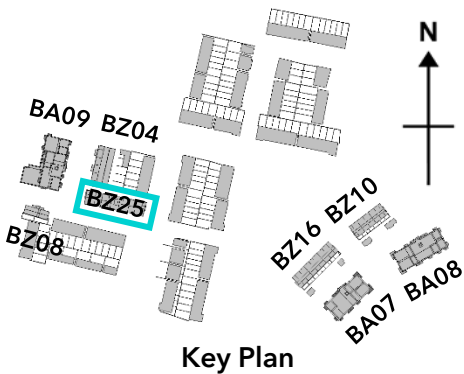
BZ25	Number of units		
	Pass	Fail	Total
Level 0	8	0	8
Level 1	0	0	0
Level 2	4	0	4
	12	0	12
	100%	0%	

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

- 1. Daylight
- 2. Aspect
- 3. Open Space

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

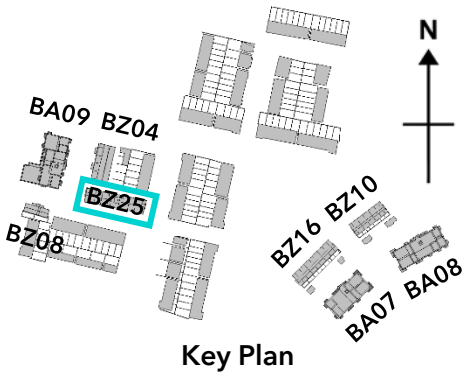
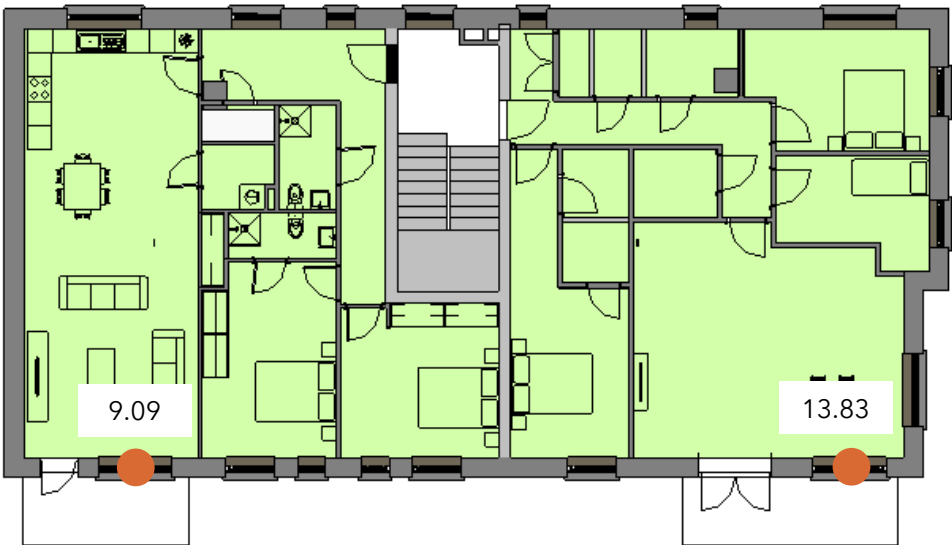
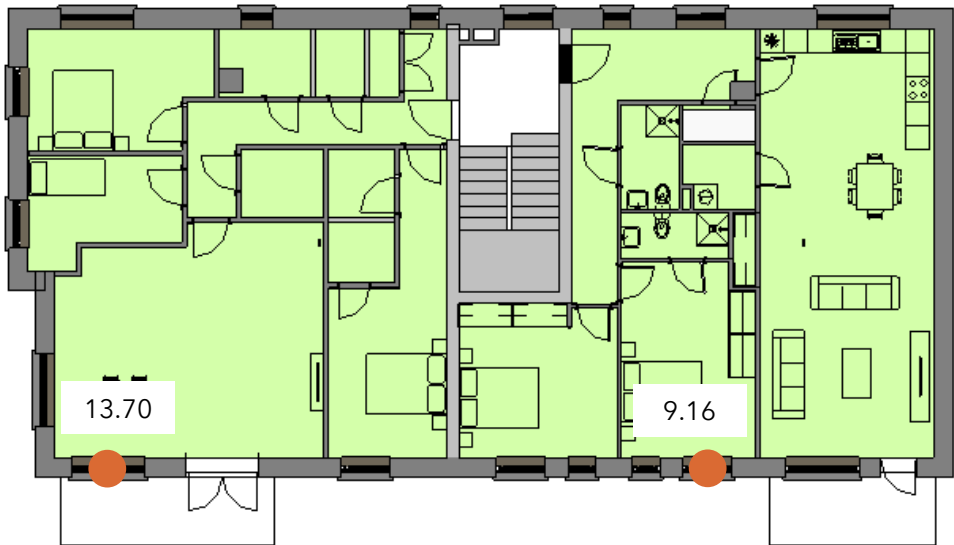
BZ25	Number of units		
	Pass	Fail	Total
Level 0	8	0	8
Level 1	0	0	0
Level 2	4	0	4
	12	0	12
	100%	0%	

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A unit is deemed compliant where a minimum of 1.5 hours is achieved on the 21st of March (Equinox).



Compensatory Measures

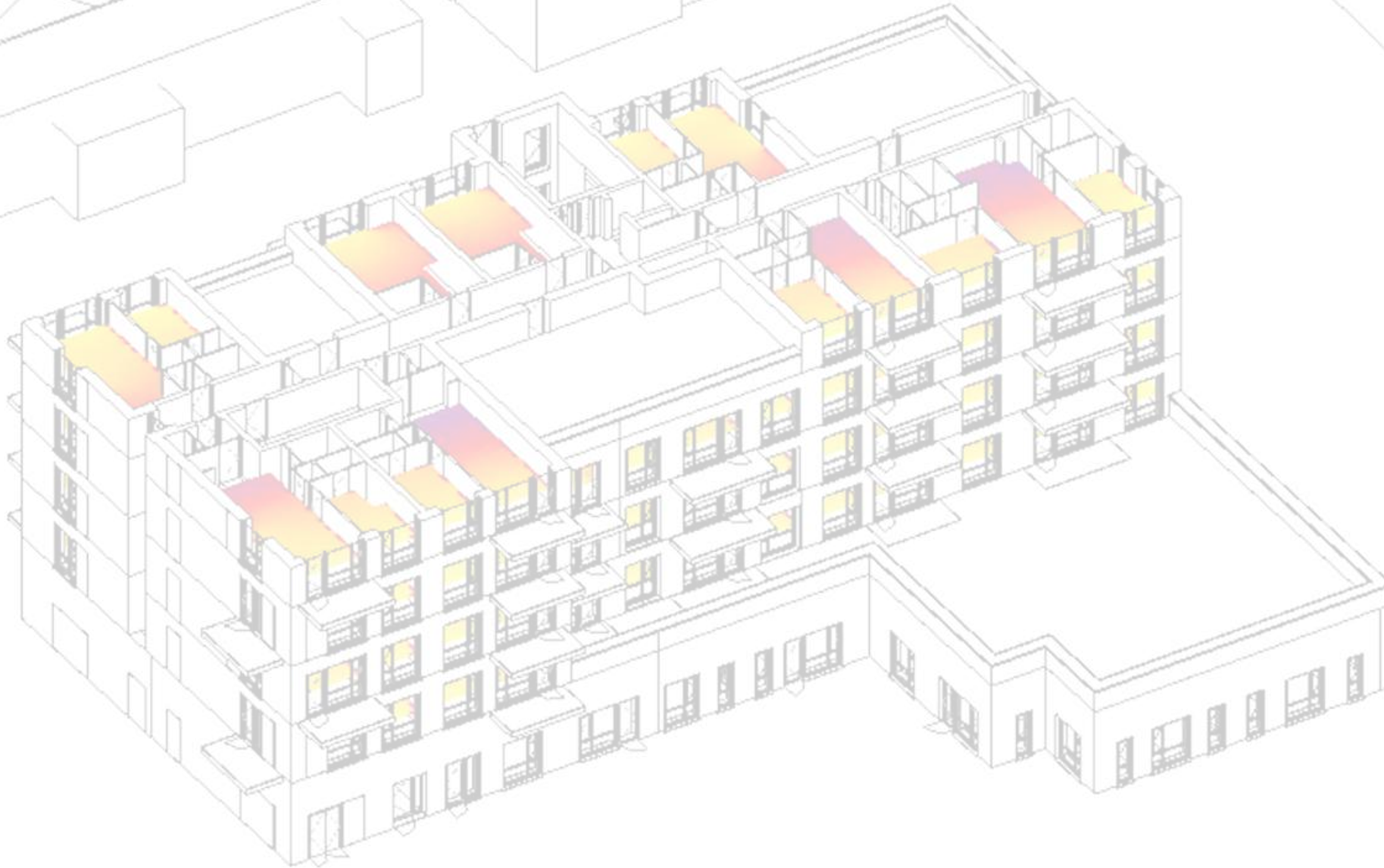
- 1. Daylight
- 2. Aspect
- 3. Open Space

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

BZ25	Number of units		
	Pass	Fail	Total
Level 0	8	0	8
Level 1	0	0	0
Level 2	4	0	4
	12	0	12
	100%	0%	

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Appendix E - Clarifications



Clarifications

Impact of Trees

The BRE Guide provides the following guidance in relation to the impact of trees:

“G1.1 Trees and hedges vary in their effects on skylight and sunlight. Most tree species will cast a partial shade[G¹,G²]; for deciduous trees this will vary with time of year. However very little light can penetrate dense belts of evergreen trees, and the shade they cause will be more like that of a building or wall.

G1.2 It is generally more difficult to calculate the effects of trees on daylight because of their irregular shapes and because some light will generally penetrate through the tree crown. Where the effect of a new building on existing buildings nearby is being analysed, it is usual to ignore the effect of existing trees. This is because daylight is at its scarcest and most valuable in winter when most trees will not be in leaf.”

The guide goes on to further note:

“G2 Skylight in new dwellings obstructed by trees

G2.1 Sometimes, however, trees should be taken into account, for example where a new dwelling is proposed near to large existing trees. ”

“G3 Sunlight in new dwellings obstructed by trees

G3.1 To assess sunlight provision to new dwellings, BS EN 17037 recommends the calculation of hours of sunlight received on a single day, assuming clear skies; 21 March is the suggested date. At this time of the year deciduous trees will not be in full leaf and therefore some sun will be expected to penetrate. However, it would be impossible to accurately simulate how the fragmented obstruction of a tree would obstruct direct sunlight to a point at a particular time.”

“G4 Sunlight in gardens with trees

G4.1 In assessing the impact of buildings on sunlight in gardens (see section 3.3), trees and shrubs are not normally included in the calculation unless a dense belt or group of evergreens is specifically planned as a windbreak or for privacy purposes. This is partly because the dappled shade of a tree is more pleasant than the deep shadow of a building (this applies especially to deciduous trees).”

“G5 Effect of hedges

G5.1 High hedges may cause loss of sunlight and skylight to neighbouring gardens and houses. Under the Anti-Social Behaviour Act 2003, a local authority may require a hedge to be pruned if it is causing a nuisance, which can include if it is blocking too much sunlight or skylight.”

BRE have also clarified directly to IN2 that large existing belts of trees should be including and that:

“For proposed landscaping, trees and vegetation would usually need not be included if they would not impact daylight/sunlight to proposed areas, for example if they were low level (below sill height) or would not obstruct a room. Deciduous trees need not be included in assessment of sunlight to open spaces. Where a dense belt or group of trees is specifically planned as a windbreak or for privacy purposes, it is better to include these if they could obstruct daylight/sunlight. The growth of trees and their likely final size should be allowed for. In other situations professional judgement should be used. For example, if plans suggest a proposed tree would be likely to significantly obstruct a room then an account for it could be included.”

View Out

Whilst the metric to assess View Out is included in the BRE Guide, the following clarification is noted for housing:

“The method is most applicable to spaces with fixed seating locations such as offices and schools; it is less relevant to housing where people can move about in order to see out.”

Therefore, no assessment was determined to be required for this development.

Protection Against Glare

The EN 17037 standard does include a metric for determining glare, the standard clarifies that the applicability is:

“A glare assessment is suggested in spaces, where the expected activities are comparable to reading, writing or using display devices and the user is not able to choose freely his position and viewing direction. For glare protection, a movable or retractable solar protection device can individually be adjusted while fixed devices may need additional shading devices to support individual needs.”

The BRE Guide notes:

“Sunlight is also valued in non-domestic buildings. However, the requirement for sunlight will vary according to the type of non-domestic building, the aims of the designer and the extent to which the occupants can control their environment. People appreciate sunlight more if they can choose whether to be exposed to it, either by changing their positions in the room or using adjustable shading. Where prolonged access to sunlight is available, shading devices will also be needed to avoid overheating and unwanted glare from the sun. This can apply to housing as well.”

Therefore, as the assessments within this report are for the residential sections of the development, where occupants can choose their locations and viewing direction, no assessment was determined to be required for this development.



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