

Proposed Student Accommodation, and Commercial Development Independent House, Dublin City

Daylight and Sunlight Assessment Report
Applicant: Summix IHD Developments Limited

"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." - BR 209

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The following report has been prepared by 3D Design Bureau (3DDB). 3DDB have over 7 years experience in producing daylight and sunlight assessments for large scale planning applications and are recognised as experts in the field. This report has been reviewed and overseen by Nicholas Polley and Richard Dalton. Nicholas is CEO of 3D Design Bureau and is a qualified Building Services Engineer (B.Sc.(Eng) Dip Eng) with over 25 years experience in the industry. Richard is Associate Director of 3DDB and has a bachelors degree in Building Information Modelling (BIM) with over 20 years experience in the industry.

1.0 Executive Summary

1.1 Summary of Assessment

This proposal seeks permission for a large-scale residential development principally comprising of student accommodation. The subject site at Nos. 87-93 Middle Abbey Street, Dublin 1, D01 NH70 is collectively known as 'Independent House'.

The proposed development will include a combination of retention and demolition of existing structures to facilitate 316 no. student accommodation bedspaces within walking distance to major city centre colleges such as Trinity College and TU Dublin, Bolton Street and Grangegorman campuses.

3D Design Bureau (3DDB) were commissioned to carry out a comprehensive daylight and sunlight assessment, along with an accompanying shadow study as part of the planning application for the proposed student accommodation.

Assessments have been broken down into the following two main categories, 'Impact Assessment' and 'Scheme Performance', of which there are subcategories as summarised below:

Impact Assessment

Following advice within the BRE Guidelines, the surrounding context was carefully considered to ensure all properties and amenity spaces that may potentially experience a level of effect have been included in the study. A more detailed explanation of the criterion applied can be found in section "4.1 Impact Assessment, Window Selection Criteria" on page 13.

The impact assessment that was carried out for the purpose of this report is in accordance with the BRE Guidelines. The potential levels of effect that the proposed development would have on the surrounding existing environment and/or properties has been assessed. The assessed properties in the impact assessment are indicated in Fig. 1.1 below.

The effects were assessed in the baseline state versus the proposed state. For definition of model states, including a visual representation of the model states, please refer to the 'Methodology' section on Page 15.

This impact assessment covers the following metrics:

- Effect on daylight to surrounding properties. The effect to the Vertical Sky Component (VSC) of the windows of the following neighbouring properties was assessed:

- GPO (1)
- Rear of Arnotts (2)
- Granted Hotel (DCC Reg. Ref. 4880/22) (3)
- 94 Middle Abbey Street, facing Williams Lane (4)
- 61-67 Middle Abbey Street (5)
- Properties East of the subject site (6)
 - 35-39 O'Connell Street (6)
 - 84 Middle Abbey Street (6)
 - 79-82 Middle Abbey Street (6)

- Effect on sunlight to surrounding properties. The effect to the annual and winter probable sunlight hours (APSH/ WPSH) of the windows of the following neighbouring properties was assessed:

- GPO (1)
- Rear of Arnotts (2)
- Granted Hotel (DCC Reg. Ref. 4880/22) (3)
- Properties East of the subject site (6)
 - 84 Middle Abbey Street (6)
 - 79-82 Middle Abbey Street (6)

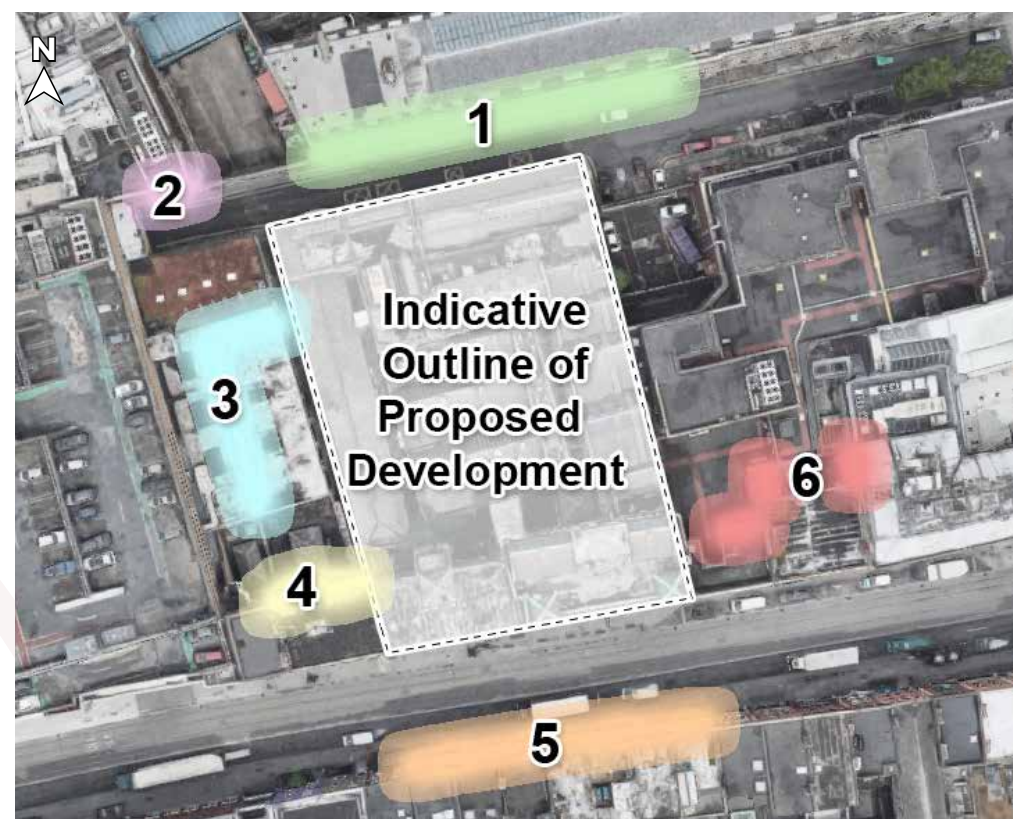


Fig. 1.1: Scope of surrounding properties and environment assessed.

The results of the impact assessments can be found in section A.0 on page 37. These results are summarised in section 1.2 and explained in section "Analysis of Impact Assessment Results" on page 23.

Scheme Performance

Daylight access for the bedrooms and communal living areas of the student accommodation have been assessed through a Spatial Daylight Autonomy (SDA) study. Sunlight access for the same rooms has been quantified through a Sunlight Exposure (SE) assessment. A Sun On Ground (SOG) study has also been carried out to indicate the level of sunlight on March 21st in the proposed external amenity spaces. The results of these scheme performance assessments, which are in accordance with the BRE Guidelines, can be found in section C.0 on page 75. These results are summarised in section 1.3 and explained in section "5.2 Analysis of Scheme Performance Results" on page 30.

Supplementary scheme performance studies have also been carried out. These include an SDA assessment under the I.S. EN 17037 criterion, and a No Sky Line (NSL) study within proposed habitable rooms. The results of the supplementary scheme performance assessments can be found in section D.0 on page 113.

1.2 Impact Assessment Results Overview - Neighbouring Properties:

Effect to Daylight - Vertical Sky Component (VSC):

Effect to Vertical Sky Component (VSC)		
	Residential Properties	Commercial Premises
Windows/Rooms Assessed	41	138
Negligible	40	35
Minor Adverse	0	35
Moderate Adverse	1	59
Major Adverse	0	9
Beneficial Impact*	0	0
n.a.**	0	0

Effect to Sunlight - Annual Probable Sunlight Hours (APSH):

Effect to Annual Probable Sunlight Hours (APSH)		
	Residential Properties	Commercial Premises
Windows/Rooms Assessed	8	70
Negligible	3	52
Minor Adverse	2	10
Moderate Adverse	1	8
Major Adverse	1	0
Beneficial Impact*	0	0
n.a.**	1	0

Effect to Sunlight - Winter Probable Sunlight Hours (WPSH):

Effect to Winter Probable Sunlight Hours (WPSH)		
	Residential Properties	Commercial Premises
Windows/Rooms Assessed	8	70
Negligible	3	34
Minor Adverse	0	4
Moderate Adverse	0	2
Major Adverse	0	22
Beneficial Impact*	0	0
n.a.**	5	8

*'Beneficial Impact' will only be stated if the ratio of change is greater than 1.20 (an improvement of 20%). Should less perceptible improvements occur a 'Negligible' level of effect will be stated.

**In instances where a baseline value is particularly low, levels of effects can appear exaggerated. To mitigate such occurrences, If the baseline value in the VSC or APSH/WPSH studies is below 1%, 3DDB have categorised the level of effect as n.a. (not applicable). Where windows/rooms are considered non-applicable, these instances are not included in the compliance rates calculation.

1.3 Scheme Performance Results Overview:

Spatial Daylight Autonomy (SDA):

Spatial Daylight Autonomy (SDA) BRE 209 Criteria	
Unit Count	84
Rooms Assessed	370
Without Trees	
Compliant	352
Non-compliant	18
Compliance Rate*	c. 95%
With Trees (Proposed and Existing Trees)	
Compliant	352
Non-compliant	18
Compliance Rate*	c. 95%
Note: It is the expert opinion of 3DDB that the appropriate criteria for SDA assessments are that of the BRE Guidelines (BRE 209)	

* Compliance rates stated for the SDA analysis are based on the rooms that have been assessed.

Sunlight Exposure (SE):

Sunlight Exposure (SE)	
Units Assessed	84
SE without deciduous trees	
Below Minimum	17
Minimum	28
Medium	10
High	29
Compliance Rate*	c. 80%
SE with trees as opaque objects	
Below Minimum	17
Minimum	28
Medium	10
High	29
Compliance Rate*	c. 80%

* Compliance rates stated for the SE analysis are based on the units that have been assessed.

Sun On Ground (SOG) in proposed communal amenity areas:

Sun On Ground (SOG) in proposed gardens / amenity areas	
Assessed Area	Meets BRE Recommendation
Basement Level Communal Amenity	No
Level 5 Communal Amenity	Yes
Level 6 Communal Amenity	No
Level 8, West Communal Amenity	Yes
Level 8, North Communal Amenity	Yes
Combined Communal Amenity*	Yes

* In an additional assessment, it has been tested if the overall communal open space provided can receive at least two hours of sunlight on March 21st.

1.4 Supplementary Assessment Results Overview

Spatial Daylight Autonomy (SDA) under I.S. EN 17037 Criterion:

Spatial Daylight Autonomy (SDA) under I.S. EN 17037 Criterion	
Unit Count	84
Rooms Assessed	370
Without Trees	
Compliant	273
Non-compliant	97
Compliance Rate*	c. 74%
With Trees (Proposed and Existing Trees)	
Compliant	271
Non-compliant	99
Compliance Rate*	c. 73%

Note: The study under the I.S. EN 17037 criterion should be considered a supplementary assessment. It is the expert opinion of 3DDB that the appropriate criteria are that of the BRE Guidelines (BRE 209)

* Compliance rates stated for the SDA analysis are based on the rooms that have been assessed.

No Sky Line (NSL):

No Sky Line (NSL):	
Unit Count	84
Rooms Assessed	370
Yes	223
No	147
Compliance Rate**	c. 60%

** As the BRE Guidelines do not provide a recommended minimum for NSL in proposed developments, compliance rates for NSL are calculated using a criteria applied by 3DDB.

* Compliance rates stated for the NSL analysis are based on the rooms that have been assessed.

2.0 Guidelines / Standards

Overview

Neither the British Standard, European Standard, British Annex to the European Standard nor the BRE Guidelines (BR 209) set out rigid standards or limits. They are all considered advisory documents. The BRE Guide is preceded by the following very clear statement as to how the design advice contained therein should be used:

“The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its 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.”

That the recommendations of the BRE Guidelines are not suitable for rigid application to all developments in all contexts, is of particular importance in the context of national and local policies for the consolidation and densification of urban areas or when assessing applications for highly constrained sites (e.g. lands in close proximity or immediately to the south of residential lands). A compromise may have to be made concerning daylight and sunlight compliance to achieve national or local planning objectives.

It is the expert opinion of 3D Design Bureau, that the BRE Guidelines (BR 209) are the most appropriate guiding document for daylight and sunlight assessment. For daylight within proposed developments, a supplementary study has also been carried out under the criteria of I.S. EN 17037. The rationale for this opinion is outlined below.

Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities. (2023)

In July 2023, the Department of Housing, Planning and Local Government published an updated guidance document for new apartments, *Sustainable Urban Housing: Design Standards for New Apartments*. This document makes reference to, EN 17037:2018: *Daylight in Buildings* (the European Standard), BS EN 17037:2018: *Daylight in Buildings* (the UK National Annex to the European Standard) and to the 3rd edition of Building Research Establishment’s *Site Layout Planning for Daylight and Sunlight: a Guide to Good Practice* (BR 209 2022).

Paragraph 6.7 of the 2023 apartment guidelines states:

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

As such, this report identifies where daylight and sunlight recommendations have and have not been achieved. Rationale and compensatory design solutions are the remits of the planning consultant and/or the project architect, these will also be included in this report where applicable.

Note: Section 3.2 of the Urban Development and Building Height Guidelines 2018, provides similar guidance as above. However, it should be noted that at the time of publication of the *Urban Development and Building Height Guidelines* (2018), BR 209 was in the 2nd edition, first published in 2011. Since then, a 3rd edition of BR 209 has been published (June 2022) and the 2nd edition has been withdrawn. BR 209 no longer references BS 8206-2:2008, which has also been withdrawn. The standard used as reference in BR 209 edition 3 is BS EN 17037.

BR 209 - Site Layout Planning for Daylight and Sunlight: a Guide to Good Practice (2022)

This document will be referred to as the *BRE Guidelines*, the *BRE Guide* or *BR 209* in this report.

At the time of writing this report, the BRE Guidelines are in the third edition (BR 209). The BRE Guidelines set out recommendations for appropriate levels of daylight and sunlight within a proposed development, as well as providing guidance on impacts arising from a proposed development to surrounding properties and amenity areas.

Upon publication of the 3rd Edition of the BR 209 (2022), the 2nd edition (2011) has been withdrawn. Among the updates from the 2nd to the 3rd edition are some changes in the recommended metrics to use for carrying out scheme performance assessments.

Daylight within proposed developments was previously assessed under the 2011 guidelines using an ‘Average Daylight Factor’ assessment (ADF). This has been replaced with a ‘target illuminance assessment’, also known as a ‘Spatial Daylight Autonomy’ assessment (SDA).

Sunlight within proposed developments was previously assessed under the 2011 guidelines using an ‘Annual / Winter Probable Sunlight Hours’ assessment (APSH/WPSH). This has been replaced with a ‘Sunlight Exposure’ assessment (SE). However, APSH/WPSH is still recommended for sunlight impact assessments.

As such, no ADF or APSH/WPSH assessment will be included as part of a scheme performance assessment under the updated guidelines.

Details of the criteria for new metrics, and all other relevant metrics, can be found in the methodology section on Page 13 of this report.

It is the expert opinion of 3D Design Bureau that the BRE Guidelines are the most appropriate guiding document for assessing daylight potential within a proposed development. The rationale for this opinion is outlined in the Dublin City Council development plan (2022-2028), which states:

"Prior to 2018, Ireland had no standard for daylight. In 2018, the National Standards Authority of Ireland adopted EN 17037 to directly become IS EN 17037. It is important to note that no amendments were made to this document and unlike BS EN 317037, it does not contain a national annex. It offers only a single target for new buildings (there are no space by space targets – e.g. a kitchen would have the same target as a warehouse or office). It does not offer guidance on how new developments will impact on surrounding existing environments. These limitations make it unsuitable for use in planning policy or during planning applications. BR 209 must still be used for this purpose."

Whilst BRE Guidelines draws reference from BS EN 17037, there are some subtle differences between BR 209 and BS EN 17037. For the purposes of this report, the BRE Guidelines (BR 209) is considered the appropriate reference document.

A detailed description of the various recommendations for impact assessment and scheme performance is contained in section "4.3 Quantitative Impact Assessment Overview" on page 17 of this report.

EN 17037:2018: Daylight in Buildings (2018)

EN 17037 is a European Standard that provides recommendations for daylight within spaces. (Emphasis added)

EN 17037:2018 recommends that 300 lux should be received across 50% of a hypothetical reference plane of any room for half of the daylight hours of the year, with no less than 100 lux received across 95% of the reference plane. No distinction is made for the function of the room for target lux levels within this standard.

It is the opinion of 3D Design Bureau that these target values are less appropriate for proposed residential developments than the recommendations made in the BRE Guidelines, which apply room-specific target values for appropriate LUX levels.

Recommendations made in EN 17037 regarding Sunlight Exposure for proposed developments have been incorporated into the BRE Guidelines. As such, Sunlight Exposure is deemed the appropriate assessment for sunlight within habitable rooms of the proposed development.

EN 17037 also makes recommendations related to glare and quality of view out. These aspects are not addressed in this report as these assessments have less relevance in a residential context where occupants have the freedom to move about in order to improve level of glare or alter the view out.

I.S. EN 17037:2018 Daylight in Buildings (2018)

I.S. EN 17037 is a direct adoption of the European Standard EN 17037:2018 that provides recommendations for daylight within spaces.

The target values given within I.S. EN 17037 are directly adopted from EN 17037. As such, there are no room-specific recommendations for daylight. Because of these limitations, it is the expert opinion of 3D Design Bureau, that the recommendations made in the BRE Guidelines are more appropriate to use than those within I.S. EN 17037.

Regardless, a supplementary SDA study has been carried out on the proposed development using the criterion of I.S. EN 17037, with compliance rates stated. However, this should be considered a supplementary study.

BS EN 17037:2018: Daylight in Buildings (2018)

BS EN 17037 is the British Annex to the European Standard (see above). The British Annex acknowledges that a rigid application of the European Standard "may not be achievable". It states "... it is the opinion of the UK committee that the recommendations for daylight provision in a space [...] may not be achievable for some buildings, particularly dwellings."

In BS EN 17037, daylight recommendations differ depending on the function of a room. Target lux levels are applied across 50% of the reference plane of a room for half of the daylight hours. The target lux levels are:

- 200 Lux for kitchens • 150 Lux for living rooms • 100 Lux for bedrooms

No minimum is stated to be achieved across 95% of the working plane. If a space has dual purposes it is advised that the higher target value should be applied.

The Compact Growth Guidelines (2024)

The Compact Growth Guidelines offers guidance on compact growth principles as a means to promote sustainable development, efficient land use, and infrastructure while minimizing sprawl and environmental degradation, contributing to sustainable urban growth, enhance liveability and support broader planning objectives.

In regard to daylight, section 5.3.7 states:

"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.

(...)

(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 Compact Growth Guidelines should be applied within statutory development plans and during the consideration of individual planning applications. Flexibility in interpretation allows planning authorities to tailor recommendations to specific local contexts and planning objectives.

Dublin City Development Plan (2022-2028)

Appendix 16 of the Dublin City Development Plan, 2022-2028 (DCC) provides direction to applicants and consultants conducting daylight and sunlight assessments, outlining the necessary information for inclusion in such reports.

The guidance provided in the DCC development plan was formulated prior to the publication of the 3rd Edition of the BRE guidelines (BR 209), but in anticipation of it. Section 5.0 of Appendix 16 of the DCC Development Plan states:

"Until such time when BR 209 is updated and all relevant and required information is included (i.e. removal of reference to BS 8206-2 and inclusion of metrics within BS EN 17037), the planning authority will request metrics from both BS 8206-2 and BS EN 17037. These are outlined below for clarity."

BR 209 has since been updated, leading to the withdrawal of some requested assessments in the DCC Development Plan by the BRE and their replacement with more pertinent assessments as outlined in the 'BR 209' section above.

Regarding impact assessments to existing buildings, the DCC Development Plan states:

"When assessing the impact of a proposed development, it is expected that all surrounding properties are assessed. It is not acceptable to assess only the surrounding residential properties. Residential properties should be clearly marked out and results for these presented separately."

As such, all impact analysis will be broken down into residential and commercial sections. Where necessary, assumptions have been made regarding the usage of existing windows in terms of habitable rooms and whether the property is currently in residential or commercial use. These assumptions have been indicated in the results tables and will be stated in the analysis of results.

Summary

According to the aforementioned guiding documents, the following assessments are typically conducted for a daylight and sunlight study, depending on the specific requirements of the project.

Performance of the Proposed Development

Annual Probable Sunlight Hours (APSH) and Winter Probable Sunlight Hours (WPSH) on all relevant windows: APSH and WPSH are no longer recommended for scheme performance assessments under BR 209. They have been replaced with Sunlight Exposure (SE). When conducting a scheme performance assessment for sunlight in the habitable rooms of the proposed development, Sunlight Exposure is the relevant metric. An APSH/WPSH assessment will not be carried out in the scheme performance assessment of the proposed development.

Sunlight on Ground (SOG) in all amenity spaces: A SOG assessment will be carried out, where appropriate, for the amenity spaces of the proposed development.

Average Daylight Factor (ADF) in all habitable rooms: BR 209 (2022) states that ADF is no longer recommended as a relevant method of assessment. ADF has been replaced with a target illuminance assessment. (See below). As such, no ADF assessment will be carried out on the proposed development.

No Sky Line (NSL) in all habitable rooms: An NSL assessment will be conducted for the habitable rooms of the proposed development as a supplementary study as part of a scheme performance assessment.

Target Illuminance in all habitable rooms: A target illuminance assessment, also known as a Spatial Daylight Autonomy (SDA) assessment, has replaced ADF as the relevant metric for assessing daylight within proposed habitable spaces. The two recommended methodologies for this assessment are detailed in section 4.5.1 on page 20. In a scheme performance assessment, the SDA will be calculated for the habitable rooms of the proposed development.

Impact on the Surrounding Properties

Vertical Sky Component (VSC) on all relevant surrounding windows: A VSC impact assessment will be conducted, where appropriate, on the relevant surrounding windows determined by the BRE decision chart as illustrated in Fig. 4.2 on page 13.

Annual Probable Sunlight Hours (APSH) and Winter Probable Sunlight Hours (WPSH) on all relevant surrounding windows: An APSH/WPSH impact assessment will be conducted, where appropriate, on the relevant surrounding windows/rooms that have an orientation within 90° of due south.

Sunlight on Ground (SOG) in all surrounding amenity spaces: A SOG impact assessment will be carried out, where appropriate, on the neighbouring gardens/ amenity spaces located within close proximity and to the north of the subject site.

3.0 Glossary

3.1 Terms and Definitions

Below is a list of daylight and sunlight terminology that may be used in this report depending on the assessments carried out.

Skylight

Non directional ambient light cast from the sky and environment.

Sunlight

Direct parallel rays of light emitted from the sun.

Daylight

Combined skylight and sunlight.

Overcast sky model

A completely overcast sky model, used for daylight calculation.

Cloudless sky model

A completely cloudless sky model, used for sunlight exposure calculation.

Model State

The model state is a term used to describe the configuration of the digital model used to run analysis. Model states will typically reflect a baseline state and a proposed or cumulative state. For a definition of the model states used in the analysis carried out in this report, please refer to "Preparing the analytical model" on page 15.

Vertical Sky Component (VSC)

Ratio of that part of illuminance, at a point on a given vertical plane, that is received directly from an overcast sky model, to illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. Usually the 'given vertical plane' is the outside of a window wall. The VSC does not include reflected light, either from the ground or from other buildings.

Annual Probable Sunlight Hours (APSH) / Winter Probable Sunlight Hours (WPSH)

Annual Probable Sunlight Hours (APSH) and Winter Probable Sunlight Hours (WPSH) are a measure of sunlight that a given window may expect over a year period (1 Jan - 31 Dec), or the winter period (21 Sep - 21 Mar) respectively.

North facing windows may receive sunlight on only a handful of occasions in a year, and windows facing eastwards or westwards will receive sunlight only at certain times of the day. Taking this into account, the BRE Guidelines suggest that windows with an orientation within 90 degrees of due south should be assessed.

Sun On Ground (SOG)

Assessment of what portion of a garden or amenity space is capable of receiving 2 hours or more of direct sunlight on March 21st.

Sunlight Exposure (SE)

The number of hours of direct sunlight a room can expect to receive on a given date between February 1st and March 21st at a determined point on the windows.

Spatial Daylight Autonomy (SDA)

Spatial Daylight Autonomy assesses whether a space receives sufficient daylight on a working plane during standard operating hours on an annual basis. For compliance, the target value is achieved across 50% of the working plane for half of the occupied period.

No Sky Line (NSL)

The no sky line divides points on the working plane which can and cannot see the sky.

Working plane

Horizontal, vertical or inclined plane in which a visual task lies. Normally the working plane may be taken to be horizontal, 850 mm above the floor in houses and factories, 700 mm above the floor in offices. The plane is offset 300mm from the room boundaries under BR 209 criteria, and 500mm from the room boundaries under I.S. EN 17037 criteria.

LKD

Living / Kitchen / Dining room.

BRE Target Value

When assessing the effect a proposed development would have on a neighbouring property, a target value will be applied. This applied target value is generated as per the criteria set out for each study in the BRE Guidelines.

Alternative Target Value

It could be appropriate to use alternative target values when conducting assessment of effect on existing properties. If such instances occur the rationale will be clearly explained and the instances where the alternative target values have been applied will be clearly identified.

Level of BRE Compliance

Each table in the study that has a column identified as "Level of BRE Compliance", identifies how an assessed instance performs in relation to the appropriate target value. If the instance is in compliance with the recommendations as made in the BRE Guidelines the value will be expressed as "BRE Compliant". If the instance does not meet the criteria as set out in the BRE Guidelines a percentage will be expressed to determine the level of compliance with the recommendation. This value determines the definition of effect.

LUX

Lux is a standardised unit of measurement of light level intensity. A measurement of 1 lux is equal to the illumination of a one metre square surface that is one metre away from a single candle.

3.2 Definition of Effects

The BRE Guidelines state that:

“Adverse impacts occur when there is a significant decrease in the amount of skylight and sunlight reaching an existing building where it is required, or in the amount of sunlight reaching an open space. The assessment of impact will depend on a combination of factors, and there is no simple rule of thumb that can be applied.”

As such, planning authorities should consider a range of localised factors when making decisions. The terminology suggested in the BRE Guidelines is as listed below, whilst the assessment of impact should depend on a combination of factors. The BRE Guidelines also state:

“Where a new development affects a number of existing buildings or open spaces, the clearest approach is usually to assess the impact on each one separately. It is also clearer to assess skylight and sunlight impacts separately.”

Taking this advice, 3DDB have categorised the level of effect on each window/room/open space on an individual basis. In quantifying the levels of effect, 3DDB have assigned numerical values to the levels of compliance with the BRE recommendations. By applying a numerical logic to the terminology used in defining the levels of effect there is no ambiguity regarding how the levels of effect have been categorised within this report.

The list of definitions given below is taken from ‘Appendix H: Environmental impact assessment’ of the BR 209 with a clear indication of how they have been applied in the context of this report.

Negligible

For the purposes of this Sunlight and Daylight Assessment Report a ‘Negligible’ level of effect will be stated if the level of effect is within the criteria as recommended in the BRE Guidelines and the applied target value has been achieved.

Minor Adverse

For the purposes of this Sunlight and Daylight Assessment Report, a ‘Minor Adverse’ level of effect will be stated if the level of effect is marginally outside of the criteria as stated in the BRE Guidelines. Typically a ‘Minor Adverse’ level of effect will be applied if the level of daylight or sunlight is reduced to equal or greater than 80% and less than 100% of the applied target value.

Moderate Adverse

For the purposes of this Sunlight and Daylight Assessment Report, a ‘Moderate Adverse’ level of effect will be stated if the level of daylight or sunlight is reduced to equal or greater than 50% and less than 80% of the applied target value. ‘Moderate Adverse’ levels of effect are quite typical in instances where a proposed development is planned on an under-developed plot of land.

Major Adverse

An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment. For the purposes of this Sunlight and Daylight Assessment Report a ‘Major Adverse’ level of effect will be stated if the proposed development reduces the availability of daylight or sunlight of a neighbouring property to significantly below a baseline level. A ‘Major Adverse’ level of effect will be stated if the level of daylight or sunlight is reduced to less than 50% of the applied target value.

Beneficial Impact

In relation to sunlight or daylight access, it is conceivable that a proposed development could yield positive effects on the neighbouring properties. In such circumstances the development would typically involve a reduction to the size or scale of built form (e.g. such as the demolition of a building or the removal of a large belt of evergreen trees, which might result in an increase in light access). Where such improvements occur, a ‘Beneficial Impact’ will only be stated if the ratio of change is greater than 1.20 (an improvement of 20%). Should less perceptible improvements occur a ‘Negligible’ level of effect will be stated.

Not Applicable (n.a.)

In instances where a baseline value is particularly low, levels of effects can appear exaggerated. To mitigate such occurrences, if the baseline value in the VSC, APSH/WPSH or SOG studies is below 1%, 3DDB have categorised the level of effect as n.a. (not applicable).

Averaged Windows (-)

If it can be determined or reasonably assumed that multiple windows are serving the same room, each window will be assessed and a weighted average will be calculated. In such instances the level of effect for the room will be stated, but the level of effect for the individual windows contributing towards the average will be left blank in the table. This will be indicated in the tables with the dash symbol. (-)

3.3 Definition of Levels of Sunlight Exposure

For interiors, access to sunlight can be quantified. BR 209 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.

3.3.1 Level of Sunlight Exposure:

The level of sunlight exposure will be stated for each assessed room in the tables under section “C.3 Sunlight Exposure (SE) in Proposed Units” on page 99. Below is a list of the terms used to categorise the levels of sunlight exposure:

Below Minimum

Sunlight exposure will be categorised as ‘below minimum’ if the potential sunlight for the assessed room is less than 1.5 hours on March 21st. Note: the recommendation is that a room within a proposed unit is capable of receiving 1.5 hours of direct sunlight on March 21st. If an individual room does not achieve this recommendation, it does not mean that the unit is non compliant.

Minimum

A ‘minimum’ level of sunlight exposure will be stated if the potential sunlight for the assessed room is between 1.5 hours and 3 hours on March 21st.

Medium

A ‘medium’ level of sunlight exposure will be stated if the potential sunlight for the assessed room is between 3 hours and 4 hours on March 21st.

High

A ‘high’ level of sunlight exposure will be stated if the potential sunlight for the assessed room is greater than 4 hours on March 21st.

3.3.2 Unit Compliance:

In a typical sunlight exposure assessment, for a standard residential development, unit compliance can be achieved by a single room within an unit. The logic behind that assessment methodology is that occupants of a house or apartment usually have the freedom to circulate throughout the whole of the property.

As the assessment within this report is for a student accommodation, it is expected that each bedroom within a shared cluster is private space, freely accessible to the occupier of that room only. As such, it would be inappropriate to deem a whole cluster ‘compliant’ based on a single private bedroom.

The logic that has been applied to achieving compliance for a unit in this assessment is on the basis that all occupants within a cluster have sufficient sunlight access. This can be achieved in two ways:

- Firstly, if a communal room (LKD, Living-room or Kitchen) within a cluster has sufficient sunlight access, then that unit will be considered ‘compliant’.
- Secondly, provided all bedrooms within a cluster have sufficient access to sunlight, then the cluster will be categorised as ‘compliant’ on the basis that all occupants have access to a room with adequate sunlight.

Studio units are assessed as a stand alone space.

Non-Compliant

If all occupants of a proposed unit do not have access to a room that can receive 1.5 hours of sunlight on the assessment date, the unit will be categorised as ‘Non-Compliant’.

Compliant

If all occupants of a proposed unit have access to a room that can receive 1.5 hours of sunlight on the assessment date, the unit will be categorised as ‘Compliant’.

Note: Within the tables of results, which can be found in section C.3 on page 99, the ‘level of sunlight exposure’ will be stated for each assessed room as summarised above in section 3.3.1. The same tables will state ‘unit compliance’ using the logic as explained in section 3.3.2.

4.0 Methodology

4.1 Impact Assessment, Window Selection Criteria

To determine the properties to be included in the impact assessment, the decision chart taken from the BRE Guidelines has been followed, as shown in Fig. 4.2.

Accordingly, all properties within a distance of three times the height of the proposed development, as illustrated in Fig. 4.1, have been considered for impact assessment.



Fig. 4.1: Properties within three times the height of the proposed development

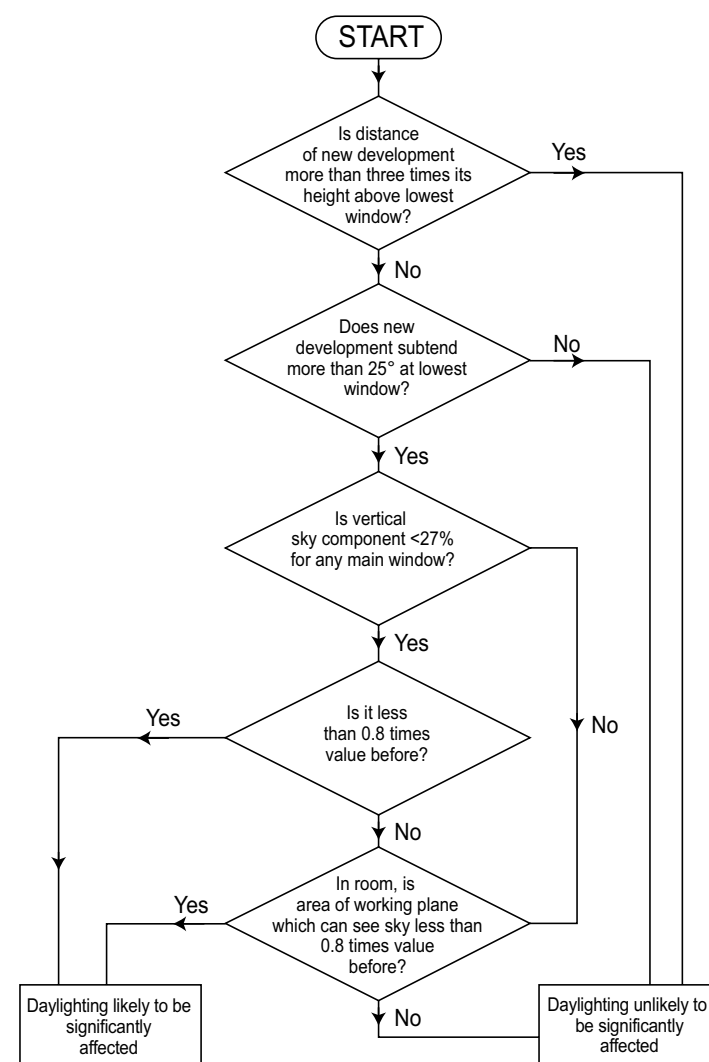


Fig. 4.2: VSC decision chart, taken from BR 209.

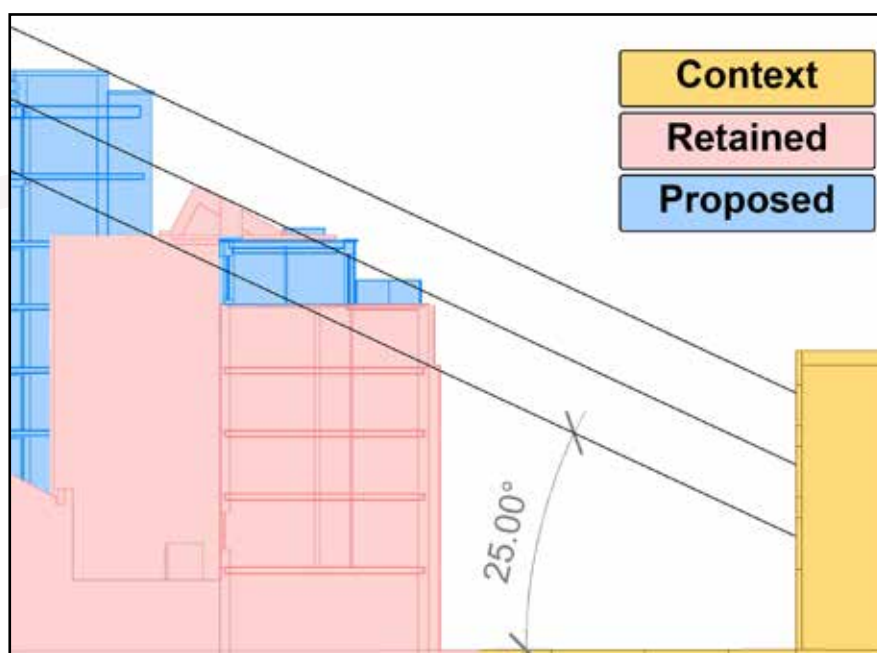


Fig. 4.3: Example Section A-A taken through 63 Middle Abbey St.

As per the BRE Guidelines, a perpendicular section has been drawn from the main window wall of the potentially affected properties to determine if the proposed development subtends an angle of more than 25° at the lowest window.

If the proposed development subtends 25° in this section, then a VSC assessment should be conducted. Fig. 4.3 shows a perpendicular section taken through 63 Middle Abbey Street which provides an example of where the proposed development subtends 25° when measured in a perpendicular section through an existing window.

The new development does not subtend an angle of 25° when measured from the lowest window in the example shown in Fig. 4.3 due to the existing obstruction of the retained parapet. But as can be seen in the same diagram, the measurement taken from the windows on subsequent levels indicate that a more detailed assessment is warranted.

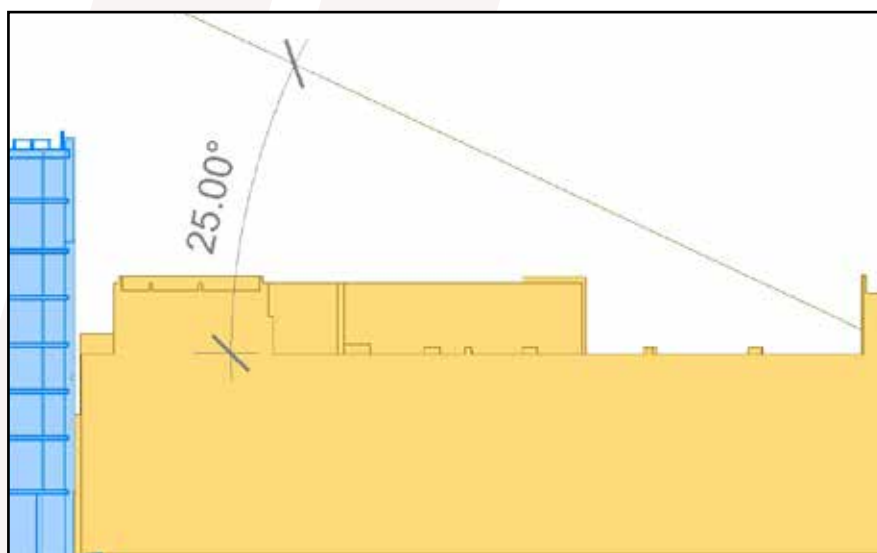


Fig. 4.4: Example Section B-B taken through 35-39 O'Connell St.

However, if the proposed development does not subtend 25° in a perpendicular section, daylight is unlikely to be significantly affected and no further assessment will be carried out. Fig. 4.4 shows a perpendicular section taken through 35-39 O'Connell Street which provides an example of where an existing window is within 3 times the height of the proposed development but the proposed development does not subtend 25° when measured in a perpendicular section.

It is advisable that if a window/room does not meet the BRE criteria in the VSC impact assessment that a no sky line (NSL) assessment should then be carried out. However, a NSL assessment requires accurate dimensions and layouts of the existing rooms and windows. Due to common lack of availability regarding the required information, it is not common practice to carry out a no sky line study when assessing impact on existing properties.

Furthermore, if a perpendicular obstruction falls within 45° when measured both in a plan and elevation view, then it is also appropriate to conduct a VSC impact assessment to determine if daylight will be affected. This is referred to in the BRE Guidelines as the '45° approach'. The 45° approach has been taken into consideration when determining which properties to include in the impact assessment.

Fig. 4.5 shows both a plan and a section of 94 Middle Abbey Street, illustrating that the proposed development obstructs a 45° line of sight from the existing window, both in plan and elevation. As such, a more detailed impact assessment has been conducted on this property, and other properties where appropriate, taking account of the 45° approach.

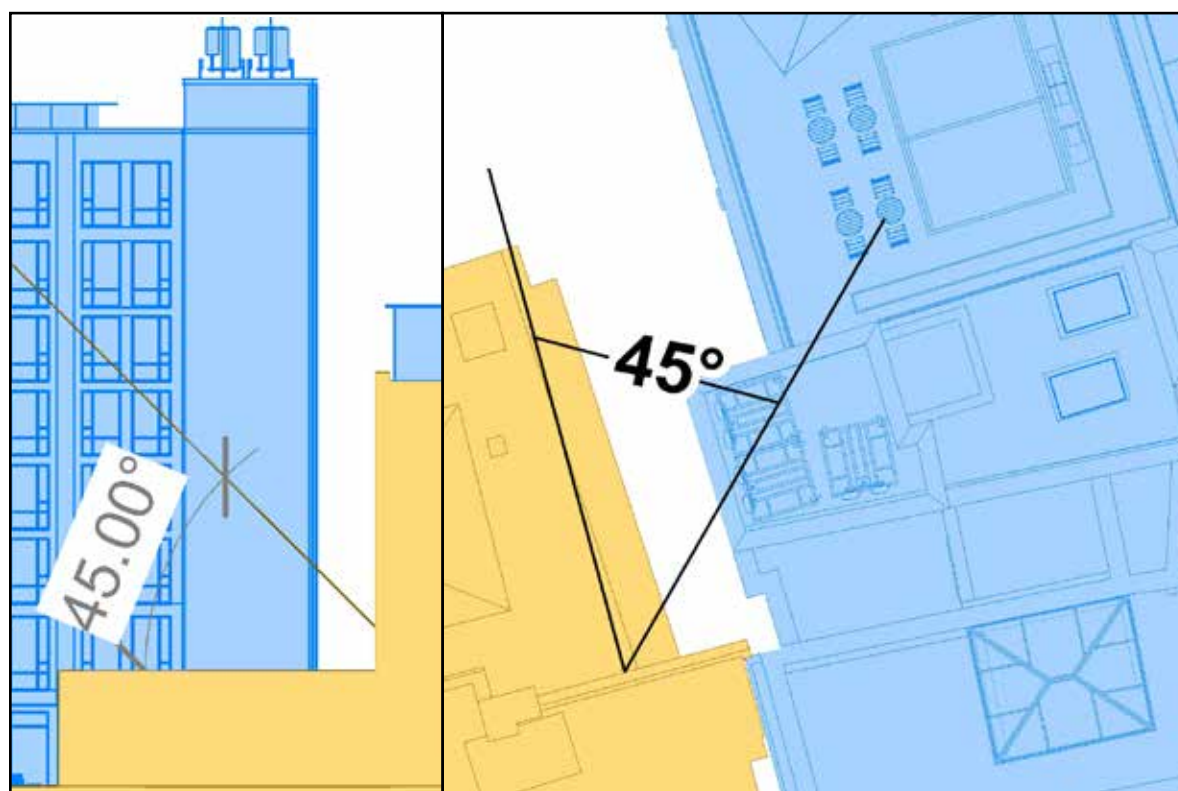


Fig. 4.5: Example of '45° approach' applied to 94 Middle Abbey Street.
Section C-C (L), Plan view (R),

A detailed description regarding the methodology of the VSC assessment can be found in 4.3.1 on page 17.

The BRE Guidelines also apply the 25° rule to determine the need for an impact assessment for loss of sunlight (APSH/WPSH). They also advise that only windows with an orientation within 90° of due south should be assessed. It is recommended to assess the main living rooms of dwellings and conservatories, while APSH/WPSH assessments are typically not required for kitchens and bedrooms.

In practice, 3DDB include all windows meeting the proximity criteria in an APSH/WPSH assessment if they are reasonably assumed to serve habitable spaces. This approach avoids distinguishing whether the windows serve bedrooms or living areas, thereby eliminating the need to make assumptions about the specific functions of rooms in existing dwellings.

While the BRE Guidelines recommend conducting an impact assessment on the lowest window where daylight/sunlight is needed, if a property is found to have a window potentially affected by the proposed development, based on the previously explained criteria, all windows facing the proposed development on that property will be assessed. This approach provides a more comprehensive understanding of the overall impact on the property.

4.2 Preparing the analytical model

4.2.1 Building the Model States

The project architect, Henry J Lyons (HJL) supplied 3DDB with a series of 3D models of the proposed development from which a 3D analytical model was created. Landscape drawings were issued by Cameo and Partners Landscape Architects. A combination of survey information, aerial photography, available online photography and/or ordnance survey information were used to model the surrounding context and assessed buildings. **Note:** as the information gathered from online sources is not as accurate as surveyed information, a reasonable tolerance should be allowed to the placement of windows, boundary treatments and the results generated.

Baseline model state

As illustrated in Fig. 4.6, the baseline model state represents the existing environment, incorporating the approved hotel development to the west of the subject site (DCC Reg Ref. 4880/22), allowing for testing in the most constrained state. This model includes the subject site in its current condition, along with existing structures identified for demolition as part of this application.

As explained in section 4.1, the BRE Guidelines recommend that impact assessments should be carried out 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. This criteria has been used to ensure all windows that could possibly sustain an adverse level of effect have been included in the model when running VSC and APSH/WPSH assessments.

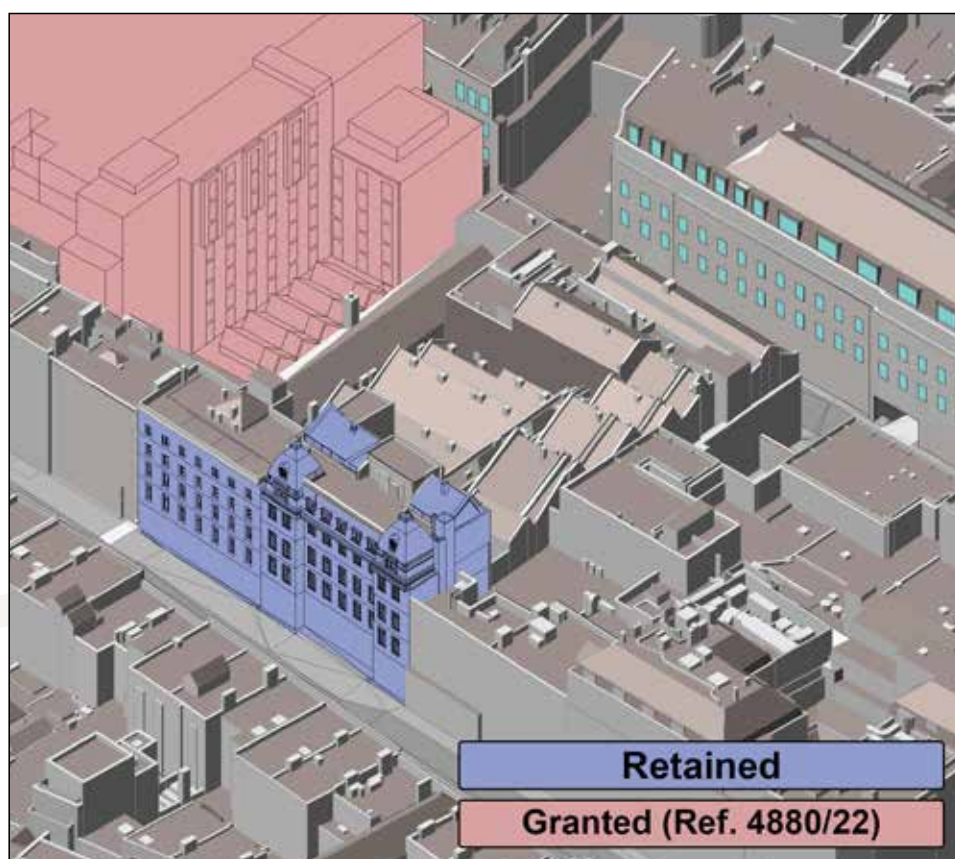


Fig. 4.6: Model view of the baseline model state

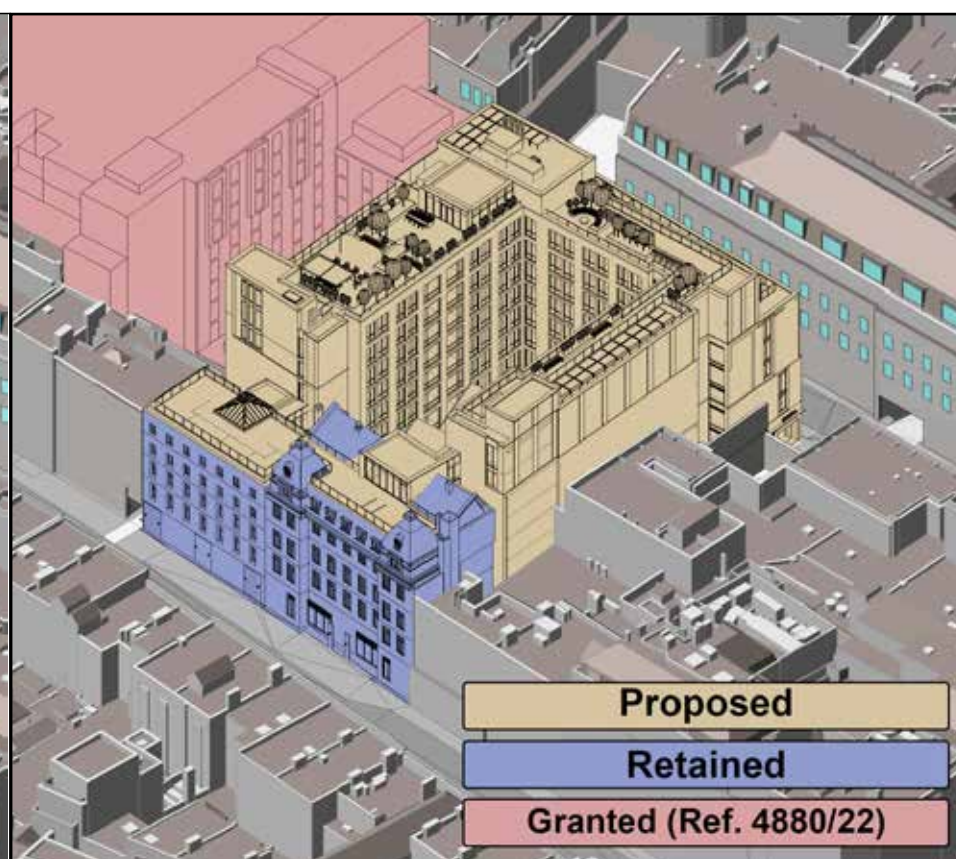


Fig. 4.7: Model view of the proposed model state

Proposed model state

As illustrated in Fig. 4.7, the proposed model state reflects the subject site if the development is built as proposed. This includes proposed landscaping on the subject site and the demolition of existing structures, etc. Proposed buildings have been positioned in their location on the subject site with relevant surrounding context included.

Simplified models of proposed trees within the proposed development have been included in the assessment model using information provided by the project landscape architects.

All of the above information was subsequently used to prepare a digital analytical model in software specifically designed for daylight and sunlight analysis.

Relevant weather and climatic data has been obtained for this report using a localised EnergyPlus Weather File (IRL_Dublin.039690_IWEC.epw).

4.2.2 Trees

It is generally not possible to accurately represent trees in a digital 3D model as the size and shape will differ greatly from tree to tree. When modelling trees for this assessment assumptions have been made and tree geometry has been simplified.

For the purpose of the analysis carried out in this report, existing trees have not been included in the assessment model as there are no existing trees in close proximity to the proposed development. Simplified models of proposed trees within the development have also been included according to the information provided by the landscape architect.

BR 209 provides guidance on how trees should be treated depending on the study being carried out, as summarised below:

Impact to Vertical Sky Component (VSC) and Annual / Winter Probable Sunlight Hours (APSH / WPSH)

The BRE Guidelines state that when assessing the effect a new development would have on existing buildings, it is usual to ignore the effect of deciduous trees. This is because daylight is at its scarcest and most valuable in winter when most trees will not be in leaf. Evergreen trees should be included, particularly where a dense belt or group of evergreens is specifically planned as a windbreak or for privacy purposes.

Sun On Ground (SOG)

The BRE Guidelines states that when assessing the impact of buildings on sunlight in gardens:

“...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).”

As such, deciduous trees have not been included in the calculation of SOG, unless there is a dense belt present or a group of trees specifically planned as a windbreak or for privacy purposes. Evergreen trees are included in the SOG assessment.

Sunlight Exposure (SE)

The BRE Guidelines state that as deciduous trees would not be in full leaf on the recommended assessment date (March 21st), sunlight would be expected to penetrate deciduous trees. However, as trees have so many variables, it is impossible to accurately represent how they would affect sunlight at a given time. The suggested methodology (BR 209) to allow for this is to run the sunlight exposure study in two states. Once with trees as opaque objects and secondly without deciduous trees in the assessment model. This gives a range of potential sunlight hours.

Spatial Daylight Autonomy (SDA)

BR 209 recommends when assessing daylight in a proposed building, it is appropriate to run the assessment with trees represented over the course of the whole year. Light transmittance values for the modelled trees are varied to account for summer and winter foliage.

Taking average values from *BRE Digest 350*, a light transmittance value of 60% has been applied to deciduous trees during the portion of year where a bare branch tree condition is most likely (from the 6th of October to the 24th of April). Representative of summer months, a light transmittance value of 20% has been applied to deciduous trees during the portion of year where a full leaf tree condition is most likely (from the 24th of April to the 6th of October).

A light transmittance value of 20% has been applied to evergreen trees throughout the year.

Units have also been assessed without trees to give an understanding of how the architecture performs should trees not be factored into the calculation.

I.S. EN 17037 does not give any guidance on how trees should be represented. For the purpose of this report, the SDA calculation under the I.S. EN 17037 criteria has been carried out with trees represented in the same manner as the BR 209 assessment. Units have also been assessed without trees to give an understanding of how the architecture performs should trees not be factored into the calculation.

No Sky Line (NSL)

Because some sky can usually be seen through a tree canopy, deciduous trees have not been included in the No Sky Line assessment model. Evergreen trees may be included in this assessment, particularly if there is a dense belt or group planned for windbreak or for privacy purposes.

Shadow Study

The hourly renderings of the shadow study have been generated with evergreen trees represented as opaque objects, where applicable, and without deciduous trees. This method best represents the methodology used for the impact assessment and allows for a better understanding of potential shadows cast by the proposed development through the tree canopy.

4.3 Quantitative Impact Assessment Overview

4.3.1 Effect on Vertical Sky Component (VSC)

A proposed development could potentially have a negative effect on the level of daylight that a neighbouring property receives, if the obstructing building is large in relation to their distance from the existing dwelling.

Section 4.1 outlines the decision process which was used to determine the appropriate properties to be included in the VSC impact assessment.

For the proposed development, all properties within a radius of three times the height of the proposed development have been considered for impact assessment. Should the angle from the windows to the proposed development subtend 25° in a perpendicular section, then VSC is calculated in both the baseline and proposed model states, and a comparison made.

A no skyline assessment requires accurate dimensions and layouts of both rooms and windows. However, the required information is rarely available for existing dwellings. As such, it is not common practice to carry out a no sky line (NSL) impact assessment.

VSC can be defined as the amount of skylight that falls on a vertical wall or window.

This report assesses the percentage of direct sky illuminance that falls on the assessment point of neighbouring windows that could be affected by the proposed development.

The BRE Guidelines state that if the VSC is:

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

The VSC for each window/room will be calculated in the relevant model states, as outlined in section 4.2 on page 15. A comparison between the results generated with these model states will determine the level of effect.

A proposed development could possibly have a noticeable effect on the daylight received by an existing window, if the following occurs:

- The VSC value drops below the guideline value of 27%; **and**
- The VSC value is less than 0.8 times the existing value.

In instances where a baseline value is less than 1%, the impact will be considered '*non-applicable*' (n.a.)

Under BRE Guidelines, only habitable rooms need to be assessed for effect to VSC. In the absence of design layouts or floor plans, or information pertaining to the internal 'as-built' layouts, assumptions have been made regarding the function of the windows of the existing surrounding properties (i.e. what room type is served by the window being assessed).

Typically, the effect on ground floor windows is greater than the effect on windows of subsequent floors. However, floors above ground floor level have been included in this study to give a more comprehensive assessment.

Assessment Points

The VSC impact assessment has been carried out on the windows/rooms of the neighbouring properties that could be affected by the proposed development as highlighted in Fig. 1.1 on page 3.

The assessment points for measuring VSC are taken from the centre point of a standard window. If the window being assessed is a full height window, the assessment point is taken at 1600 mm above the finished floor level.

Weighted Averages

If it can be determined or reasonably assumed that multiple windows are serving the same room, each window has been assessed and a room VSC has been calculated by applying a weighted average calculation to the results.

When calculating weighted averages the proportion of the total glazing area represented for each window is taken into account. It should be noted that assumptions typically need to be made regarding window sizes, so a tolerance should be applied regarding calculated weighted averages.

In instances where weighted averages have been calculated, the VSC figures will be stated for each window on an individual basis as well as the calculated figure to be applied to the room, but the level of effect will only be stated for the room.

Project Assessment

Following the BRE decision chart, as illustrated in Fig. 4.2 on page 13, a VSC impact assessment has been carried out on the windows/rooms of the neighbouring properties that could be affected by the proposed development, as indicated in Fig. 1.1 on page 3.

A VSC impact assessment has been conducted on the windows that may be affected by the proposed development of the following properties, and as highlighted in Fig. 1.1 on page 3: The GPO, windows to the rear of Arnotts facing Prince's Street North, the granted hotel development (DCC Reg. Ref. 4880/22), 94 Middle Abbey Street, facing Williams Lane, 61-67 Middle Abbey Street, 35-39 O'Connell Street, 84 Middle Abbey Street and 79-82 Middle Abbey Street.

The results for the VSC assessment can be found in the appendix results section A.1 on page 37, with analysis of the results in section 5.1 on page 23.

4.3.2 Effect on Annual/Winter Probable Sunlight Hours (APSH/WPSH)

Annual/Winter Probable Sunlight Hours (APSH/WPSH) is a measure of sunlight that a given window may expect to receive over the period of a year. The percentage of APSH/WPSH that windows in existing properties receive might be affected by a proposed development.

A proposed development could potentially have a negative effect on the level of sunlight that a neighbouring property receives, if the obstructing building is located to the south and is large in relation to their distance from the existing dwelling. This can be determined if the distance of a proposed development is less than three times its height from an existing dwelling, or if the angle from an existing window to the proposed development subtends 25° to the horizontal when measured in a perpendicular section.

Whether a window is considered for APSH/WPSH impact assessment is based on its orientation. A south-facing window will, in general, receive the most sunlight. North facing windows may receive sunlight on only a handful of occasions in a year, and windows facing eastwards or westwards will receive sunlight only at certain times of the day. Taking this into account, the BRE Guidelines suggest that windows with an orientation within 90 degrees of due south should be assessed.

Section 4.1 outlines the decision process which was used to determine the appropriate properties to be included in the APSH/WPSH impact assessment.

The APSH/WPSH for each of the assessed windows will be calculated in the relevant model states, as outlined in section 4.2 on page 15. A comparison between the results generated with these model states will determine the level of effect.

If it can be determined or reasonably assumed that multiple windows are serving the same room, the APSH/WPSH has been assessed for the room as opposed to each individual window. When APSH/WPSH is assessed for a room it considers sunlight coming from all windows, but does not double count if sunlight is reaching multiple windows at the same time.

If a room can receive more than 25% of APSH, including at least 5% of the WPSH, then the room should receive enough sunlight.

A proposed development could possibly have a noticeable effect on the sunlight received by an existing window/room, if the following occurs:

- The APSH value drops below the annual (25%) or winter (5%) guidelines; **and**
- The APSH value is less than 0.8 times the baseline value; **and**
- There is a reduction of more than 4% to the annual APSH.

In some circumstances, the available sunlight during the winter period (WPSH) may both drop below the recommended minimum of 5% with a proposed value of less than 0.8 times the baseline value, but the reduction to annual probable sunlight (APSH) is less than 4%. Such occurrences are considered compliant with the BRE Guidelines, and the impact to WPSH will be stated as 'n.a.' on that basis.

Additionally, where a baseline value is less than 1%, the impact will be considered 'non-applicable' (n.a.)

Under BRE Guidelines, only main living-rooms need to be assessed for effect on sunlight. In the absence of design layouts or floor plans, or information pertaining to the internal 'as-built' layouts, all windows assumed to be servicing habitable rooms have been included in the APSH/WPSH assessment provided they are orientated within 90° of due south and are in relative close proximity to the proposed development.

Typically, the effect on ground floor windows is greater than the effect on windows of subsequent floors. However, floors above ground floor level have been included in this study to give a more comprehensive assessment.

Assessment Points

The assessment points for measuring APSH/WPSH are taken from the centre point of a standard window. If the window being assessed is a full height window, the assessment point is taken at 1600 mm above the finished floor level.

Project Assessment

The APSH/WPSH impact assessment has been carried out on the windows/rooms of the neighbouring properties that could be affected by the proposed development, as indicated in Fig. 1.1 on page 3, with an orientation within 90 degrees of due south.

An APSH/WPSH impact assessment has been conducted on the windows that may be affected by the proposed development of the following properties, as highlighted in Fig. 1.1 on page 3: The GPO, windows to the rear of Arnotts facing Prince's Street North, the granted hotel development (DCC Reg. Ref. 4880/22), 84 Middle Abbey Street and 79-82 Middle Abbey Street.

The results for the APSH/WPSH assessment can be found in the appendix results section A.2 on page 52, with analysis of the results in section 5.1 on page 23.

4.3.3 Effect on Sun On Ground in Existing Gardens/Amenity Areas (SOG)

The BRE Guidelines recommend that for a garden or amenity area to appear adequately sunlit throughout the year, at least half the area should receive at least two hours of sunlight on March 21st. As the BRE Guidelines does not provide a clear criteria on which neighbouring properties should be included in an impact on SOG study, 3DDB have carefully considered the neighbouring properties that may be affected when running the impact assessment. Gardens or amenity areas included in this study are typically located within close proximity, to the north of the proposed development.

Where a quantitative assessment has not been carried out it is on the basis that the omitted areas are unlikely to be adversely affected. Such instances may be because the areas are not deemed to be in close proximity to the proposed development or because they are located to the south. Should there be any concerns over the potential impact on any areas that have not been included in the quantitative assessment, a qualitative assessment may be carried out using the shadow study and false colour plans included in the report.

March 21st, also known as the spring equinox, is chosen as the assessment date as daytime and night-time are of approximately equal duration on this date.

The analytical model for SOG impact assessment includes evergreen trees, where applicable, in accordance with the BRE Guidelines. Typically deciduous trees will not be included unless there is a particularly dense belt.

The percentage of assessed areas which can receive two hours or more of direct sunlight on March 21st will be calculated in the relevant model states, as outlined in section 4.2 on page 15. A comparison between the results generated with these model states will determine the level of effect.

A proposed development could possibly have a noticeable effect on the sunlight received by an existing garden and/or amenity area, if the following occurs:

- Half the area of the space does not receive at least two hours of sunlight during the spring equinox; **and**
- The area that receives more than two hours of sun on the spring equinox is less than 0.8 times its former value.

In instances where a baseline value is less than 1%, the impact will be considered '*non-applicable*' (n.a.)

Effect on sunlight to existing neighbouring gardens and/or amenity areas has been assessed to the north of the proposed development, as areas located to the south are unlikely to be affected due to sun direction. Overshadowing is highly unlikely to occur in areas that are due south of any proposed development.

Project Assessment

No quantitative SOG impact assessment has been carried out on the areas surrounding the subject site as the proposed development is not located significantly south of any garden or amenity area.

The false colour plans of the proposed SOG assessment section A.3 on page 65 and the hourly renderings of the shadow study in section B.0 on page 66, allow for a qualitative sunlight assessment of the surrounding areas.

4.4 Qualitative Assessment - Shadow Study

A shadow study has been carried out to allow a qualitative comparison between the relevant model states, as outlined in section 4.2 on page 15. This visual representation of the shadows cast by the proposed development can be found in the hourly shadow diagrams in the appendix results section B.0 on page 66.

Hourly renderings have been shown from sunrise to sunset on the following dates in 2024:

- Spring equinox: March 21st Sunrise 6:32 | Sunset 18:32. (GMT)
- Summer solstice: June 21st. Sunrise 5:04 | Sunset 21:49. (BST)
- Winter solstice: December 21st Sunrise 8:45 | Sunset 16:00. (GMT)

The shadow study has been generated using the same model states as described in section 4.2.1. In certain cases, assumptions or estimations may have been made when modelling elements of the surrounding context and/or proposed site details when creating the various model states. Therefore, it is advisable for a reasonable tolerance to be applied when interpreting shadows in the qualitative assessment.

The hourly renderings of the shadow study will be generated without deciduous trees and with evergreen trees, where applicable, represented as opaque objects when present in the model states.

Note: The spring equinox (March 21st) and autumn equinox (21st September) yield similar shadows, albeit with a one hour difference as daylight saving time (BST) would be in effect. Only the spring equinox was included in the shadow study images in accordance with the BRE Guidelines.

4.5 Quantitative Scheme Performance Assessment Overview

4.5.1 Spatial Daylight Autonomy in Proposed Habitable Rooms (SDA)

Since the publication of the 3rd edition of the BRE Guidelines (BR 209 - 2022), Spatial Daylight Autonomy (SDA) is the recommended metric for assessing daylight access within a proposed development. Spatial Daylight Autonomy replaces Average Daylight Factor (ADF) in this regard, which was the recommended metric under the 2nd edition of the BRE Guidelines (BR 209 - 2011).

Spatial Daylight Autonomy assesses whether a room receives sufficient daylight on a working plane during standard operating hours on an annual basis. A given target value should be achieved across 50% of the working plane for half of the daylight hours.

There are two methods for calculating SDA:

- **Calculation method using illuminance level:** This requires the use of a detailed daylight calculation method 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. This calculation method determines daylight provision directly from simulated illuminance values on the reference plane. The illuminance value of at least half the required area of the space should equal or exceed the target values.
- **Calculation method using daylight factor:** The daylight factor method assumes a constant ratio between internal and external illuminance. The daylight factors in the space shall be calculated by any reliable method that is based on the ISO 15469:2004 standard overcast sky (TYPE 1 or TYPE 16). Daylight factors are to be predicted across grid of points on a plane 0.85m above the floor of the space. The daylight factor of at least half the required area of the space should equal or exceed the target values.

It is the opinion of 3DDB that the calculation method using illuminance level better represents a real-world scenario as it accounts for the quality of daylight based on orientation. As such, the illuminance methodology has been adopted for all SDA assessments in this report using a localised EnergyPlus Weather File (IRL_Dublin.039690_IWEC.epw) to apply the relevant climate information.

In terms of housing, *BR 209* provides target SDA values to be received across at least 50% of the working plane for at least half the daylight hours. The target values differ based on the function of the room assessed:

- 200 Lux for kitchens • 150 Lux for living rooms • 100 Lux for bedrooms

Where rooms serve more than one function, the higher SDA target value should be taken. In new developments, some internal spaces (e.g. studio units, shared communal areas etc.) can possibly be of a nature that do not have a predefined target value in *BR 209*. In such instances, 3DDB have applied a target value they deem to be appropriate. In the case of the proposed development, a target value of 200 Lux has been applied to studio units, due to their multi functional usage that includes a kitchen area.

BR 209 recommends a target of 100 Lux for bedrooms. However, in this report, a higher target of 150 Lux has been used for bedroom lighting. This deviation from the guidelines acknowledges that, in student accommodation, bedrooms are likely to be occupied for longer periods than in typical residential settings. These bedrooms will also serve as study and living areas. Applying this higher standard helps ensure adequate lighting for these varied uses. If the lower target of 100 Lux were applied, overall compliance could only improve.

Under I.S. EN 17037 at least 50% of the working plane should receive above 300 lux for at least half the daylight hours, with 95% of the working plane receiving above 100 Lux for all rooms. The target SDA values do not vary depending on the room function under this criteria.

This study has assessed the Spatial Daylight Autonomy (SDA) received in the habitable rooms of the proposed development under the *BR 209* criterion. The SDA of the proposed development has been calculated under the I.S. EN 17037 criterion as part of a supplementary assessment.

Defining Rooms

Definition of rooms has been taken directly from the architectural drawings supplied by the project architect.

In accordance with the BRE Guidelines circulation spaces, corridors, bathrooms etc. have not been assessed.

Indication of the assessed space in each room is provided in the floor plans that correspond to the SDA results in the appendix section "Proposed Student Accommodation Floor Plans" on page 75.

Working Plane

The calculation of SDA is carried out on a hypothetical working plane which lies 850 mm from the finished floor level in residential units and 700 mm in academic and office spaces.

In the *BR 209* study the working plane is offset 300 mm from the room boundaries. Under the I.S. EN 17037 criteria the working plane is offset 500 mm from the room boundaries. The working plane has a grid density of c. 300 mm.

Material Palette

Following consultation with the project Architects, Henry J Lyons, material values used for SDA calculations are as per the table below:

Table No. 4.5.1 - Material Palette for SDA Calculations					
Object	Material	Reflectance	Object	Material	Reflectance Transmittance
Exterior walls	Standard Brick	0.3	Interior Walls	Pastel paint	0.80
	Light Brick	0.4	Interior Ceiling	White paint	0.8
	Dark Brick	0.15	Interior Floor	Light timber	0.4
	Render	0.6	Miscellaneous	Miscellaneous	0.5
	Concrete	0.4	Glass	Double glazing	0.80
Ground cover	Paving	0.4		Maintenance factor	0.91
	Tarmac	0.2		Glass adjusted for maintenance	0.73
	Grass	0.2		Frosted glass	0.5

Project Assessment

The results for the study on SDA can be found in the appendix results section C.2 on page 87.

Analysis of the results can be found in section 5.2.1 on page 30.

The results of the supplementary SDA study under the I.S. EN 17037 criterion can be found in section D.0 on page 113.

4.5.2 Sunlight Exposure in Proposed Habitable Rooms (SE)

Since the publication of the 3rd edition of the BRE Guidelines (BR 209 - 2022), Sunlight Exposure (SE) is the recommended metric for assessing sunlight access within a proposed development. Sunlight Exposure replaces APSH/WPSH in this regard, which was the recommended metric under the 2nd edition of the BRE Guidelines (BR 209 - 2011).

Sunlight exposure (SE) is a measure of sunlight that a given window may expect to receive on a given date between the 1st of February and the 21st of March. The BRE guidelines suggest that March 21st (equinox) is used as the assessment date.

In the presence of trees, SE results have been generated, both with deciduous trees as opaque objects and without the inclusion of deciduous trees, in accordance with the BRE Guidelines. Evergreen trees have been included as opaque objects, where applicable, in both states.

The level of sunlight exposure is categorised as follows:

- 1.5 Hours - Minimum • 3 Hours - Medium • 4 Hours - High

In a typical sunlight exposure assessment, for a standard residential development, unit compliance can be achieved by a single room within an unit. The logic behind this assessment methodology is that occupants of a house or apartment usually have the freedom to circulate throughout the whole of the property.

As the assessment within this report is for a student accommodation, it is expected that each bedroom within a shared cluster is private space, freely accessible to the occupier of that room only. As such, it would be inappropriate to deem a whole cluster 'compliant' based on a single private bedroom.

The logic that has been applied to achieving compliance for a unit in this assessment is on the basis that all occupants within a cluster have sufficient sunlight access. This can be achieved in two ways:

- Firstly, if a communal room (LKD, Living-room or Kitchen) within a cluster has sufficient sunlight access, then that unit will be considered 'compliant'.
- Secondly, provided all bedrooms within a cluster have sufficient access to sunlight, then the cluster will be categorised as 'compliant' on the basis that all occupants have access to adequate sunlight access.

Studio units are assessed as a stand alone space.

If all occupants of a proposed unit have access to a room that can receive 1.5 hours of sunlight on the assessment date, the unit will be categorised as 'Compliant', otherwise the cluster will be considered 'non-compliant'.

Sunlight exposure is carried out on habitable rooms within a proposed development. The assessment point for windows is 1.2m above the finished floor level, or 0.3m above the sill level (which ever is higher). If a room has multiple windows, the amount of sunlight received by each can be added together provided they occur at different times and sunlight hours are not double counted.

The criterion applies to rooms of all orientations, although if a room faces significantly north of due east or west it is unlikely to be met. As such, it is not always possible to achieve full compliance, especially in developments that contain single aspect units.

The sunlight exposure assessment focuses on habitable residential rooms. Unless sunlight access is deemed important for the functionality of a non-residential room in a proposed development, it will not be included in the study, which remains limited to residential rooms.

Project Assessment

The results for the study on sunlight exposure can be found in the appendix results section C.3 on page 99, with analysis of the results in section 5.2.2 on page 32.

4.5.3 Sun On Ground in Proposed Outdoor Amenity Areas (SOG)

The BRE Guidelines recommend that for a garden or amenity area to appear adequately sunlit throughout the year, at least half of it should receive at least two hours of sunlight on March 21st.

March 21st, also known as the spring equinox, is chosen as the assessment date as daytime and night-time are of approximately equal duration on this date.

The analytical model for SOG assessment in proposed amenity areas includes evergreen trees, where applicable, as per the BRE Guidelines. Typically deciduous trees will not be included unless there is a particularly dense belt.

A quantitative SOG assessment has been carried out on the areas as indicated by the project architect. The shadow study and false colour plans allow for a qualitative assessment for all other areas.

The portion of each assessed space capable of receiving 2 hours of direct sunlight on March 21st has been calculated individually. These areas can be combined to give the development average where appropriate.

Project Assessment

The levels of sunlighting to proposed amenity areas, as indicated by the architect, have been assessed. However, it should be noted that the numbering and naming of these spaces in the Daylight and Sunlight Assessment Report has been assigned by 3DDB specifically for the purposes of this report. If other consultants are referencing these spaces in their own reports, it is unlikely they will be identified in the same manner.

The results for the study on sun on ground in the proposed outdoor amenity areas (including a visual representation in the form of 2-hour false colour plans) can be found in the appendix results section C.4 on page 111, with analysis of the results in section 5.2.3 on page 33.

4.5.4 No Sky Line in Proposed Habitable Rooms (NSL)

The no sky line divides the areas of the working plane which can receive direct skylight, from those which cannot. It indicates the distribution of direct daylight within a room.

The BRE Guidelines recommend the No Sky Line study as an appropriate metric for an impact assessment to daylight, but only where room layouts are known.

"The calculation can only be carried out where room layouts are known. Using estimated room layouts is likely to give inaccurate results and is not recommended."

All advice regarding NSL in the BRE Guidelines is in relation to impact assessments. NSL is not mentioned in the BRE section regarding daylight in new developments. Nevertheless, an NSL assessment was carried out on the proposed development as a supplementary study as it is requested in the DCC Development Plan 2022-2028 (Section 5.1, Appendix 16).

As the BRE Guidelines does not give advice on target NSL values for proposed rooms, no compliance rate has been stated. However a no skyline of 80% could be considered an appropriate figure given that the BRE Guidelines state that supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.

The results of the supplementary NSL study can be found in section D.0 on page 113.

5.0 Analysis of Results

5.1 Analysis of Impact Assessment Results

The analysis of results is broken down on a property-by-property basis. The location of each property in relation to the subject site is indicated in Fig. 5.1 below.



Fig. 5.1: Scope of surrounding properties and environment assessed.

The list of the assessed properties and the various assessments conducted on each property is indicated below.

- **GPO (1)** - VSC & APSH/WPSH
- **Rear of Arnotts (2)** - VSC & APSH/WPSH
- **Granted Hotel (DCC Reg. Ref. 4880/22) (3)** - VSC & APSH/WPSH
- **94-96 Abbey Street Middle, facing Williams Lane (4)** - VSC
- **61-67 Abbey Street Middle (5)** - VSC
- **Properties East of the subject site (6)**
 - **35-39 O'Connell Street (6)** - VSC
 - **84 Abbey Street Middle (6)** - VSC & APSH/WPSH
 - **79-82 Abbey Street Middle (6)** - VSC & APSH/WPSH
- Other properties that are within three times the height of the proposed development, were also taken into account in the impact assessment. Many of these did not warrant detailed VSC or APSH assessment due to the angles of obstruction. See "4.1 Impact Assessment, Window Selection Criteria" on page 13 for more details.

The results of the impact assessments can be found in section A.0 on page 37, of this report.

5.1.1 General Post Office (GPO), windows facing Prince's Street North

The potential for impact to the GPO was a key consideration in conducting the daylight assessment for the proposed development. From the outset, the design team highlighted the sensitivities around this historical building. The subject site is situated adjacent the GPO across the Prince's Street North, which is essentially a narrow lane way.

Considering the proximity of two sites, some level of impact is inevitable if the subject site is to be developed in a viable manner. However, the design team made great efforts to achieve a balance in delivering an appropriately dense development that maximizes the number of bedspaces provided, while minimizing any unreasonable impact on neighbouring properties, particularly the GPO, given its historical and cultural significance.

Impact to daylight, Vertical Sky Component (VSC)

The original massing of the proposed development was considerably more dense in the early design stages, particularly along the Prince's Street North elevation. This density is illustrated in the image on the left hand side of the massing study images shown in Fig. 5.2 below. Initial daylight impact assessments, using this massing indicated that this level of density would result in an undesirable number of 'major adverse' levels of effect to the windows of the GPO. This was raised as an issue among the design team.

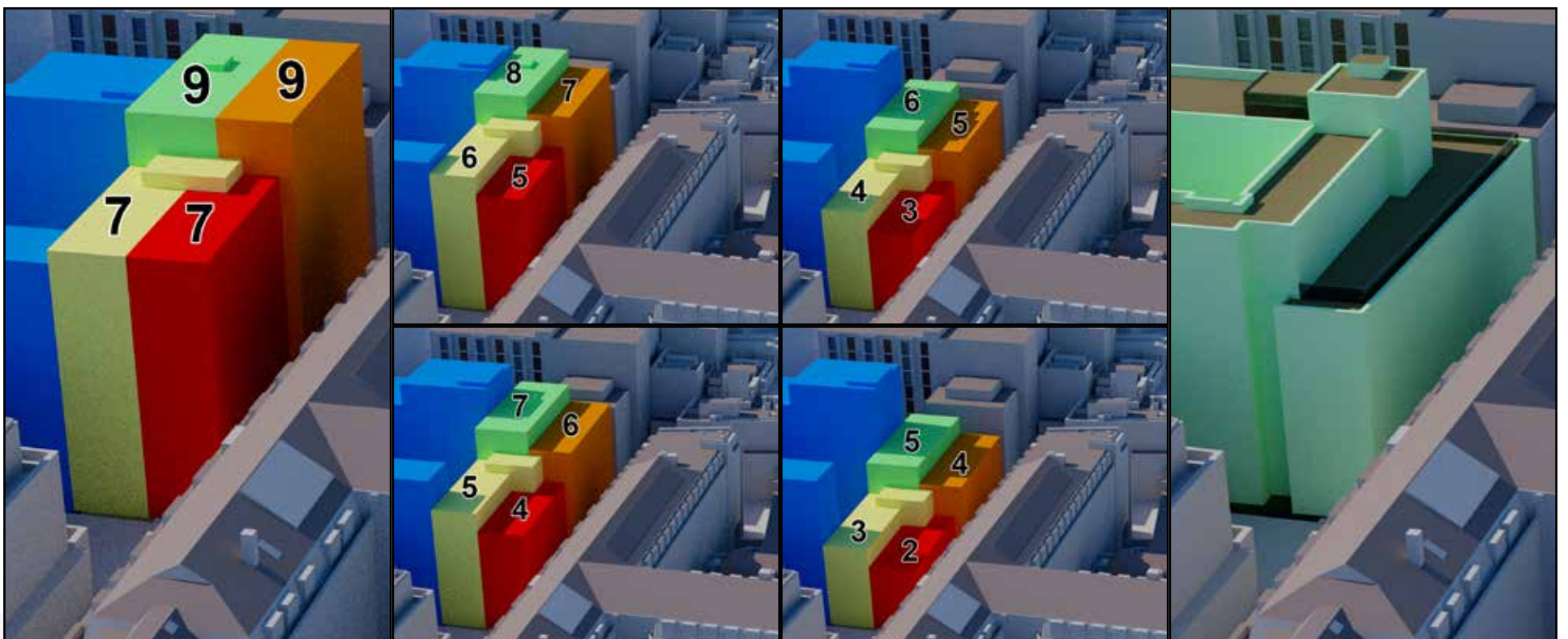


Fig. 5.2: Massing study images assessing potential impact on the GPO: Original massing (L), Sample of iterative testing (M), Selected massing (R).

The next steps in the process, involved 3DDB assessing the impact that would be caused by a number of iterative models with reduced massing along this portion of the subject site. The four images, in the middle of Fig. 5.2, show some examples of this iterative testing. These tests formed the basis for a detailed consultation with the project architects and planning consultant. After which, the design team provided 3DDB with an updated massing model. This is shown on the right hand side of Fig. 5.2. This refined massing achieved the desired balance between appropriate density and reasonable levels of impact. This massing was then used as the basis to design a viable proposed development.

Once the design of the proposed development was developed, the impact assessment was conducted once more to ensure the balanced level of effect remained consistent with the massing study as explained above.

In total, the effect on daylight has been assessed through the Vertical Sky Component (VSC) for 46 no. windows on the GPO. The assessed windows are located on the 1st, 2nd and 3rd floors of the GPO facing onto the subject site. Using the rationale explained in section 3.2 on page 11, the effect on the VSC of 11 no. of these windows would be considered 'negligible', 13 no. 'minor adverse', 22 no. 'moderate adverse' and 0 no. 'major adverse'.

Impact to sunlight in windows, Annual Probable Sunlight Hours (APSH) / Winter Probable Sunlight Hours (WPSH)

A reduction to sunlight levels is inevitable in this assessment as the subject site is situated due south of the GPO.

However, all of the assessed windows of the GPO, in the Annual Probable Sunlight Hours assessment (APSH), have indicated that there would be a 'negligible' level of effect. In many cases, the ratio of change between the baseline and proposed state is less than the recommended level of 0.80. Nevertheless, the level of effect is considered 'negligible' in all instances on the basis that the APSH value in the proposed state remains above the recommended level of 25%.

The assessment during the winter period, from the 21st of September to the 21st of March, has shown greater levels of effect. In the WPSH assessment, 23 no. of the assessed windows would be considered 'negligible', 1 no. 'minor adverse', 1 no. 'moderate adverse' and 21 no. 'major adverse'.

The higher levels of effect in the WPSH assessment when compared with the APSH assessment are due to the sun being positioned lower in the sky during the winter period.

The proposed development would result in a notable reduction to sunlight access during the winter months. But it should be taken into consideration that sunlight access is less important in a commercial premises than it is in a residential property. In an office, excessive sunlight can be considered a negative, particularly during the winter months, when it can lead to unwanted screen glare.

5.1.2 Rear of Arnotts, windows facing Prince's Street North

As shown in Fig. 5.3, the windows to the rear of Arnotts, facing Prince's Street North are not directly opposite the subject site. However, these windows have been included in the impact assessment on the basis of the '45° approach'. See section 4.1 on page 13 for more information on the 45° approach.

The exact usage of the rooms serviced by these windows has not been verified, but it is a reasonable assumption that they are commercial in nature.

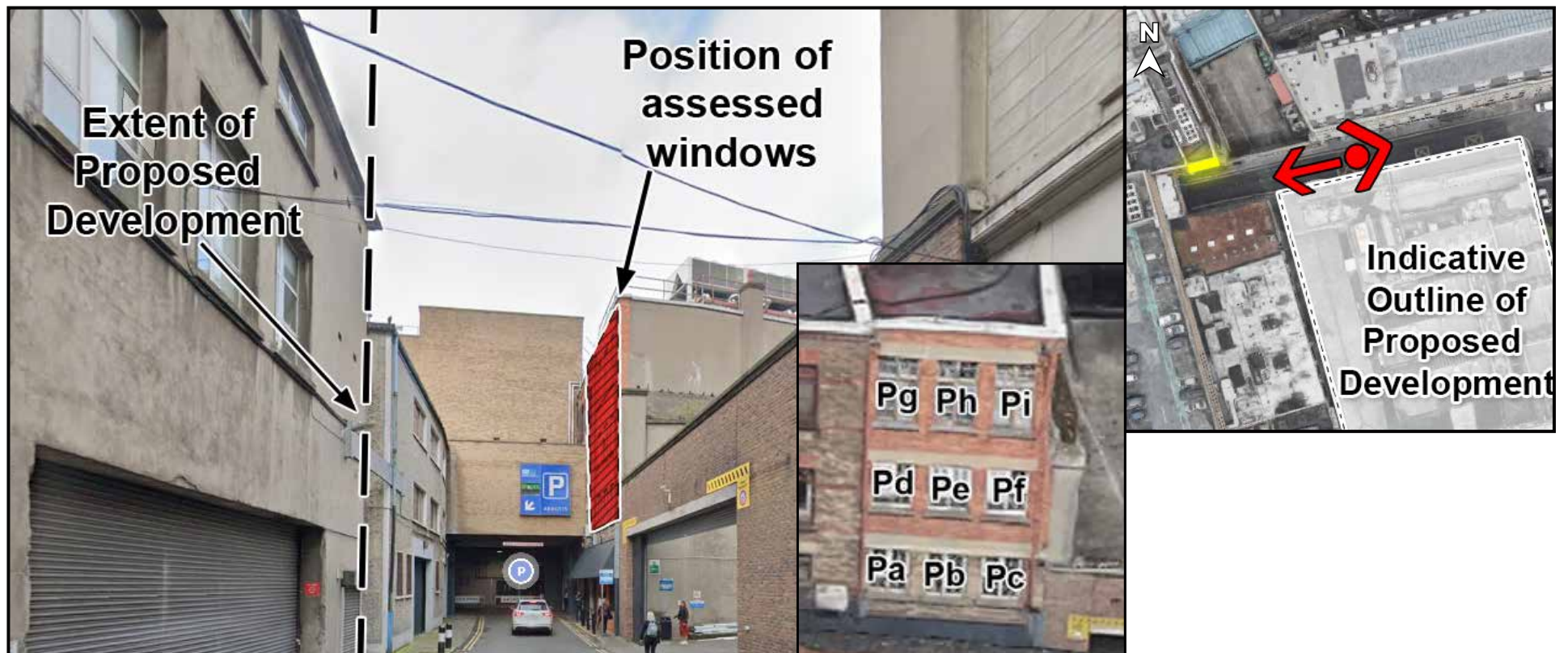


Fig. 5.3: Indication of the position of assessed windows (L), Numbering of assessed windows (inset), Aerial view of assessed location (R)

Impact to daylight, Vertical Sky Component (VSC)

The granted hotel development (DCC Reg. Ref. 4880/22) is not shown in the image above, which was taken from Google Maps. This hotel will be directly adjacent the assessed windows to the rear of Arnotts. This hotel has caused a relatively low baseline value to be recorded in the windows on this facade, particularly in on the lower floors. A low baseline value can make a modest reduction to daylight access appear proportionately high.

Taking window 'Pc' in this study as an example. Window 'Pc' is located on the bottom right of the assessed facade. The VSC value for this window, in the 'baseline model state', which includes the granted hotel development, is 8.32%. The VSC value, for the same window, in the proposed state is 6.24%. Although the reduction to VSC in this instance is only a reduction of 2.08%, the low baseline value means that the reduction is proportionately high. Consequently, the ratio of change of 0.75 is lower than the recommended level of 0.80.

Window 'Pc', as mentioned above, is the most affected window on this facade. The level of effect to this window, using the rationale explained in section 3.2 on page 11, is categorised as 'minor adverse'. There are two other instance of 'minor adverse' among the assessed windows on this facade. These are windows 'Pb & Pf' as indicated above. Both of these have a ratio of change from the baseline to the proposed of 0.79, which is marginally outside the recommended level as per the BRE Guidelines.

The rest of the assessed windows on this facade, have a ratio of change above 0.80, and on that basis have been considered 'compliant' with the BRE recommendation and the level of effect has been categorised as 'negligible' accordingly.

Impact to sunlight in windows, Annual Probable Sunlight Hours (APSH) / Winter Probable Sunlight Hours (WPSH)

As the subject site is located to the south of the assessed windows of this property, some level of impact is inevitable. Again the baseline values are relatively low in the annual study. The level of effect on two of the three assessed windows on the lowest floor have been categorised as 'moderate adverse' with the remaining window, identified as 'Pa', being categorised as 'minor adverse'. The impact to APSH in all assessed windows on the second floor have been categorised as 'minor adverse'. All assessed windows on the third floor have shown a 'negligible' level of effect to APSH.

The majority of windows on this facade have very little expectation of sunlight access during the winter months. Four of the nine assessed windows (Pa, Pb, Pc & Pe) have recorded 0% WPSH in the baseline state. As stated in the rationale for assigning levels of effect in section 3.2, windows with a baseline value of less than 1% will be categorised as non-applicable (n.a.). Eight of the nine assessed windows have less than 1% WPSH in the baseline state. As such the level of effect on these windows is categorised as 'n.a.'.

The only other window ('Pi') has a baseline WPSH value of 1.32%. While this is particularly low, it is marginally above the '1%' threshold to be excluded from the assessment. The effect on this window is considered 'major adverse' but it must be stressed that this does not represent a significant reduction to sunlight access, but is a consequence of a reduction to an already heavily constrained window.

5.1.3 Granted Hotel Development (DCC Reg. Ref. 4880/22)

There is a grant of permission (DCC Reg. Ref. 4880/22) for a hotel development located to the west of the subject site, across the very narrow William's Lane. Given the close proximity between the two plots and the low density of the subject site along William's Lane in its current state, a high level of effect is to be expected in the assessment of the permitted hotel.

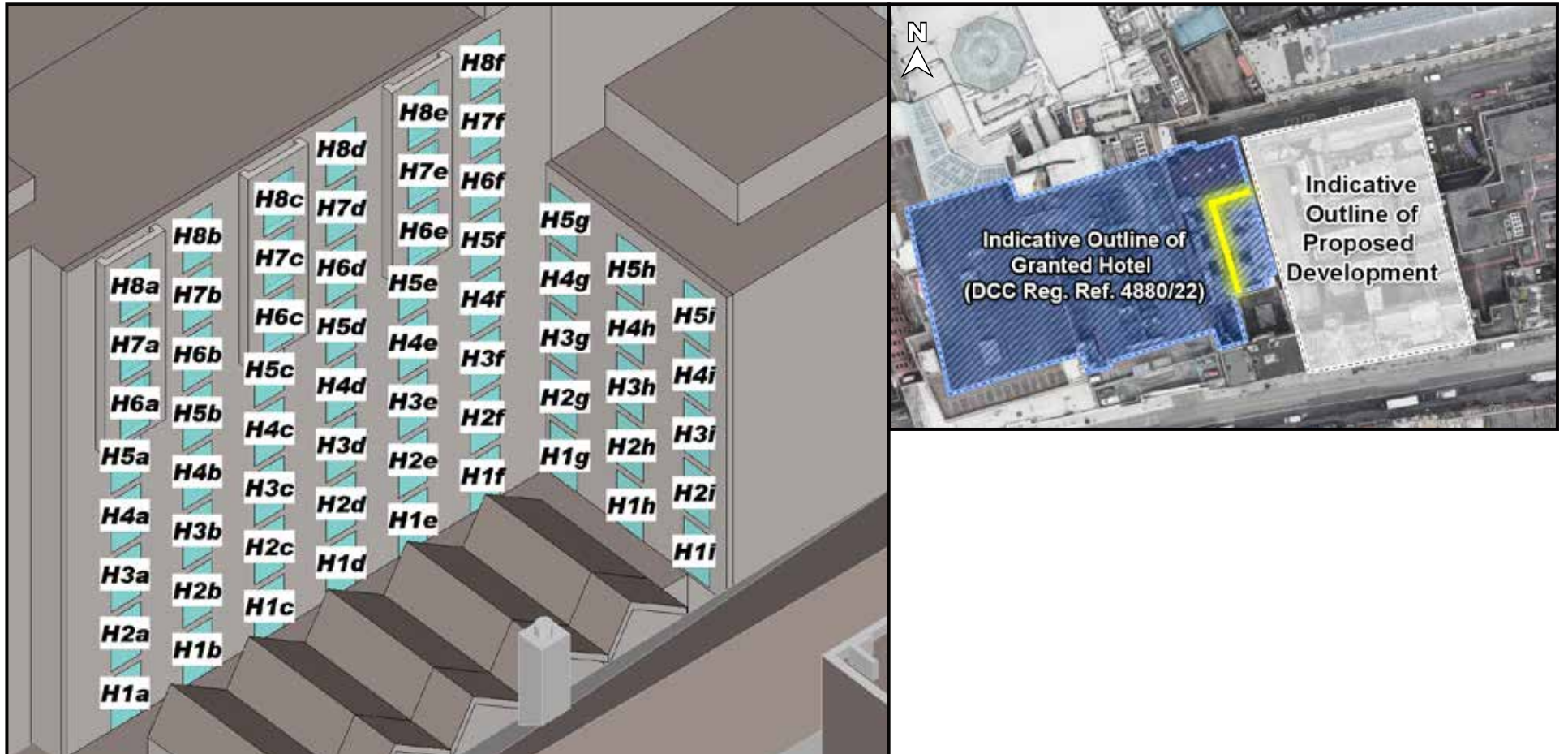


Fig. 5.4: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

Impact to daylight, Vertical Sky Component (VSC)

As illustrated in Fig. 5.4, 63 no. windows of the granted hotel have been included in the VSC impact assessment. The assessed windows are located on the first to eight floors of the hotel, in the location that is in closest proximity to the subject site.

Of these 63 no. windows, the effect on the VSC of 16 no. of these windows would be considered '*negligible*', 12 no. '*minor adverse*', 26 no. '*moderate adverse*' and 9 no. '*major adverse*'.

A key consideration in this situation, is that hotel rooms are typically occupied for short stays. As a result, occupants do not develop the same expectation of the baseline conditions as they would be in permanently inhabited spaces such as an office or residential property. Furthermore, city centre hotels are typically used as a base for exploring the city. This means the expected periods of occupancy are primarily in the early morning and evening, when supplementary electric lighting is usually required.

Impact to sunlight in windows, Annual Probable Sunlight Hours (APSH) / Winter Probable Sunlight Hours (WPSH)

The majority of the assessed windows of the granted hotel do not have an orientation within 90° of due south. These are identified as windows 'a-f' in the diagram above. As such, no APSH assessment is required on these windows. The windows labelled as 'g-i' however, are orientated within 90° of due south. An APSH/WPSH impact assessment has been conducted on these windows.

This assessment has shown that there would be a '*moderate adverse*' level of effect to the windows on the lower floors which gradually improves as the level increases to a '*negligible*' level of effect.

In total, 15 no. windows of the hotel have been assessed. The APSH assessment has indicated that there would be no instances of '*major adverse*', 6 no. '*moderate adverse*', 6 no. '*minor adverse*', and 3 no. '*negligible*'.

In the study over the winter period from the 21st of September to the 21st of March, has indicated that the levels of effect to WPSH are 11 no. '*negligible*', 3 no. '*minor adverse*', 1 no. '*moderate adverse*' and 0 no. '*major adverse*'.

Similar to the statement above regarding daylight, sunlight access would not typically be considered an important factor in city centre hotels. And the levels of effect will be unlikely to affect the commercial viability of the hotel.

5.1.4 94-96 Abbey Street Middle, Facing William's Lane

Whilst the proposed development is not situated directly opposite the rear windows of 94-96 Abbey Street Middle, which face north towards William's Lane, these windows have been included in the impact assessment based on the 45° approach. The windows of this property will be constrained from the west by the permitted hotel (DCC Reg. Ref. 4880/22), with the proposed development adding an additional constraint from the east.

Assumptions have been made regarding the function of the room serviced by these windows. Both in terms of them being 'residential or commercial' and also whether the room is 'habitable or non-habitable'. For the purpose of this report all windows on this facade are assumed to be 'residential'. No assessment has been conducted on windows assumed to service 'non-habitable' rooms. The rooms that have been included in the impact assessment and the number that has been assigned to each is indicated in Fig. 5.5 below.



Fig. 5.5: Indication of the position of assessed windows (main), Aerial view of assessed location (inset)

Impact to daylight, Vertical Sky Component (VSC)

In total, 19 no windows have been assessed on this property. Only 2 no. of which meet the criteria as set out in the BRE Guidelines. The level of effect to these 2 no. windows would be considered 'negligible', 6 no. 'minor adverse', 11 no. 'moderate adverse' and 0 no. 'major adverse'.

On average, the level of effect on this property could be summarised as 'moderate adverse'. Given the location, this level of impact may be considered a reasonable outcome in the pursuit of achieving urban regeneration.

Impact to sunlight in windows, Annual Probable Sunlight Hours (APSH) / Winter Probable Sunlight Hours (WPSH)

The orientation of the assessed facade is predominantly north facing, thus there is no expectation of sunlight, and no APSH/WPSH impact assessment has been carried out, in accordance with the BRE Guidelines.

5.1.5 61-67 Abbey Street Middle

The facade of the subject site that faces on to Abbey Street Middle will be conserved as part of the proposed development. The proposed parapet in this area will remain very similar to the existing parapet, with additional height added gradually through the depth of the proposed development.

This existing parapet subtends an angle of 25° when measured in a perpendicular section from the lowest habitable window of the adjacent properties across Abbey Street Middle, effectively reducing the perceived level of effect. However, as demonstrated in the perpendicular section through 63 Abbey Street Middle, in Fig. 5.6, the proposed development does subtend 25° when measured from the upper floors of this property. Consequently, the properties across Abbey Street Middle that face on to the subject site (number 61-67) have been included in the impact assessment. For the purpose of this report, it has been assumed that these are residential properties.

Impact to daylight, Vertical Sky Component (VSC)

In total, the impact to VSC has been calculated in 33 no. windows across these 7 no. buildings. All instances have shown a 'negligible' level of effect.

In some instances, a marginal improvement has been recorded between the baseline and proposed states. These are a result of minor changes in the parapet in the proposed state, where the increased height is not visible from the assessed window. The increase, where applicable, is minor and the categorisation of a 'negligible' level of effect still applies.

Impact to sunlight in windows, Annual Probable Sunlight Hours (APSH) / Winter Probable Sunlight Hours (WPSH)

The orientation of the assessed facade is predominantly north facing, thus there is no expectation of sunlight, and no APSH/WPSH impact assessment has been carried out, in accordance with the BRE Guidelines.

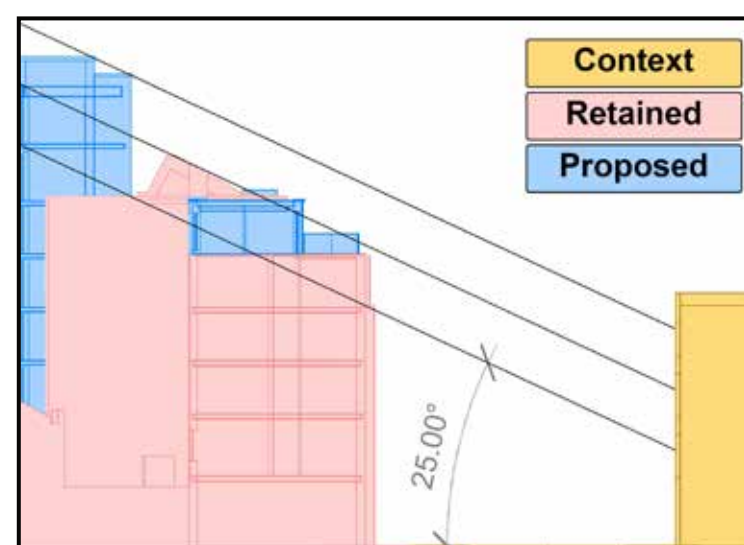


Fig. 5.6: Section taken through 63 Middle Abbey Street

5.1.6 Properties to the east of the subject site

There are a number of properties located to the east of the subject site, on the same side of Abbey Street Middle.

Assumptions have been made regarding the functionality of these windows, as is common practice. But in some cases assumptions have also been required regarding the property to which the windows belong. Many of the assessed windows in this area are highly constrained in the baseline state, and it is difficult to obtain a clear view on Google Maps.

Fig. 5.7 below indicates the position of the assessed windows in this area.



Fig. 5.7: Indication of the position of assessed windows (T), Aerial view of assessed location (B)

35-39 O'Connell Street

35-39 O'Connell Street, also known as "Penny's" has a secondary entrance on Abbey Street Middle. There is a window at the top level that has been included in the impact assessment due to the 45° approach as explained in 4.1 on page 13. It has not been determined what type of room is serviced by this window, but it is likely an office or storeroom.

Impact to daylight, Vertical Sky Component (VSC)

The ratio of change between the baseline VSC and proposed VSC values for this window is approximately (0.76) the recommendation made in the BRE Guidelines (> 0.80). As such, the level of effect to this window is categorised as 'minor adverse'.

If this window serves a store room, the reduction to daylight is likely to be inconsequential. If it serves an office, it is possible that the users of that office may perceive a small reduction to the amount of natural daylight when in use.

Impact to sunlight in windows, Annual Probable Sunlight Hours (APSH) / Winter Probable Sunlight Hours (WPSH)

The orientation of the assessed facade is predominantly north facing, thus there is no expectation of sunlight, and no APSH/WPSH impact assessment has been carried out, in accordance with the BRE Guidelines.

5.1.7 84 Abbey Street Middle

There are two windows visible on Google Maps to the rear of this property, located in a light well facing the subject site. It is possible that there are more similar windows located on lower floors in this area, but this has not been established. It is most likely that these windows are serving bedrooms or bathrooms given the recessed nature within the dense built environment. There are also windows facing north on this property, that have been considered for impact assessment, but as the proposed development does not subtend an angle of 45° in section and plan, a detailed impact assessment is not required.

Impact to daylight, Vertical Sky Component (VSC)

Of the two assessed windows, one has shown no reduction from the baseline state. This is identified as window '84a' in this report, as indicated in Fig. 5.7 above. The proposed development does not reduce the baseline VSC value of this window as it is not visible from the assessment point. This indicates that if there are any windows in this location on lower floors, no impact would be expected.

The proposed development, which is in relative close proximity to this facade, would be visible from window '84b'. The baseline VSC value of 16.90% would be reduced to 10.42%. Using the rationale explained in section 3.2 on page 11, the level of effect on the VSC of this window would be categorised as 'moderate adverse'.

However, it is worth noting that the proposed VSC value of window '84b' (10.42%) remains considerably higher than the baseline value of window '84a' (3.83). Presumably both rooms serve the same or similar functions within two separate units. If so, the level of effect being imposed on window 84b is consistent with emerging trends in the area and window '84a' sets a precedence for reduced levels of daylight being necessary to facilitate the required density of a city centre.

Impact to sunlight in windows, Annual Probable Sunlight Hours (APSH) / Winter Probable Sunlight Hours (WPSH)

Window '84a' has particularly low baseline values in both APSH and WPSH. The baseline values are less than 4%. Given that any reduction to APSH of less than 4% over the whole year is deemed 'negligible', the level of effect to this window has been categorised as 'n.a.', although there is no change between the baseline and proposed values. The WPSH value of the same window is 0% in both baseline and proposed calculations. This indicates that this window will not receive any sunlight during the period between the 21st of September and the 21st of March regardless of the proposed development.

Window '84b' which faces west can only receive sunlight during the evening time during the summer period. The proposed development would have a perceptible reduction to sunlight access of this window during this period. The level of effect to APSH has been categorised as 'moderate adverse'. As with window '84a', window '84b' has also shown zero sunlight access during the winter period. Thus no impact could be recorded and the level of effect is considered 'non-applicable'.

5.1.8 79-82 Abbey Street Middle

There are six windows on this property, visible from Google Maps, facing the proposed development. It is not clear if these are part of a residential properties or commercial premises. For the purpose of this report they have been assumed to be residential. There are two windows per floor in this location. The windows on the left, (79a, 79c & 79e) as shown in Fig. 5.7 on the previous page, are larger than their counterpart on the right (79b, 79d & 79f). This could indicate that the windows on the right are servicing a bathroom or circulation area. But as this could not be 'reasonably' assumed, they have been included in the analysis.

Impact to daylight, Vertical Sky Component (VSC)

The windows on the lowest assessed floor have relatively low baseline values, due to existing constraints. In the proposed state the level of daylight in these windows is reduced, but they maintain a ratio above 0.80 of the baseline and have been categorised accordingly as 'negligible'. In fact, all six assessed windows in this location have met the BRE criteria for impact to VSC and the level of effect has been categorised as 'negligible'.

Impact to sunlight in windows, Annual Probable Sunlight Hours (APSH) / Winter Probable Sunlight Hours (WPSH)

Half of the 6 no. windows that have been assessed on this property meet the criteria as set out in the BRE Guidelines. The level of effect to these 3 no. windows would be considered 'negligible', 2 no. 'minor adverse', 0 no. 'moderate adverse' and 1 no. 'major adverse'.

Window '79b,' is the most constrained window among this group. It has a baseline APSH of 4.97%, which is relatively low. The level of effect to the APSH of this window is categorised as 'major adverse' due to the proposed development blocking available sunlight access. However, as demonstrated in Fig. 5.8, this window can only receive sunlight for a very narrow period of time. As this room does not receive sunlight access for the vast majority of annual sunlight hours, occupants are very unlikely to perceive the proposed reduction despite the 'major adverse' categorisation. The same room is considered, non-applicable in the WPSH assessment as there is no sunlight access in the baseline state during the winter months.

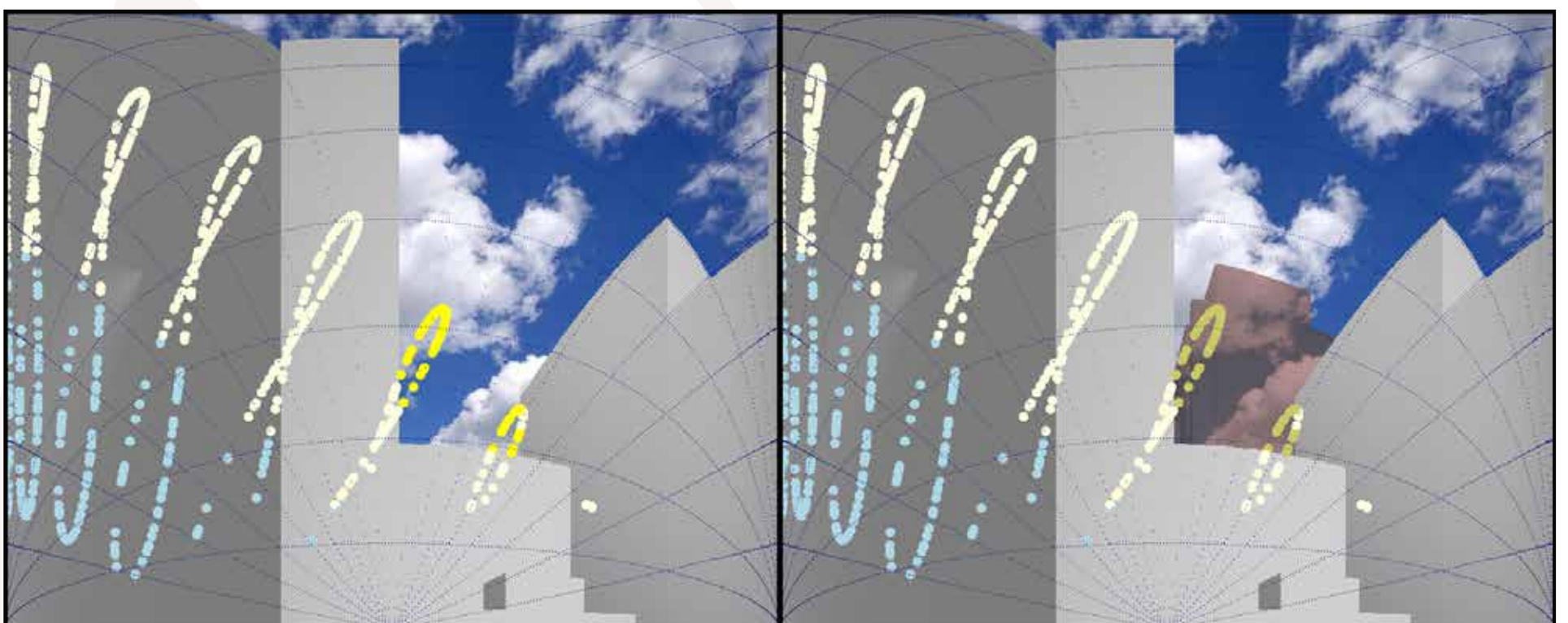


Fig. 5.8: Illustration of annual sun-path as viewed from window '79b': Baseline (L), Proposed (R)

The other assessed windows of this property are categorised as 'minor adverse' and 'negligible' in the annual assessment. In the winter assessment the windows are all categorised as 'n.a.' or 'negligible', but in all cases no reduction has been recorded.

5.2 Analysis of Scheme Performance Results

5.2.1 Spatial Daylight Autonomy (SDA)

This study has assessed the Spatial Daylight Autonomy (SDA) received in all habitable rooms within the residential portion of the proposed student accommodation. The assessment has been conducted both with and without trees, however there is very little difference between both assessments due to the relatively low number of trees in the assessment model. This has ensured that a clear understanding has been obtained regarding the daylight performance of the proposed student accommodation.

The SDA target values applied to LKDs, Kitchens and Living Rooms, within this study align with the recommendations made in the BRE Guidelines. In order to be considered 'compliant' an LKD or kitchen must achieve 200 Lux across at least half the working plane. The same standard has been applied to studios.

Living rooms have a lower target value, with a requirement for 150 Lux across half of the working plane.

For bedrooms, the BRE recommendation is 100 Lux over half of the working plane. However, in the assessment for this report, a higher target of 150 Lux for a 'bedroom' has been applied. This acknowledges that, in student accommodation, bedrooms are likely to be used for longer durations and have more functionality than a bedroom in typical residential settings. This deviation from the guidelines sets a stricter standard for bedrooms, and if the lower 100 Lux target were deemed appropriate, overall compliance would improve.

The proposed development consists of 84 no. units, 42 no. clusters with 272 no. bedspaces, and 42 no. studios with 44 no. bedspaces. In total, 370 no. habitable rooms, including shared living areas, have been assessed.

Under the criteria as set out in the BR 209, the SDA value in 352 no. habitable rooms meets or exceeds the assigned target values. This gives a circa compliance rate of 95%. For a scheme of this size and density, this should be considered a very favourable level of compliance.

I.S. EN 17037 sets out more onerous recommendations for SDA. As such, the number of habitable rooms achieving compliance under this standard is 271. This gives a reduced circa compliance rate of c. 73%.

In cases where rooms comply with the criteria of BR 209 but do not meet the criteria of I.S. EN 17037, it is the recommendation of 3D Design Bureau that these rooms will appear adequately daylight. This recommendation is based on the fact that BR 209 provides room-specific criteria, unlike I.S. EN 17037. BR 209 considers the varying daylight requirements for different room types, which I.S. EN 17037 does not account for.

The favourable compliance rate of c. 95% was achieved through a collaborative design process between the project architects (HJL) and 3DDB. At an early stage of design development, HJL issued 3DDB with a work in progress model to gain an understanding of daylight performance within the proposed student accommodation and refine the proposed design accordingly.

This process was repeated multiple times in order to achieve the balance of appropriate density and favourable daylight provision. Notable among the many design tweaks, is the increase of window sizes. This is particularly evident on the proposed first floor (level 01). The units on this level are the most constrained in terms of daylight access, with SDA values naturally improving as the level increases. Taking advantage of more generous floor to ceiling heights at this level, the new 1st floor windows were made taller, allowing for improved daylight distribution.

Another positive evolution in the design, that was borne out of the collaborative process between 3DDB and HJL, can be seen in Unit B 01 02. As illustrated in Fig. 5.9 below, an early design of this unit had the LKD located to the north, in to a constrained area, with an associated bedroom of the same unit facing south on to Abbey Street Middle.

The room facing north is highly constrained, and design interventions to the facade are limited due to the conservation of the existing facade. It was the decision of the design team that it would be more favourable to locate a bedroom in this area, and to relocate the commonly accessible LKD on the less constrained south facade.

This design change has also been implemented to similar units on subsequent floors

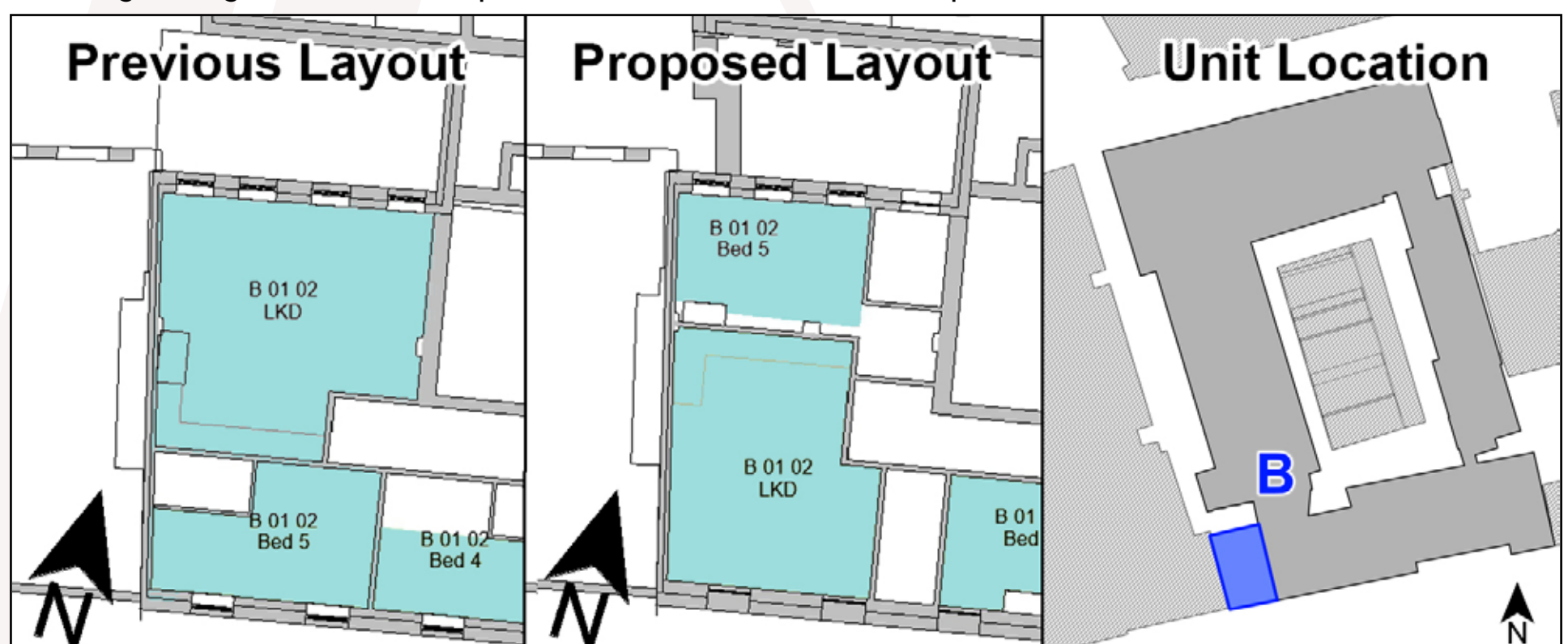


Fig. 5.9: Unit B 01 02 LKD evolution: Early layout floor plans (L), final layout floor plans (M), and location within the proposed development (R).

The majority of rooms that have not achieved the applied target SDA values are bedrooms. As stated previously these have been assessed against a higher standard in acknowledgment that they will often be used as study areas. The most common configuration within the bedrooms of the proposed student accommodation allocates space for a desk at the front of the room, right in front of the window. This configuration ensures optimal levels of daylight to study by. There will be a natural fall-off of light towards the rear of the room into areas that will typically have a lower requirement for daylight as they will be serve a more typical bedroom usage.

With regards to internal daylighting, Section 6.7 of the Sustainable Urban Housing: Design Standards for New Apartments July 2023, states the following:

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

In total there are 18 no. rooms that have not achieved the recommended levels of daylight, as indicated in the primary SDA assessment results shown in section C.2 of this report.

Based on the above statements, the following rationale and /or compensatory design solutions have been provided by the project architect, where possible, for rooms that do not achieve the daylight provision targets applied in the primary assessment.

The rationale for non compliance in, the studio unit A 01 02 and bedrooms 4, 5 and 6 of unit A 01 03 is that the glazing is in a protected structure on the retained façade which is being preserved as much as possible as part of the conservation aspect of the proposed development.

The compensatory design solution for the non compliant LKDs within units A 01 04, A 02 04 and A 03 04 is that the spaces are more than double the recommended size to provide additional amenity.

The compensatory design solution for the non compliant rooms within unit A 01 06, A 02 06 and B 01 01 is that the spaces are oversized to provide additional amenity.

Non-compliance in the daylight assessment of bedroom 1 of unit B 01 02 and bedroom 5 of units B 01 02, B 02 02, B 03 02 and the LKD of unit B 04 02 have been rationalised on the basis that these spaces are within the protected structure, with fixed window arrangements.

Given the constraints on the subject site, including existing and permitted buildings and the conservation of protected structures, it is the expert opinion of 3D Design Bureau that the level of daylight achieved in the proposed development is highly favourable.

The results for the study on SDA can be seen in section C.2 on page 87.

5.2.2 Sunlight Exposure (SE)

A sunlight exposure assessment has been carried out on all habitable, residential rooms within the student accommodation portion of the proposed development. For these assessments, trees have been included in the analytical model as opaque objects. The assessments have been carried out in two states:

- All trees included in assessment model.
- Only evergreen trees included in the assessment model.

This approach is in accordance with the BRE Guidelines.

The assessment has calculated compliance based on all occupants of a given unit having access to a room that achieves the recommended level of sunlight. The criteria of this assessment methodology is expanded on in section 4.5.2 on page 21.

In total, 84 no. units have been assessed. Using the rationale explained in section 3.3 on page 12, the level of sunlight exposure for the assessed units is as follows:

In the assessment carried out with all trees considered as opaque objects and without deciduous trees has yielded the same results. In both assessments, 29 no. units are considered *high*, 10 no. *medium*, 28 no. have reached the *minimum* recommendation with 17 units below the *minimum* recommendation.

The SE assessment has shown that the circa compliance rate for the assessed units, in accordance with the BRE Guidelines, is 80%.

Whilst the criterion applies to rooms of all orientations, it should be noted that if a room faces significantly north of due east or west it is unlikely to be met. As such, it is not always possible to achieve full compliance, especially in developments that contain single aspect units. While the clusters within the proposed development are predominantly dual aspect, the majority of non-compliant rooms within the SE assessment are single aspect, north facing studios.

There are some dual aspect clusters that do not achieve the recommended levels of sunlight on March 21st, this is due to localised constraints and only affects three individual clusters on level 01. Sunlight access improves on each subsequent floor, with only one cluster affected on levels 02 and 03. All clusters from the 4th floor upward have sufficient sunlight access.

No recommendation is made regarding the performance of a development as a whole for SE performance within the BRE Guidelines. However, it should be noted that section 15.13.2.1 of the DCC development plan states: *"Given the nature of student occupancy, the residential standards in relation to dual aspect may be relaxed."*

On balance, 3DDB considers the proposed development to perform adequately in terms of sunlight exposure, especially given the constrained nature of the site.

The results for the study on SE in the habitable rooms of the proposed units can be seen in section C.3 on page 99.

5.2.3 Sun On Ground in Proposed Outdoor Amenity Areas

This study has assessed the level of sunlight on March 21st within the various proposed external communal amenity areas. In total, five spaces have been assessed: one at basement level in the courtyard, one on level 05 facing Abbey Street Middle,



Fig. 5.10: Indication of the amenity areas that have been analysed (L), Area capable of receiving 2 hours of sunlight on March 21st shown in white (R) one on level 06 facing Prince's Street North, and two on level 08 facing the courtyard located to the west and north of the subject site, respectively.

Of the 5 no. assessed spaces, 3 no. would meet the criteria as set out in the BRE Guidelines.

The spaces that do not achieve the recommended level of sunlight on March 21st are the basement level amenity area and the 6th floor amenity area facing Prince's Street North (highlighted as '2' in the figure above).

The basement level amenity area is highly constrained and unlikely to receive sunlight at any time. The inclusion of this space contributes to the conservation aspect of the proposed development rather than serving as a well-lit space for future occupants, which is instead provided by the roof gardens.

The 6th floor amenity area will be shaded for most of the day at the equinox. While it will have a mix of sunlit and shaded areas, it will receive ample sunlight in the evening during the summer months, as shown in the hourly renderings of the summer solstice shadow study in section B.2.

The limited sunlight access in the areas as indicated above is offset by the other external amenity areas, which are accessible by all future occupants, that perform very well in this regard.

A calculation has been made, in which it has been established that the 'combined community amenity' provided in this student accommodation has sufficient sunlight access.

The results for the study on sunlighting in the proposed outdoor amenity spaces can be found in section C.4 on page 111.

A visual representation of these readings can be seen in the false colour plan above and in the hourly shadow diagrams for March 21st in section B.1 on page 66 of the appendix section of this report.

6.0 Conclusion

This proposal seeks permission for a large-scale residential development principally comprising of student accommodation. The subject site at Nos. 87-93 Middle Abbey Street, Dublin 1, D01 NH70 is collectively known as 'Independent House'.

The proposed development will include a combination of retention and demolition of existing structures to facilitate 316 no. student accommodation bedspaces within walking distance to major city centre colleges such as Trinity College and TU Dublin, Bolton Street and Grangegorman campuses.

3D Design Bureau (3DDB) were commissioned to carry out a comprehensive daylight and sunlight assessment, along with an accompanying shadow study for the proposed student accommodation.

The relationship between the proposed development and the GPO was a key consideration in the design of the proposed development. The primary focus of the daylight and sunlight assessment was to ensure a measured approach was taken regarding the potential impact on the GPO.

It is the opinion of 3DDB that a balance has been achieved in delivering an appropriately dense development that will provide much-needed bedspaces for students within the city centre. Care was taken to minimize any unreasonable impact on neighbouring properties, with particular consideration given to the GPO, due to its historical and cultural significance.

The scheme performance assessment for this report has quantified the level of daylight and sunlight within the proposed development.

Notwithstanding the relatively small number of rooms that have not achieved the recommended levels of daylight and sunlight access, the overall provision of daylight and sunlight in the proposed development is commendable, particularly given the highly constrained nature of the site.

Additionally, the development offers strong sunlight access in its exterior amenity areas, including multiple roof terraces with excellent sunlight potential.

In conclusion, urban regeneration in the heart of the capital is challenging to achieve without some degree of non-compliance with the BRE Guidelines for daylight and sunlight. However, the proposed development strikes a favourable balance, performing well in both overall scheme quality and its impact on neighbouring properties. This sustainable design makes effective use of an underutilized city-centre site.

Appendix - Results



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Assessment criteria and detailed analysis of results can be found in the accompanying report.

A.0 Impact Assessment Results

A.1 Effect on Vertical Sky Component (VSC)

Below is an example of the table used to describe the effect on VSC.

Table Example. A.1 - VSC Impact Assessment							
Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC	Level of Compliance with BRE Guidelines	Effect of Proposed Development
A	B	C	D	E	F	G	H

A: Window Number

The number in this column will identify the assessed window. All windows are represented visually in the corresponding figure.

B: Assumed Usage

This column will state the assumption made regarding the functionality of the room serviced by the window that has been assessed. This assumption is made to differentiate between 'commercial' and 'residential' properties.

C: Baseline VSC Value

The *Baseline VSC Value* represents the VSC value of the assessed window which is calculated in the existing baseline model state (as explained in the "Building the Model States" on page 15).

D: Proposed VSC Value

The *Proposed VSC Value* represents the VSC value of the assessed window which is calculated in the proposed model state (as explained in the "Building the Model States" on page 15).

E: Ratio of Proposed VSC to Baseline VSC

This column expresses the ratio of change between the baseline VSC value and the proposed VSC value. The BRE Guidelines recommend that if the proposed value is less than 0.8 times the baseline value, then the reduction in daylight is more likely to be perceptible.

F: Recommended minimum VSC

The *BRE Target Value* for each window has been set according to the BRE Guidelines. The Guidelines state that a proposed development could possibly have a noticeable effect on the daylight received by an existing window, if the VSC value **both** drops below the guideline value of 27% **and** the VSC value is less than 0.8 times the baseline value.

Therefore, to determine the *recommended minimum Value*, 80% of the *Baseline VSC value* has been calculated. If this value is above the 27% threshold, a target value of 27% will be applied. If 80% of the baseline value is below 27%, then 80% of the baseline value is the appropriate target value.

G: Level of Compliance with the BRE Guidelines

This column states the compliance of the *Proposed VSC Value* with the *recommended minimum VSC* as per the BRE Guidelines. In essence, it shows whether or not the assessed window would experience a perceptible level of impact. If the window complies with the BRE Guidelines this cell will state "*BRE Compliant*". If the window does not meet the criteria as set out in the BRE Guidelines, a percentage of compliance with the *recommended minimum* will be stated.

H: Effect of Proposed Development

The levels of effect in this column describe the effect an assessed window will experience, based on its compliance with the *BRE Target Value*. A full list of definitions and a numerical rationale for each can be found in the section "*Definition of Effects*" on page 11.

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation of these figures may yield a negligible difference and should not be considered an error.

A.1.1 Prince's Street North Elevation of the General Post Office (GPO) - 1st Floor

Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
1a	Commercial	23.89%	9.86%	0.41	19.11%	52%	Moderate Adverse
1b	Commercial	24.19%	9.83%	0.41	19.35%	51%	Moderate Adverse
1c	Commercial	24.26%	9.83%	0.41	19.41%	51%	Moderate Adverse
1d	Commercial	24.27%	9.76%	0.40	19.42%	50%	Moderate Adverse
1e	Commercial	24.25%	9.92%	0.41	19.40%	51%	Moderate Adverse
1f	Commercial	24.27%	10.15%	0.42	19.42%	52%	Moderate Adverse
1g	Commercial	24.38%	10.41%	0.43	19.50%	53%	Moderate Adverse
1h	Commercial	24.54%	10.80%	0.44	19.63%	55%	Moderate Adverse
1i	Commercial	24.75%	11.47%	0.46	19.80%	58%	Moderate Adverse
1j	Commercial	25.06%	12.68%	0.51	20.05%	63%	Moderate Adverse
1k	Commercial	25.70%	14.87%	0.58	20.56%	72%	Moderate Adverse
1l	Commercial	26.72%	18.28%	0.68	21.38%	86%	Minor Adverse
1m	Commercial	27.48%	20.44%	0.74	21.98%	93%	Minor Adverse
1n	Commercial	28.13%	21.88%	0.78	22.50%	97%	Minor Adverse
1o	Commercial	28.32%	22.74%	0.80	22.66%	BRE Compliant	Negligible
1p	Commercial	28.24%	23.32%	0.83	22.59%	BRE Compliant	Negligible
1q	Commercial	27.85%	23.55%	0.85	22.28%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

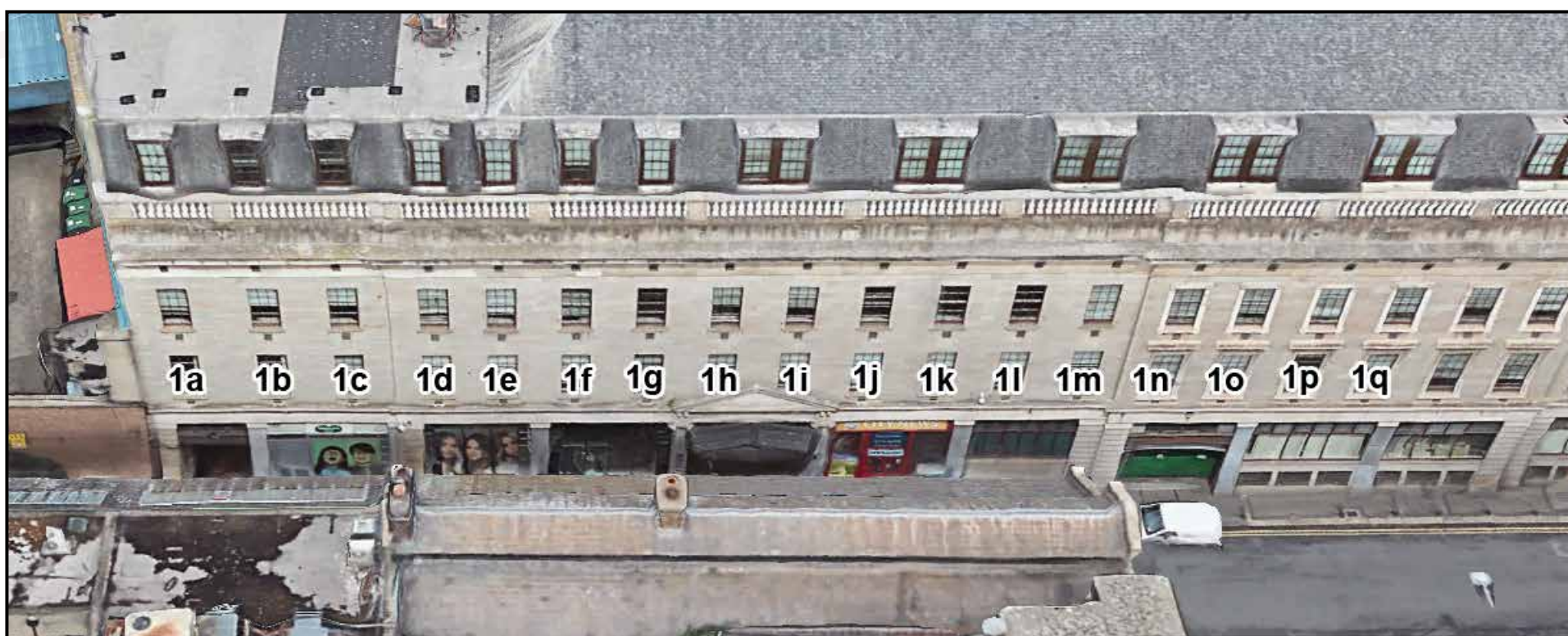
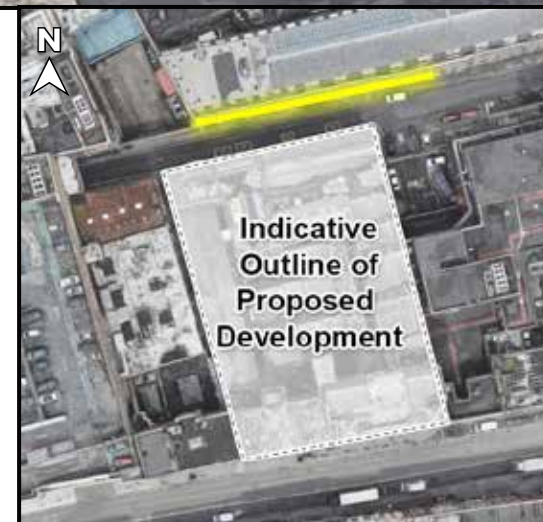


Fig. A.1: Indication of the position of assessed windows (T), Aerial view of assessed location (B)



A.1.2 Prince's Street North Elevation of the General Post Office (GPO) - 2nd Floor

Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
2a	Commercial	30.69%	13.90%	0.45	24.55%	57%	Moderate Adverse
2b	Commercial	31.06%	13.95%	0.45	24.85%	56%	Moderate Adverse
2c	Commercial	31.22%	14.05%	0.45	24.98%	56%	Moderate Adverse
2d	Commercial	31.38%	14.10%	0.45	25.10%	56%	Moderate Adverse
2e	Commercial	31.25%	14.36%	0.46	25.00%	57%	Moderate Adverse
2f	Commercial	31.22%	14.68%	0.47	24.98%	59%	Moderate Adverse
2g	Commercial	31.32%	15.03%	0.48	25.06%	60%	Moderate Adverse
2h	Commercial	31.58%	15.48%	0.49	25.26%	61%	Moderate Adverse
2i	Commercial	31.75%	16.17%	0.51	25.40%	64%	Moderate Adverse
2j	Commercial	31.94%	17.33%	0.54	25.55%	68%	Moderate Adverse
2k	Commercial	32.16%	19.34%	0.60	25.73%	75%	Moderate Adverse
2l	Commercial	32.48%	22.60%	0.70	25.98%	87%	Minor Adverse
2m	Commercial	32.57%	24.62%	0.76	26.06%	94%	Minor Adverse
2n	Commercial	32.83%	26.01%	0.79	26.26%	99%	Minor Adverse
2o	Commercial	32.77%	26.86%	0.82	26.22%	BRE Compliant	Negligible
2p	Commercial	32.58%	27.51%	0.84	26.06%	BRE Compliant	Negligible
2q	Commercial	32.26%	27.93%	0.87	25.81%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.



Fig. A.2: Indication of the position of assessed windows (T), Aerial view of assessed location (B)



A.1.3 Prince's Street North Elevation of the General Post Office (GPO) - 3rd Floor

Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
3a	Commercial	36.05%	25.53%	0.71	27.00%	95%	Minor Adverse
3b	Commercial	36.46%	25.19%	0.69	27.00%	93%	Minor Adverse
3c	Commercial	36.78%	25.21%	0.69	27.00%	93%	Minor Adverse
3d	Commercial	37.05%	25.47%	0.69	27.00%	94%	Minor Adverse
3e	Commercial	37.22%	25.77%	0.69	27.00%	95%	Minor Adverse
3f	Commercial	37.37%	26.16%	0.70	27.00%	97%	Minor Adverse
3g	Commercial	37.48%	26.64%	0.71	27.00%	99%	Minor Adverse
3h	Commercial	37.63%	27.61%	0.73	27.00%	BRE Compliant	Negligible
3i	Commercial	37.75%	29.50%	0.78	27.00%	BRE Compliant	Negligible
3j	Commercial	37.84%	32.32%	0.85	27.00%	BRE Compliant	Negligible
3k	Commercial	37.88%	33.82%	0.89	27.00%	BRE Compliant	Negligible
3l	Commercial	37.89%	34.94%	0.92	27.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

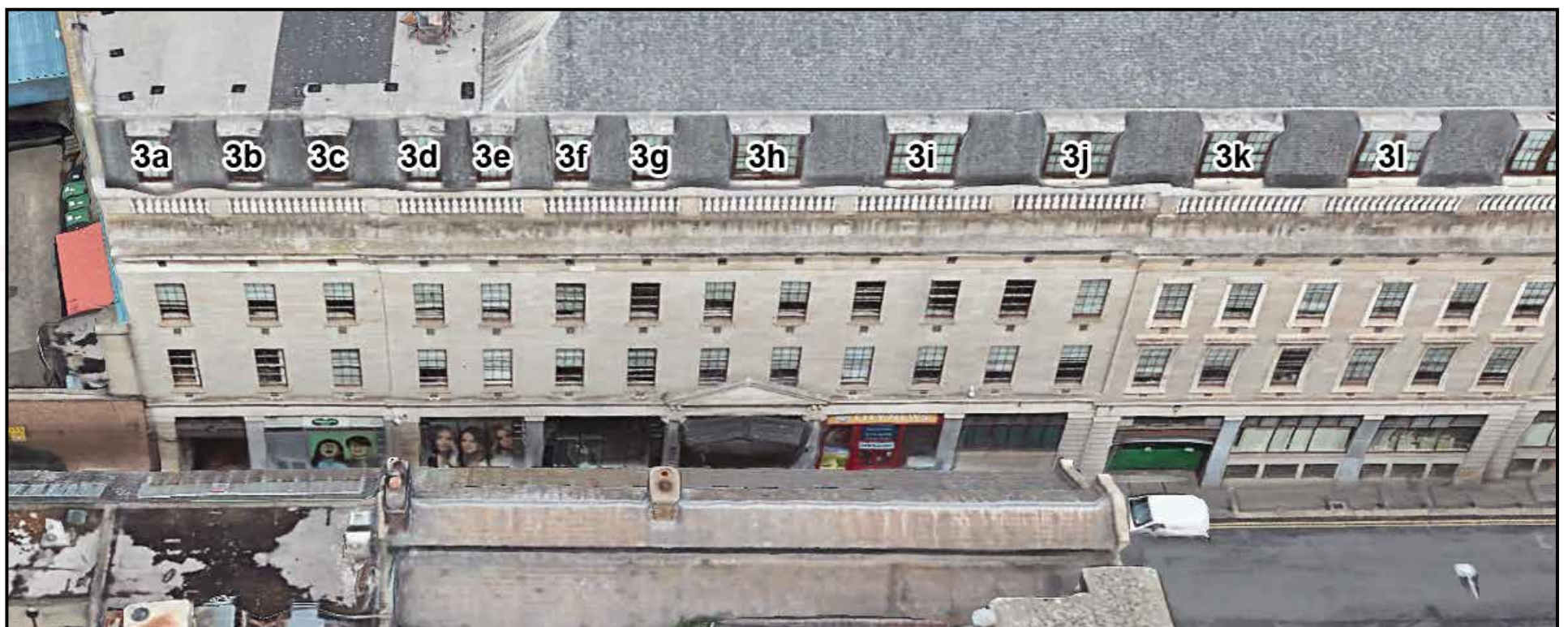
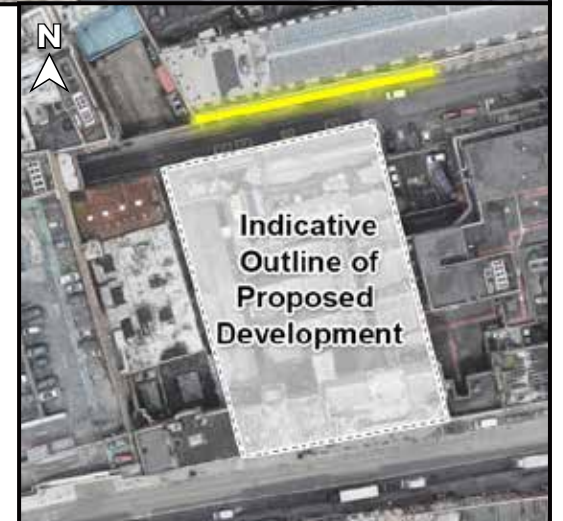


Fig. A.3: Indication of the position of assessed windows (T), Aerial view of assessed location (B)



A.1.4 Rear of Arnotts, Prince's Street North Elevation

Table No. A.1.4 - VSC Results: Rear of Arnotts, Prince's Street North Elevation							
Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
Pa	Commercial	6.53%	5.35%	0.82	5.22%	BRE Compliant	Negligible
Pb	Commercial	7.45%	5.88%	0.79	5.96%	99%	Minor Adverse
Pc	Commercial	8.32%	6.24%	0.75	6.66%	94%	Minor Adverse
Pd	Commercial	8.87%	7.53%	0.85	7.10%	BRE Compliant	Negligible
Pe	Commercial	10.16%	8.39%	0.83	8.13%	BRE Compliant	Negligible
Pf	Commercial	11.27%	8.92%	0.79	9.02%	99%	Minor Adverse
Pg	Commercial	12.97%	11.43%	0.88	10.38%	BRE Compliant	Negligible
Ph	Commercial	14.85%	12.88%	0.87	11.88%	BRE Compliant	Negligible
Pi	Commercial	16.22%	13.63%	0.84	12.98%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.



Fig. A.4: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

A.1.5 Granted Hotel (DCC Reg. Ref. 4880/22) - 1st & 2nd Floor

Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
G1a	Commercial	24.67%	9.98%	0.40	19.74%	51%	Moderate Adverse
G1b	Commercial	26.05%	9.85%	0.38	20.84%	47%	Major Adverse
G1c	Commercial	25.70%	9.52%	0.37	20.56%	46%	Major Adverse
G1d	Commercial	24.72%	8.90%	0.36	19.78%	45%	Major Adverse
G1e	Commercial	22.59%	7.95%	0.35	18.07%	44%	Major Adverse
G1f	Commercial	18.38%	6.61%	0.36	14.70%	45%	Major Adverse
G1g	Commercial	15.24%	9.25%	0.61	12.19%	76%	Moderate Adverse
G1h	Commercial	17.69%	10.44%	0.59	14.15%	74%	Moderate Adverse
G1i	Commercial	19.31%	10.84%	0.56	15.45%	70%	Moderate Adverse
G2a	Commercial	30.20%	12.45%	0.41	24.16%	52%	Moderate Adverse
G2b	Commercial	30.51%	12.27%	0.40	24.41%	50%	Moderate Adverse
G2c	Commercial	29.99%	11.92%	0.40	23.99%	50%	Major Adverse
G2d	Commercial	28.86%	11.23%	0.39	23.09%	49%	Major Adverse
G2e	Commercial	26.33%	10.09%	0.38	21.06%	48%	Major Adverse
G2f	Commercial	21.60%	8.29%	0.38	17.28%	48%	Major Adverse
G2g	Commercial	16.69%	10.53%	0.63	13.35%	79%	Moderate Adverse
G2h	Commercial	19.93%	12.08%	0.61	15.94%	76%	Moderate Adverse
G2i	Commercial	22.45%	12.63%	0.56	17.96%	70%	Moderate Adverse

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

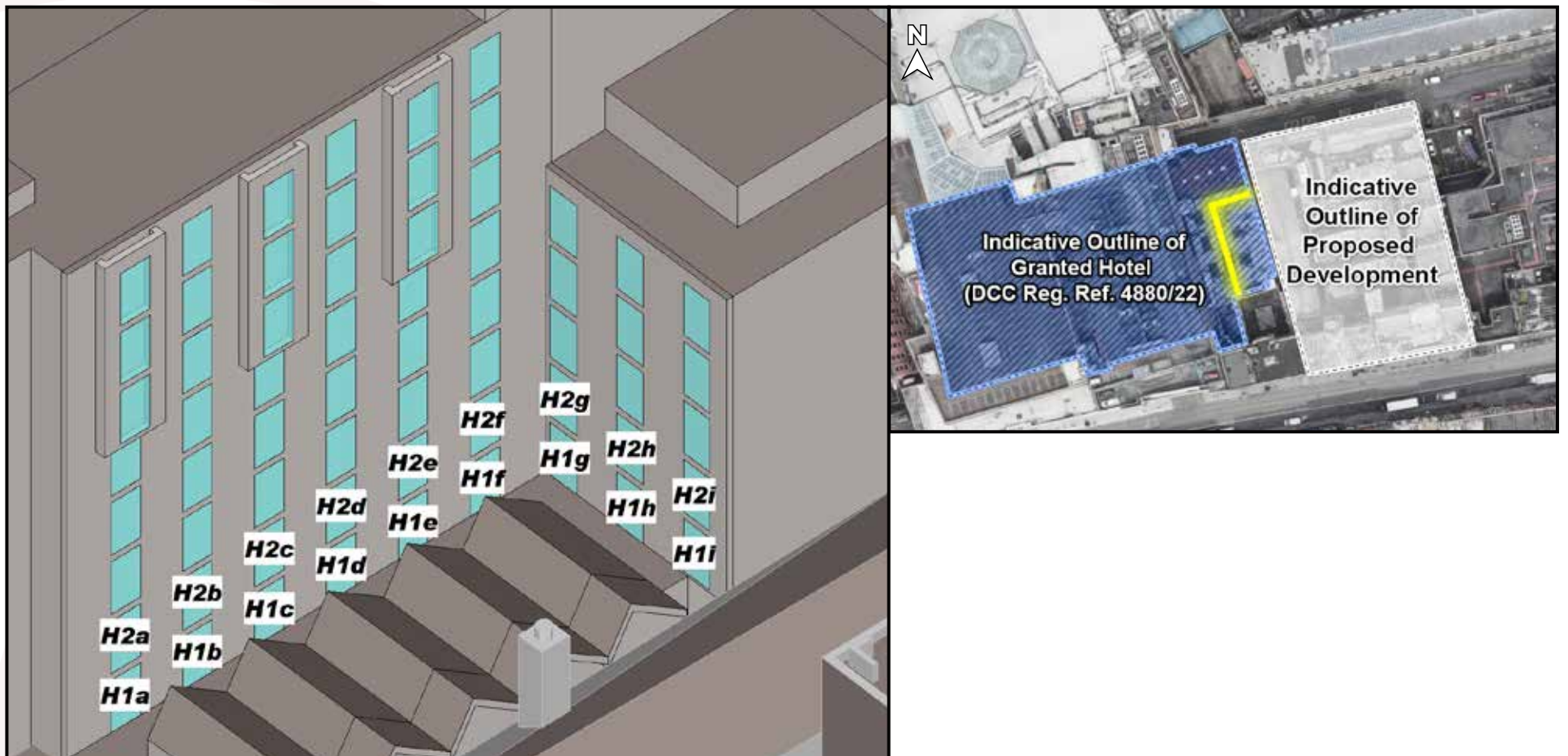


Fig. A.5: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

A.1.6 Granted Hotel (DCC Reg. Ref. 4880/22) - 3rd & 4th Floor

Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
G3a	Commercial	32.95%	15.49%	0.47	26.36%	59%	Moderate Adverse
G3b	Commercial	33.17%	15.25%	0.46	26.54%	57%	Moderate Adverse
G3c	Commercial	32.90%	14.88%	0.45	26.32%	57%	Moderate Adverse
G3d	Commercial	31.99%	14.30%	0.45	25.59%	56%	Moderate Adverse
G3e	Commercial	29.49%	13.02%	0.44	23.59%	55%	Moderate Adverse
G3f	Commercial	24.18%	10.70%	0.44	19.34%	55%	Moderate Adverse
G3g	Commercial	17.91%	11.98%	0.67	14.33%	84%	Minor Adverse
G3h	Commercial	21.78%	14.03%	0.64	17.42%	81%	Minor Adverse
G3i	Commercial	24.91%	14.79%	0.59	19.93%	74%	Moderate Adverse
G4a	Commercial	35.33%	19.03%	0.54	27.00%	70%	Moderate Adverse
G4b	Commercial	35.39%	18.73%	0.53	27.00%	69%	Moderate Adverse
G4c	Commercial	35.08%	18.38%	0.52	27.00%	68%	Moderate Adverse
G4d	Commercial	34.50%	18.03%	0.52	27.00%	67%	Moderate Adverse
G4e	Commercial	32.73%	17.06%	0.52	26.18%	65%	Moderate Adverse
G4f	Commercial	27.57%	14.38%	0.52	22.06%	65%	Moderate Adverse
G4g	Commercial	19.08%	13.62%	0.71	15.26%	89%	Minor Adverse
G4h	Commercial	23.71%	16.39%	0.69	18.97%	86%	Minor Adverse
G4i	Commercial	27.33%	17.48%	0.64	21.86%	80%	Minor Adverse

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

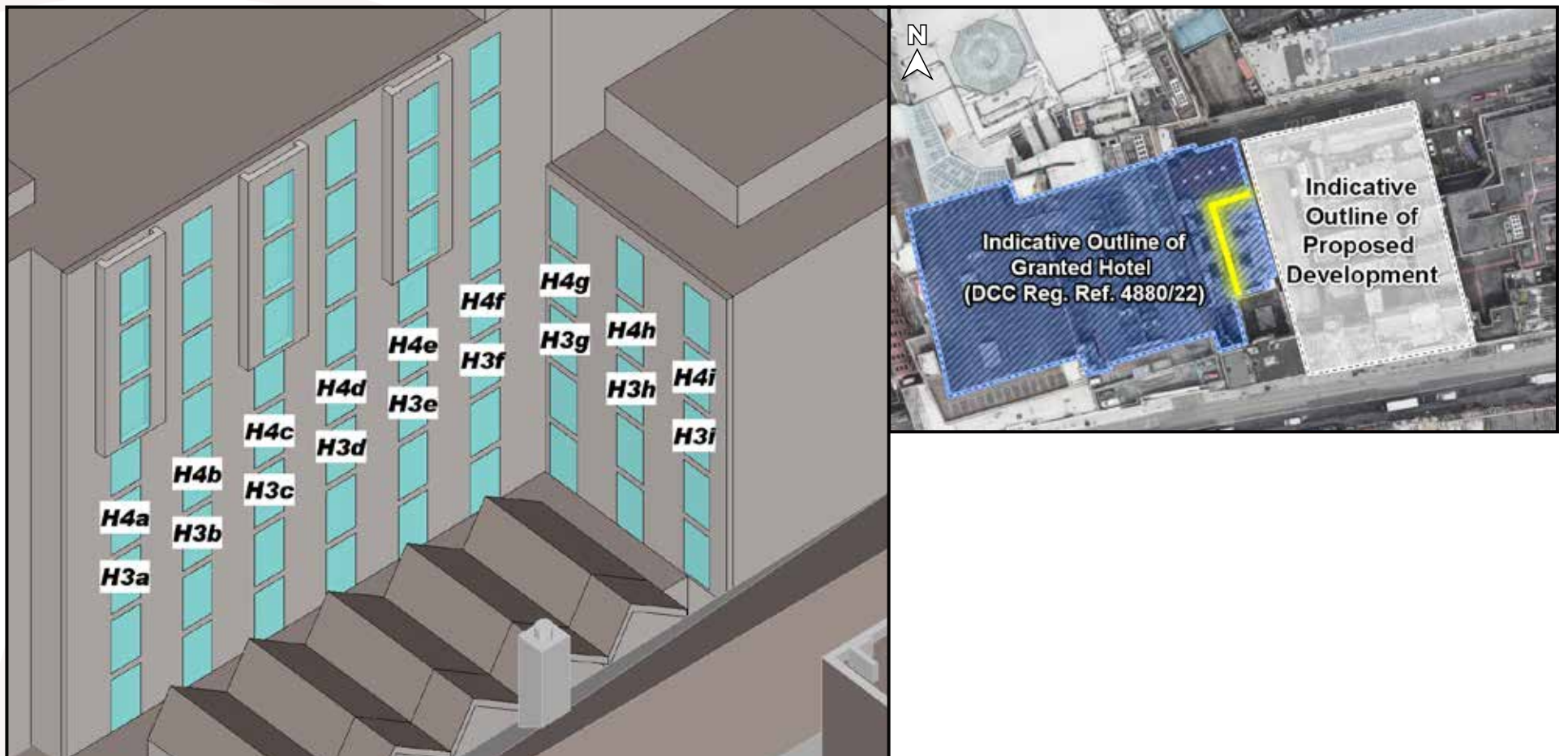


Fig. A.6: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

A.1.7 Granted Hotel (DCC Reg. Ref. 4880/22) - 5th & 6th Floor

Table No. A.1.7 - VSC Results: Granted Hotel (DCC Reg. Ref. 4880/22) - 5th & 6th Floor							
Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
G5a	Commercial	32.88%	18.74%	0.57	26.30%	71%	Moderate Adverse
G5b	Commercial	36.70%	22.31%	0.61	27.00%	83%	Minor Adverse
G5c	Commercial	32.63%	18.20%	0.56	26.10%	70%	Moderate Adverse
G5d	Commercial	36.25%	21.97%	0.61	27.00%	81%	Minor Adverse
G5e	Commercial	31.54%	17.67%	0.56	25.23%	70%	Moderate Adverse
G5f	Commercial	33.31%	20.69%	0.62	26.65%	78%	Moderate Adverse
G5g	Commercial	20.08%	15.33%	0.76	16.06%	95%	Minor Adverse
G5h	Commercial	25.71%	19.20%	0.75	20.57%	93%	Minor Adverse
G5i	Commercial	29.76%	20.72%	0.70	23.81%	87%	Minor Adverse
G6a	Commercial	38.68%	27.22%	0.70	27.00%	BRE Compliant	Negligible
G6b	Commercial	37.49%	26.35%	0.70	27.00%	98%	Minor Adverse
G6c	Commercial	38.65%	27.04%	0.70	27.00%	BRE Compliant	Negligible
G6d	Commercial	37.44%	26.32%	0.70	27.00%	97%	Minor Adverse
G6e	Commercial	38.52%	27.12%	0.70	27.00%	BRE Compliant	Negligible
G6f	Commercial	37.54%	27.04%	0.72	27.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

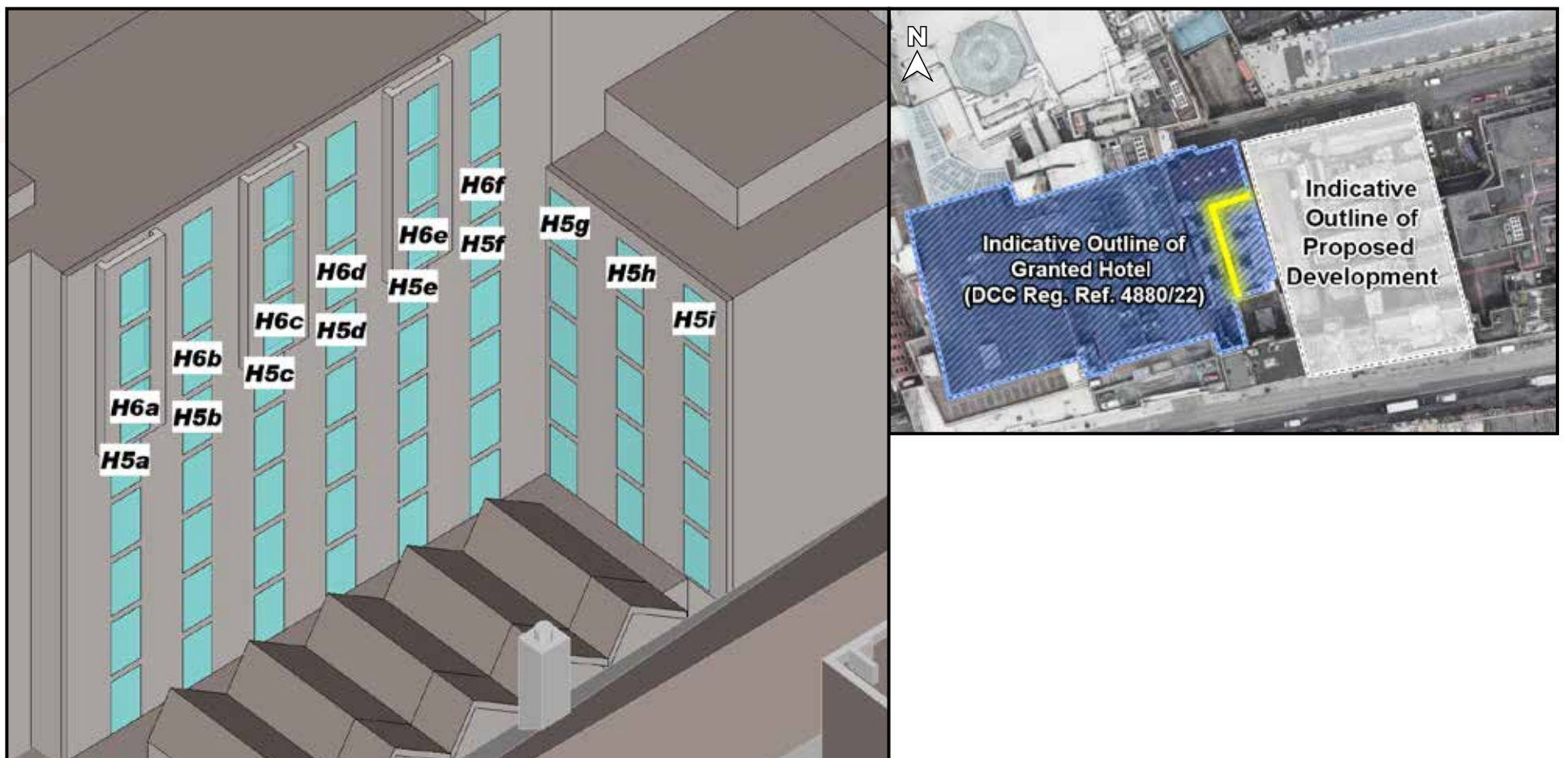


Fig. A.7: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

A.1.8 Granted Hotel (DCC Reg. Ref. 4880/22) - 7th & 8th Floor

Table No. A.1.8 - VSC Results: Granted Hotel (DCC Reg. Ref. 4880/22) - 7th & 8th Floor							
Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
G7a	Commercial	39.21%	31.69%	0.81	27.00%	BRE Compliant	Negligible
G7b	Commercial	38.05%	30.77%	0.81	27.00%	BRE Compliant	Negligible
G7c	Commercial	39.21%	31.62%	0.81	27.00%	BRE Compliant	Negligible
G7d	Commercial	38.04%	30.74%	0.81	27.00%	BRE Compliant	Negligible
G7e	Commercial	39.21%	31.63%	0.81	27.00%	BRE Compliant	Negligible
G7f	Commercial	38.60%	31.54%	0.82	27.00%	BRE Compliant	Negligible
G8a	Commercial	39.48%	36.06%	0.91	27.00%	BRE Compliant	Negligible
G8b	Commercial	38.69%	35.39%	0.91	27.00%	BRE Compliant	Negligible
G8c	Commercial	39.48%	36.02%	0.91	27.00%	BRE Compliant	Negligible
G8d	Commercial	38.69%	35.29%	0.91	27.00%	BRE Compliant	Negligible
G8e	Commercial	39.48%	35.83%	0.91	27.00%	BRE Compliant	Negligible
G8f	Commercial	39.07%	35.55%	0.91	27.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

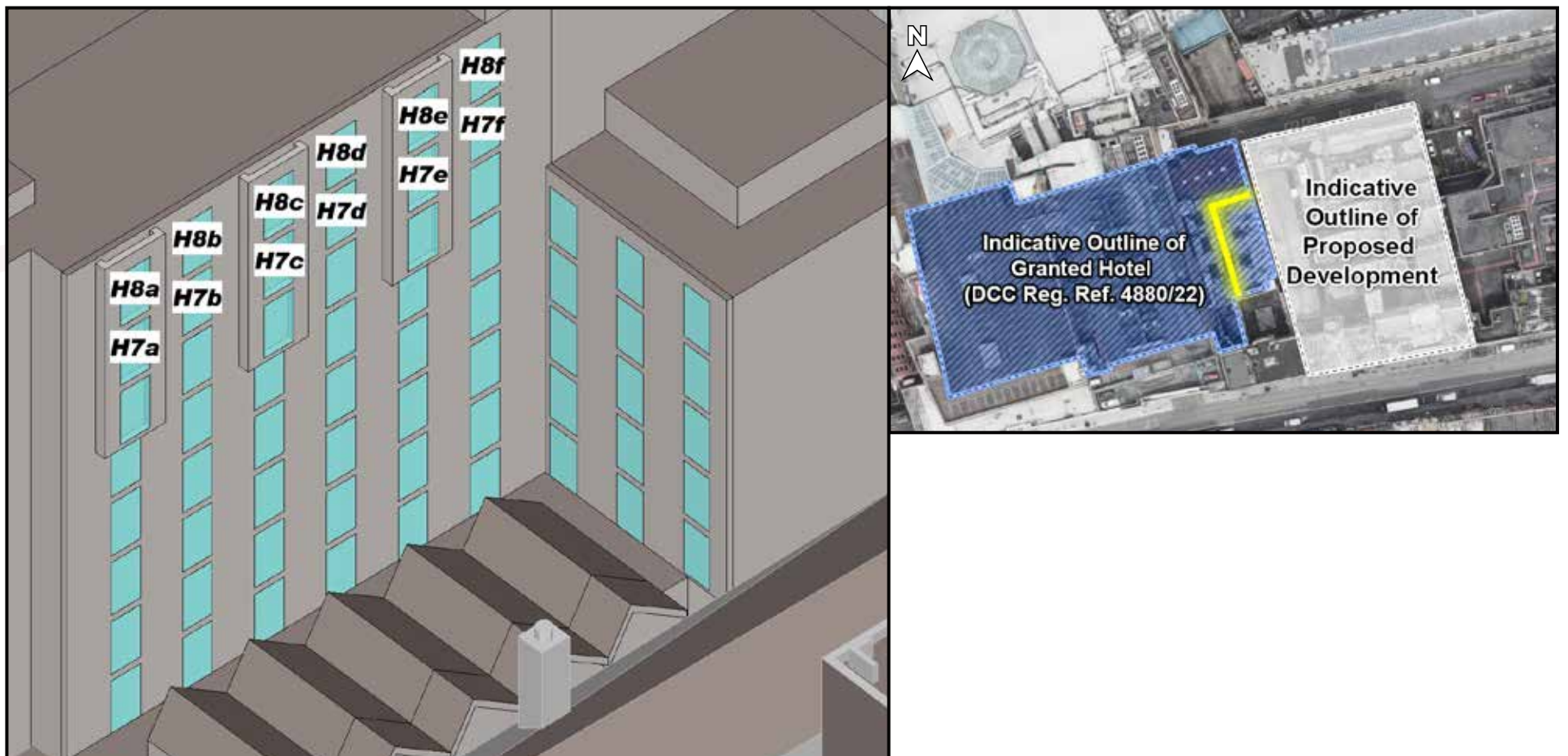


Fig. A.8: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

A.1.9 94 Middle Abbey Street, Facing William's Lane

Table No. A.1.9 - VSC Results: 94 Middle Abbey Street, Facing William's Lane							
Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
94a	Commercial	22.39%	10.40%	0.46	17.91%	58%	Moderate Adverse
94b	Commercial	22.46%	10.88%	0.48	17.97%	61%	Moderate Adverse
94c	Commercial	18.54%	10.35%	0.56	14.83%	70%	Moderate Adverse
94d	Commercial	11.55%	8.21%	0.71	9.24%	89%	Minor Adverse
94e	Commercial	25.86%	11.50%	0.44	20.69%	56%	Moderate Adverse
94f	Commercial	25.11%	12.35%	0.49	20.09%	61%	Moderate Adverse
94g	Commercial	21.30%	12.56%	0.59	17.04%	74%	Moderate Adverse
94h	Commercial	19.53%	11.93%	0.61	15.62%	76%	Moderate Adverse
94i	Commercial	12.56%	9.47%	0.75	10.05%	94%	Minor Adverse
94j	Commercial	28.34%	13.27%	0.47	22.67%	59%	Moderate Adverse
94k	Commercial	27.52%	14.44%	0.52	22.02%	66%	Moderate Adverse
94l	Commercial	23.26%	14.88%	0.64	18.61%	80%	Minor Adverse
94m	Commercial	21.21%	14.05%	0.66	16.97%	83%	Minor Adverse
94n	Commercial	13.60%	10.85%	0.80	10.88%	>99%	Negligible
94o	Commercial	30.89%	15.34%	0.50	24.71%	62%	Moderate Adverse
94p	Commercial	30.05%	16.98%	0.57	24.04%	71%	Moderate Adverse
94q	Commercial	25.45%	17.84%	0.70	20.36%	88%	Minor Adverse
94r	Commercial	23.10%	16.75%	0.73	18.48%	91%	Minor Adverse
94s	Commercial	15.65%	13.34%	0.85	12.52%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.



Fig. A.9: Indication of the position of assessed windows (T), Aerial view of assessed location (B)



A.1.10 61 Middle Abbey Street

Table No. A.1.10 - VSC Results: 61 Middle Abbey Street							
Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
61a	Residential	21.25%	21.12%	0.99	17.00%	BRE Compliant	Negligible
61b	Residential	21.38%	21.23%	0.99	17.10%	BRE Compliant	Negligible
61c	Residential	21.52%	21.30%	0.99	17.22%	BRE Compliant	Negligible
61d	Residential	24.98%	24.28%	0.97	19.98%	BRE Compliant	Negligible
61e	Residential	25.11%	24.39%	0.97	20.09%	BRE Compliant	Negligible
61f	Residential	25.22%	24.46%	0.97	20.18%	BRE Compliant	Negligible
61g	Residential	29.80%	28.17%	0.95	23.84%	BRE Compliant	Negligible
61h	Residential	29.87%	28.28%	0.95	23.90%	BRE Compliant	Negligible
61i	Residential	29.95%	28.33%	0.95	23.96%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.



Fig. A.10: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

A.1.11 62-63 Middle Abbey Street

Table No. A.1.11 - VSC Results: 62-63 Middle Abbey Street							
Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
62a	Residential	21.03%	21.00%	1.00	16.82%	BRE Compliant	Negligible
62b	Residential	25.43%	24.66%	0.97	20.34%	BRE Compliant	Negligible
62c	Residential	30.03%	28.30%	0.94	24.02%	BRE Compliant	Negligible
63a	Residential	20.70%	20.78%	1.00	16.56%	BRE Compliant	Negligible
63b	Residential	25.10%	24.44%	0.97	20.08%	BRE Compliant	Negligible
63c	Residential	29.77%	28.10%	0.94	23.82%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

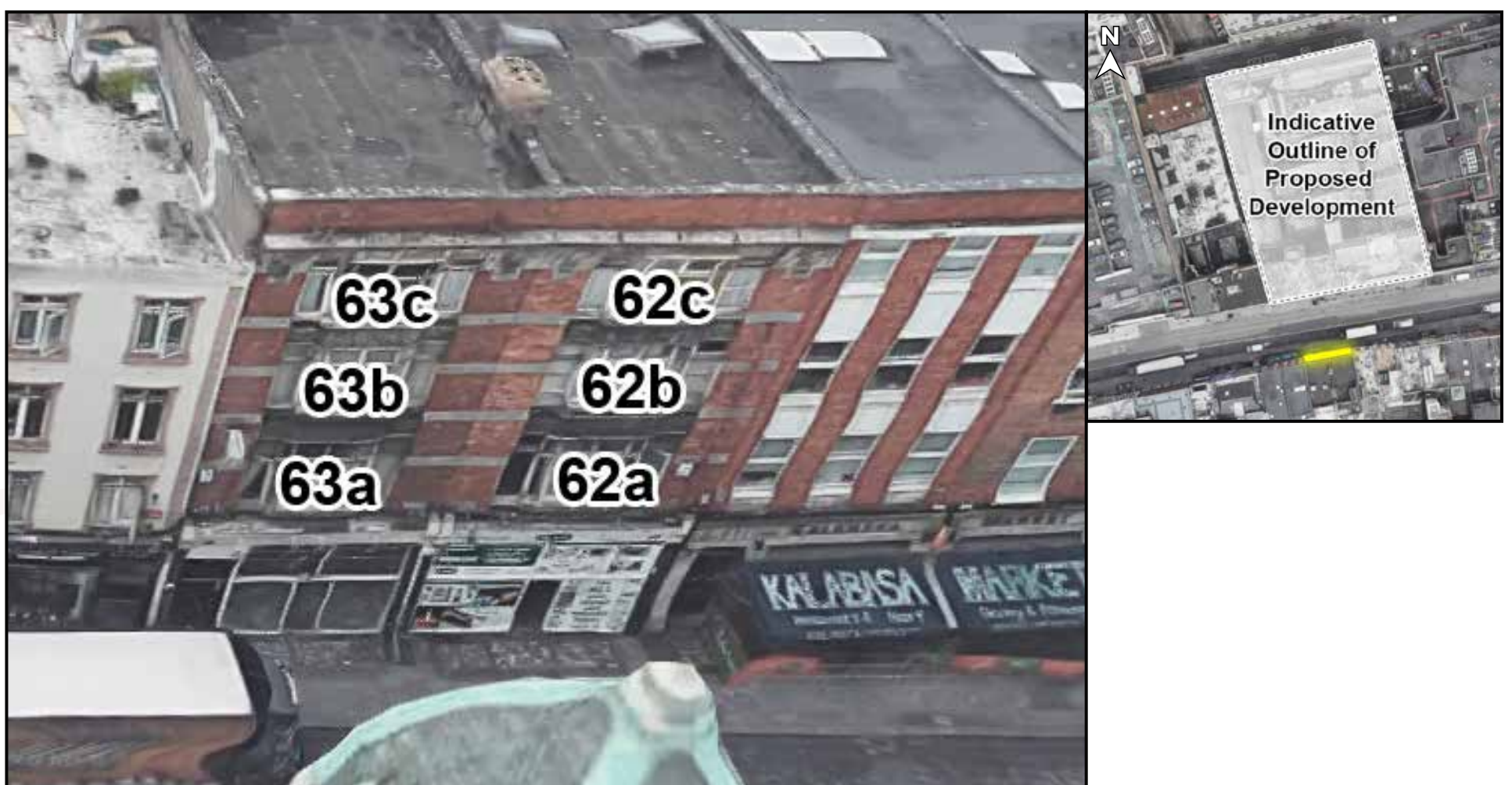


Fig. A.11: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

A.1.12 64-65 Middle Abbey Street

Table No. A.1.12 - VSC Results: 64-65 Middle Abbey Street							
Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
64a	Residential	20.04%	20.25%	1.01	16.03%	BRE Compliant	Negligible
64b	Residential	19.98%	20.19%	1.01	15.98%	BRE Compliant	Negligible
64c	Residential	23.57%	23.32%	0.99	18.86%	BRE Compliant	Negligible
64d	Residential	23.55%	23.27%	0.99	18.84%	BRE Compliant	Negligible
64e	Residential	26.66%	25.83%	0.97	21.33%	BRE Compliant	Negligible
64f	Residential	26.66%	25.79%	0.97	21.33%	BRE Compliant	Negligible
65a	Residential	20.34%	20.56%	1.01	16.27%	BRE Compliant	Negligible
65b	Residential	20.21%	20.41%	1.01	16.17%	BRE Compliant	Negligible
65c	Residential	23.82%	23.65%	0.99	19.06%	BRE Compliant	Negligible
65d	Residential	23.70%	23.48%	0.99	18.96%	BRE Compliant	Negligible
65e	Residential	26.84%	26.22%	0.98	21.47%	BRE Compliant	Negligible
65f	Residential	26.75%	26.04%	0.97	21.40%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.



Fig. A.12: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

A.1.13 66-67 Middle Abbey Street

Table No. A.1.13 - VSC Results: 66-67 Middle Abbey Street							
Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
66a	Residential	21.30%	21.52%	1.01	17.04%	BRE Compliant	Negligible
66b	Residential	25.49%	25.33%	0.99	20.39%	BRE Compliant	Negligible
66c	Residential	29.96%	29.18%	0.97	23.97%	BRE Compliant	Negligible
67a	Residential	22.17%	22.39%	1.01	17.74%	BRE Compliant	Negligible
67b	Residential	26.48%	26.51%	1.00	21.18%	BRE Compliant	Negligible
67c	Residential	30.92%	30.59%	0.99	24.74%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.



Fig. A.13: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

A.1.14 Properties to the east of the subject site

Table No. A.1.14 - VSC Results: Properties to the east of the subject site							
Window Number	Assumed Usage	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
35a	Commercial	21.15%	16.10%	0.76	16.92%	95%	Minor Adverse
84a	Residential	3.83%	3.83%	1.00	3.06%	BRE Compliant	Negligible
84b	Residential	16.90%	10.42%	0.62	13.52%	77%	Moderate Adverse
79a	Residential	13.20%	11.97%	0.91	10.56%	BRE Compliant	Negligible
79b	Residential	10.44%	8.66%	0.83	8.35%	BRE Compliant	Negligible
79c	Residential	25.57%	22.64%	0.89	20.46%	BRE Compliant	Negligible
79d	Residential	18.97%	15.80%	0.83	15.18%	BRE Compliant	Negligible
79e	Residential	34.64%	31.39%	0.91	27.00%	BRE Compliant	Negligible
79f	Residential	35.44%	32.24%	0.91	27.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.



Fig. A.14: Indication of the position of assessed windows (T), Aerial view of assessed location (B)



The assessed properties that are located to the east of the subject site are:

- A north facing window of 35-39 O'Connell Street, which is also accessible from Middle Abbey Street.
- Two west facing windows at the rear of 84 Middle Abbey Street, facing the subject site
- Six west facing windows at the rear of 79-82 Middle Abbey Street, facing the subject site

A.2 Effect on Annual/Winter Probable Sunlight Hours (APSH/WPSH)

Below is an example of the table used to describe the effect to the APSH/WPSH of existing windows / rooms.

Table Example. A.2 - APSH/WPSH Impact Assessment							
Window Number	Assumed Usage	Baseline APSH/WPSH	Proposed APSH/WPSH	Ratio of Proposed to Baseline APSH/WPSH	Recommended Minimum APSH/WPSH	Level of Compliance with BRE Guidelines	Effect of Proposed Development
A	B	C	D	E	F	G	H

A: Window Number

The number in this column will identify the assessed window. All windows / rooms are represented visually in the corresponding figure.

B: Assumed Usage

This column will state the assumption made regarding the functionality of the room serviced by the window that has been assessed. This assumption is made to differentiate between 'commercial' and 'residential' properties.

C: Baseline APSH/WPSH

The *Baseline APSH/WPSH Value* represents the percentage of the probable sunlight hours that the assessed window can receive, calculated in the existing baseline model state (as explained in the "Building the Model States" on page 15). The annual and winter assessments will be represented in separate tables.

D: Proposed APSH/WPSH

The *Proposed APSH/WPSH Value* represents the percentage of probable sunlight hours that the assessed window can receive, calculated in the proposed model state (as explained in the "Building the Model States" on page 15).

E: Ratio of Proposed to Baseline APSH/WPSH

This column expresses the ratio of change between the baseline APSH/WPSH value and the proposed APSH/WPSH value. The BRE Guidelines recommend that if the proposed value is less than 0.8 times the baseline value, then the reduction to sunlight is more likely to be perceptible.

F: Recommended Minimum APSH/WPSH

The *BRE Target Value* for each window has been set according to the BRE Guidelines. The Guidelines state that a proposed development could possibly have a noticeable effect on the sunlight received by an existing window, if the APSH value drops below the annual (25%) or WPSH value below the winter (5%) guidelines; **and** the APSH/WPSH value is less than 0.8 times the baseline value; **and** there is a reduction of more than 4% to the APSH.

Therefore, to determine the *recommended minimum APSH Value* for the annual study, 80% of the *Baseline APSH value* has been calculated. If this value is above the 25% threshold, a target value of 25% will be applied. If 80% of the baseline value is below 25%, then 80% of the baseline value is the appropriate target value.

To determine the *recommended minimum WPSH Value* for the winter study, 80% of the *Baseline winter APSH value* has been calculated. If this value is above the 5% threshold, a target value of 5% will be applied. If 80% of the baseline value is below 5%, then 80% of the baseline value is the appropriate target value.

G: Level of Compliance with BRE Guidelines

This column states the compliance of the *Proposed APSH/WPSH Value* with the *recommended minimum APSH/WPSH* as per the BRE Guidelines. In essence, it shows whether or not the assessed window would experience a perceptible level of impact. If the window complies with the BRE Guidelines this cell will state "BRE Compliant". If the window does not meet the criteria as set out in the BRE Guidelines, a percentage of compliance with the *recommended minimum* will be stated.

H: Effect of Proposed Development

The levels of effect in this column describe the effect an assessed window /room will experience, based on its compliance with the *BRE Target Value*. A full list of definitions and a numerical rationale for each can be found in the section "Definition of Effects" on page 11.

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation of these figures may yield a negligible difference and should not be considered an error.

A.2.1 Prince's Street North Elevation of the General Post Office (GPO) - 1st Floor

Window Number	Assumed Usage	Baseline APSH	Proposed APSH	Ratio of Proposed APSH to Baseline APSH	Recommended minimum APSH*	Level of Compliance with BRE Guidelines**	Effect of Proposed Development
1a	Commercial	56.10%	30.38%	0.54	25.00%	BRE Compliant	Negligible
1b	Commercial	57.03%	31.78%	0.56	25.00%	BRE Compliant	Negligible
1c	Commercial	55.79%	30.77%	0.55	25.00%	BRE Compliant	Negligible
1d	Commercial	57.58%	31.16%	0.54	25.00%	BRE Compliant	Negligible
1e	Commercial	56.88%	31.39%	0.55	25.00%	BRE Compliant	Negligible
1f	Commercial	57.42%	32.32%	0.56	25.00%	BRE Compliant	Negligible
1g	Commercial	58.51%	33.64%	0.58	25.00%	BRE Compliant	Negligible
1h	Commercial	58.43%	35.20%	0.60	25.00%	BRE Compliant	Negligible
1i	Commercial	59.05%	36.75%	0.62	25.00%	BRE Compliant	Negligible
1j	Commercial	60.06%	38.85%	0.65	25.00%	BRE Compliant	Negligible
1k	Commercial	60.68%	42.97%	0.71	25.00%	BRE Compliant	Negligible
1l	Commercial	63.33%	49.11%	0.78	25.00%	BRE Compliant	Negligible
1m	Commercial	63.56%	50.19%	0.79	25.00%	BRE Compliant	Negligible
1n	Commercial	67.44%	55.17%	0.82	25.00%	BRE Compliant	Negligible
1o	Commercial	67.13%	55.56%	0.83	25.00%	BRE Compliant	Negligible
1p	Commercial	67.44%	57.73%	0.86	25.00%	BRE Compliant	Negligible
1q	Commercial	67.06%	57.42%	0.86	25.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

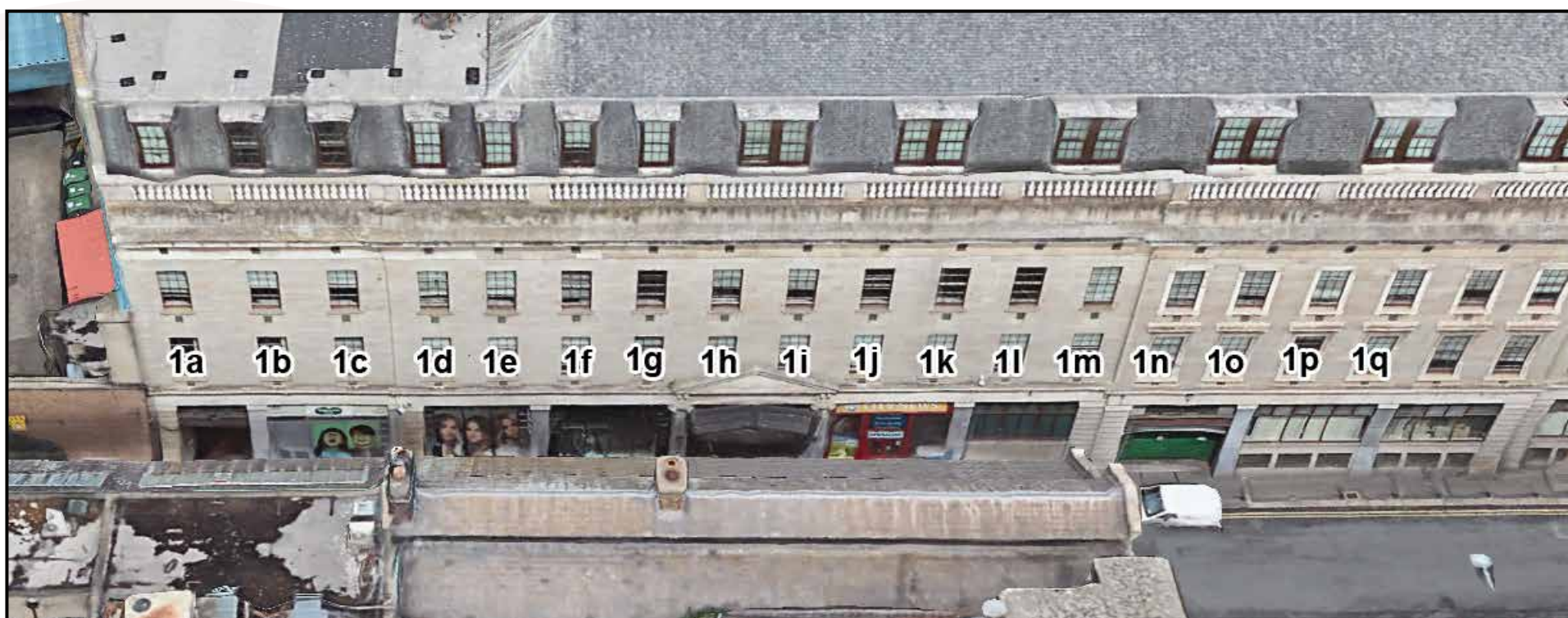
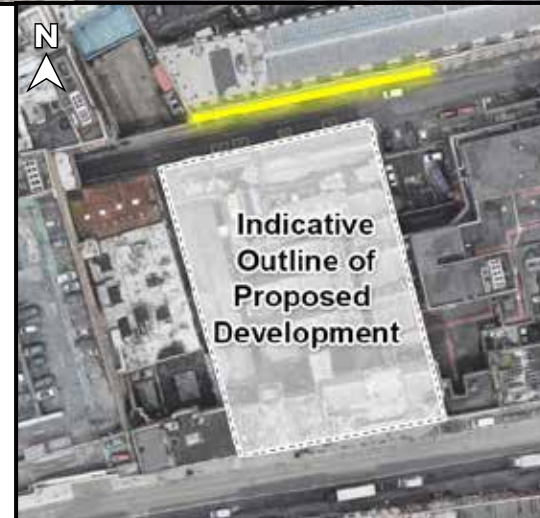


Fig. A.15: Indication of the position of assessed windows (T), Aerial view of assessed location (B)



A.2.2 Prince's Street North Elevation of the General Post Office (GPO) - 1st Floor

Window Number	Assumed Usage	Baseline WPSH	Proposed WPSH	Ratio of Proposed WPSH to Baseline WPSH	Recommended minimum WPSH*	Level of Compliance with BRE Guidelines**	Effect of Proposed Development
1a	Commercial	4.43%	0.00%	0.00	3.54%	0%	Major Adverse
1b	Commercial	4.74%	0.00%	0.00	3.79%	0%	Major Adverse
1c	Commercial	4.74%	0.00%	0.00	3.79%	0%	Major Adverse
1d	Commercial	4.58%	0.00%	0.00	3.67%	0%	Major Adverse
1e	Commercial	3.89%	0.00%	0.00	3.11%	0%	Major Adverse
1f	Commercial	4.35%	0.00%	0.00	3.48%	0%	Major Adverse
1g	Commercial	4.58%	0.00%	0.00	3.67%	0%	Major Adverse
1h	Commercial	4.27%	0.08%	0.02	3.42%	2%	Major Adverse
1i	Commercial	4.90%	0.08%	0.02	3.92%	2%	Major Adverse
1j	Commercial	5.91%	0.47%	0.08	4.72%	10%	Major Adverse
1k	Commercial	6.45%	1.63%	0.25	5.00%	33%	Major Adverse
1l	Commercial	9.09%	4.27%	0.47	5.00%	85%	Minor Adverse
1m	Commercial	11.27%	5.91%	0.52	5.00%	BRE Compliant	Negligible
1n	Commercial	13.05%	6.06%	0.46	5.00%	BRE Compliant	Negligible
1o	Commercial	13.13%	6.22%	0.47	5.00%	BRE Compliant	Negligible
1p	Commercial	13.52%	6.06%	0.45	5.00%	BRE Compliant	Negligible
1q	Commercial	13.29%	5.91%	0.44	5.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

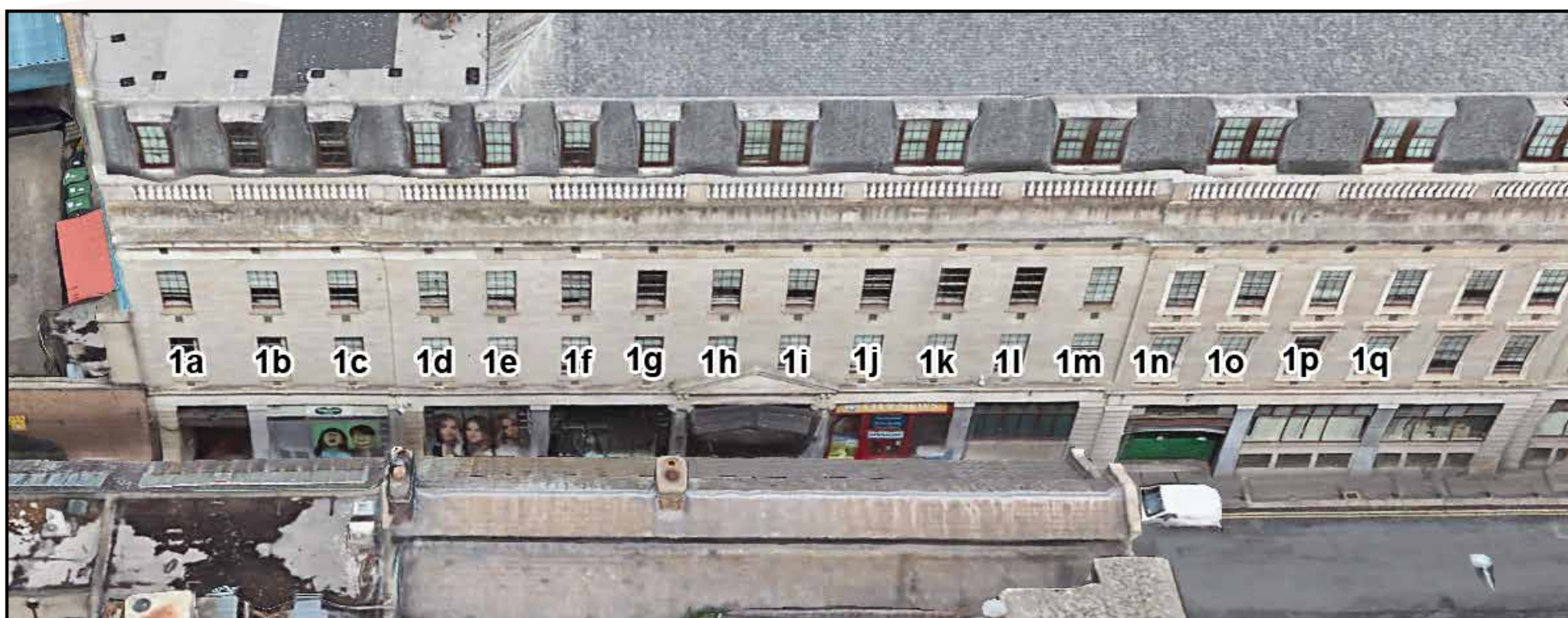
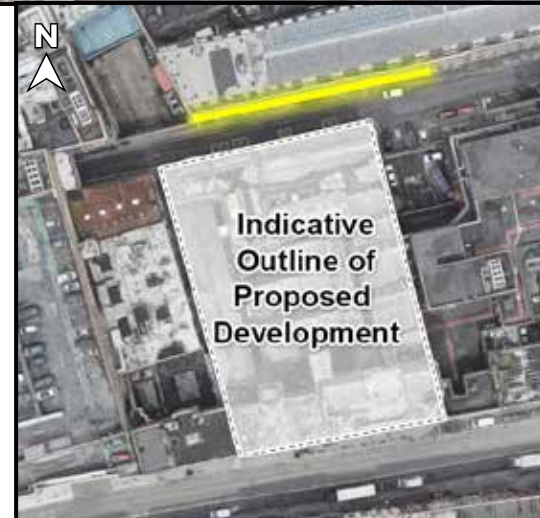


Fig. A.16: Indication of the position of assessed windows (T), Aerial view of assessed location (B)



A.2.3 Prince's Street North Elevation of the General Post Office (GPO) - 2nd Floor

Window Number	Assumed Usage	Baseline APSH	Proposed APSH	Ratio of Proposed APSH to Baseline APSH	Recommended minimum APSH*	Level of Compliance with BRE Guidelines**	Effect of Proposed Development
2a	Commercial	72.73%	42.74%	0.59	25.00%	BRE Compliant	Negligible
2b	Commercial	73.04%	42.89%	0.59	25.00%	BRE Compliant	Negligible
2c	Commercial	72.73%	42.58%	0.59	25.00%	BRE Compliant	Negligible
2d	Commercial	72.88%	43.43%	0.60	25.00%	BRE Compliant	Negligible
2e	Commercial	72.34%	44.68%	0.62	25.00%	BRE Compliant	Negligible
2f	Commercial	72.11%	45.07%	0.63	25.00%	BRE Compliant	Negligible
2g	Commercial	72.57%	46.00%	0.63	25.00%	BRE Compliant	Negligible
2h	Commercial	73.82%	47.16%	0.64	25.00%	BRE Compliant	Negligible
2i	Commercial	74.20%	47.71%	0.64	25.00%	BRE Compliant	Negligible
2j	Commercial	75.06%	50.51%	0.67	25.00%	BRE Compliant	Negligible
2k	Commercial	75.21%	53.46%	0.71	25.00%	BRE Compliant	Negligible
2l	Commercial	76.46%	58.74%	0.77	25.00%	BRE Compliant	Negligible
2m	Commercial	75.14%	59.98%	0.80	25.00%	BRE Compliant	Negligible
2n	Commercial	78.71%	64.80%	0.82	25.00%	BRE Compliant	Negligible
2o	Commercial	78.32%	66.43%	0.85	25.00%	BRE Compliant	Negligible
2p	Commercial	78.01%	67.13%	0.86	25.00%	BRE Compliant	Negligible
2q	Commercial	76.85%	67.21%	0.87	25.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.



Fig. A.17: Indication of the position of assessed windows (T), Aerial view of assessed location (B)



A.2.4 Prince's Street North Elevation of the General Post Office (GPO) - 1st Floor

Window Number	Assumed Usage	Baseline WPSH	Proposed WPSH	Ratio of Proposed WPSH to Baseline WPSH	Recommended minimum WPSH*	Level of Compliance with BRE Guidelines**	Effect of Proposed Development
2a	Commercial	18.18%	0.00%	0.00	5.00%	0%	Major Adverse
2b	Commercial	18.34%	0.08%	0.00	5.00%	2%	Major Adverse
2c	Commercial	19.43%	0.08%	0.00	5.00%	2%	Major Adverse
2d	Commercial	18.03%	0.08%	0.00	5.00%	2%	Major Adverse
2e	Commercial	17.25%	0.08%	0.00	5.00%	2%	Major Adverse
2f	Commercial	16.71%	0.08%	0.00	5.00%	2%	Major Adverse
2g	Commercial	17.56%	0.08%	0.00	5.00%	2%	Major Adverse
2h	Commercial	18.88%	0.31%	0.02	5.00%	6%	Major Adverse
2i	Commercial	19.35%	0.62%	0.03	5.00%	12%	Major Adverse
2j	Commercial	20.20%	1.48%	0.07	5.00%	30%	Major Adverse
2k	Commercial	20.36%	3.19%	0.16	5.00%	64%	Moderate Adverse
2l	Commercial	21.60%	6.92%	0.32	5.00%	BRE Compliant	Negligible
2m	Commercial	22.07%	9.95%	0.45	5.00%	BRE Compliant	Negligible
2n	Commercial	23.31%	10.80%	0.46	5.00%	BRE Compliant	Negligible
2o	Commercial	23.15%	11.81%	0.51	5.00%	BRE Compliant	Negligible
2p	Commercial	23.15%	12.59%	0.54	5.00%	BRE Compliant	Negligible
2q	Commercial	22.07%	12.74%	0.58	5.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

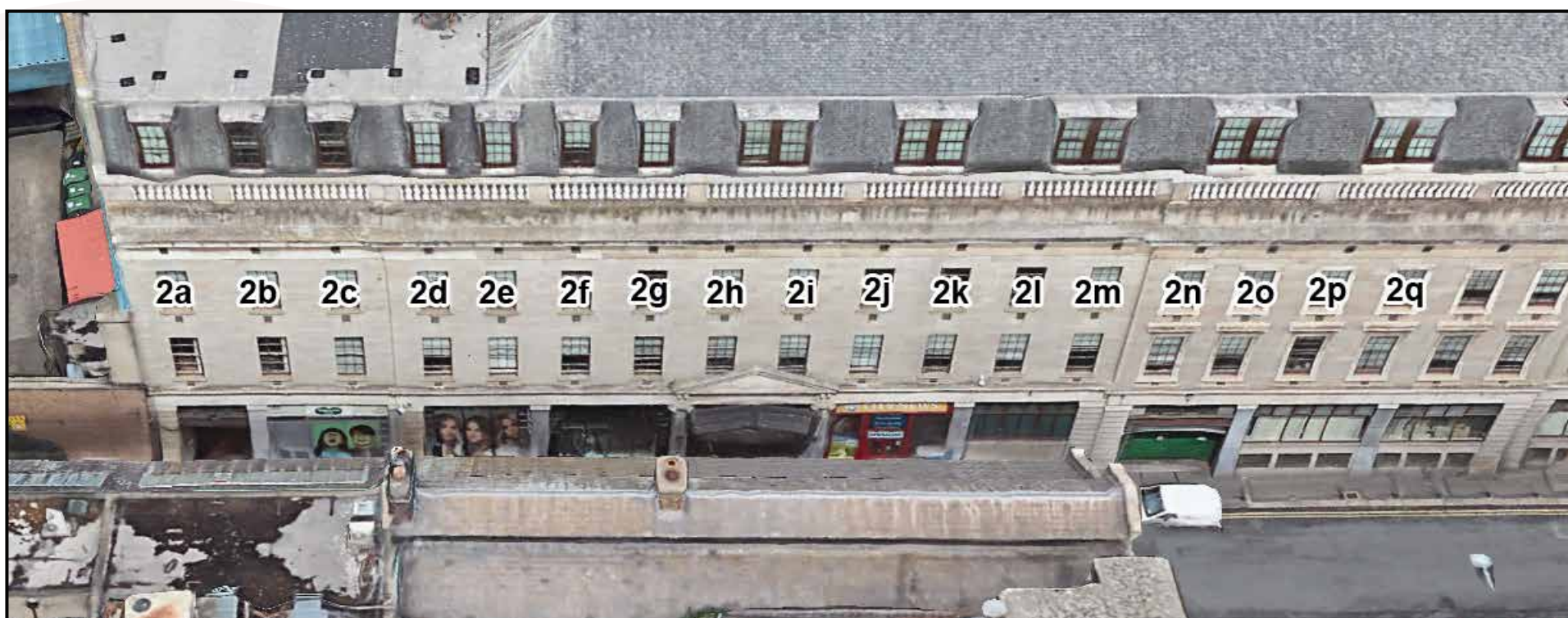
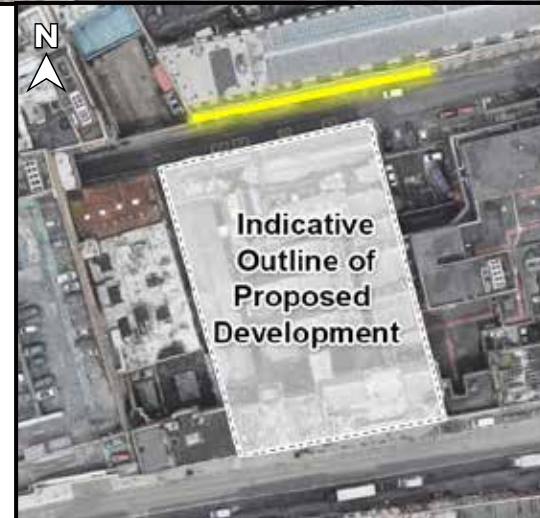


Fig. A.18: Indication of the position of assessed windows (T), Aerial view of assessed location (B)



A.2.5 Prince's Street North Elevation of the General Post Office (GPO) - 3rd Floor

Table No. A.2.5 - APSH Results: Prince's Street North Elevation of the General Post Office (GPO) - 3rd Floor							
Window Number	Assumed Usage	Baseline APSH	Proposed APSH	Ratio of Proposed APSH to Baseline APSH	Recommended minimum APSH*	Level of Compliance with BRE Guidelines**	Effect of Proposed Development
3a	Commercial	84.15%	65.58%	0.78	25.00%	BRE Compliant	Negligible
3b	Commercial	85.39%	63.32%	0.74	25.00%	BRE Compliant	Negligible
3c	Commercial	86.09%	63.17%	0.73	25.00%	BRE Compliant	Negligible
3d	Commercial	86.87%	63.01%	0.73	25.00%	BRE Compliant	Negligible
3e	Commercial	87.10%	63.65%	0.73	25.00%	BRE Compliant	Negligible
3f	Commercial	86.95%	63.84%	0.73	25.00%	BRE Compliant	Negligible
3g	Commercial	86.87%	64.51%	0.74	25.00%	BRE Compliant	Negligible
3h	Commercial	87.41%	66.43%	0.76	25.00%	BRE Compliant	Negligible
3i	Commercial	87.49%	70.40%	0.80	25.00%	BRE Compliant	Negligible
3j	Commercial	87.72%	76.22%	0.87	25.00%	BRE Compliant	Negligible
3k	Commercial	87.96%	80.34%	0.91	25.00%	BRE Compliant	Negligible
3l	Commercial	87.80%	82.36%	0.94	25.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.



Fig. A.19: Indication of the position of assessed windows (T), Aerial view of assessed location (B)



A.2.6 Prince's Street North Elevation of the General Post Office (GPO) - 3rd Floor

Table No. A.2.6 - WPSH Results: Prince's Street North Elevation of the General Post Office (GPO) - 3rd Floor							
Window Number	Assumed Usage	Baseline WPSH	Proposed WPSH	Ratio of Proposed WPSH to Baseline WPSH	Recommended minimum WPSH*	Level of Compliance with BRE Guidelines**	Effect of Proposed Development
3a	Commercial	27.58%	9.32%	0.34	5.00%	BRE Compliant	Negligible
3b	Commercial	28.83%	6.99%	0.24	5.00%	BRE Compliant	Negligible
3c	Commercial	29.53%	6.76%	0.23	5.00%	BRE Compliant	Negligible
3d	Commercial	30.30%	6.45%	0.21	5.00%	BRE Compliant	Negligible
3e	Commercial	30.54%	7.09%	0.23	5.00%	BRE Compliant	Negligible
3f	Commercial	30.38%	7.28%	0.24	5.00%	BRE Compliant	Negligible
3g	Commercial	30.30%	7.95%	0.26	5.00%	BRE Compliant	Negligible
3h	Commercial	30.85%	9.87%	0.32	5.00%	BRE Compliant	Negligible
3i	Commercial	30.92%	13.83%	0.45	5.00%	BRE Compliant	Negligible
3j	Commercial	31.16%	19.66%	0.63	5.00%	BRE Compliant	Negligible
3k	Commercial	31.39%	23.78%	0.76	5.00%	BRE Compliant	Negligible
3l	Commercial	31.24%	25.80%	0.83	5.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.



Fig. A.20: Indication of the position of assessed windows (T), Aerial view of assessed location (B)



A.2.7 Rear of Arnotts, Prince's Street North Elevation

Table No. A.2.7 - APSH Results: Prince's Street North Elevation of the General Post Office (GPO) - 3rd Floor							
Window Number	Assumed Usage	Baseline APSH	Proposed APSH	Ratio of Proposed APSH to Baseline APSH	Recommended minimum APSH*	Level of Compliance with BRE Guidelines**	Effect of Proposed Development
Pa	Commercial	12.28%	7.85%	0.64	8.28%	95%	Minor Adverse
Pb	Commercial	15.62%	8.24%	0.53	11.62%	71%	Moderate Adverse
Pc	Commercial	18.03%	10.26%	0.57	14.03%	73%	Moderate Adverse
Pd	Commercial	20.05%	15.15%	0.76	16.04%	94%	Minor Adverse
Pe	Commercial	21.06%	15.54%	0.74	16.85%	92%	Minor Adverse
Pf	Commercial	27.20%	20.59%	0.76	21.76%	95%	Minor Adverse
Pg	Commercial	30.69%	25.87%	0.84	24.55%	BRE Compliant	Negligible
Ph	Commercial	36.13%	31.24%	0.86	25.00%	BRE Compliant	Negligible
Pi	Commercial	41.57%	35.82%	0.86	25.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

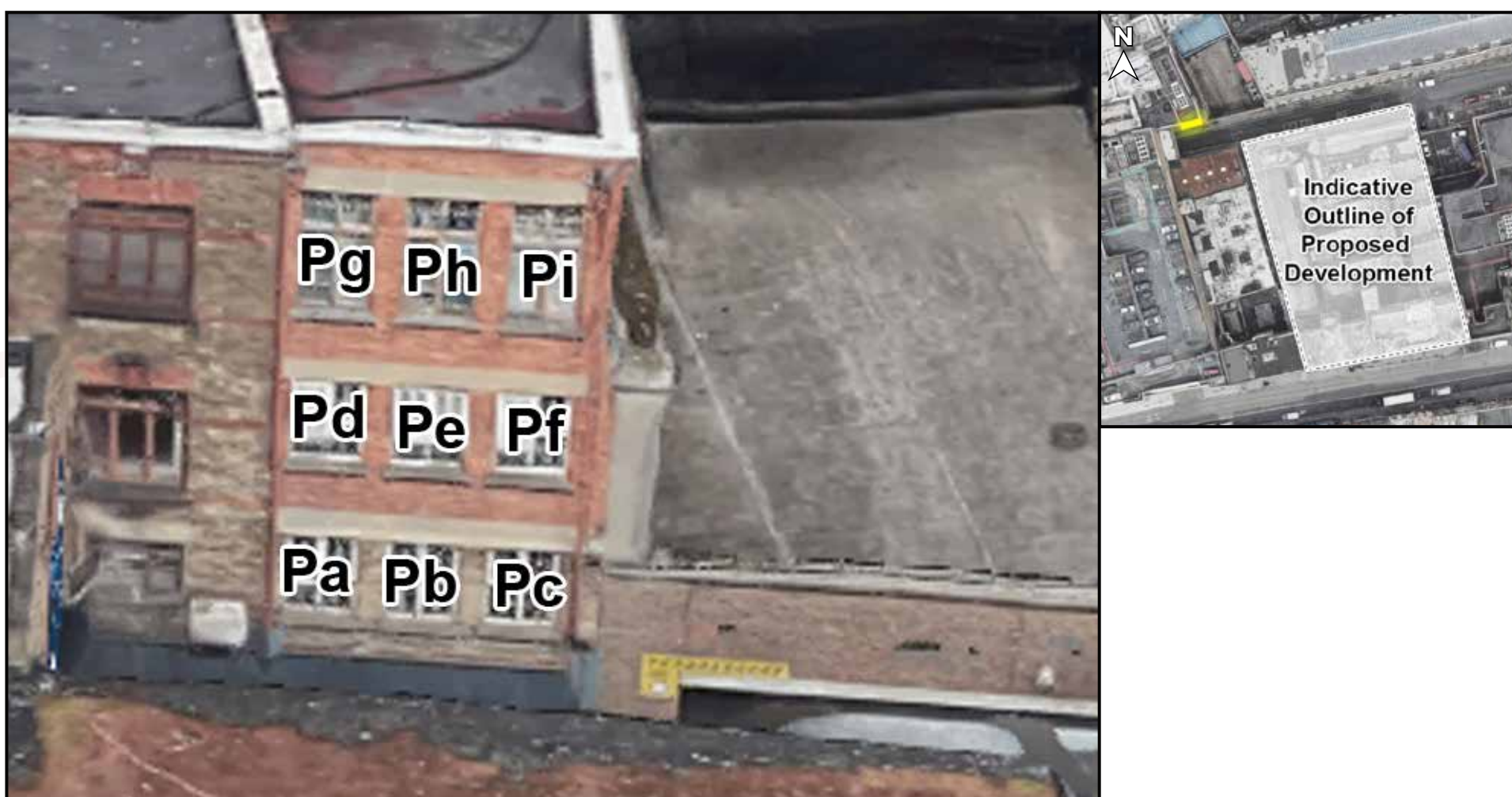


Fig. A.21: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

A.2.8 Rear of Arnotts, Prince's Street North Elevation

Table No. A.2.8 - WPSH Results: Rear of Arnotts, Prince's Street North Elevation							
Window Number	Assumed Usage	Baseline WPSH	Proposed WPSH	Ratio of Proposed WPSH to Baseline WPSH	Recommended minimum WPSH*	Level of Compliance with BRE Guidelines**	Effect of Proposed Development
Pa	Commercial	0.00%	0.00%	n.a.	n.a	n.a	n.a.
Pb	Commercial	0.00%	0.00%	n.a.	n.a	n.a	n.a.
Pc	Commercial	0.00%	0.00%	n.a.	n.a	n.a	n.a.
Pd	Commercial	0.16%	0.00%	0.00	n.a	n.a	n.a.
Pe	Commercial	0.00%	0.00%	n.a.	n.a	n.a	n.a.
Pf	Commercial	0.23%	0.00%	0.00	n.a	n.a	n.a.
Pg	Commercial	0.47%	0.00%	0.00	n.a	n.a	n.a.
Ph	Commercial	0.85%	0.00%	0.00	n.a	n.a	n.a.
Pi	Commercial	1.32%	0.00%	0.00	1.06%	0%	Major Adverse

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

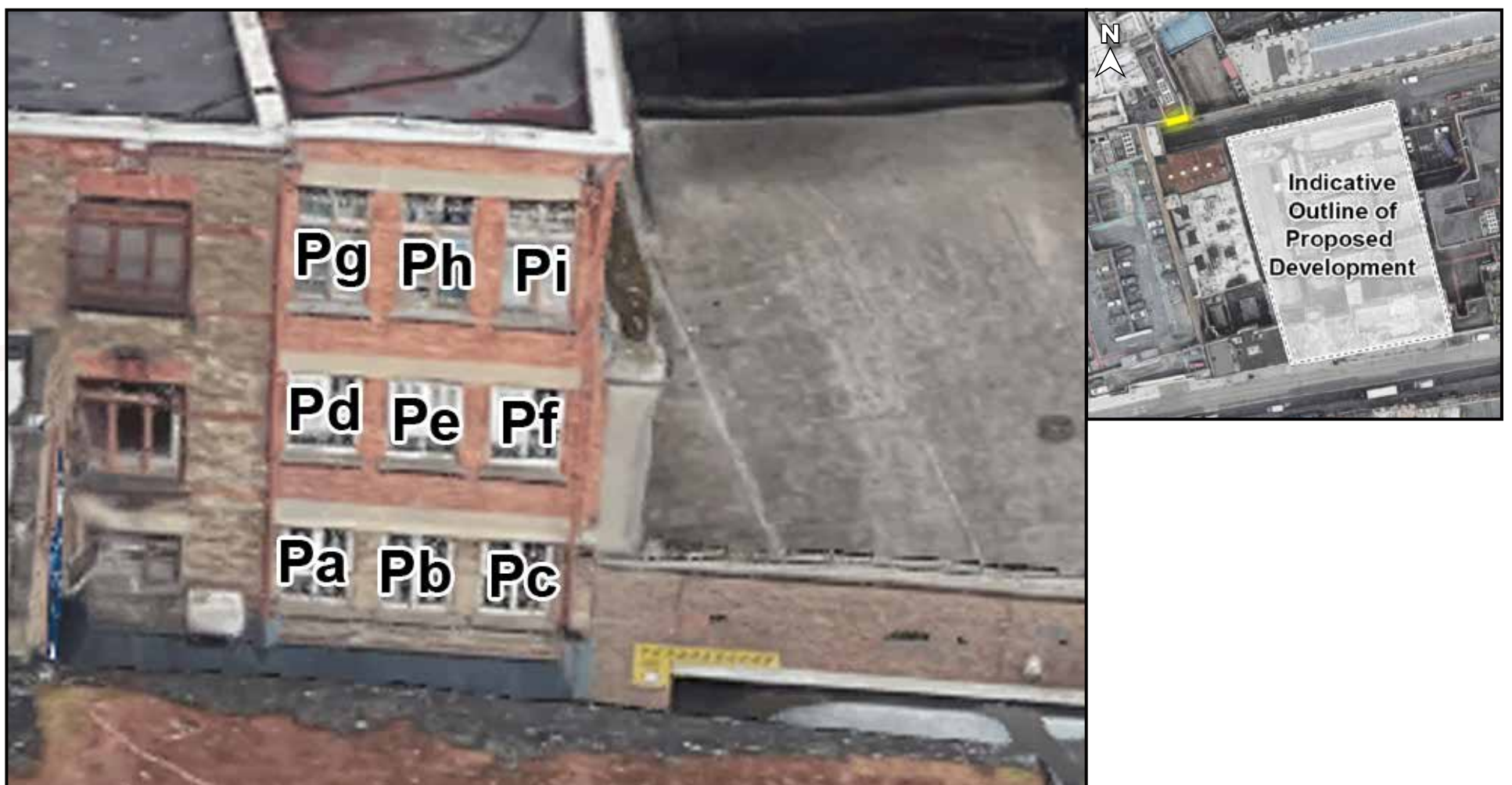


Fig. A.22: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

A.2.9 Granted Hotel (DCC Reg. Ref. 4880/22)

Table No. A.2.9 - APSH Results: Granted Hotel (DCC Reg. Ref. 4880/22)							
Window Number	Assumed Usage	Baseline APSH	Proposed APSH	Ratio of Proposed APSH to Baseline APSH	Recommended minimum APSH*	Level of Compliance with BRE Guidelines**	Effect of Proposed Development
G1g	Commercial	26.03%	12.67%	0.49	20.82%	61%	Moderate Adverse
G1h	Commercial	29.37%	14.84%	0.51	23.50%	63%	Moderate Adverse
G1i	Commercial	32.48%	17.25%	0.53	25.00%	69%	Moderate Adverse
G2g	Commercial	30.38%	13.91%	0.46	24.30%	57%	Moderate Adverse
G2h	Commercial	36.21%	18.57%	0.51	25.00%	74%	Moderate Adverse
G2i	Commercial	40.95%	21.06%	0.51	25.00%	84%	Minor Adverse
G3g	Commercial	34.19%	18.03%	0.53	25.00%	72%	Moderate Adverse
G3h	Commercial	41.49%	22.30%	0.54	25.00%	89%	Minor Adverse
G3i	Commercial	48.33%	24.40%	0.50	25.00%	98%	Minor Adverse
G4g	Commercial	37.61%	21.59%	0.57	25.00%	86%	Minor Adverse
G4h	Commercial	45.61%	23.23%	0.51	25.00%	93%	Minor Adverse
G4i	Commercial	55.24%	29.53%	0.53	25.00%	BRE Compliant	Negligible
G5g	Commercial	39.70%	23.64%	0.60	25.00%	95%	Minor Adverse
G5h	Commercial	50.19%	29.71%	0.59	25.00%	BRE Compliant	Negligible
G5i	Commercial	59.83%	35.43%	0.59	25.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

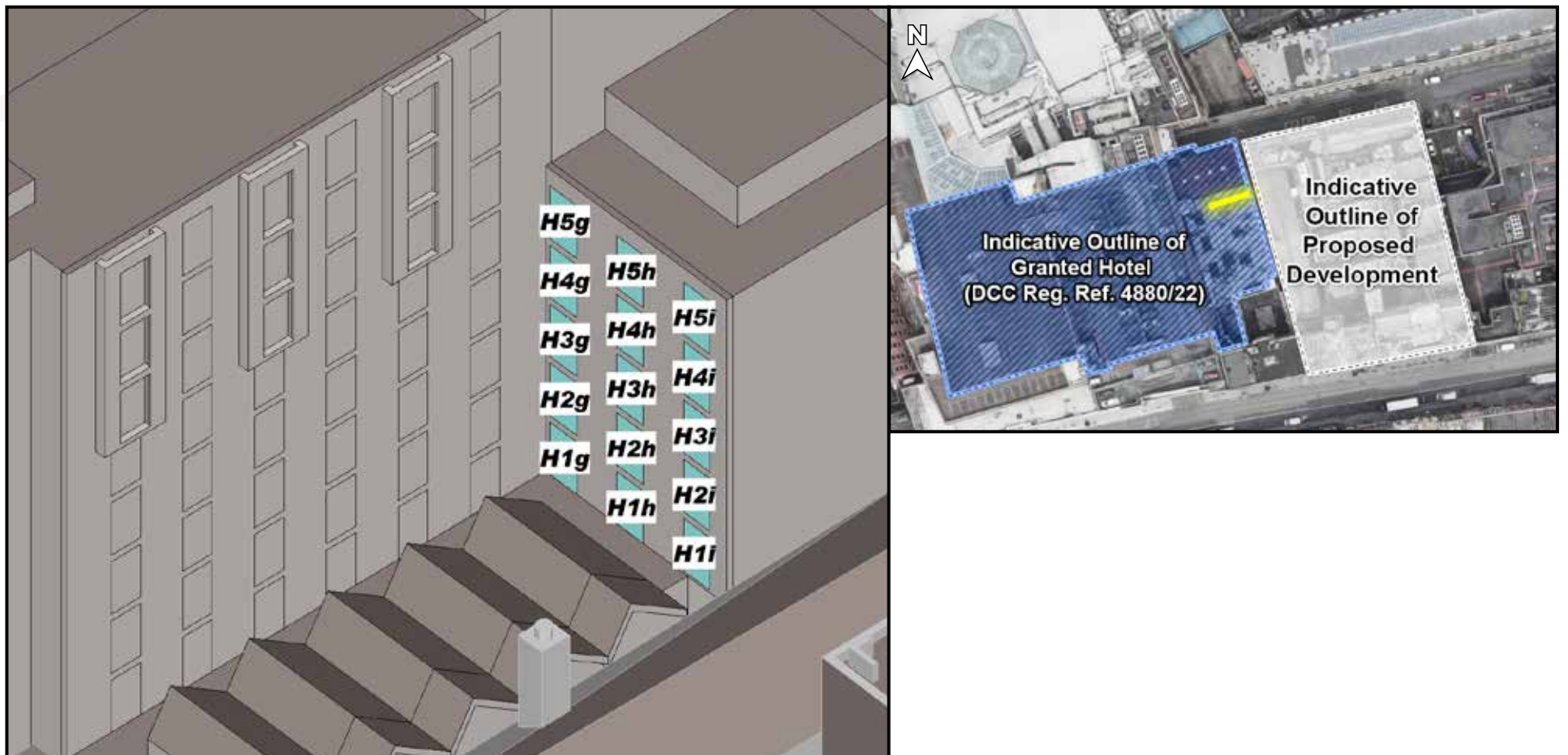


Fig. A.23: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

A.2.10 Granted Hotel (DCC Reg. Ref. 4880/22)

Table No. A.2.10 - WPSH Results: Granted Hotel (DCC Reg. Ref. 4880/22)							
Window Number	Assumed Usage	Baseline WPSH	Proposed WPSH	Ratio of Proposed WPSH to Baseline WPSH	Recommended minimum WPSH*	Level of Compliance with BRE Guidelines**	Effect of Proposed Development
G1g	Commercial	5.13%	3.57%	0.70	4.10%	87%	Minor Adverse
G1h	Commercial	5.28%	3.81%	0.72	4.23%	90%	Minor Adverse
G1i	Commercial	6.60%	3.96%	0.60	5.00%	79%	Moderate Adverse
G2g	Commercial	7.07%	4.51%	0.64	5.00%	90%	Minor Adverse
G2h	Commercial	8.55%	5.05%	0.59	5.00%	BRE Compliant	Negligible
G2i	Commercial	10.64%	6.60%	0.62	5.00%	BRE Compliant	Negligible
G3g	Commercial	9.95%	7.07%	0.71	5.00%	BRE Compliant	Negligible
G3h	Commercial	11.97%	6.99%	0.58	5.00%	BRE Compliant	Negligible
G3i	Commercial	14.45%	8.31%	0.58	5.00%	BRE Compliant	Negligible
G4g	Commercial	12.59%	8.47%	0.67	5.00%	BRE Compliant	Negligible
G4h	Commercial	14.61%	7.23%	0.49	5.00%	BRE Compliant	Negligible
G4i	Commercial	17.25%	8.47%	0.49	5.00%	BRE Compliant	Negligible
G5g	Commercial	13.75%	8.67%	0.63	5.00%	BRE Compliant	Negligible
G5h	Commercial	16.16%	8.24%	0.51	5.00%	BRE Compliant	Negligible
G5i	Commercial	18.73%	9.87%	0.53	5.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.

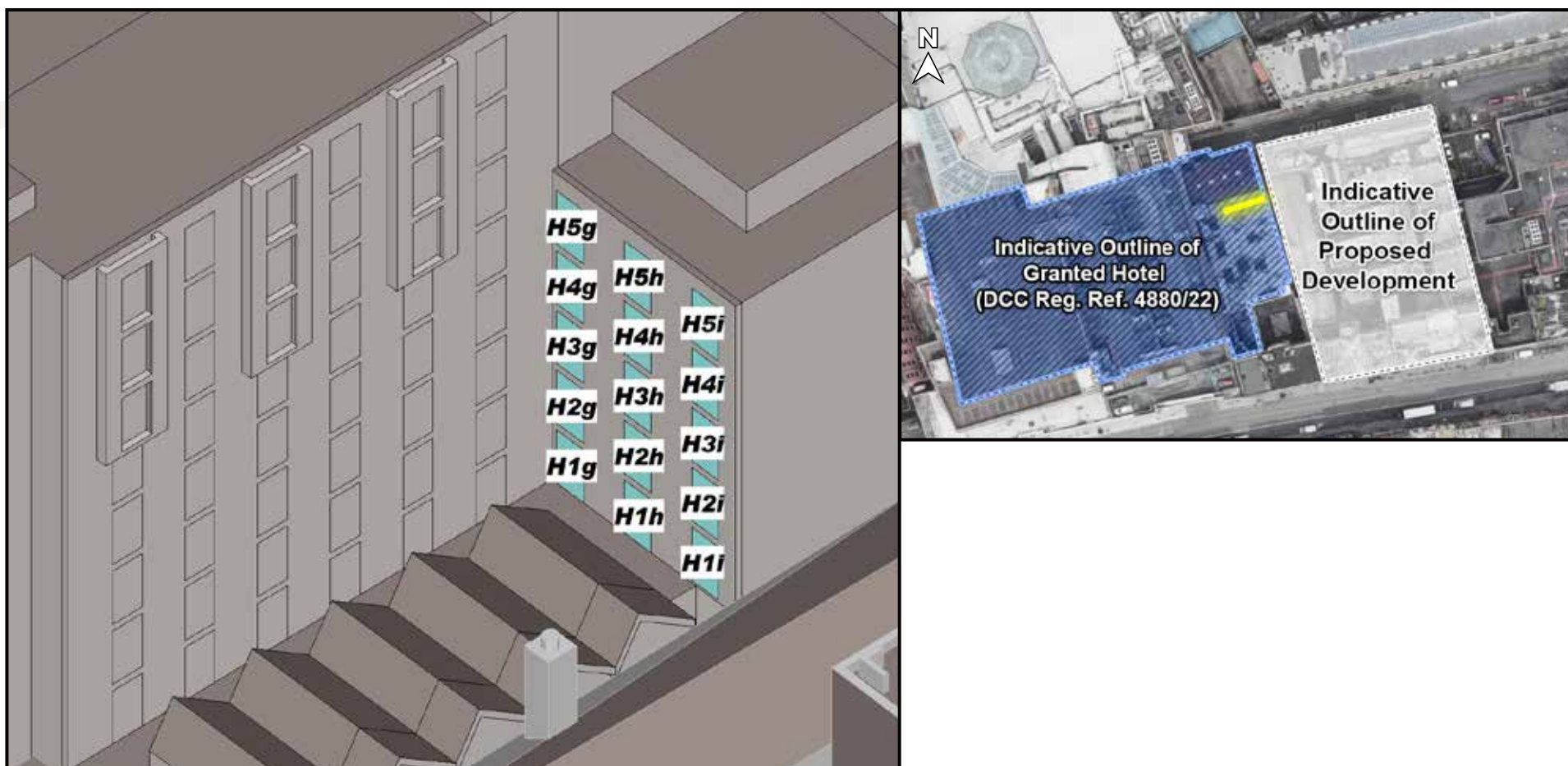


Fig. A.24: Indication of the position of assessed windows (L), Aerial view of assessed location (R)

A.2.11 Properties to the east of the subject site

Table No. A.2.10 - APSH Results: Granted Hotel (DCC Reg. Ref. 4880/22)							
Window Number	Assumed Usage	Baseline APSH	Proposed APSH	Ratio of Proposed APSH to Baseline APSH	Recommended minimum APSH*	Level of Compliance with BRE Guidelines**	Effect of Proposed Development
84a	Residential	1.48%	1.48%	1.00	n.a.	n.a	n.a.
84b	Residential	17.40%	9.79%	0.56	13.40%	73%	Moderate Adverse
79a	Residential	13.91%	9.32%	0.67	9.91%	94%	Minor Adverse
79b	Residential	4.97%	0.00%	0.00	0.97%	0%	Major Adverse
79c	Residential	36.83%	30.46%	0.83	25.00%	BRE Compliant	Negligible
79d	Residential	9.17%	4.66%	0.51	5.17%	90%	Minor Adverse
79e	Residential	52.99%	50.35%	0.95	25.00%	BRE Compliant	Negligible
79f	Residential	52.91%	49.57%	0.94	25.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.



Fig. A.25: Indication of the position of assessed windows (T), Aerial view of assessed location (B)



The assessed properties that are located to the east of the subject site are:

- Two west facing windows at the rear of 84 Middle Abbey Street, facing the subject site
- Six west facing windows at the rear of 79-82 Middle Abbey Street, facing the subject site

A.2.12 Properties to the east of the subject site

Table No. A.2.11 - WPSH Results: Granted Hotel (DCC Reg. Ref. 4880/22)							
Window Number	Assumed Usage	Baseline WPSH	Proposed WPSH	Ratio of Proposed WPSH to Baseline WPSH	Recommended minimum WPSH*	Level of Compliance with BRE Guidelines**	Effect of Proposed Development
84a	Residential	0.00%	0.00%	n.a.	n.a	n.a	n.a.
84b	Residential	0.00%	0.00%	n.a.	n.a	n.a	n.a.
79a	Residential	0.00%	0.00%	n.a.	n.a	n.a	n.a.
79b	Residential	0.00%	0.00%	n.a.	n.a	n.a	n.a.
79c	Residential	1.32%	1.32%	1.00	1.06%	BRE Compliant	Negligible
79d	Residential	0.00%	0.00%	n.a.	n.a	n.a	n.a.
79e	Residential	15.31%	15.31%	1.00	5.00%	BRE Compliant	Negligible
79f	Residential	15.23%	15.31%	1.01	5.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 11.



Fig. A.26: Indication of the position of assessed windows (T), Aerial view of assessed location (B)



The assessed properties that are located to the east of the subject site are:

- Two west facing windows at the rear of 84 Middle Abbey Street, facing the subject site
- Six west facing windows at the rear of 79-82 Middle Abbey Street, facing the subject site

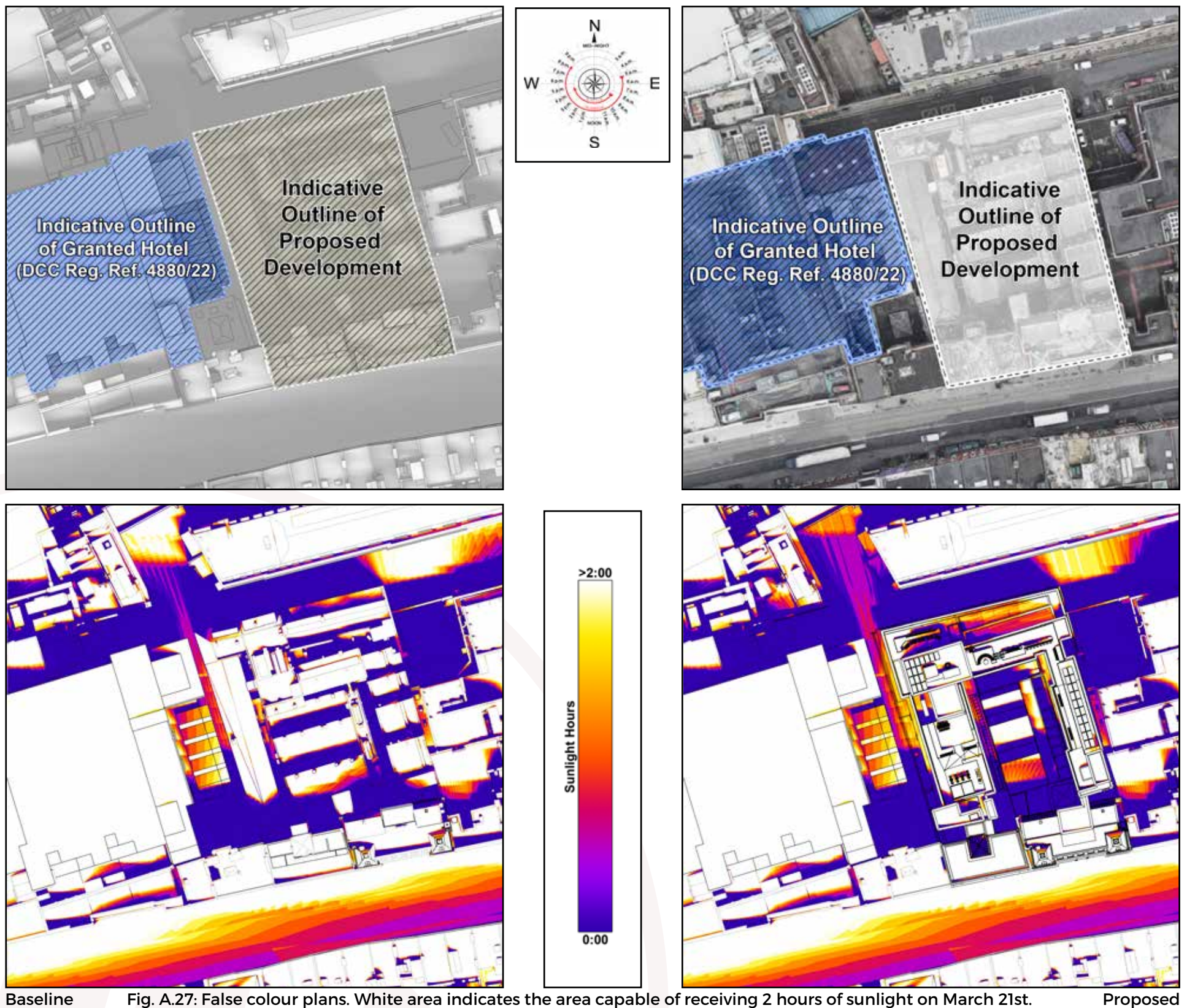
A.3 Effect on Sun On Ground (SOG) in Existing Amenity Area

The subject site is in the heart of the city centre, where outdoor amenity areas are limited. Typically, an SOG impact assessment would be conducted on nearby gardens, parks, or public amenity areas. However, for this proposal, a quantitative SOG assessment has not been conducted due to the lack of existing areas in the vicinity that benefit from or require sunlight access.

False-color plans indicating sunlight duration on March 21st have been generated for both the baseline and proposed model states. These visuals enable a qualitative assessment should any sensitive areas, unknown to the design team, exist in the area.

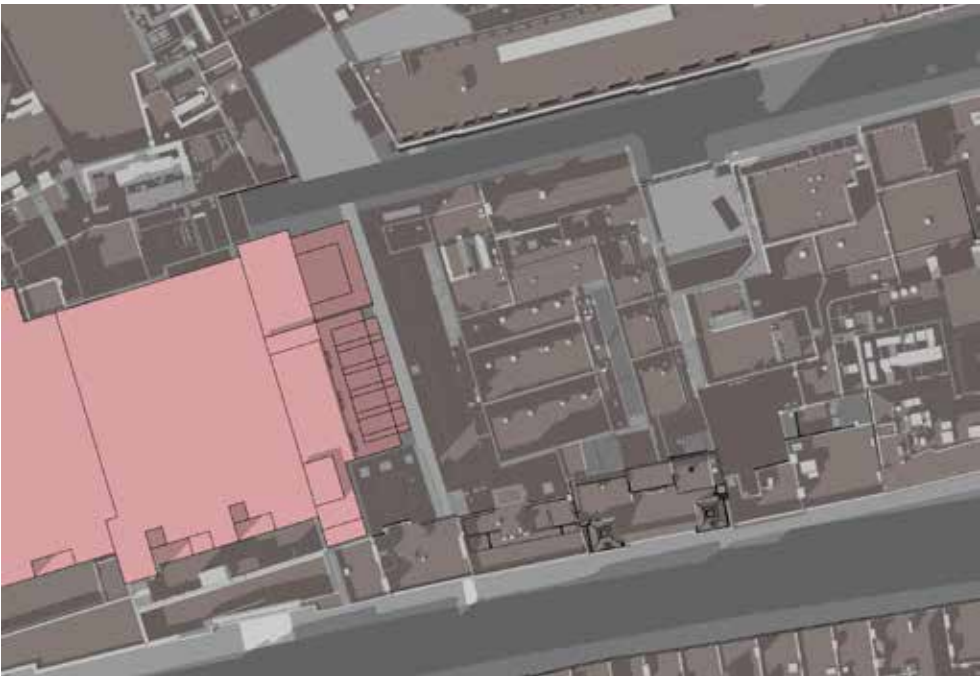
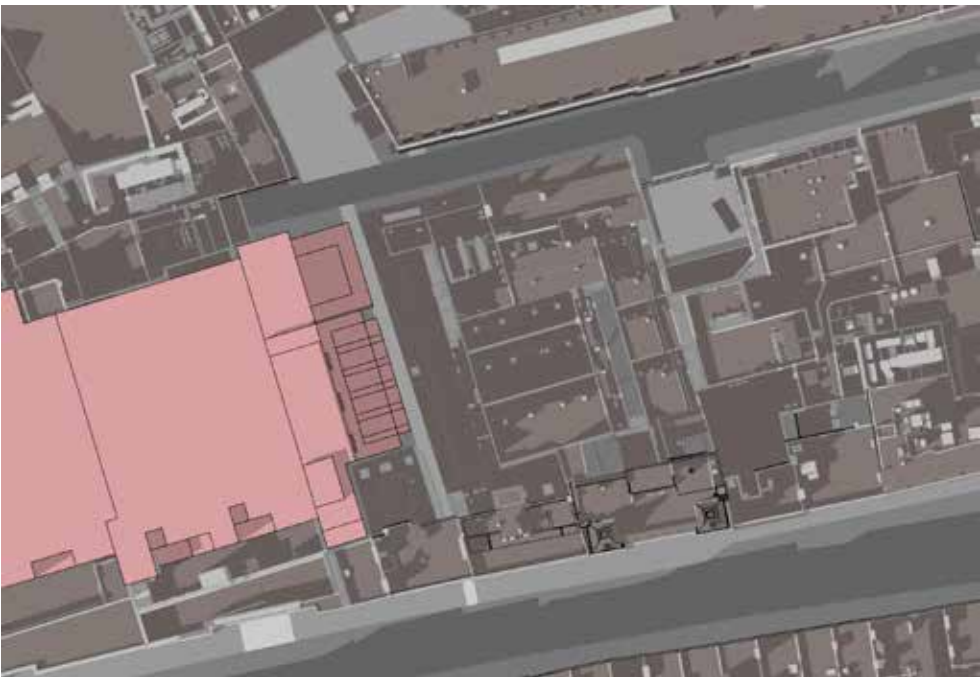
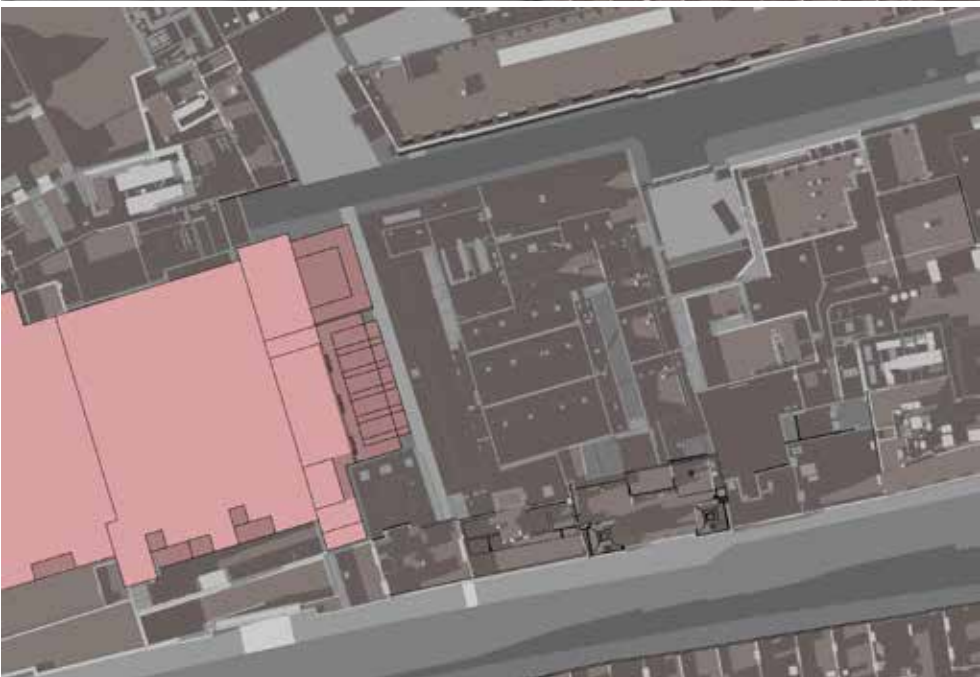
In the false-colour plans, areas shown in white indicate areas that can receive at least two hours of sunlight on March 21st. The dark blue indicate the areas where sunlight will not reach at any time during the spring equinox. The other colours indicate approximate 15 minute intervals between no sunlight access and two hours.

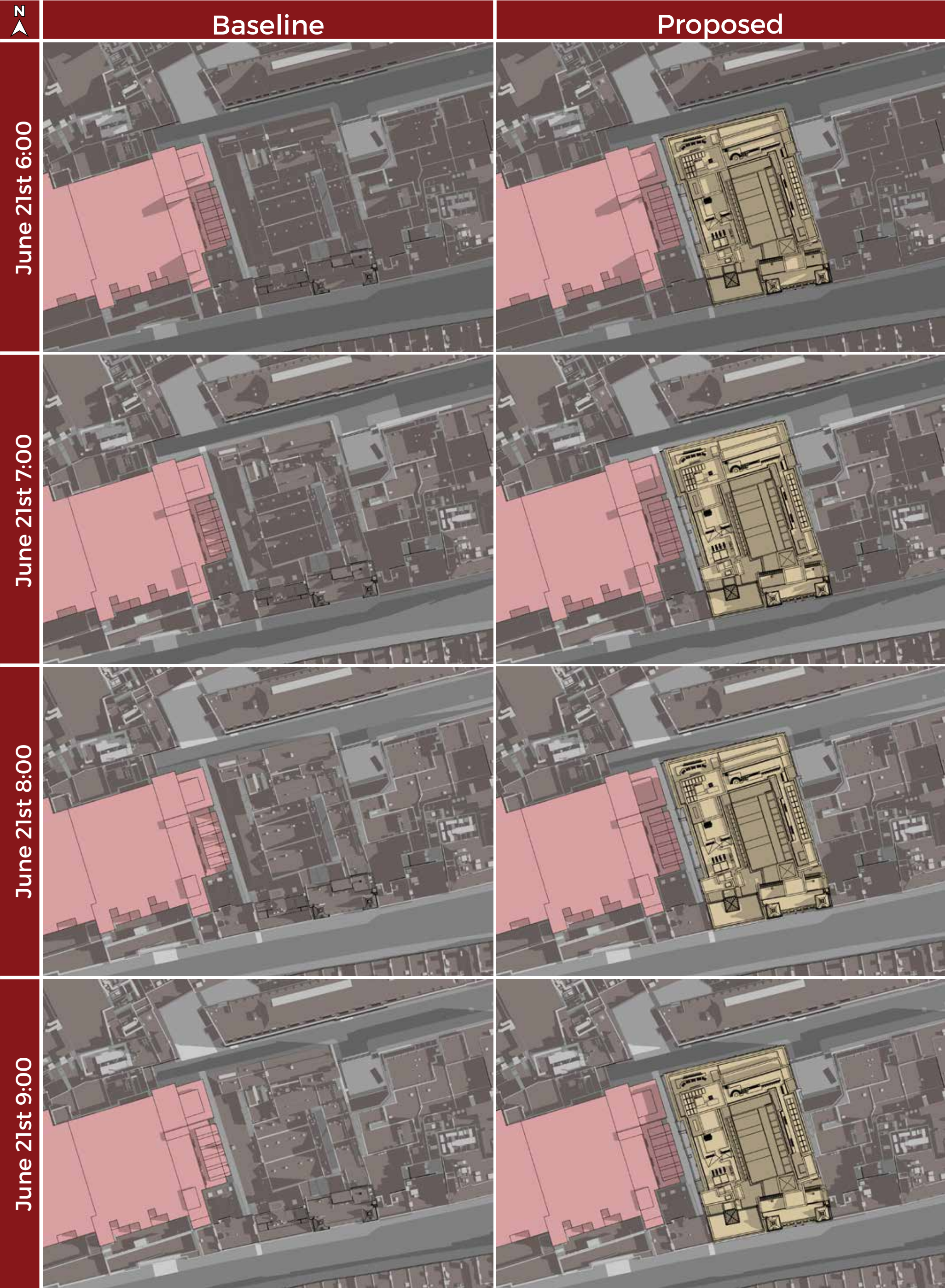
The images below, along with the hourly renderings of the shadow study in the following section, allow for a qualitative comparison of sunlight access between the baseline and proposed model states.



Baseline		Proposed		
March 21st 7:00				
B.0 B.1	Shadow Studies Shadow Study 21 March	Project: Proposed Student Accommodation, and Commercial Development, Independent House	Permitted (DCC Reg. Ref. 4880/22)	Proposed
March 21st Sunrise 6:32 Sunset 18:32		Applicant: Summix IHD Developments Limited		

Baseline		Proposed	
March 21st 11:00			
Project: Proposed Student Accommodation, and Commercial Development, Independent House		Permitted (DCC Reg. Ref. 4880/22)	Proposed
March 21st Sunrise 6:32 Sunset 18:32		Applicant: Summix IHD Developments Limited	

z		Baseline		Proposed	
March 21st 15:00					
March 21st 16:00					
March 21st 17:00					
March 21st 18:00					
		Project: Proposed Student Accommodation, and Commercial Development, Independent House		Permitted (DCC Reg. Ref. 4880/22)	
		Applicant: Summix IHD Developments Limited		Proposed	
March 21st Sunrise 6:32 Sunset 18:32				 3D DESIGN BUREAU	

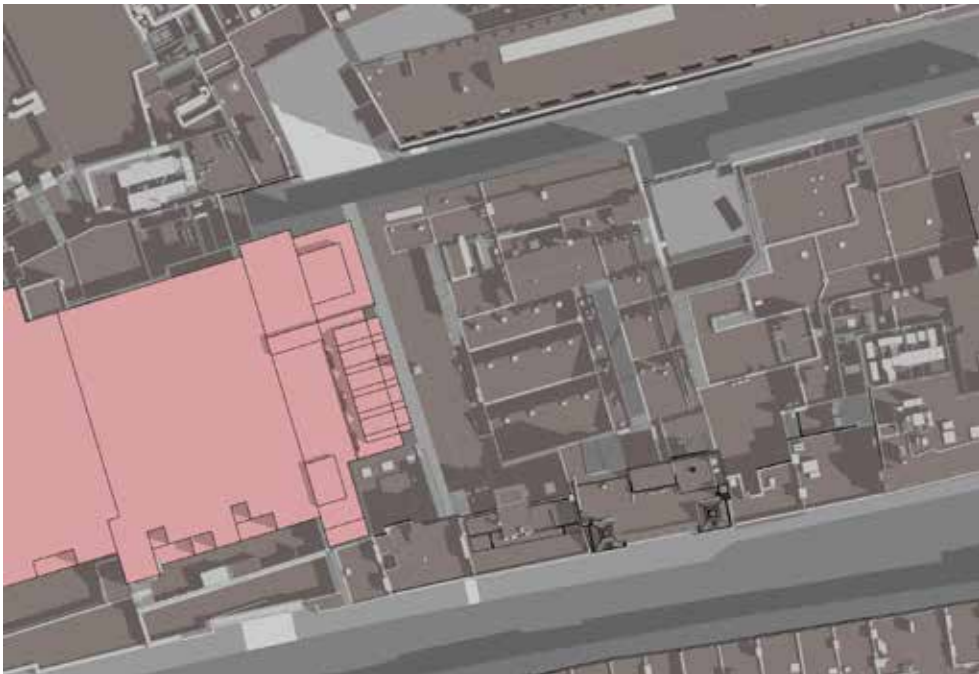




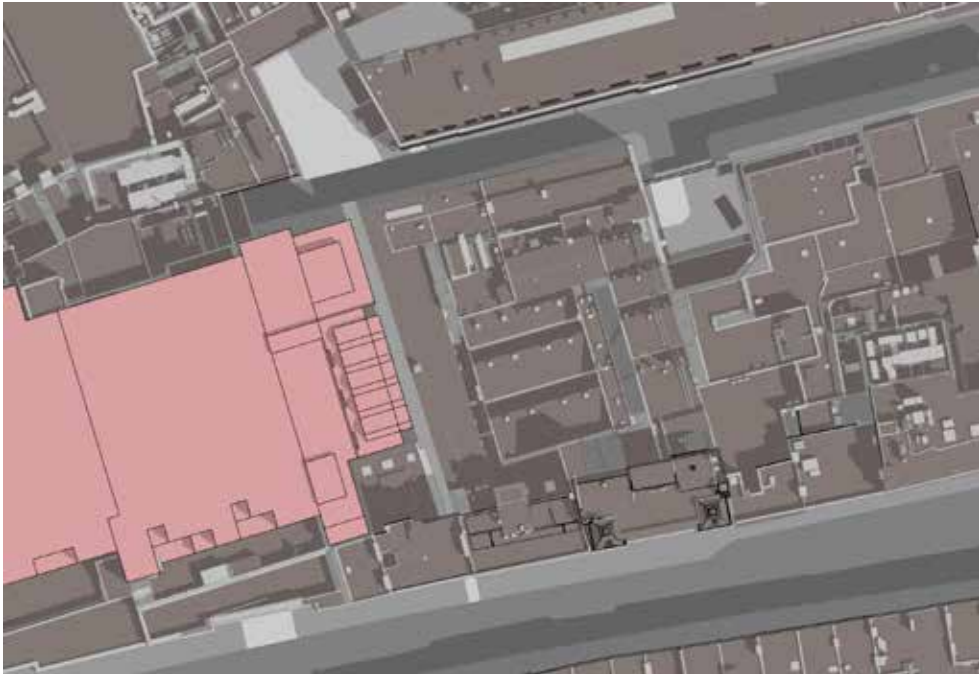
Baseline

Proposed

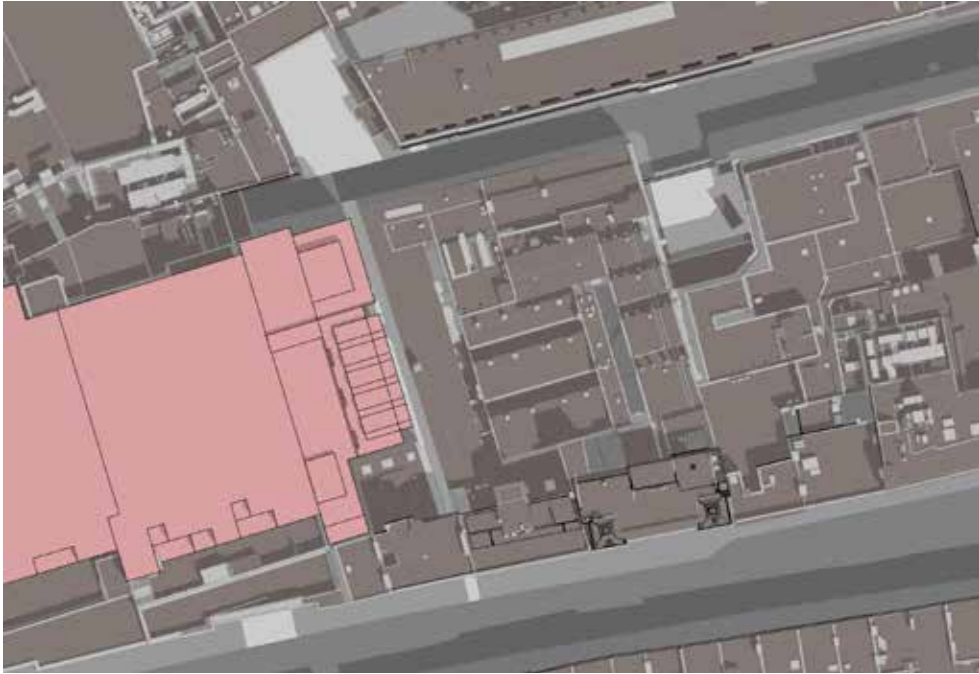
June 21st 10:00



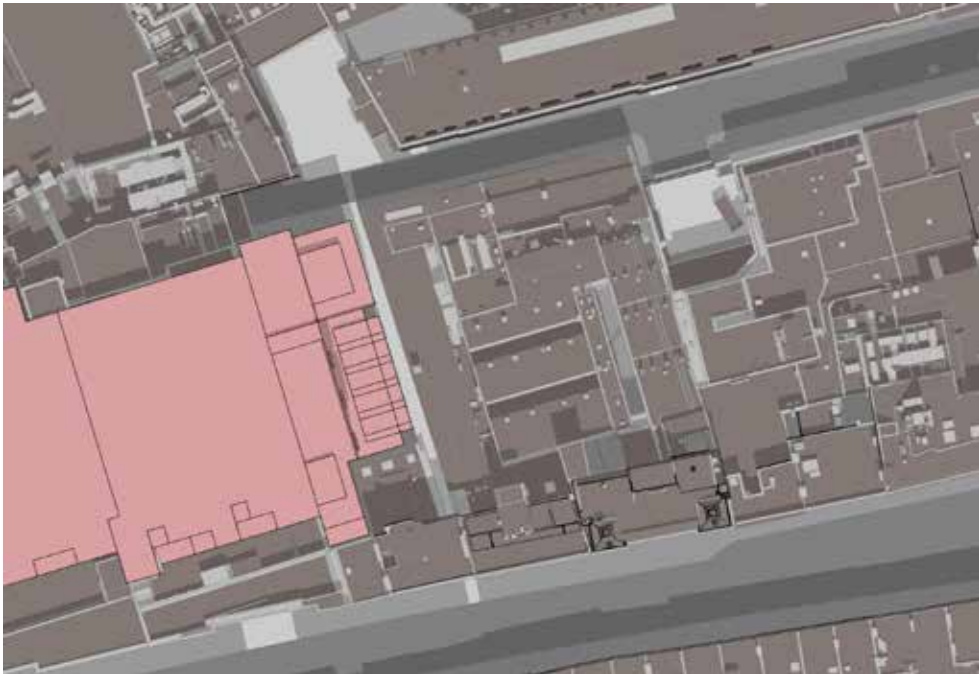
June 21st 11:00



June 21st 12:00



June 21st 13:00



June 21st
Sunrise 5:04 | Sunset 21:49

Project: Proposed Student Accommodation, and
Commercial Development, Independent House

Applicant: Summix IHD Developments Limited

Permitted
(DCC Reg. Ref. 4880/22)

Proposed



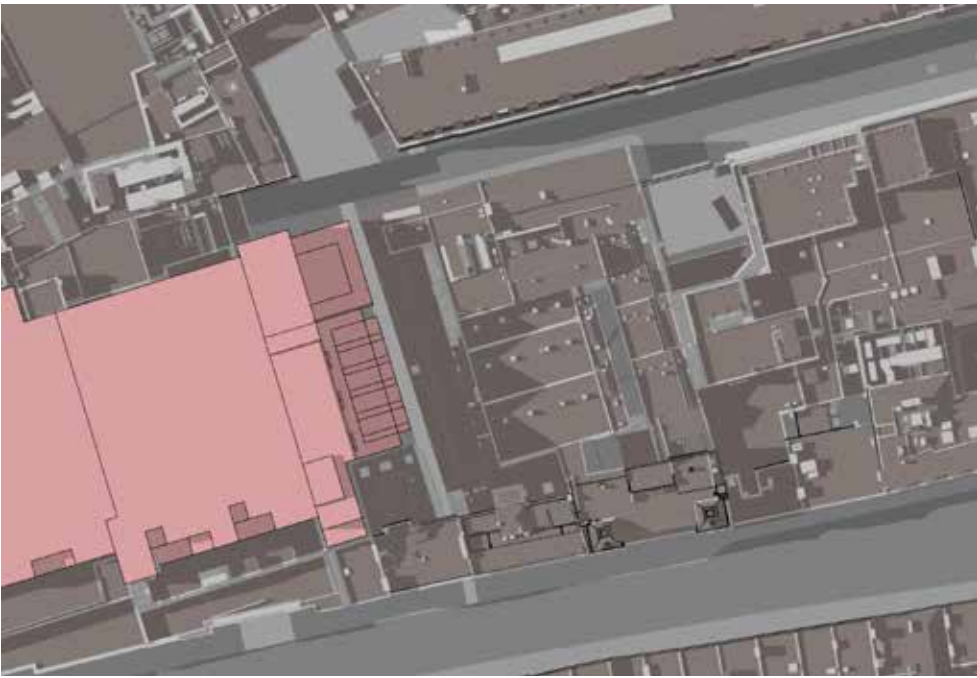
Baseline		Proposed	
June 21st 14:00			
Project: Proposed Student Accommodation, and Commercial Development, Independent House		Permitted (DCC Reg. Ref. 4880/22)	Proposed
June 21st Sunrise 5:04 Sunset 21:49		Applicant: Summix IHD Developments Limited	
		3D DESIGN BUREAU	



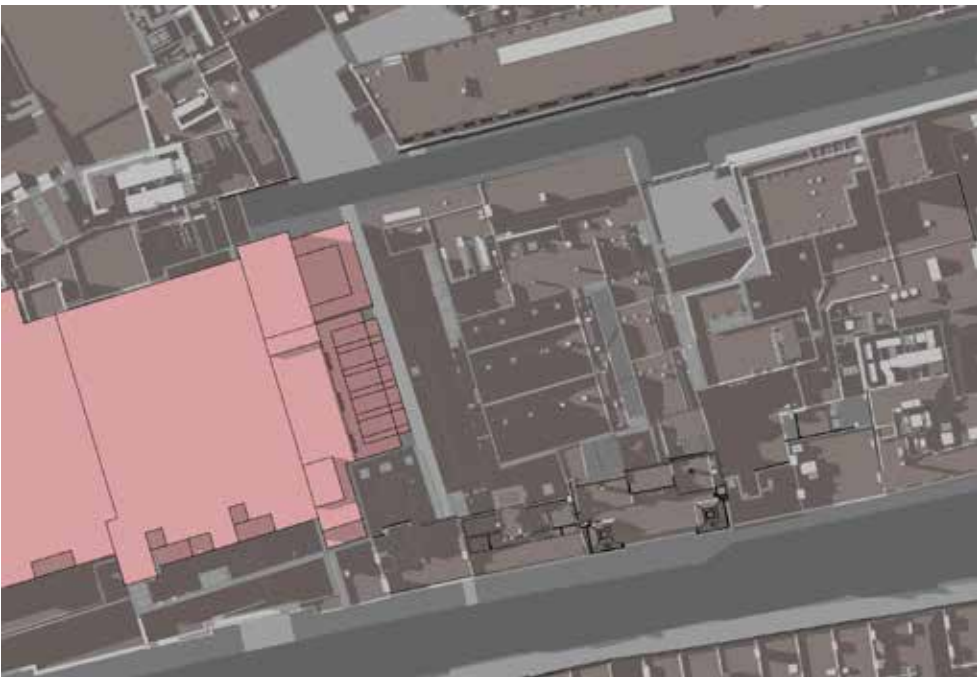
Baseline

Proposed

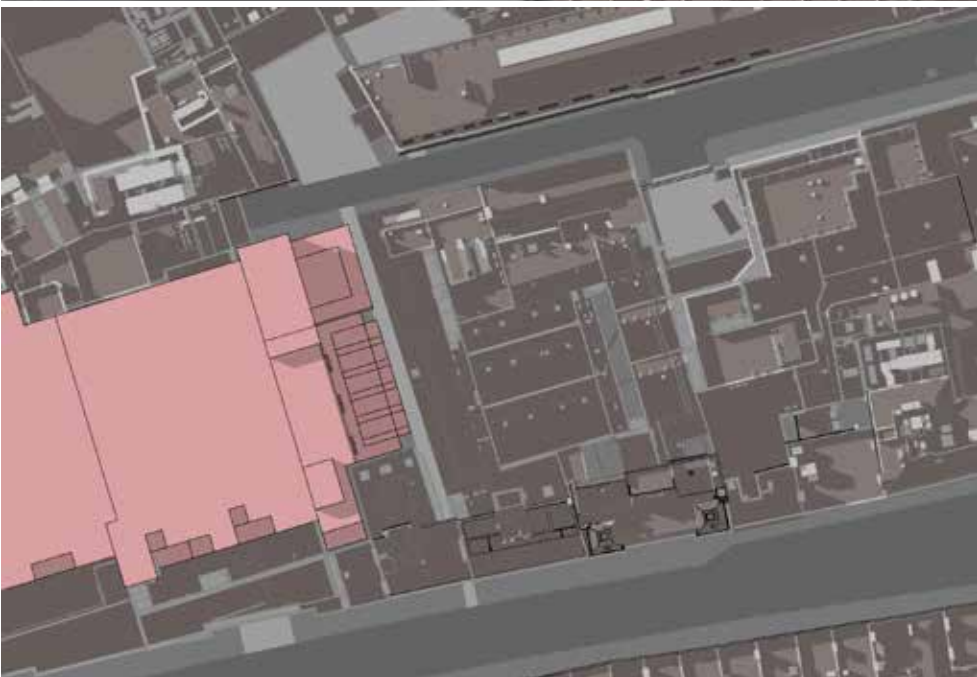
June 21st 18:00



June 21st 19:00



June 21st 20:00



June 21st 21:00



Project: Proposed Student Accommodation, and Commercial Development, Independent House

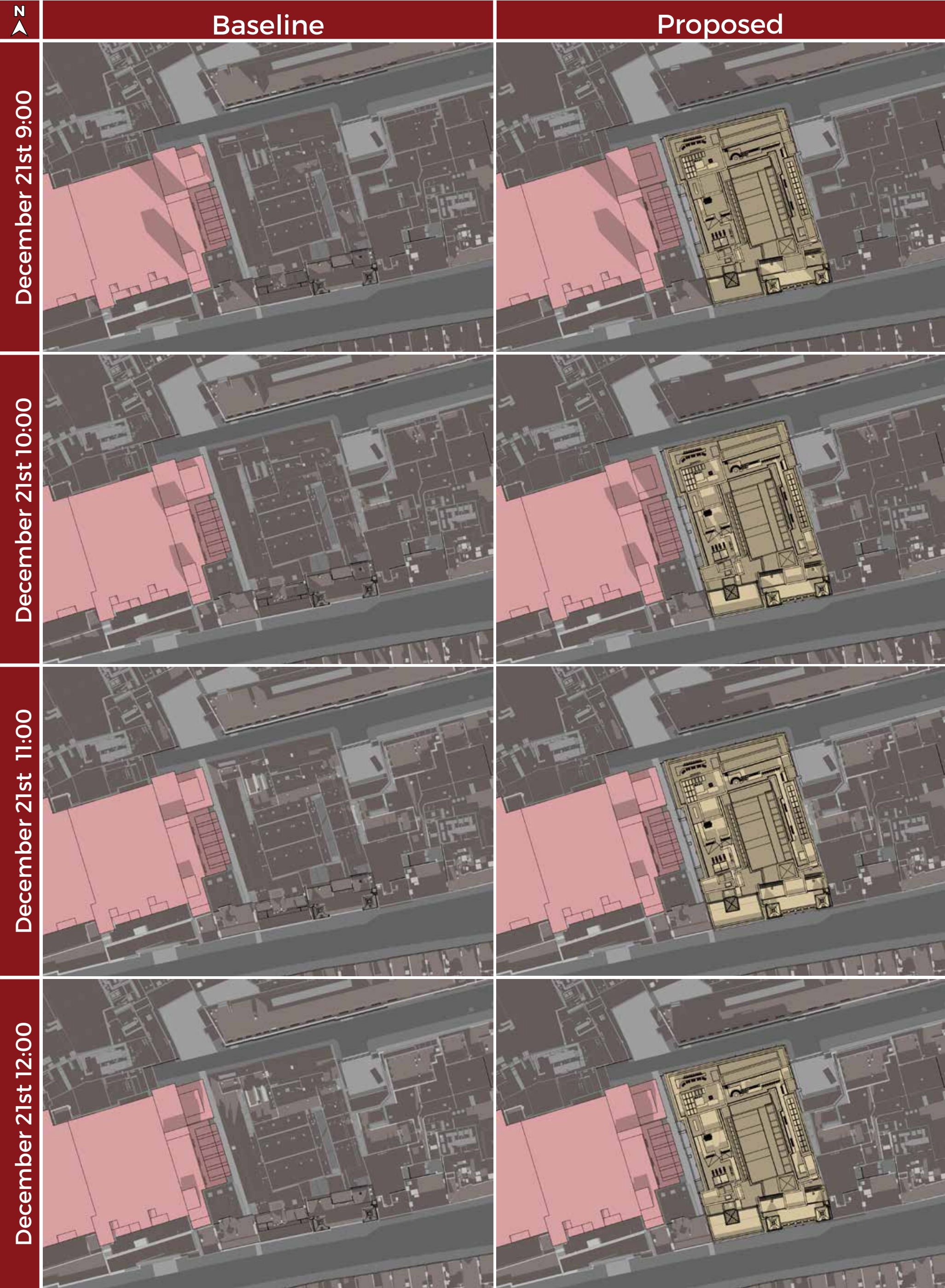
Permitted
(DCC Reg. Ref. 4880/22)

Proposed

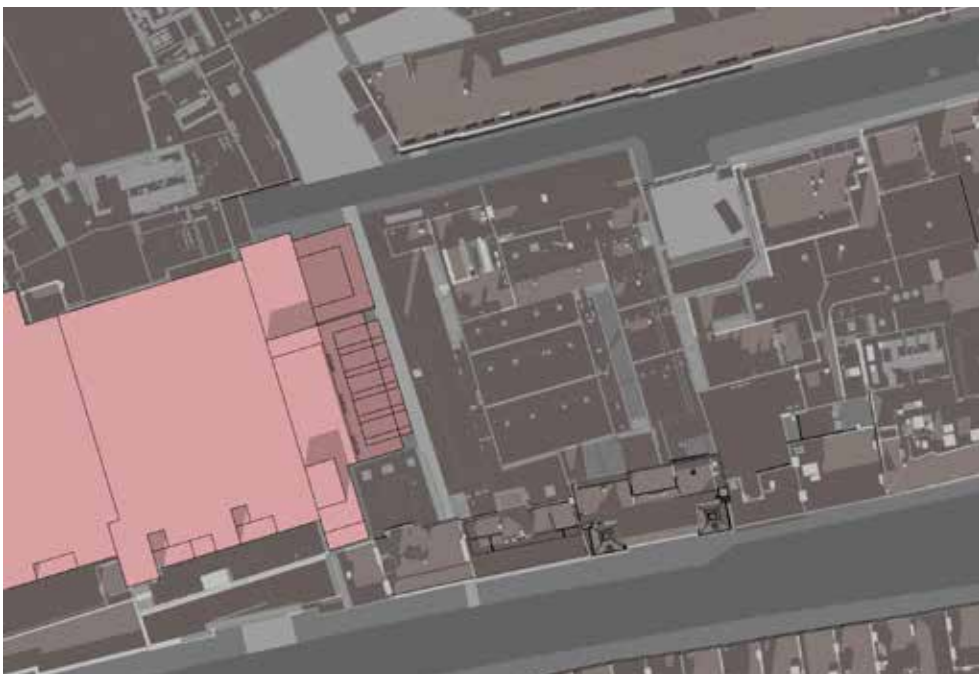
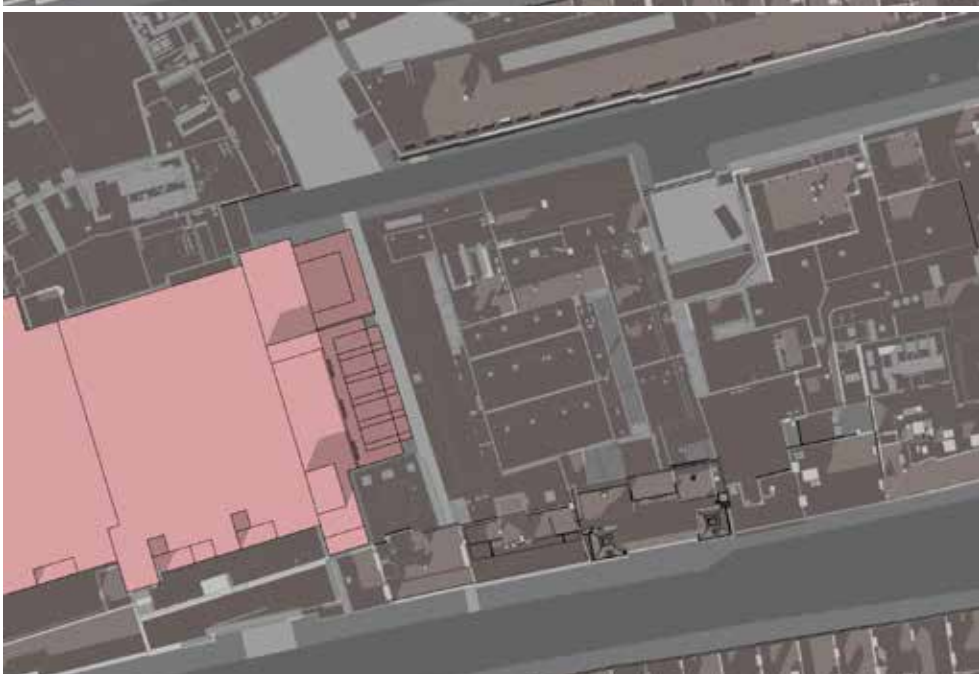
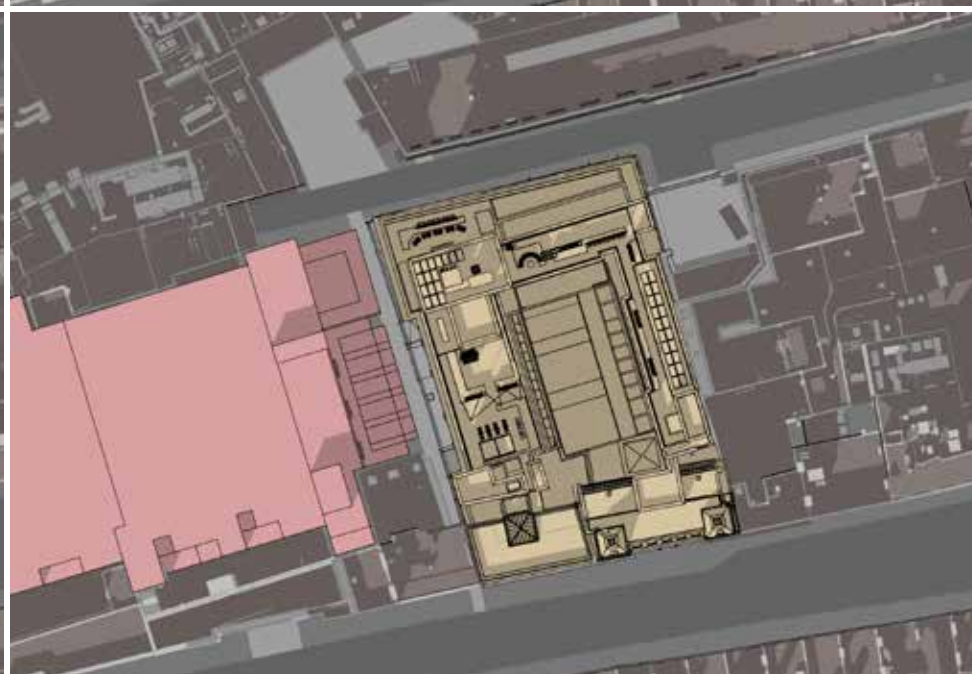
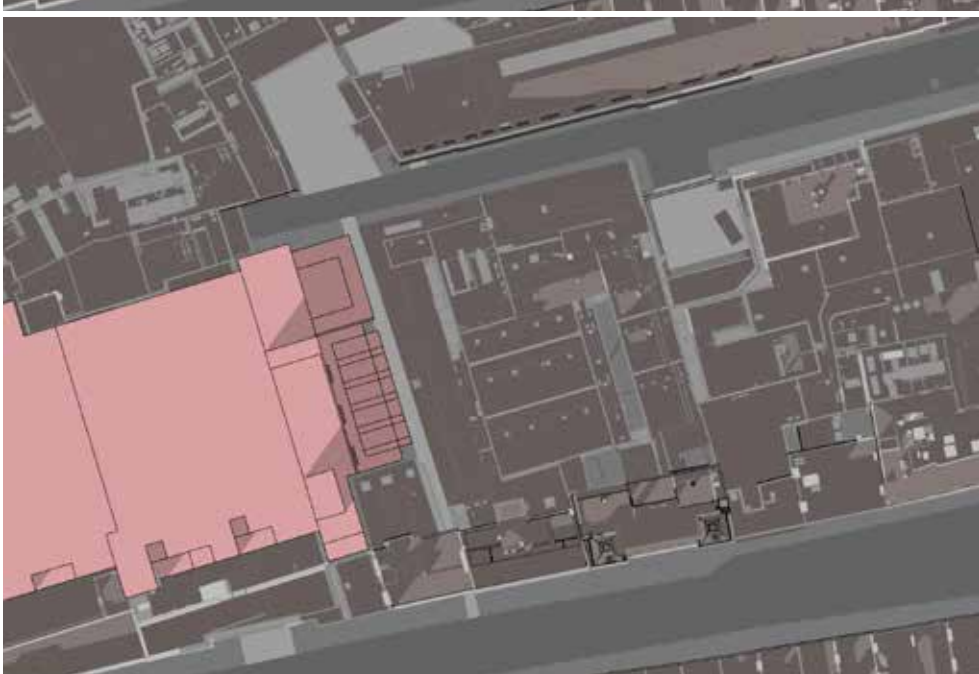
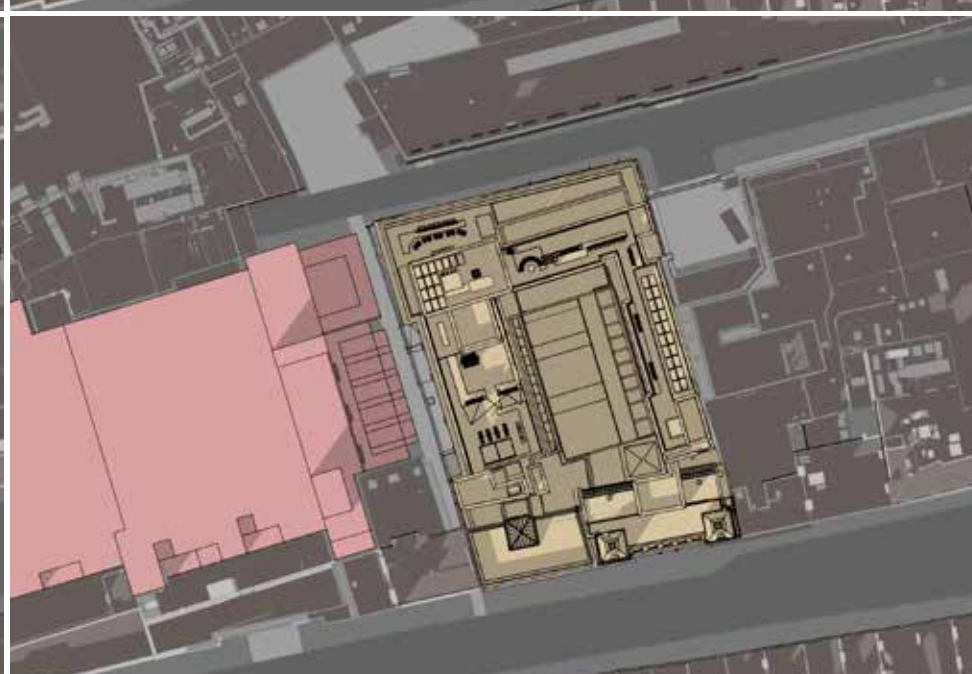
June 21st
Sunrise 5:04 | Sunset 21:49

Applicant: Summix IHD Developments Limited





B.3	Shadow Study 21 December	Project: Proposed Student Accommodation, and Commercial Development, Independent House	Permitted (DCC Reg. Ref. 4880/22)	Proposed
	December 21st Sunrise 8:45 Sunset 16:00	Applicant: Summix IHD Developments Limited		 3D DESIGN BUREAU

Baseline		Proposed					
December 21st 13:00							
							
							
							
December 21st Sunrise 8:45 Sunset 16:00		Project: Proposed Student Accommodation, and Commercial Development, Independent House		Permitted (DCC Reg. Ref. 4880/22)		Proposed	
		Applicant: Summix IHD Developments Limited		 3D DESIGN BUREAU			

C.0 Scheme Performance

C.1 Proposed Student Accommodation Floor Plans

C.1.1 Proposed Student Accommodation Floor Plans - Core A

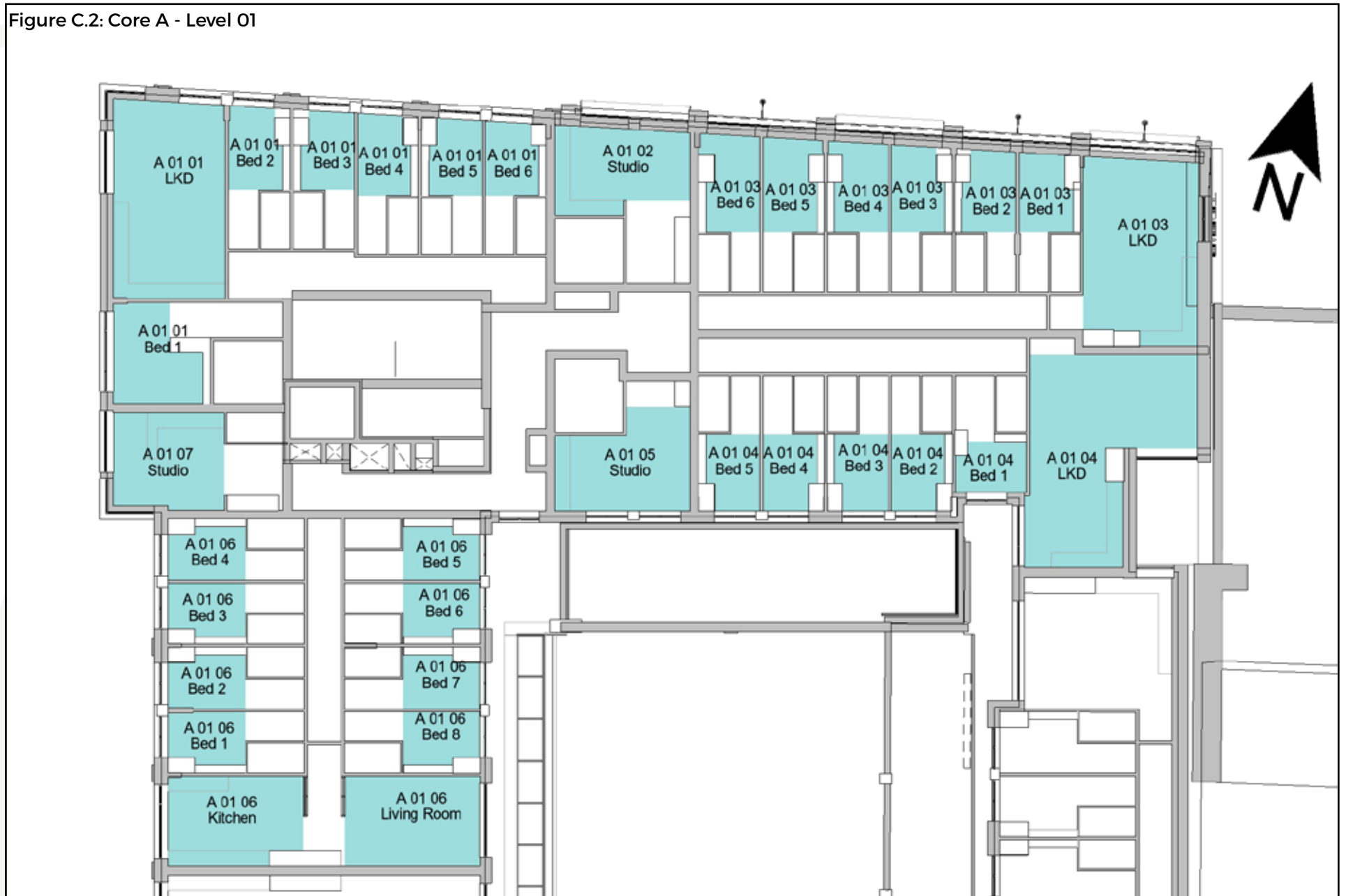
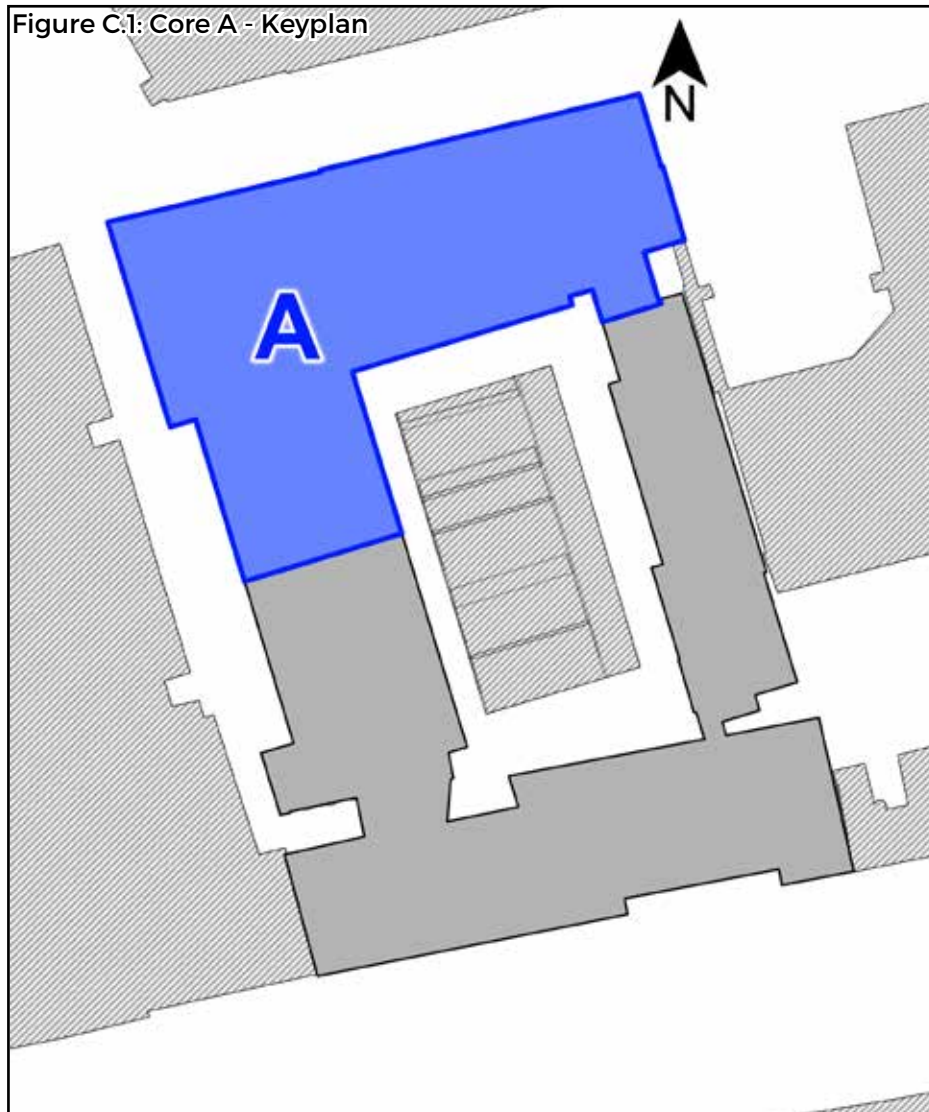


Figure C.3: Core A - Level 02

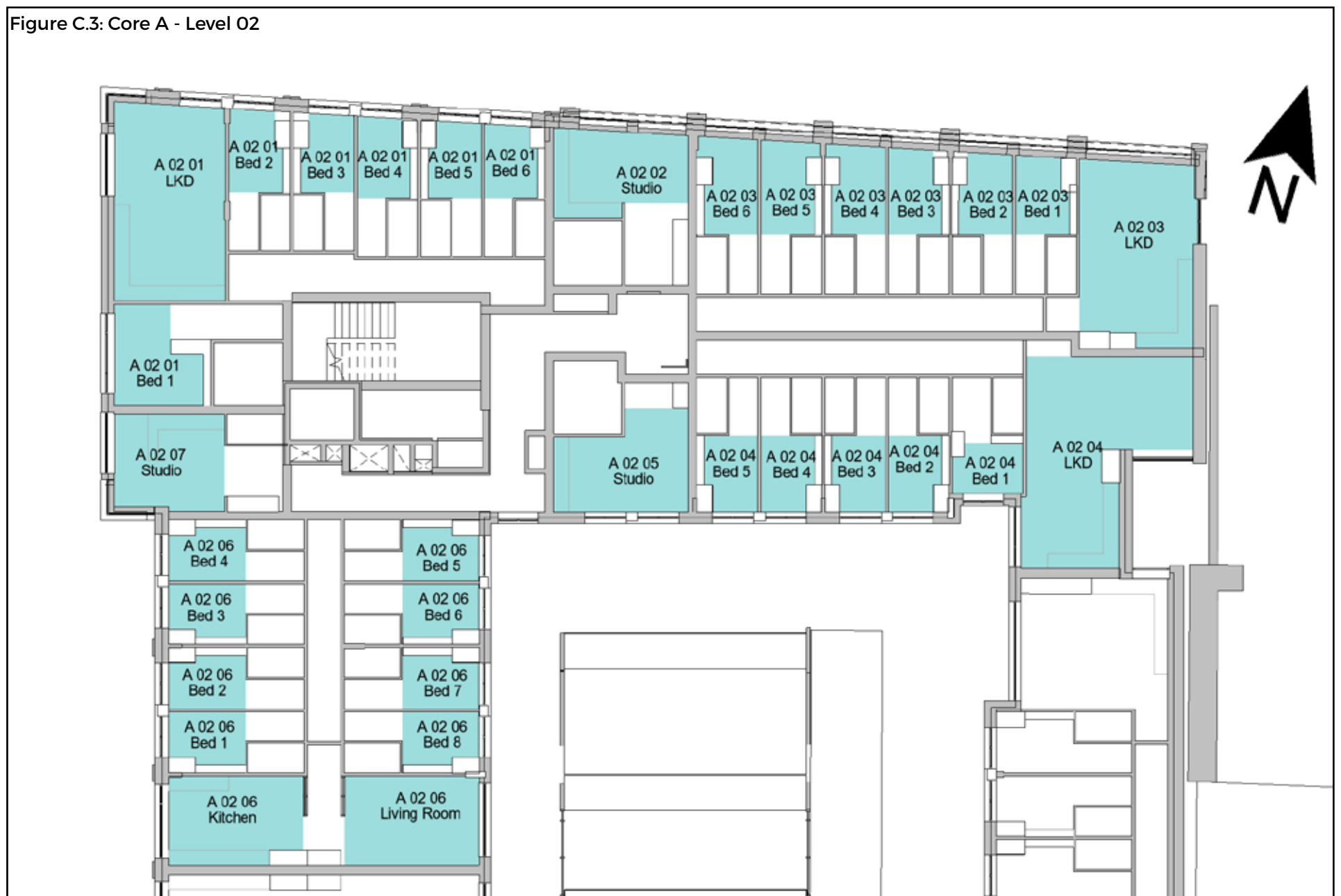


Figure C.4: Core A - Level 03

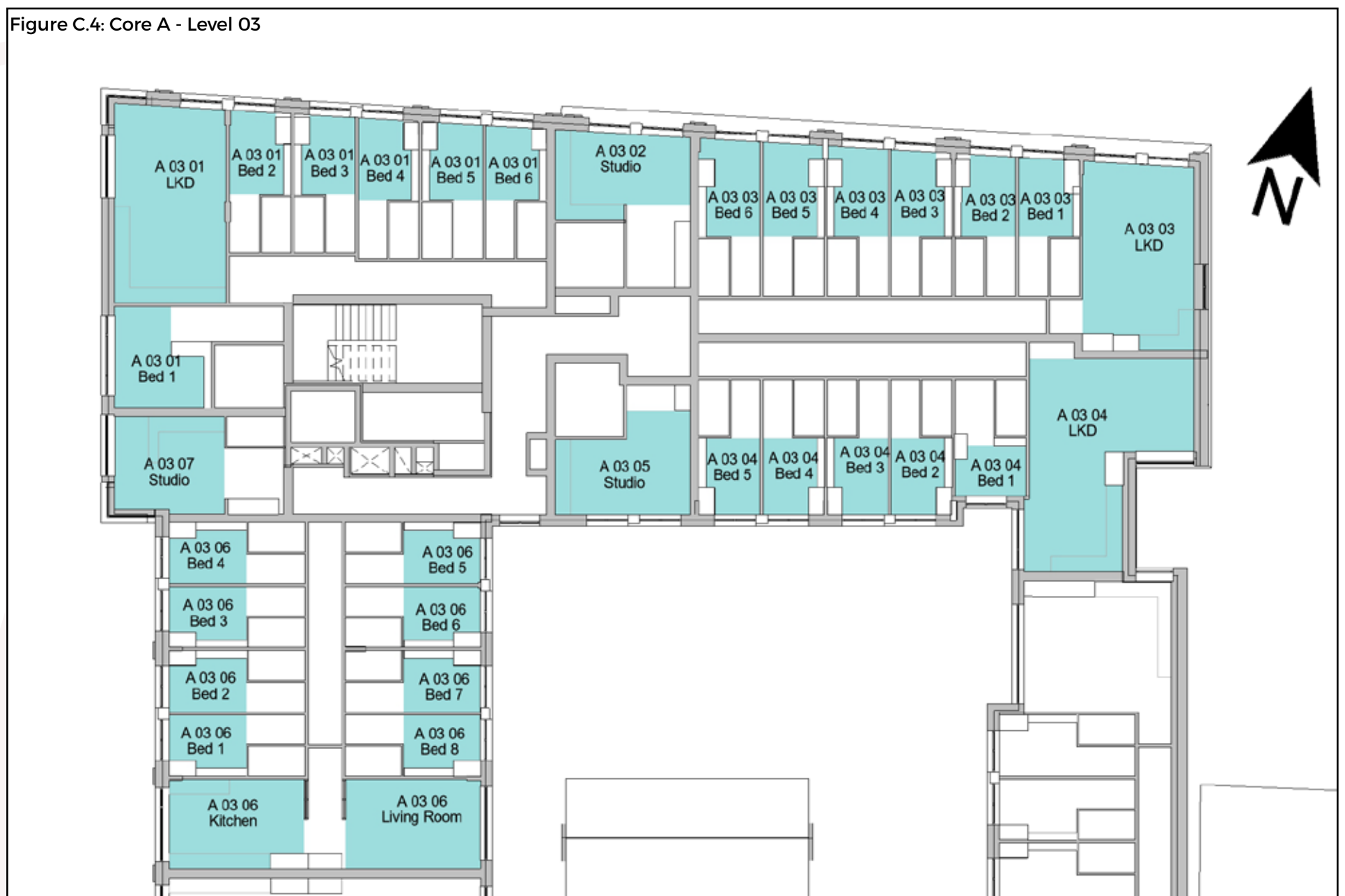


Figure C.5: Core A - Level 04

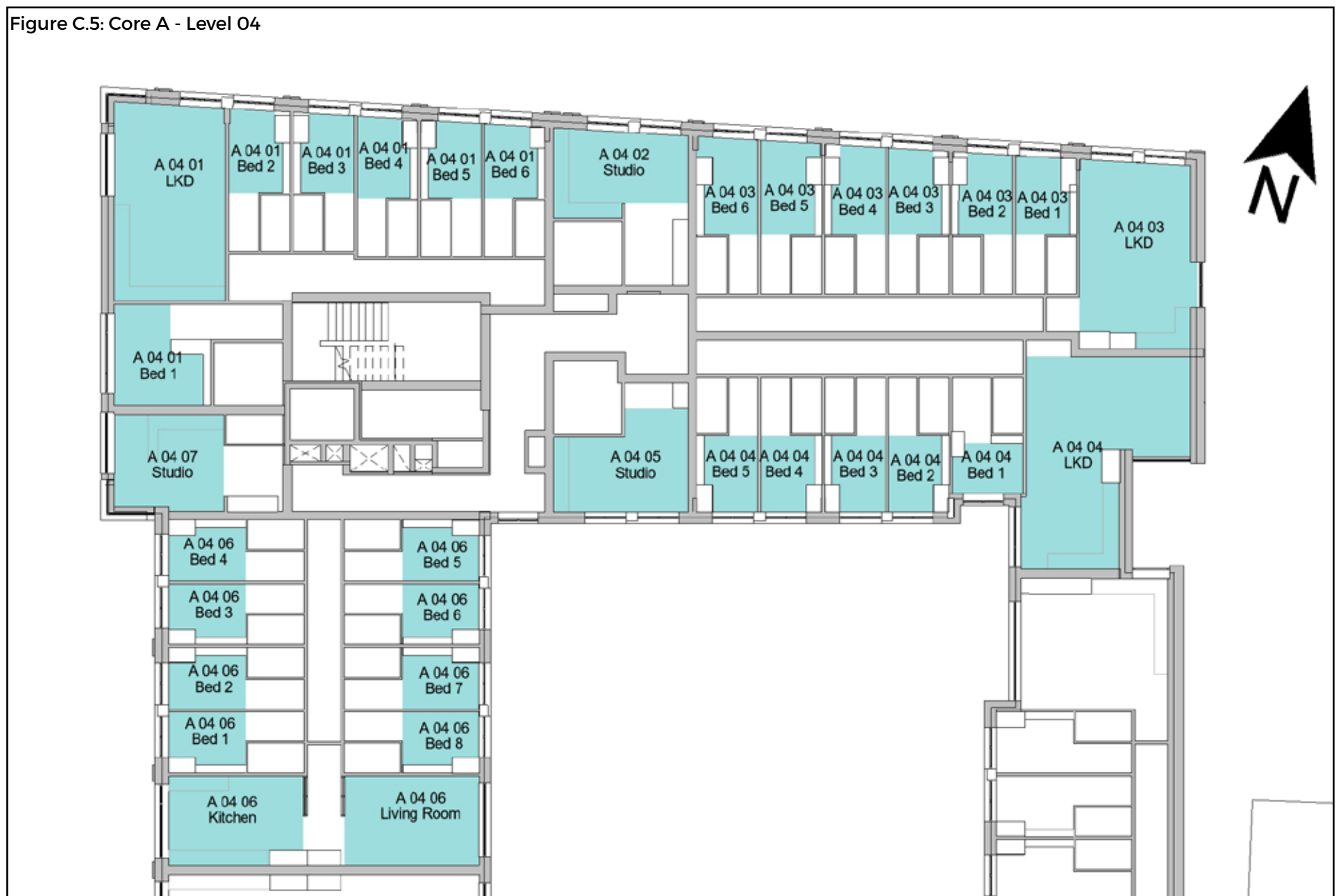


Figure C.6: Core A - Level 05

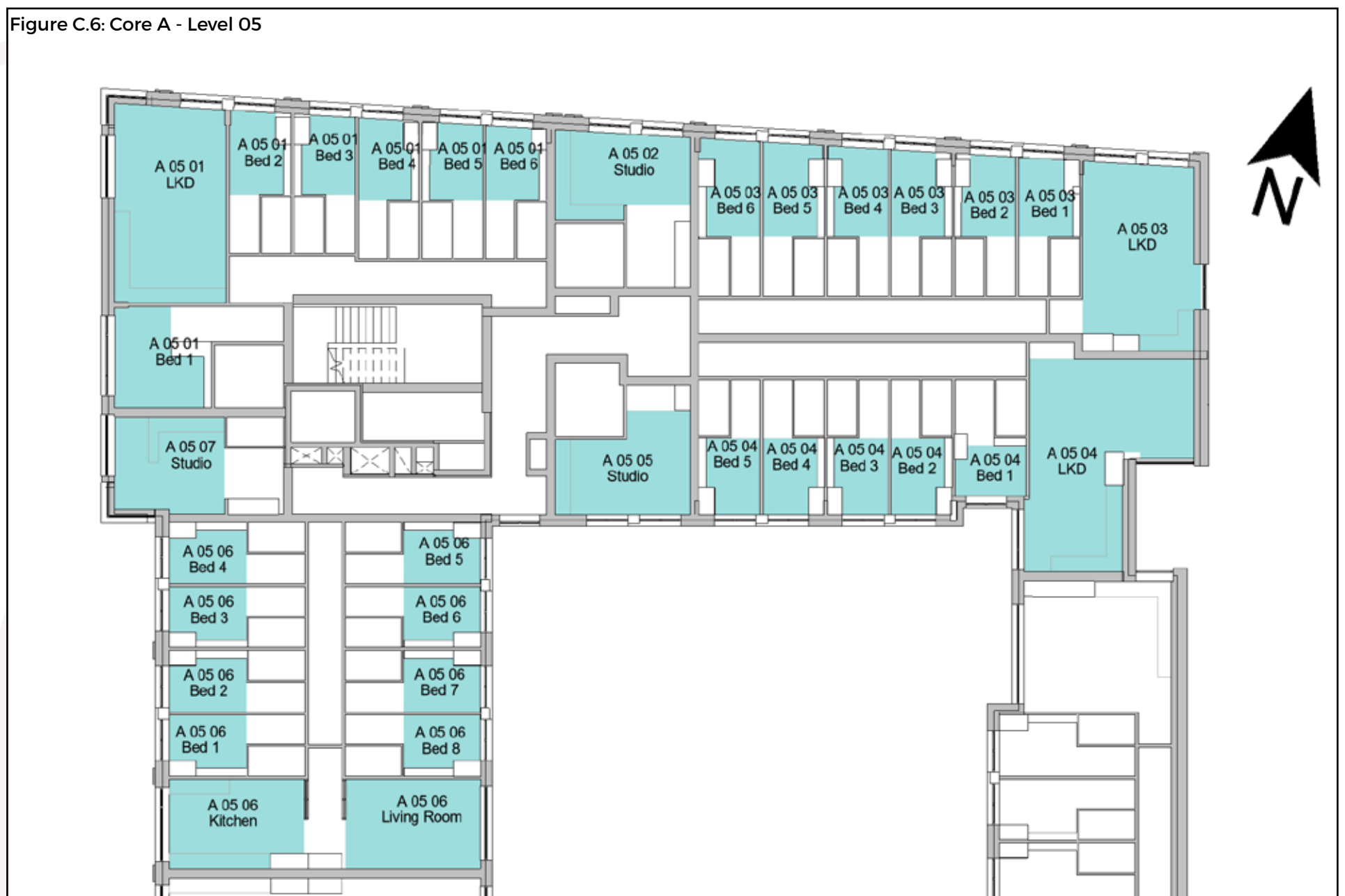


Figure C.7: Core A - Level 06

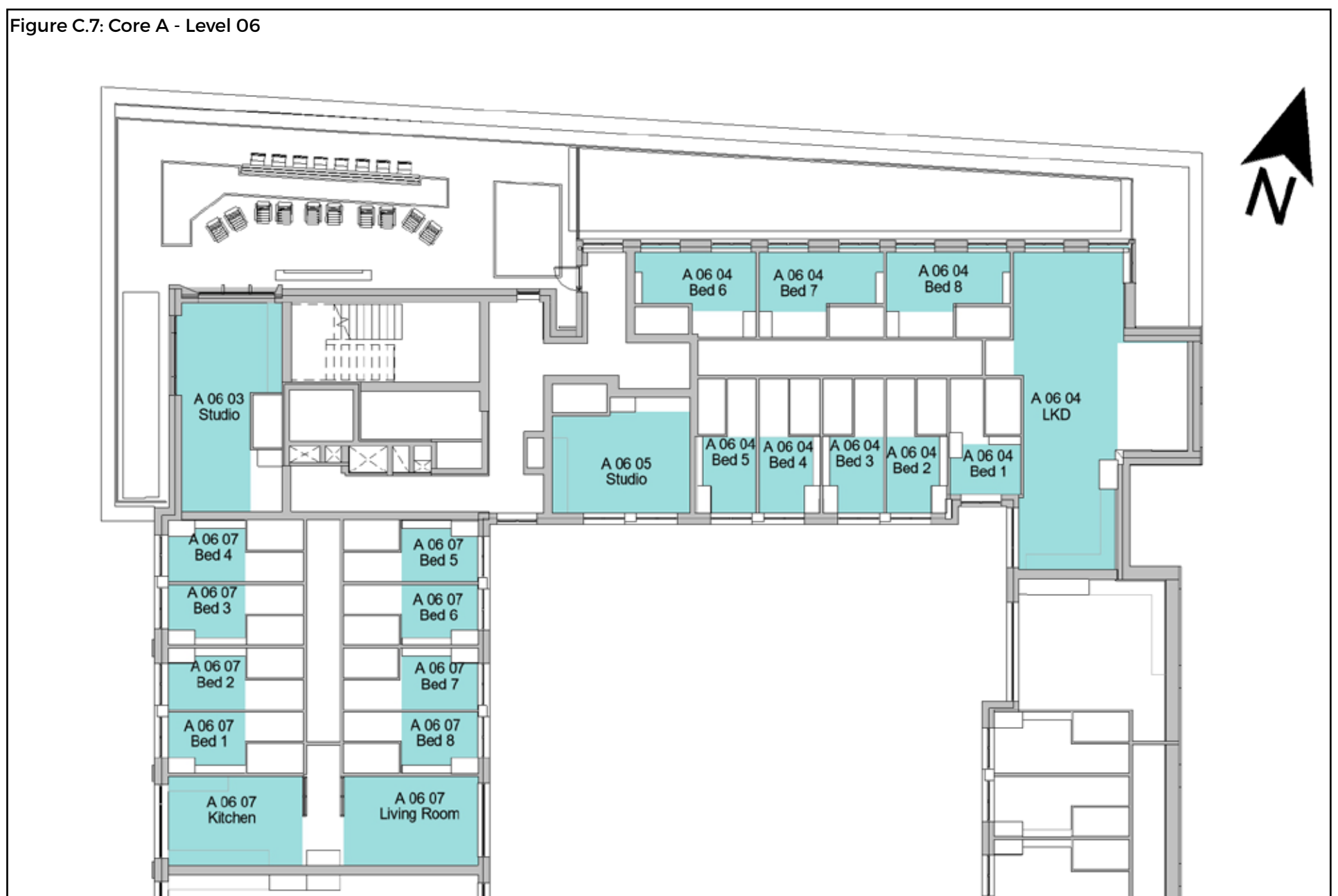
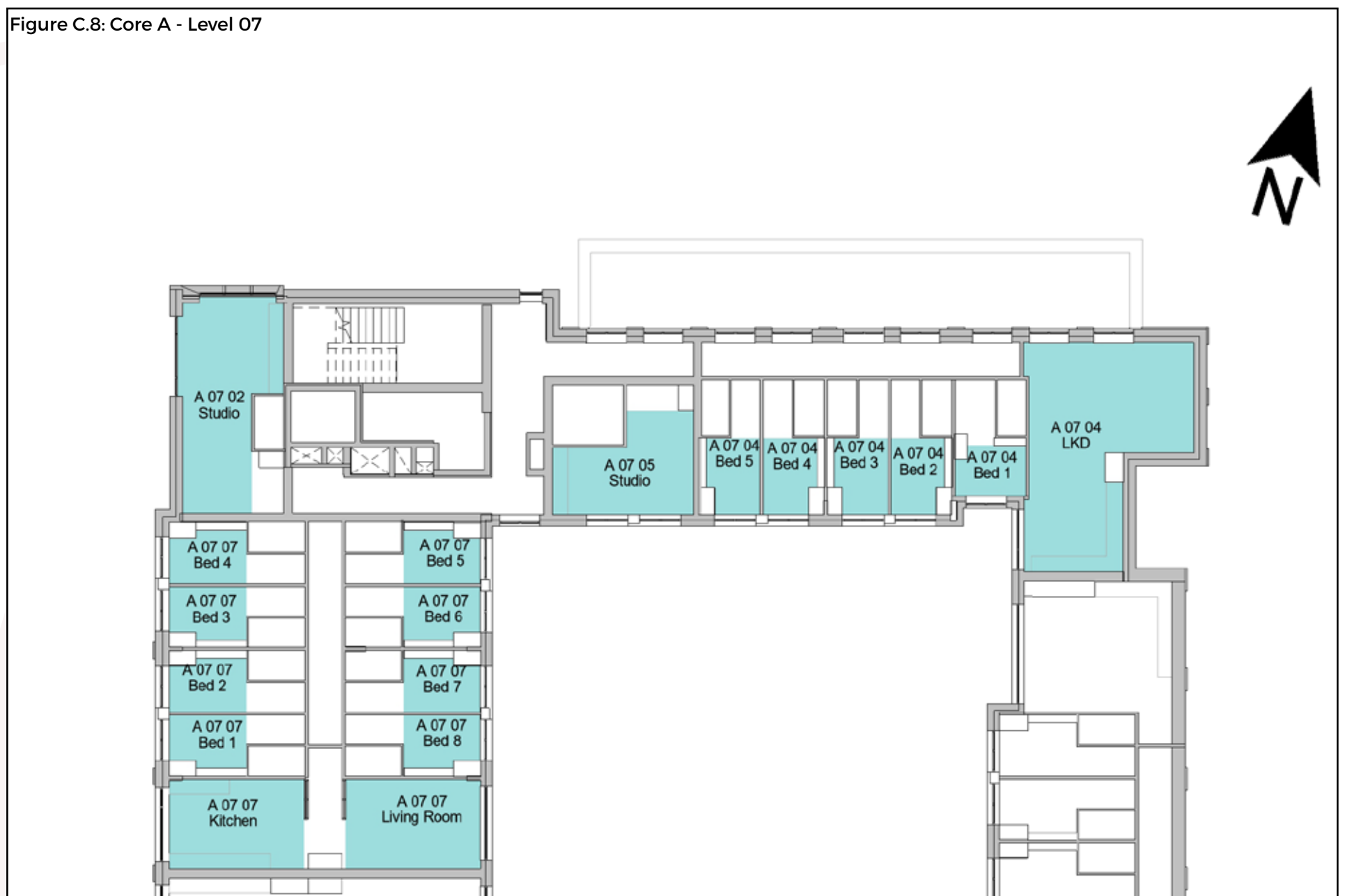


Figure C.8: Core A - Level 07



C.1.2 Proposed Student Accommodation Floor Plans - Core B

Figure C.9: Core C - Keyplan

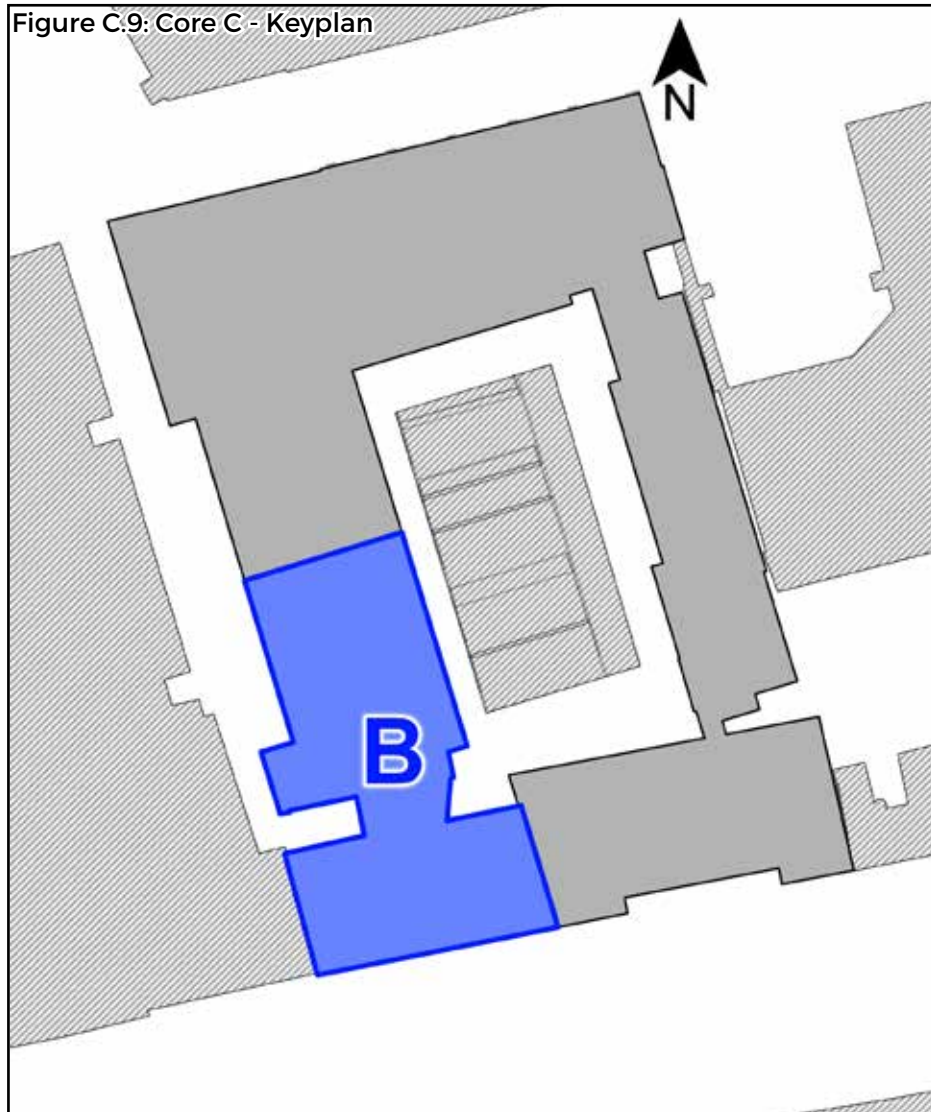


Figure C.10: Core B - Level 01



Figure C.11: Core B - Level 02



Figure C.12: Core B - Level 03



Figure C.13: Core B - Level 04



Figure C.14: Core B - Level 05

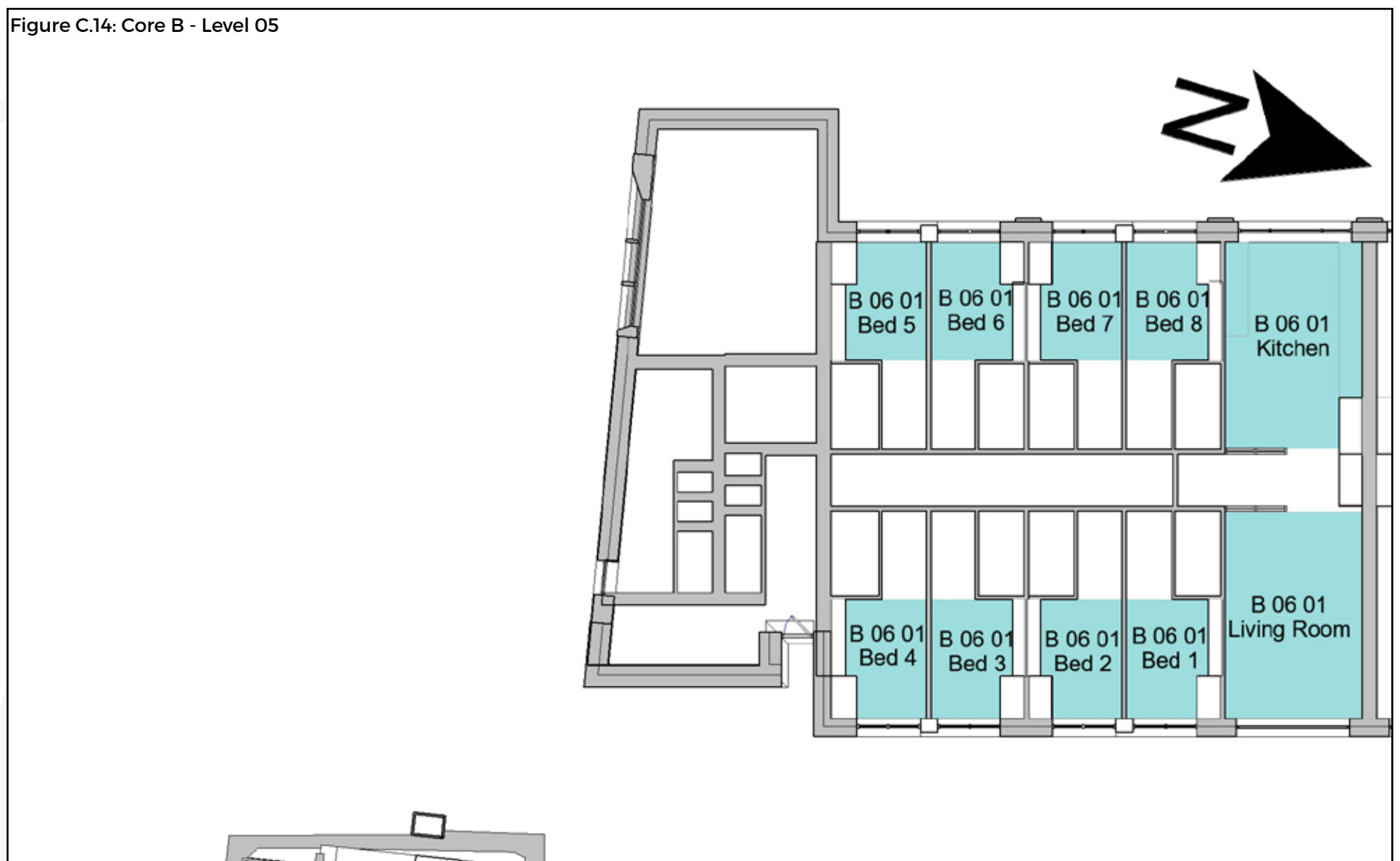


Figure C.15: Core B - Level 06

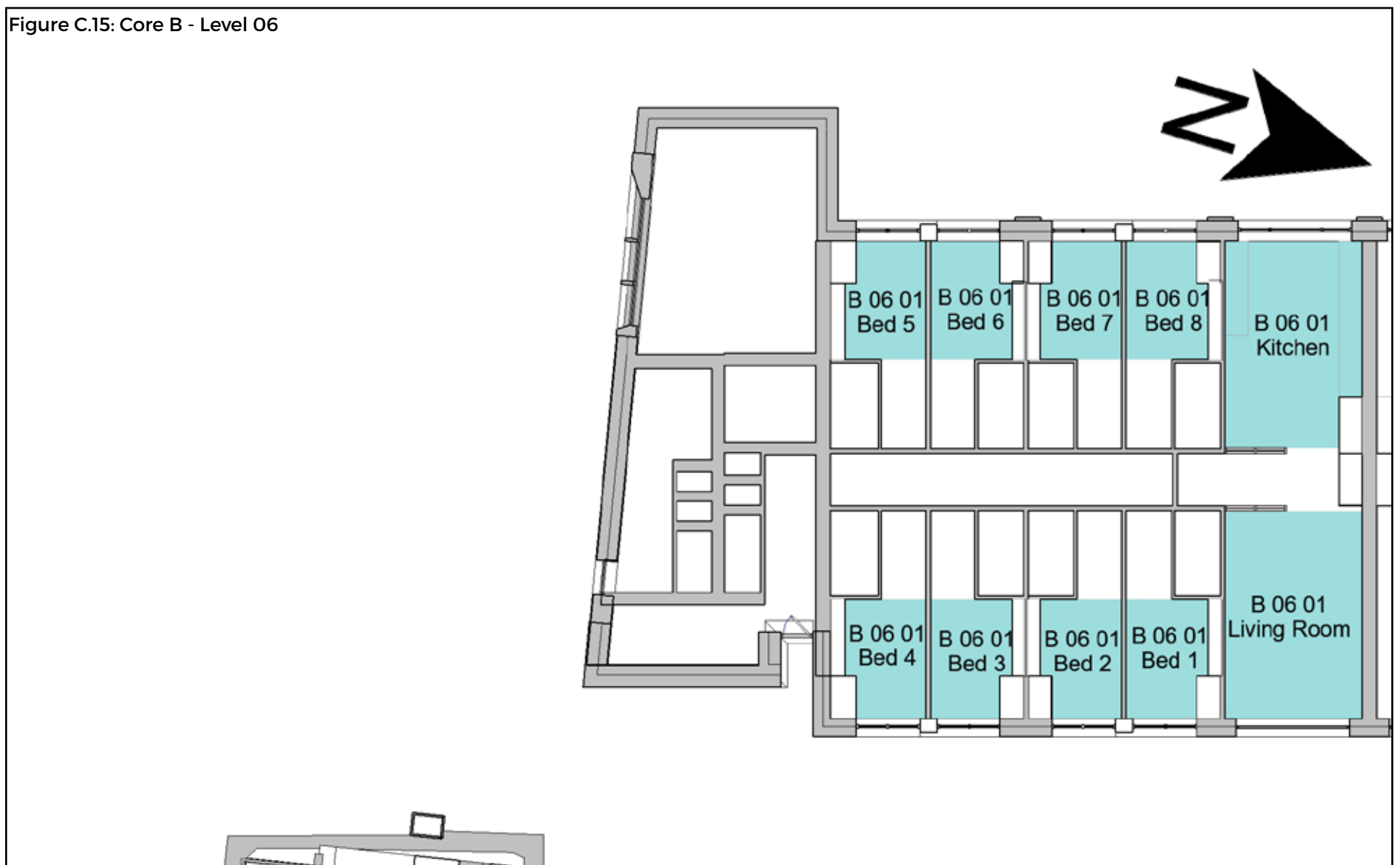


Figure C.16: Core B - Level 07



C.1.3 Proposed Student Accommodation Floor Plans - Core C

Figure C.17: Core C - Keyplan

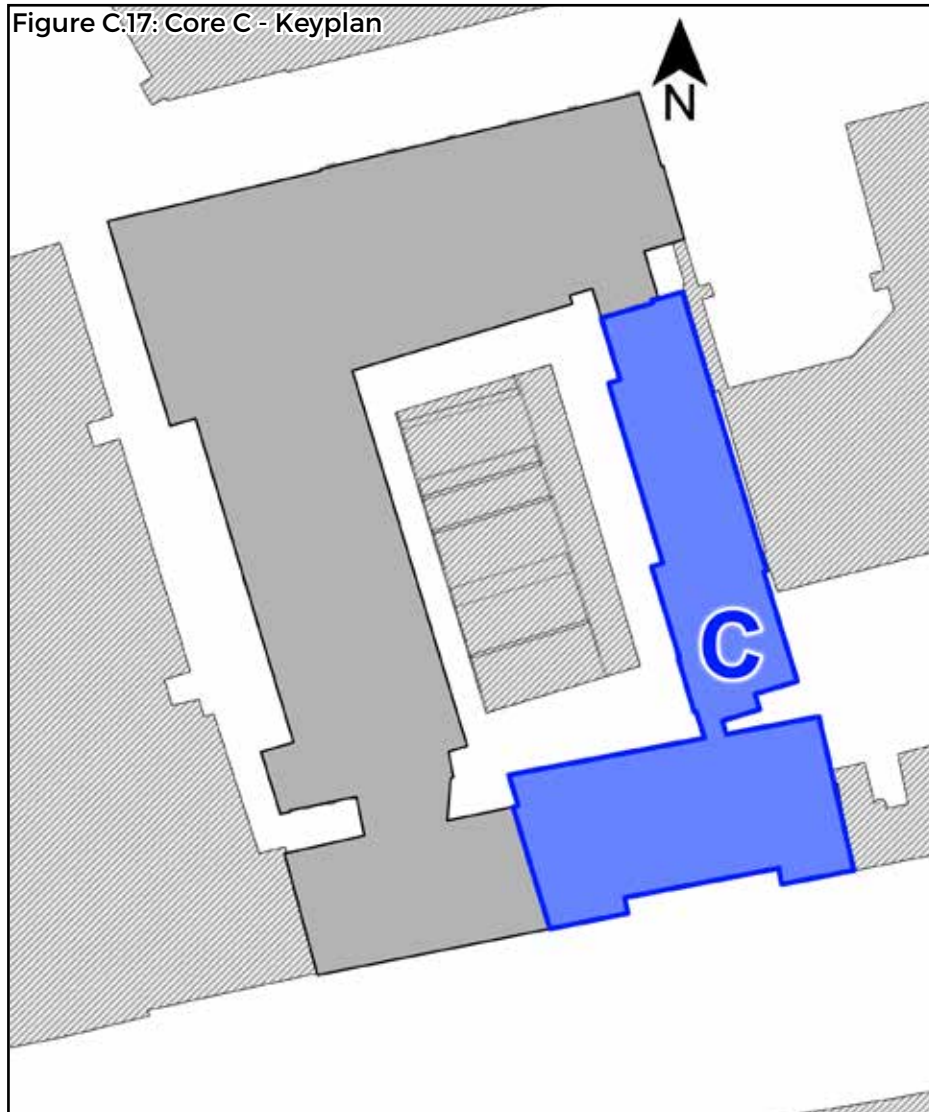


Figure C.18: Core C - Level 01

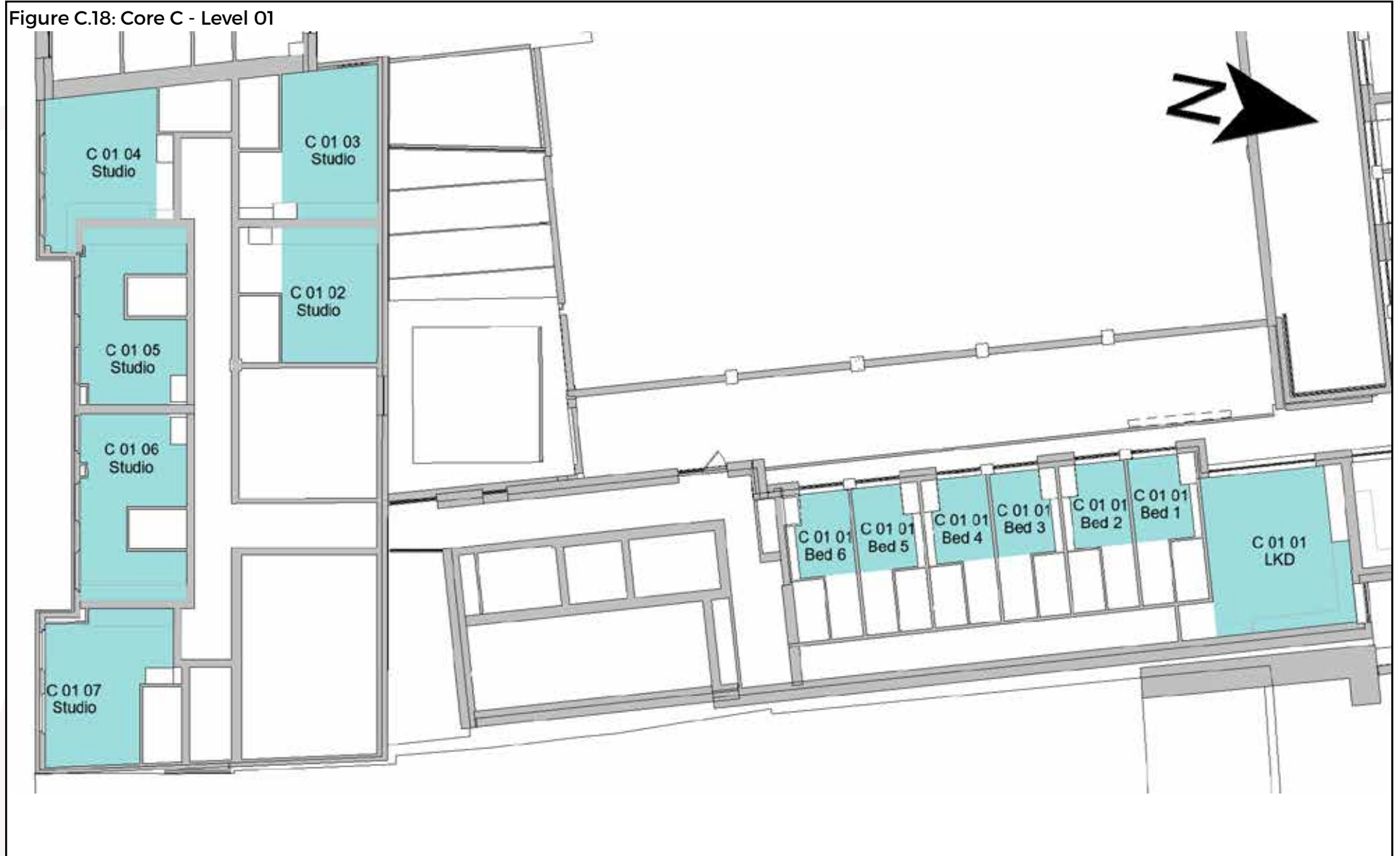


Figure C.19: Core C - Level 02

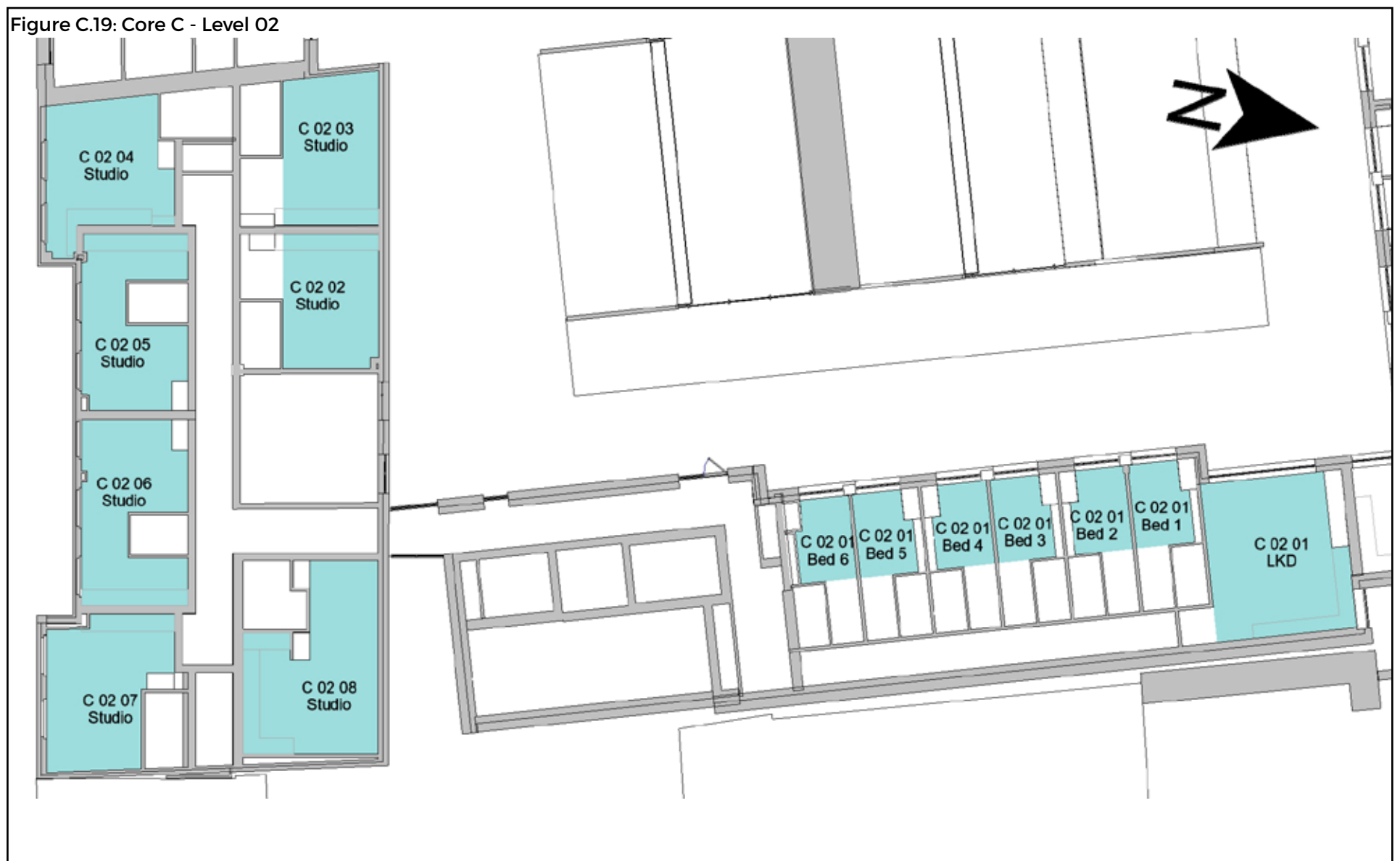


Figure C.20: Core C - Level 03

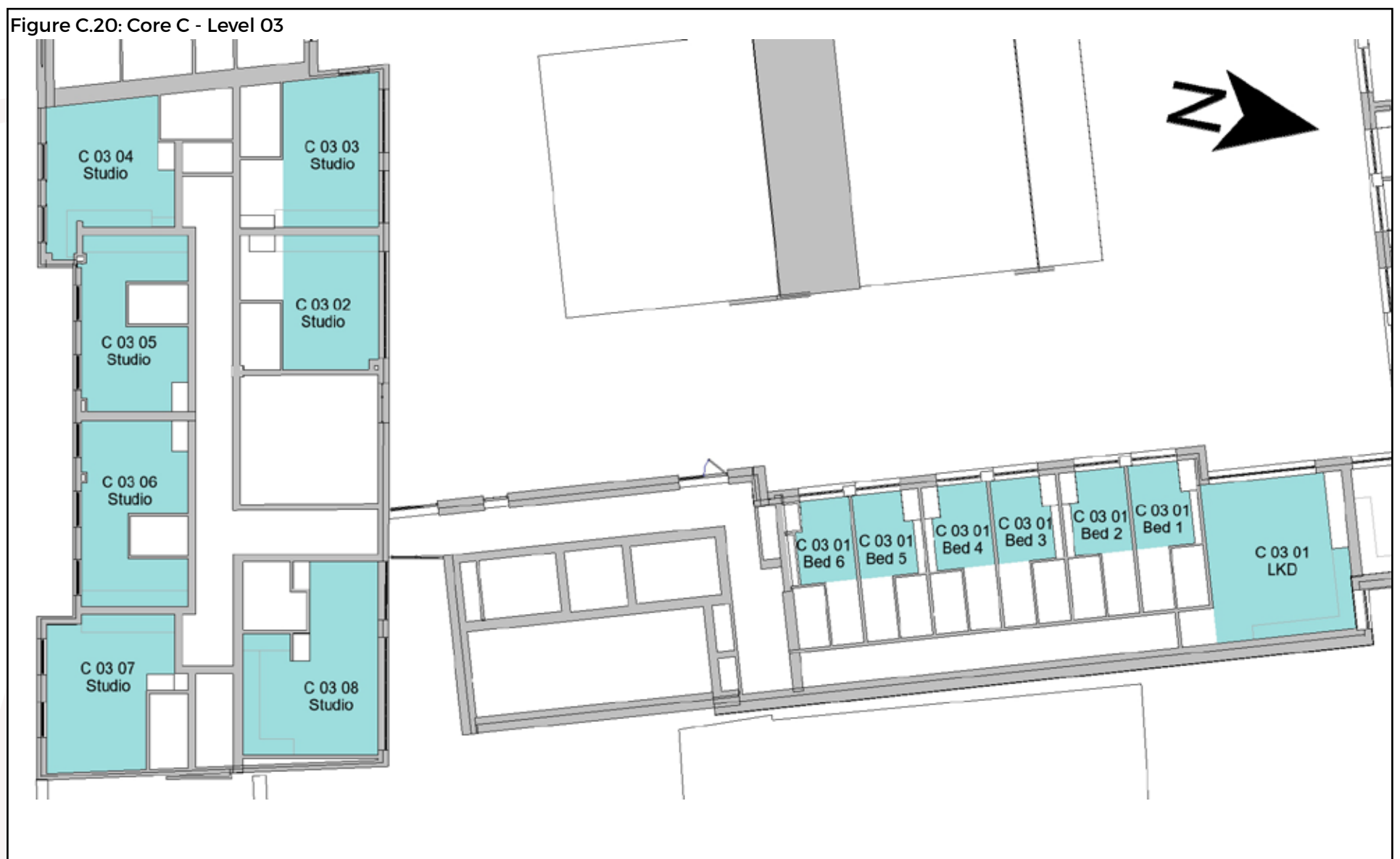


Figure C.21: Core C - Level 04

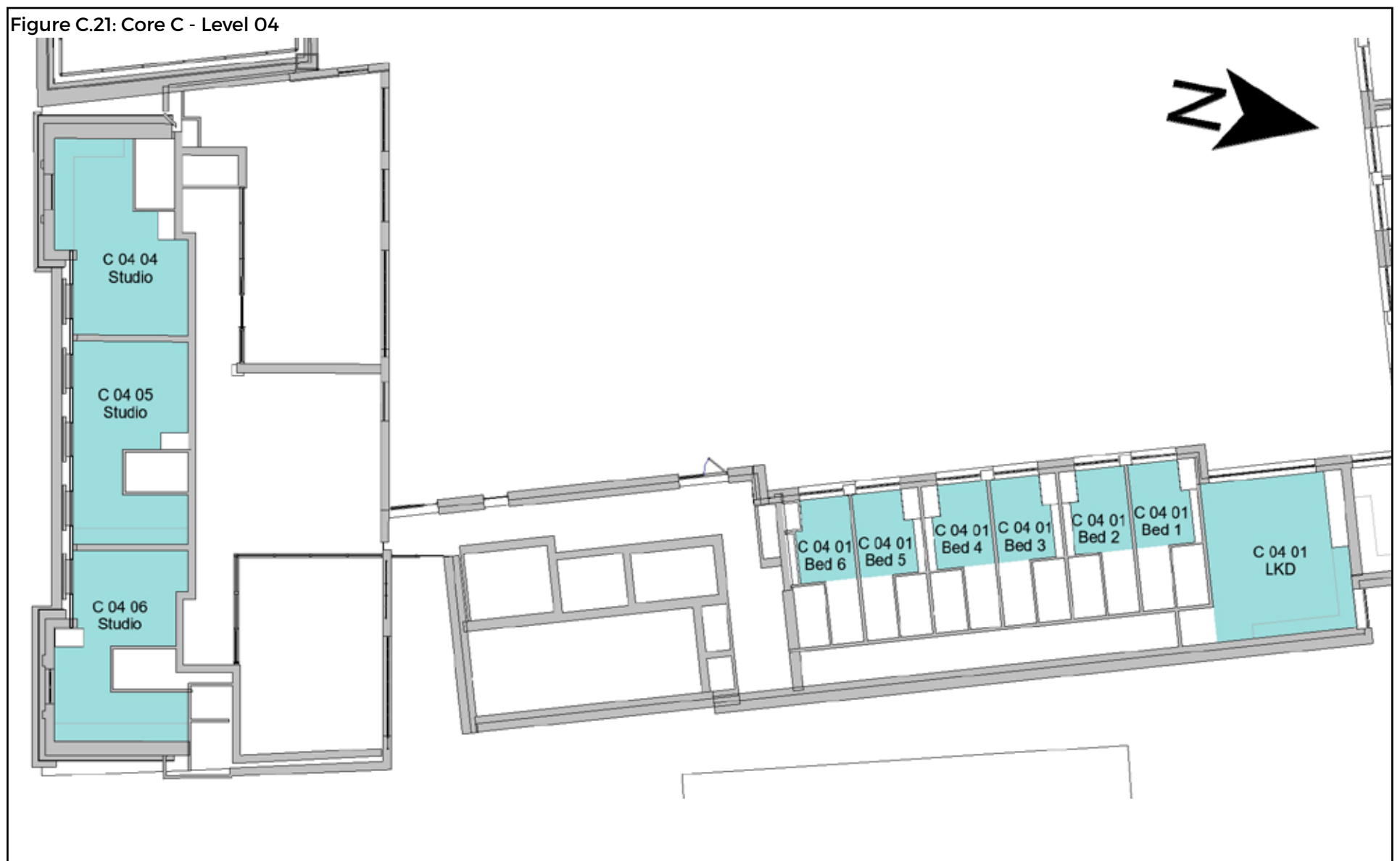


Figure C.22: Core C - Level 05

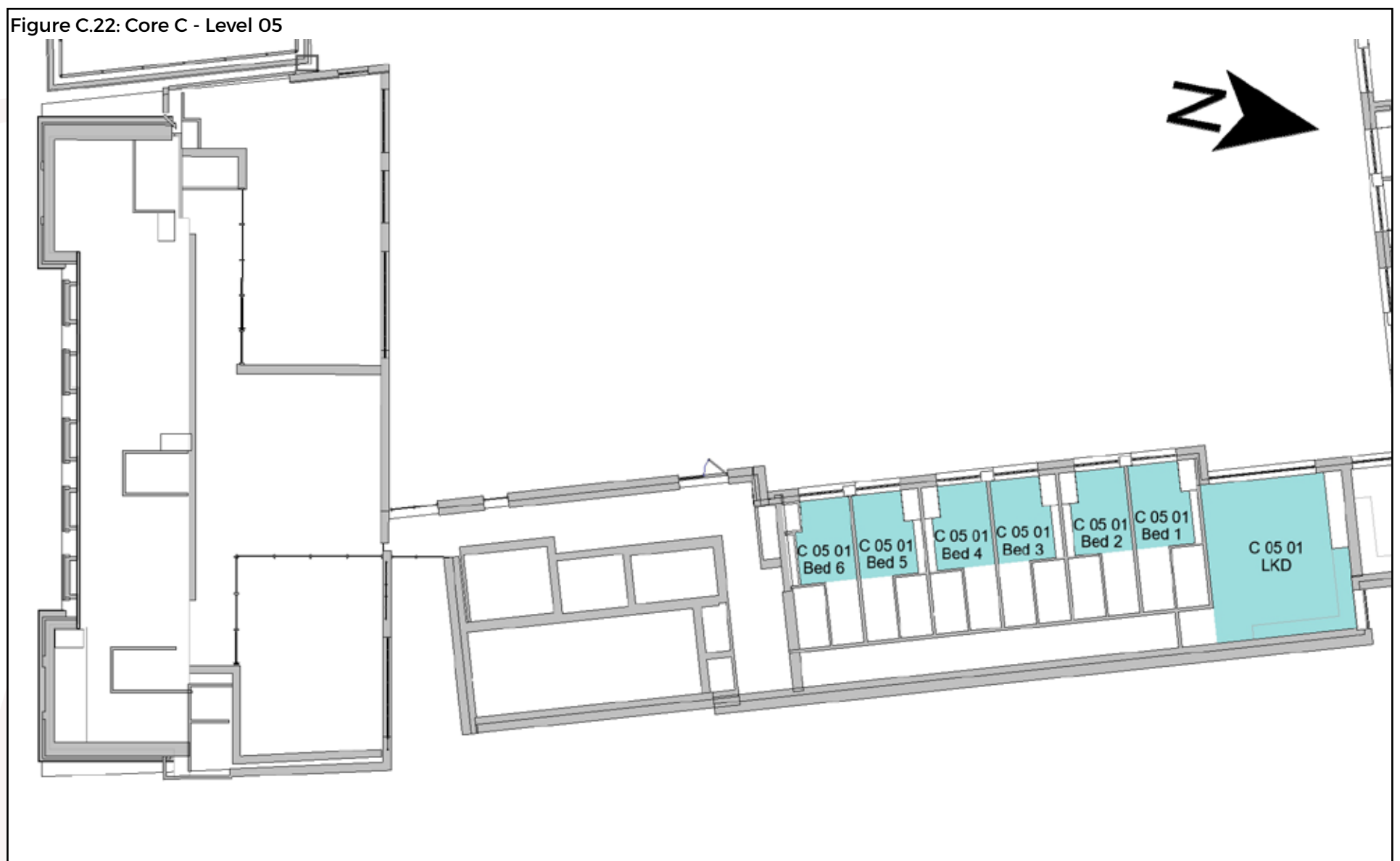


Figure C.23: Core C - Level 06

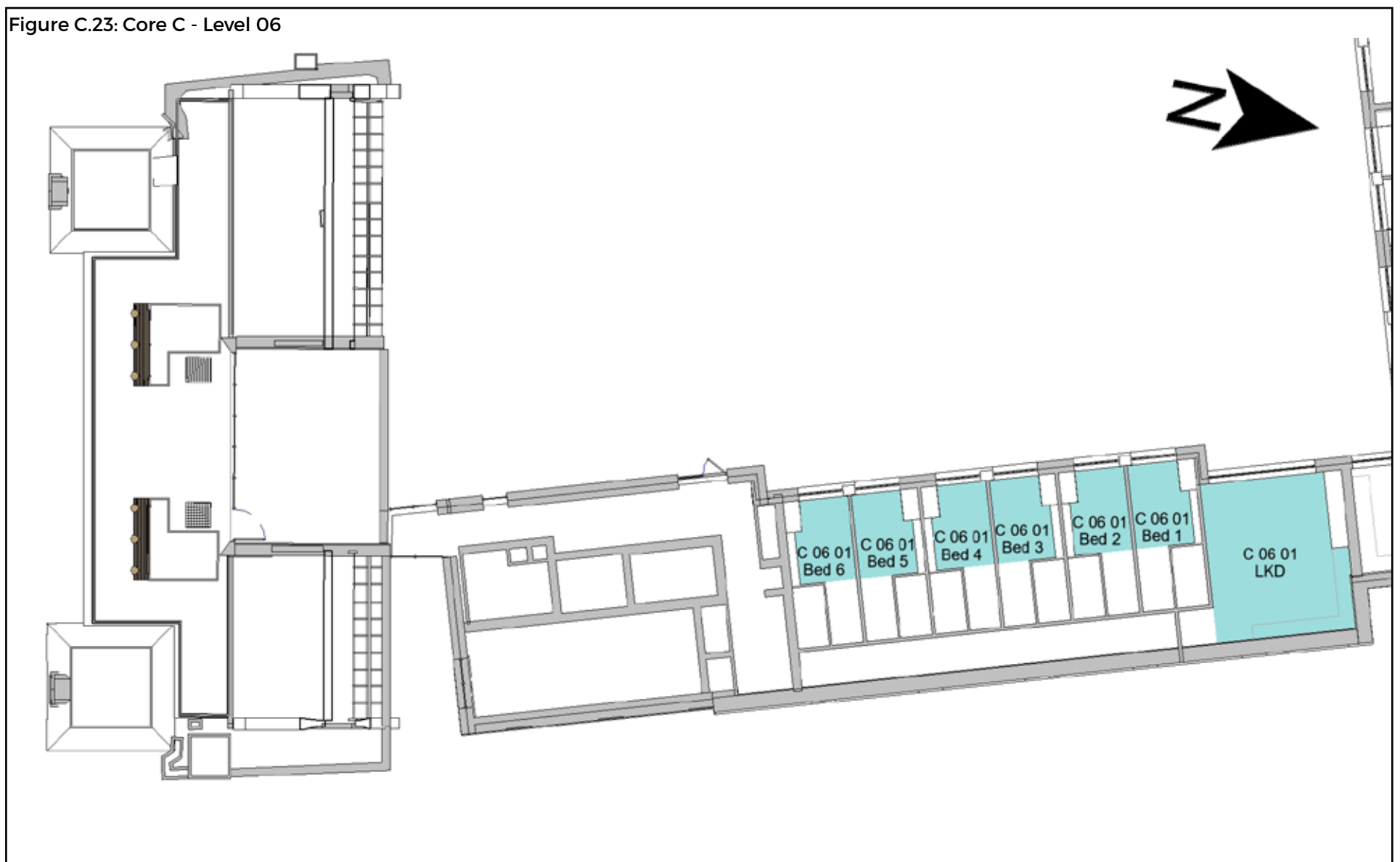
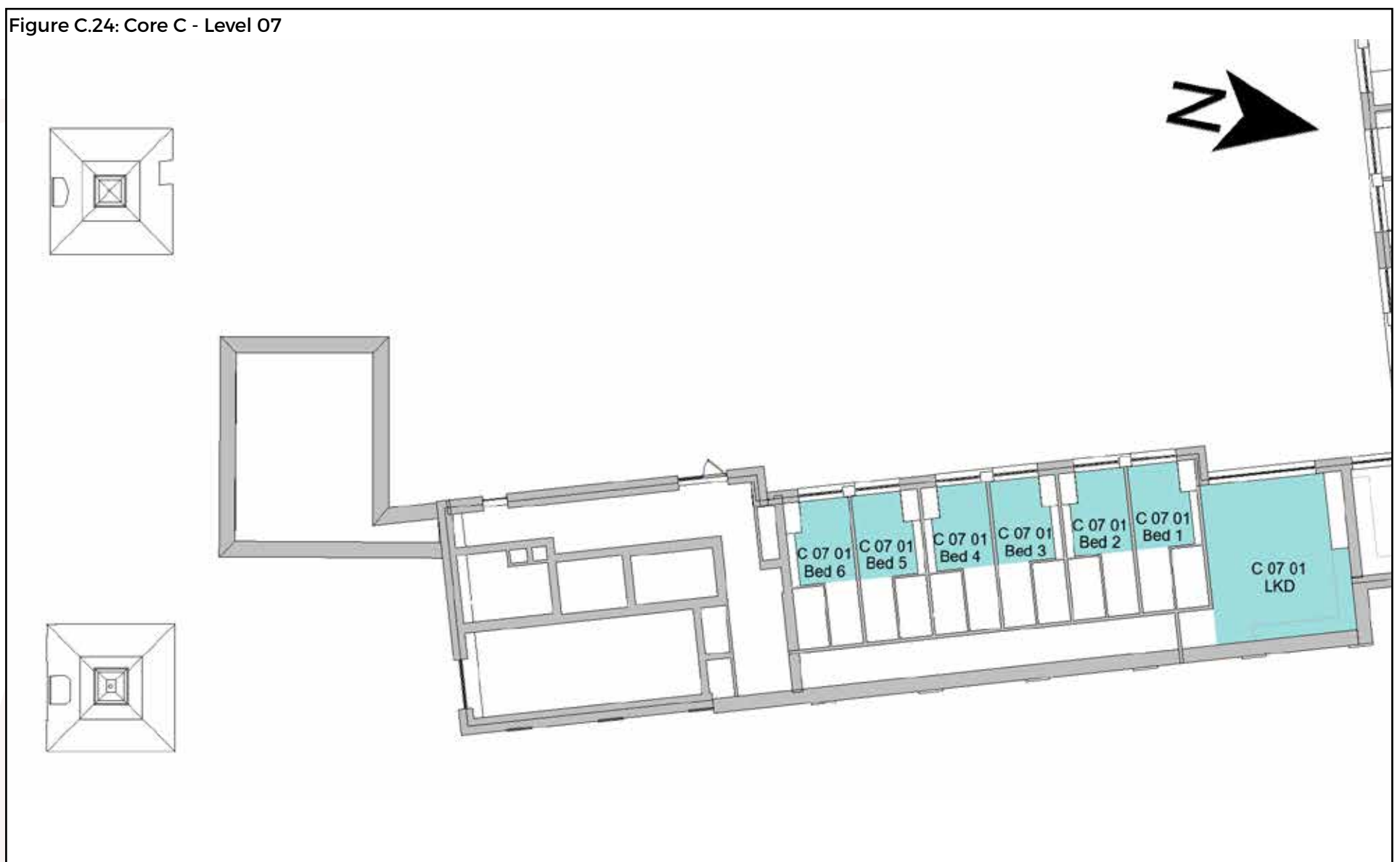


Figure C.24: Core C - Level 07



C.2 Spatial Daylight Autonomy (SDA) in Proposed Units

Below is an example of the table used to describe the spatial daylight autonomy results in proposed units.

Table Example. C.2 - Scheme Performance SDA					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria
			Without Trees	With Trees	
A	B	C	D	E	F

A: Unit Number

This column identifies the assessed unit. All unit numbers are determined by the architect's drawings, unless otherwise stated.

B: Room Description

Room Description details which room in the unit has been assessed, e.g. bedroom, LKD, etc.

C: Target Lux

Under BR 209 the appropriate target lux levels to be achieved across 50% of the working plane of a room differ depending on the room type. Kitchens have a target lux of 200, living rooms have a target lux of 150 and bedrooms have a target lux of 100. In a room providing more than one function, such as an LKD, the higher target value should be taken i.e. 200 Lux.

D: % of area above target Lux (Without Trees)

BR 209 recommends target lux levels to be achieved across at least 50% of the working plane for at least half the daylight hours. The target values differ depending on the room function, 200 lux for Kitchens, 150 lux for Living Rooms or 100 lux for Bedrooms.

This column states percentage of the working plane of the assessed room that is capable of receiving more than the appropriate target lux for at least half the daylight hours with trees excluded from the analytical model. The figures shown in this column should be considered part of a supplementary study that helps identify if trees are having an effect on daylight within the proposed units.

E: % of area above target Lux (With Trees)

BR 209 recommends target lux levels to be achieved across at least 50% of the working plane for at least half the daylight hours. The target values differ depending on the room function, 200 lux for Kitchens, 150 lux for Living Rooms or 100 lux for Bedrooms.

This column states percentage of the working plane of the assessed room that is capable of receiving more than the appropriate target lux for at least half the daylight hours with the foliage of deciduous trees varied to account for summer and winter conditions, i.e. full leaf and bare branch.

F: Compliance with BR 209 Criteria

This column states if the assessed room achieves the recommended level of daylight as per BR 209 with consideration to the various tree states.

If the target lux level is achieved across more than 50% of the working plane, for half the daylight hours, both with and without trees, this column will state: *'Compliant'*.

If the target lux level is not achieved across more than 50% of the working plane, for half the daylight hours, both with and without trees, this column will state: *'Non-compliant'*.

If the target lux level is achieved across more than 50% of the working plane, for half the daylight hours, without trees but is not achieved with trees, this column will state: *'Trees affecting compliance'*.

Compliance rates will be stated for SDA, both with and without trees.

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation of these figures may yield a negligible difference and should not be considered an error.

C.2.1 SDA Results: Core A - Level 01

Table No. C.2.1 - SDA Results: Core A - Level 01					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
A 01 01	LKD	200	99%	99%	Compliant
A 01 01	Bed 1	150	50%	50%	Compliant
A 01 01	Bed 2	150	100%	100%	Compliant
A 01 01	Bed 3	150	100%	100%	Compliant
A 01 01	Bed 4	150	85%	85%	Compliant
A 01 01	Bed 5	150	72%	72%	Compliant
A 01 01	Bed 6	150	67%	67%	Compliant
A 01 02	Studio	200	45%	45%	Non-compliant
A 01 03	LKD	200	70%	70%	Compliant
A 01 03	Bed 1	150	77%	77%	Compliant
A 01 03	Bed 2	150	54%	54%	Compliant
A 01 03	Bed 3	150	58%	58%	Compliant
A 01 03	Bed 4	150	44%	44%	Non-compliant
A 01 03	Bed 5	150	45%	45%	Non-compliant
A 01 03	Bed 6	150	40%	40%	Non-compliant
A 01 04	LKD	200	22%	22%	Non-compliant
A 01 04	Bed 1	150	100%	100%	Compliant
A 01 04	Bed 2	150	100%	100%	Compliant
A 01 04	Bed 3	150	100%	100%	Compliant
A 01 04	Bed 4	150	100%	100%	Compliant
A 01 04	Bed 5	150	100%	100%	Compliant
A 01 05	Studio	200	83%	83%	Compliant
A 01 06	Kitchen	200	40%	40%	Non-compliant
A 01 06	Living Room	150	45%	44%	Non-compliant
A 01 06	Bed 1	150	67%	67%	Compliant
A 01 06	Bed 2	150	67%	67%	Compliant
A 01 06	Bed 3	150	56%	56%	Compliant
A 01 06	Bed 4	150	58%	58%	Compliant
A 01 06	Bed 5	150	75%	72%	Compliant
A 01 06	Bed 6	150	72%	72%	Compliant
A 01 06	Bed 7	150	61%	58%	Compliant
A 01 06	Bed 8	150	64%	64%	Compliant
A 01 07	Studio	200	66%	66%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 30.

For floor plans of the assessed units please refer to section C.1 on page 75.

C.2.2 SDA Results: Core A - Level 02

Table No. C.2.2 - SDA Results: Core A - Level 02					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
A 02 01	LKD	200	97%	97%	Compliant
A 02 01	Bed 1	150	60%	60%	Compliant
A 02 01	Bed 2	150	100%	100%	Compliant
A 02 01	Bed 3	150	100%	100%	Compliant
A 02 01	Bed 4	150	95%	95%	Compliant
A 02 01	Bed 5	150	94%	94%	Compliant
A 02 01	Bed 6	150	86%	86%	Compliant
A 02 02	Studio	200	77%	77%	Compliant
A 02 03	LKD	200	76%	76%	Compliant
A 02 03	Bed 1	150	100%	100%	Compliant
A 02 03	Bed 2	150	78%	78%	Compliant
A 02 03	Bed 3	150	78%	75%	Compliant
A 02 03	Bed 4	150	62%	62%	Compliant
A 02 03	Bed 5	150	59%	59%	Compliant
A 02 03	Bed 6	150	54%	54%	Compliant
A 02 04	LKD	200	34%	33%	Non-compliant
A 02 04	Bed 1	150	100%	100%	Compliant
A 02 04	Bed 2	150	100%	100%	Compliant
A 02 04	Bed 3	150	100%	100%	Compliant
A 02 04	Bed 4	150	100%	100%	Compliant
A 02 04	Bed 5	150	100%	100%	Compliant
A 02 05	Studio	200	97%	97%	Compliant
A 02 06	Kitchen	200	47%	47%	Non-compliant
A 02 06	Living Room	150	64%	63%	Compliant
A 02 06	Bed 1	150	86%	86%	Compliant
A 02 06	Bed 2	150	86%	86%	Compliant
A 02 06	Bed 3	150	69%	69%	Compliant
A 02 06	Bed 4	150	69%	69%	Compliant
A 02 06	Bed 5	150	83%	81%	Compliant
A 02 06	Bed 6	150	83%	83%	Compliant
A 02 06	Bed 7	150	89%	89%	Compliant
A 02 06	Bed 8	150	97%	94%	Compliant
A 02 07	Studio	200	74%	74%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
 ** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.
 *** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.
 The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 30.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.2.3 SDA Results: Core A - Level 03

Table No. C.2.3 - SDA Results: Core A - Level 03					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
A 03 01	LKD	200	100%	100%	Compliant
A 03 01	Bed 1	150	79%	79%	Compliant
A 03 01	Bed 2	150	100%	100%	Compliant
A 03 01	Bed 3	150	100%	100%	Compliant
A 03 01	Bed 4	150	100%	100%	Compliant
A 03 01	Bed 5	150	100%	100%	Compliant
A 03 01	Bed 6	150	100%	100%	Compliant
A 03 02	Studio	200	98%	98%	Compliant
A 03 03	LKD	200	100%	100%	Compliant
A 03 03	Bed 1	150	100%	100%	Compliant
A 03 03	Bed 2	150	100%	100%	Compliant
A 03 03	Bed 3	150	100%	100%	Compliant
A 03 03	Bed 4	150	93%	93%	Compliant
A 03 03	Bed 5	150	80%	80%	Compliant
A 03 03	Bed 6	150	70%	70%	Compliant
A 03 04	LKD	200	47%	45%	Non-compliant
A 03 04	Bed 1	150	100%	100%	Compliant
A 03 04	Bed 2	150	100%	100%	Compliant
A 03 04	Bed 3	150	100%	100%	Compliant
A 03 04	Bed 4	150	100%	100%	Compliant
A 03 04	Bed 5	150	100%	100%	Compliant
A 03 05	Studio	200	100%	100%	Compliant
A 03 06	Kitchen	200	66%	66%	Compliant
A 03 06	Living Room	150	91%	91%	Compliant
A 03 06	Bed 1	150	100%	100%	Compliant
A 03 06	Bed 2	150	100%	100%	Compliant
A 03 06	Bed 3	150	100%	100%	Compliant
A 03 06	Bed 4	150	100%	100%	Compliant
A 03 06	Bed 5	150	100%	100%	Compliant
A 03 06	Bed 6	150	100%	100%	Compliant
A 03 06	Bed 7	150	100%	100%	Compliant
A 03 06	Bed 8	150	100%	100%	Compliant
A 03 07	Studio	200	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 30.

For floor plans of the assessed units please refer to section C.1 on page 75.

C.2.4 SDA Results: Core A - Level 04

Table No. C.2.4 - SDA Results: Core A - Level 04					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
A 04 01	LKD	200	100%	100%	Compliant
A 04 01	Bed 1	150	100%	100%	Compliant
A 04 01	Bed 2	150	100%	100%	Compliant
A 04 01	Bed 3	150	100%	100%	Compliant
A 04 01	Bed 4	150	100%	100%	Compliant
A 04 01	Bed 5	150	100%	100%	Compliant
A 04 01	Bed 6	150	100%	100%	Compliant
A 04 02	Studio	200	100%	100%	Compliant
A 04 03	LKD	200	100%	100%	Compliant
A 04 03	Bed 1	150	100%	100%	Compliant
A 04 03	Bed 2	150	100%	100%	Compliant
A 04 03	Bed 3	150	100%	100%	Compliant
A 04 03	Bed 4	150	100%	100%	Compliant
A 04 03	Bed 5	150	100%	100%	Compliant
A 04 03	Bed 6	150	100%	100%	Compliant
A 04 04	LKD	200	89%	89%	Compliant
A 04 04	Bed 1	150	100%	100%	Compliant
A 04 04	Bed 2	150	100%	100%	Compliant
A 04 04	Bed 3	150	100%	100%	Compliant
A 04 04	Bed 4	150	100%	100%	Compliant
A 04 04	Bed 5	150	100%	100%	Compliant
A 04 05	Studio	200	100%	100%	Compliant
A 04 06	Kitchen	200	79%	79%	Compliant
A 04 06	Living Room	150	100%	100%	Compliant
A 04 06	Bed 1	150	100%	100%	Compliant
A 04 06	Bed 2	150	100%	100%	Compliant
A 04 06	Bed 3	150	100%	100%	Compliant
A 04 06	Bed 4	150	100%	100%	Compliant
A 04 06	Bed 5	150	100%	100%	Compliant
A 04 06	Bed 6	150	100%	100%	Compliant
A 04 06	Bed 7	150	100%	100%	Compliant
A 04 06	Bed 8	150	100%	100%	Compliant
A 04 07	Studio	200	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 30.

For floor plans of the assessed units please refer to section C.1 on page 75.

C.2.5 SDA Results: Core A - Level 05

Table No. C.2.5 - SDA Results: Core A - Level 05					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
A 05 01	LKD	200	100%	100%	Compliant
A 05 01	Bed 1	150	100%	100%	Compliant
A 05 01	Bed 2	150	100%	100%	Compliant
A 05 01	Bed 3	150	100%	100%	Compliant
A 05 01	Bed 4	150	100%	100%	Compliant
A 05 01	Bed 5	150	100%	100%	Compliant
A 05 01	Bed 6	150	100%	100%	Compliant
A 05 02	Studio	200	100%	100%	Compliant
A 05 03	LKD	200	100%	100%	Compliant
A 05 03	Bed 1	150	100%	100%	Compliant
A 05 03	Bed 2	150	96%	96%	Compliant
A 05 03	Bed 3	150	100%	100%	Compliant
A 05 03	Bed 4	150	100%	100%	Compliant
A 05 03	Bed 5	150	100%	100%	Compliant
A 05 03	Bed 6	150	100%	100%	Compliant
A 05 04	LKD	200	99%	99%	Compliant
A 05 04	Bed 1	150	100%	100%	Compliant
A 05 04	Bed 2	150	100%	100%	Compliant
A 05 04	Bed 3	150	100%	100%	Compliant
A 05 04	Bed 4	150	100%	100%	Compliant
A 05 04	Bed 5	150	100%	100%	Compliant
A 05 05	Studio	200	100%	100%	Compliant
A 05 06	Kitchen	200	89%	89%	Compliant
A 05 06	Living Room	150	100%	100%	Compliant
A 05 06	Bed 1	150	100%	100%	Compliant
A 05 06	Bed 2	150	100%	100%	Compliant
A 05 06	Bed 3	150	100%	100%	Compliant
A 05 06	Bed 4	150	100%	100%	Compliant
A 05 06	Bed 5	150	100%	100%	Compliant
A 05 06	Bed 6	150	100%	100%	Compliant
A 05 06	Bed 7	150	100%	100%	Compliant
A 05 06	Bed 8	150	100%	100%	Compliant
A 05 07	Studio	200	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 30.

For floor plans of the assessed units please refer to section C.1 on page 75.

C.2.6 SDA Results: Core A - Level 06 & 07

Table No. C.2.6 - SDA Results: Core A - Level 06 & 07					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
A 06 03	Studio	200	100%	100%	Compliant
A 06 04	LKD	200	100%	100%	Compliant
A 06 04	Bed 1	150	100%	100%	Compliant
A 06 04	Bed 2	150	100%	100%	Compliant
A 06 04	Bed 3	150	100%	100%	Compliant
A 06 04	Bed 4	150	100%	100%	Compliant
A 06 04	Bed 5	150	100%	100%	Compliant
A 06 04	Bed 6	150	100%	100%	Compliant
A 06 04	Bed 7	150	100%	100%	Compliant
A 06 04	Bed 8	150	100%	100%	Compliant
A 06 05	Studio	200	100%	100%	Compliant
A 06 07	Kitchen	200	100%	100%	Compliant
A 06 07	Living Room	150	100%	100%	Compliant
A 06 07	Bed 1	150	100%	100%	Compliant
A 06 07	Bed 2	150	100%	100%	Compliant
A 06 07	Bed 3	150	100%	100%	Compliant
A 06 07	Bed 4	150	100%	100%	Compliant
A 06 07	Bed 5	150	100%	100%	Compliant
A 06 07	Bed 6	150	100%	100%	Compliant
A 06 07	Bed 7	150	100%	100%	Compliant
A 06 07	Bed 8	150	100%	100%	Compliant
A 07 02	Studio	200	100%	100%	Compliant
A 07 04	LKD	200	100%	100%	Compliant
A 07 04	Bed 1	150	100%	100%	Compliant
A 07 04	Bed 2	150	100%	100%	Compliant
A 07 04	Bed 3	150	100%	100%	Compliant
A 07 04	Bed 4	150	100%	100%	Compliant
A 07 04	Bed 5	150	100%	100%	Compliant
A 07 05	Studio	200	100%	100%	Compliant
A 07 07	Kitchen	200	100%	100%	Compliant
A 07 07	Living Room	150	100%	100%	Compliant
A 07 07	Bed 1	150	100%	100%	Compliant
A 07 07	Bed 2	150	100%	100%	Compliant
A 07 07	Bed 3	150	100%	100%	Compliant
A 07 07	Bed 4	150	100%	100%	Compliant
A 07 07	Bed 5	150	100%	100%	Compliant
A 07 07	Bed 6	150	100%	100%	Compliant
A 07 07	Bed 7	150	100%	100%	Compliant
A 07 07	Bed 8	150	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 30.

For floor plans of the assessed units please refer to section C.1 on page 75.

C.2.7 SDA Results: Core B - Level 01 & 02

Table No. C.2.7 - SDA Results: Core B - Level 01 & 02					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
B 01 01	Kitchen	200	43%	43%	Non-compliant
B 01 01	Living Room	150	44%	44%	Non-compliant
B 01 01	Bed 1	150	67%	67%	Compliant
B 01 01	Bed 2	150	50%	50%	Compliant
B 01 01	Bed 3	150	44%	44%	Non-compliant
B 01 01	Bed 4	150	50%	50%	Compliant
B 01 01	Bed 5	150	78%	75%	Compliant
B 01 01	Bed 6	150	94%	94%	Compliant
B 01 01	Bed 7	150	83%	83%	Compliant
B 01 01	Bed 8	150	86%	86%	Compliant
B 01 02	LKD	200	63%	63%	Compliant
B 01 02	Bed 1	150	47%	47%	Non-compliant
B 01 02	Bed 2	150	100%	100%	Compliant
B 01 02	Bed 3	150	100%	100%	Compliant
B 01 02	Bed 4	150	100%	100%	Compliant
B 01 02	Bed 5	150	9%	9%	Non-compliant
B 02 01	Kitchen	200	51%	51%	Compliant
B 02 01	Living Room	150	66%	65%	Compliant
B 02 01	Bed 1	150	100%	100%	Compliant
B 02 01	Bed 2	150	86%	86%	Compliant
B 02 01	Bed 3	150	72%	69%	Compliant
B 02 01	Bed 4	150	81%	81%	Compliant
B 02 01	Bed 5	150	94%	94%	Compliant
B 02 01	Bed 6	150	100%	100%	Compliant
B 02 01	Bed 7	150	100%	100%	Compliant
B 02 01	Bed 8	150	97%	97%	Compliant
B 02 02	LKD	200	66%	66%	Compliant
B 02 02	Bed 1	150	52%	51%	Compliant
B 02 02	Bed 2	150	100%	100%	Compliant
B 02 02	Bed 3	150	100%	100%	Compliant
B 02 02	Bed 4	150	100%	100%	Compliant
B 02 02	Bed 5	150	9%	9%	Non-compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
 ** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.
 *** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.
 The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 30.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.2.8 SDA Results: Core B - Level 03 & 04

Table No. C.2.8 - SDA Results: Core B - Level 03 & 04					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
B 03 01	Kitchen	200	70%	70%	Compliant
B 03 01	Living Room	150	97%	94%	Compliant
B 03 01	Bed 1	150	100%	100%	Compliant
B 03 01	Bed 2	150	100%	100%	Compliant
B 03 01	Bed 3	150	100%	100%	Compliant
B 03 01	Bed 4	150	100%	100%	Compliant
B 03 01	Bed 5	150	100%	100%	Compliant
B 03 01	Bed 6	150	100%	100%	Compliant
B 03 01	Bed 7	150	100%	100%	Compliant
B 03 01	Bed 8	150	100%	100%	Compliant
B 03 02	LKD	200	51%	51%	Compliant
B 03 02	Bed 1	150	70%	68%	Compliant
B 03 02	Bed 2	150	100%	100%	Compliant
B 03 02	Bed 3	150	100%	100%	Compliant
B 03 02	Bed 4	150	100%	100%	Compliant
B 03 02	Bed 5	150	22%	22%	Non-compliant
B 04 01	Kitchen	200	81%	81%	Compliant
B 04 01	Living Room	150	100%	100%	Compliant
B 04 01	Bed 1	150	100%	100%	Compliant
B 04 01	Bed 2	150	100%	100%	Compliant
B 04 01	Bed 3	150	100%	100%	Compliant
B 04 01	Bed 4	150	100%	100%	Compliant
B 04 01	Bed 5	150	100%	100%	Compliant
B 04 01	Bed 6	150	100%	100%	Compliant
B 04 01	Bed 7	150	100%	100%	Compliant
B 04 01	Bed 8	150	100%	100%	Compliant
B 04 02	LKD	200	30%	30%	Non-compliant
B 04 02	Bed 1	150	88%	88%	Compliant
B 04 02	Bed 2	150	100%	100%	Compliant
B 04 02	Bed 3	150	88%	88%	Compliant
B 04 02	Bed 4	150	100%	100%	Compliant
B 04 02	Bed 5	150	88%	88%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
 ** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.
 *** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.
 The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 30.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.2.9 SDA Results: Core B - Level 05, 06 & 07

Table No. C.2.9 - SDA Results: Core B - Level 05, 06 & 07					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
B 05 01	Kitchen	200	92%	92%	Compliant
B 05 01	Living Room	150	100%	100%	Compliant
B 05 01	Bed 1	150	100%	100%	Compliant
B 05 01	Bed 2	150	100%	100%	Compliant
B 05 01	Bed 3	150	100%	100%	Compliant
B 05 01	Bed 4	150	100%	100%	Compliant
B 05 01	Bed 5	150	100%	100%	Compliant
B 05 01	Bed 6	150	100%	100%	Compliant
B 05 01	Bed 7	150	100%	100%	Compliant
B 05 01	Bed 8	150	100%	100%	Compliant
B 06 01	Kitchen	200	100%	100%	Compliant
B 06 01	Living Room	150	100%	100%	Compliant
B 06 01	Bed 1	150	100%	100%	Compliant
B 06 01	Bed 2	150	100%	100%	Compliant
B 06 01	Bed 3	150	100%	100%	Compliant
B 06 01	Bed 4	150	100%	100%	Compliant
B 06 01	Bed 5	150	100%	100%	Compliant
B 06 01	Bed 6	150	100%	100%	Compliant
B 06 01	Bed 7	150	100%	100%	Compliant
B 06 01	Bed 8	150	100%	100%	Compliant
B 07 01	Kitchen	200	100%	100%	Compliant
B 07 01	Living Room	150	100%	100%	Compliant
B 07 01	Bed 1	150	100%	100%	Compliant
B 07 01	Bed 2	150	100%	100%	Compliant
B 07 01	Bed 3	150	100%	100%	Compliant
B 07 01	Bed 4	150	100%	100%	Compliant
B 07 01	Bed 5	150	100%	100%	Compliant
B 07 01	Bed 6	150	100%	100%	Compliant
B 07 01	Bed 7	150	100%	100%	Compliant
B 07 01	Bed 8	150	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 30.

For floor plans of the assessed units please refer to section C.1 on page 75.

C.2.10 SDA Results: Core C - Level 01, 02 & 03

Table No. C.2.10 - SDA Results: Core C - Level 01, 02 & 03					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
C 01 01	LKD	200	52%	52%	Compliant
C 01 01	Bed 1	150	83%	83%	Compliant
C 01 01	Bed 2	150	78%	78%	Compliant
C 01 01	Bed 3	150	83%	83%	Compliant
C 01 01	Bed 4	150	78%	78%	Compliant
C 01 01	Bed 5	150	86%	83%	Compliant
C 01 01	Bed 6	150	78%	78%	Compliant
C 01 02	Studio	200	96%	96%	Compliant
C 01 03	Studio	200	100%	100%	Compliant
C 01 04	Studio	200	100%	100%	Compliant
C 01 05	Studio	200	97%	97%	Compliant
C 01 06	Studio	200	100%	100%	Compliant
C 01 07	Studio	200	100%	100%	Compliant
C 02 01	LKD	200	68%	68%	Compliant
C 02 01	Bed 1	150	100%	100%	Compliant
C 02 01	Bed 2	150	100%	100%	Compliant
C 02 01	Bed 3	150	100%	100%	Compliant
C 02 01	Bed 4	150	100%	100%	Compliant
C 02 01	Bed 5	150	100%	100%	Compliant
C 02 01	Bed 6	150	100%	100%	Compliant
C 02 02	Studio	200	100%	100%	Compliant
C 02 03	Studio	200	100%	100%	Compliant
C 02 04	Studio	200	100%	100%	Compliant
C 02 05	Studio	200	99%	99%	Compliant
C 02 06	Studio	200	100%	100%	Compliant
C 02 07	Studio	200	100%	100%	Compliant
C 02 08	Studio	200	50%	50%	Compliant
C 03 01	LKD	200	86%	85%	Compliant
C 03 01	Bed 1	150	100%	100%	Compliant
C 03 01	Bed 2	150	100%	100%	Compliant
C 03 01	Bed 3	150	100%	100%	Compliant
C 03 01	Bed 4	150	100%	100%	Compliant
C 03 01	Bed 5	150	100%	100%	Compliant
C 03 01	Bed 6	150	100%	100%	Compliant
C 03 02	Studio	200	100%	100%	Compliant
C 03 03	Studio	200	100%	100%	Compliant
C 03 04	Studio	200	100%	100%	Compliant
C 03 05	Studio	200	98%	98%	Compliant
C 03 06	Studio	200	100%	100%	Compliant
C 03 07	Studio	200	100%	100%	Compliant
C 03 08	Studio	200	67%	67%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 30.

For floor plans of the assessed units please refer to section C.1 on page 75.

C.2.11 SDA Results: Core C - Level 04, 05, 06 & 07

Table No. C.2.11 - SDA Results: Core C - Level 04, 05, 06 & 07					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
C 04 01	LKD	200	99%	99%	Compliant
C 04 01	Bed 1	150	100%	100%	Compliant
C 04 01	Bed 2	150	100%	100%	Compliant
C 04 01	Bed 3	150	100%	100%	Compliant
C 04 01	Bed 4	150	100%	100%	Compliant
C 04 01	Bed 5	150	100%	100%	Compliant
C 04 01	Bed 6	150	100%	100%	Compliant
C 04 04	Studio	200	100%	100%	Compliant
C 04 05	Studio	200	100%	100%	Compliant
C 04 06	Studio	200	86%	86%	Compliant
C 05 01	LKD	200	100%	100%	Compliant
C 05 01	Bed 1	150	100%	100%	Compliant
C 05 01	Bed 2	150	100%	100%	Compliant
C 05 01	Bed 3	150	100%	100%	Compliant
C 05 01	Bed 4	150	100%	100%	Compliant
C 05 01	Bed 5	150	100%	100%	Compliant
C 05 01	Bed 6	150	100%	100%	Compliant
C 06 01	LKD	200	89%	87%	Compliant
C 06 01	Bed 1	150	100%	100%	Compliant
C 06 01	Bed 2	150	100%	100%	Compliant
C 06 01	Bed 3	150	100%	100%	Compliant
C 06 01	Bed 4	150	100%	100%	Compliant
C 06 01	Bed 5	150	100%	100%	Compliant
C 06 01	Bed 6	150	100%	100%	Compliant
C 07 01	LKD	200	100%	100%	Compliant
C 07 01	Bed 1	150	100%	100%	Compliant
C 07 01	Bed 2	150	100%	100%	Compliant
C 07 01	Bed 3	150	100%	100%	Compliant
C 07 01	Bed 4	150	100%	100%	Compliant
C 07 01	Bed 5	150	100%	100%	Compliant
C 07 01	Bed 6	150	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
 ** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.
 *** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.
 The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 30.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.3 Sunlight Exposure (SE) in Proposed Units

Below is an example of the table used to describe the SE performance of proposed habitable rooms.

Table Example. C.3 - Scheme Performance Sunlight Exposure							
Unit Number	Room Description	Deciduous Trees as Opaque Objects			Without Deciduous Trees		
		SE Hours on March 21st	Level of SE on March 21st	Unit Compliance	SE Hours on March 21st	Level of SE on March 21st	Unit Compliance
A	B	C	D	E	F	G	H

A: Unit Number

This column identifies the assessed unit. All unit numbers are determined by the architect's drawings, unless otherwise stated.

B: Room Description

Room Description details which room of the unit has been assessed, e.g. bedroom, living room, etc.

C: SE Hours on March 21st (Deciduous Trees as Opaque Objects)

This column will state the number of hours the assessed room can expect to receive on March 21st with the assessment carried out with deciduous trees as opaque objects.

D: Level of SE on March 21st (Deciduous Trees as Opaque Objects)

BR 209 recommends a minimum sunlight exposure of 1.5 hours for a proposed unit with preference given to main living rooms. BR 209 categorise sunlight exposure as minimum, medium and high, this column will categorise the level of sunlight exposure with deciduous trees as opaque objects based on the following:

- Less than 1.5 hours: *Below minimum*,
- Between 1.5 hours and 3 hours: *Minimum*
- Between 3 hours and 4 hours: *Medium*
- More than 4 hours: *High*

E: Unit compliance (Deciduous Trees as Opaque Objects)

A proposed unit is considered to be compliant provided all occupants have access to a room that is capable of receiving at least 1.5 hours of sunlight on March 21st. This column will identify compliance of the assessed unit, with the assessment carried out with deciduous trees as opaque objects, using the logic outlined in section "3.3.2 Unit Compliance:" on page 12 regardless of the performance of the individual room.

F: SE Hours on March 21st (Without Deciduous Trees)

This column will state the number of hours the assessed room can expect to receive on March 21st with the assessment carried out without deciduous trees.

G: Level of SE on March 21st (Without Deciduous Trees)

BR 209 recommends a minimum sunlight exposure of 1.5 hours for a proposed unit with preference given to main living rooms. BR 209 categorise sunlight exposure as minimum, medium and high, this column will categorise the level of sunlight exposure without deciduous trees using the same criteria as the study with deciduous trees as opaque objects.

H: Unit compliance (Without Deciduous Trees)

A proposed unit is considered to be compliant provided all occupants have access to a room that is capable of receiving at least 1.5 hours of sunlight on March 21st. This column will identify compliance of the assessed unit, with the assessment carried out without deciduous trees, using the logic outlined in section "3.3.2 Unit Compliance:" on page 12 regardless of the performance of the individual room.

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation of these figures may yield a negligible difference and should not be considered an error.

C.3.1 SE Results: Core A - Level 01

Table No. C.3.1 - Sunlight Exposure Results: Core A - Level 01							
Unit Number	Room Description	Deciduous Trees as Opaque Objects*			Without Deciduous Trees*		
		SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**	SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**
A 01 01	LKD	0.40	Below Minimum	Non-Compliant	0.40	Below Minimum	Non-Compliant
A 01 01	Bed 1	0.90	Below Minimum	Non-Compliant	0.90	Below Minimum	Non-Compliant
A 01 01	Bed 2	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 01 01	Bed 3	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 01 01	Bed 4	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 01 01	Bed 5	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 01 01	Bed 6	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 01 02	Studio	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 01 03	LKD	1.60	Minimum	Compliant	1.60	Minimum	Compliant
A 01 03	Bed 1	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 01 03	Bed 2	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 01 03	Bed 3	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 01 03	Bed 4	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 01 03	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 01 03	Bed 6	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 01 04	LKD	1.40	Below Minimum	Compliant	1.50	Minimum	Compliant
A 01 04	Bed 1	1.80	Minimum	Compliant	2.00	Minimum	Compliant
A 01 04	Bed 2	2.00	Minimum	Compliant	2.00	Minimum	Compliant
A 01 04	Bed 3	2.00	Minimum	Compliant	2.00	Minimum	Compliant
A 01 04	Bed 4	1.90	Minimum	Compliant	1.90	Minimum	Compliant
A 01 04	Bed 5	1.90	Minimum	Compliant	1.90	Minimum	Compliant
A 01 05	Studio	1.90	Minimum	Compliant	1.90	Minimum	Compliant
A 01 06	Kitchen	1.70	Minimum	Compliant	1.70	Minimum	Compliant
A 01 06	Living Room	0.30	Below Minimum	Compliant	0.30	Below Minimum	Compliant
A 01 06	Bed 1	1.00	Below Minimum	Compliant	1.00	Below Minimum	Compliant
A 01 06	Bed 2	1.50	Minimum	Compliant	1.50	Minimum	Compliant
A 01 06	Bed 3	0.90	Below Minimum	Compliant	0.90	Below Minimum	Compliant
A 01 06	Bed 4	1.60	Minimum	Compliant	1.60	Minimum	Compliant
A 01 06	Bed 5	1.40	Below Minimum	Compliant	1.40	Below Minimum	Compliant
A 01 06	Bed 6	0.40	Below Minimum	Compliant	0.40	Below Minimum	Compliant
A 01 06	Bed 7	1.00	Below Minimum	Compliant	1.00	Below Minimum	Compliant
A 01 06	Bed 8	0.30	Below Minimum	Compliant	0.30	Below Minimum	Compliant
A 01 07	Studio	1.60	Minimum	Compliant	1.60	Minimum	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.
 ** For a unit to be compliant all occupants should have access to a room that can receive a minimum of 1.5 hours of direct sunlight on March 21st. The SE circa compliance rates can be found in section 5.2.2 on page 32.
 *** For the interpretation of levels of Sunlight Exposure please refer to "3.3.1 Level of Sunlight Exposure:" on page 12.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.3.2 SE Results: Core A - Level 02

Table No. C.3.2 - Sunlight Exposure Results: Core A - Level 02

Unit Number	Room Description	Deciduous Trees as Opaque Objects*			Without Deciduous Trees*		
		SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**	SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**
A 02 01	LKD	0.40	Below Minimum	Non-Compliant	0.40	Below Minimum	Non-Compliant
A 02 01	Bed 1	1.30	Below Minimum	Non-Compliant	1.30	Below Minimum	Non-Compliant
A 02 01	Bed 2	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 02 01	Bed 3	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 02 01	Bed 4	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 02 01	Bed 5	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 02 01	Bed 6	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 02 02	Studio	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 02 03	LKD	2.10	Minimum	Compliant	2.10	Minimum	Compliant
A 02 03	Bed 1	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 02 03	Bed 2	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 02 03	Bed 3	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 02 03	Bed 4	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 02 03	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 02 03	Bed 6	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 02 04	LKD	1.90	Minimum	Compliant	2.20	Minimum	Compliant
A 02 04	Bed 1	2.20	Minimum	Compliant	2.30	Minimum	Compliant
A 02 04	Bed 2	2.10	Minimum	Compliant	2.30	Minimum	Compliant
A 02 04	Bed 3	2.20	Minimum	Compliant	2.30	Minimum	Compliant
A 02 04	Bed 4	2.20	Minimum	Compliant	2.30	Minimum	Compliant
A 02 04	Bed 5	2.20	Minimum	Compliant	2.20	Minimum	Compliant
A 02 05	Studio	2.30	Minimum	Compliant	2.30	Minimum	Compliant
A 02 06	Kitchen	1.70	Minimum	Compliant	1.70	Minimum	Compliant
A 02 06	Living Room	1.50	Minimum	Compliant	1.50	Minimum	Compliant
A 02 06	Bed 1	1.20	Below Minimum	Compliant	1.20	Below Minimum	Compliant
A 02 06	Bed 2	1.80	Minimum	Compliant	1.80	Minimum	Compliant
A 02 06	Bed 3	1.20	Below Minimum	Compliant	1.20	Below Minimum	Compliant
A 02 06	Bed 4	1.70	Minimum	Compliant	1.70	Minimum	Compliant
A 02 06	Bed 5	1.40	Below Minimum	Compliant	1.40	Below Minimum	Compliant
A 02 06	Bed 6	0.70	Below Minimum	Compliant	0.70	Below Minimum	Compliant
A 02 06	Bed 7	1.60	Minimum	Compliant	1.60	Minimum	Compliant
A 02 06	Bed 8	1.00	Below Minimum	Compliant	1.00	Below Minimum	Compliant
A 02 07	Studio	1.70	Minimum	Compliant	1.70	Minimum	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.
 ** For a unit to be compliant all occupants should have access to a room that can receive a minimum of 1.5 hours of direct sunlight on March 21st. The SE circa compliance rates can be found in section 5.2.2 on page 32.
 *** For the interpretation of levels of Sunlight Exposure please refer to "3.3.1 Level of Sunlight Exposure:" on page 12.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.3.3 SE Results: Core A - Level 03

Table No. C.3.3 - Sunlight Exposure Results: Core A - Level 03

Unit Number	Room Description	Deciduous Trees as Opaque Objects*			Without Deciduous Trees*		
		SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**	SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**
A 03 01	LKD	0.80	Below Minimum	Non-Compliant	0.80	Below Minimum	Non-Compliant
A 03 01	Bed 1	1.50	Minimum	Non-Compliant	1.50	Minimum	Non-Compliant
A 03 01	Bed 2	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 03 01	Bed 3	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 03 01	Bed 4	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 03 01	Bed 5	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 03 01	Bed 6	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 03 02	Studio	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 03 03	LKD	2.70	Minimum	Compliant	2.70	Minimum	Compliant
A 03 03	Bed 1	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 03 03	Bed 2	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 03 03	Bed 3	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 03 03	Bed 4	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 03 03	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 03 03	Bed 6	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 03 04	LKD	2.20	Minimum	Compliant	2.30	Minimum	Compliant
A 03 04	Bed 1	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A 03 04	Bed 2	2.70	Minimum	Compliant	2.90	Minimum	Compliant
A 03 04	Bed 3	2.60	Minimum	Compliant	2.90	Minimum	Compliant
A 03 04	Bed 4	2.50	Minimum	Compliant	2.70	Minimum	Compliant
A 03 04	Bed 5	2.50	Minimum	Compliant	2.70	Minimum	Compliant
A 03 05	Studio	2.60	Minimum	Compliant	2.70	Minimum	Compliant
A 03 06	Kitchen	2.00	Minimum	Compliant	2.00	Minimum	Compliant
A 03 06	Living Room	1.80	Minimum	Compliant	1.80	Minimum	Compliant
A 03 06	Bed 1	1.60	Minimum	Compliant	1.60	Minimum	Compliant
A 03 06	Bed 2	2.10	Minimum	Compliant	2.10	Minimum	Compliant
A 03 06	Bed 3	1.30	Below Minimum	Compliant	1.30	Below Minimum	Compliant
A 03 06	Bed 4	1.90	Minimum	Compliant	1.90	Minimum	Compliant
A 03 06	Bed 5	1.70	Minimum	Compliant	1.70	Minimum	Compliant
A 03 06	Bed 6	1.00	Below Minimum	Compliant	1.00	Below Minimum	Compliant
A 03 06	Bed 7	1.70	Minimum	Compliant	1.70	Minimum	Compliant
A 03 06	Bed 8	1.00	Below Minimum	Compliant	1.00	Below Minimum	Compliant
A 03 07	Studio	2.40	Minimum	Compliant	2.40	Minimum	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.
 ** For a unit to be compliant all occupants should have access to a room that can receive a minimum of 1.5 hours of direct sunlight on March 21st. The SE circa compliance rates can be found in section 5.2.2 on page 32.
 *** For the interpretation of levels of Sunlight Exposure please refer to "3.3.1 Level of Sunlight Exposure:" on page 12.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.3.4 SE Results: Core A - Level 04

Table No. C.3.4 - Sunlight Exposure Results: Core A - Level 04

Unit Number	Room Description	Deciduous Trees as Opaque Objects*			Without Deciduous Trees*		
		SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**	SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**
A 04 01	LKD	1.70	Minimum	Compliant	1.70	Minimum	Compliant
A 04 01	Bed 1	1.90	Minimum	Compliant	1.90	Minimum	Compliant
A 04 01	Bed 2	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 04 01	Bed 3	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 04 01	Bed 4	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 04 01	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 04 01	Bed 6	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 04 02	Studio	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 04 03	LKD	3.20	Medium	Compliant	3.20	Medium	Compliant
A 04 03	Bed 1	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 04 03	Bed 2	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 04 03	Bed 3	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 04 03	Bed 4	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 04 03	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 04 03	Bed 6	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 04 04	LKD	5.90	High	Compliant	6.00	High	Compliant
A 04 04	Bed 1	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A 04 04	Bed 2	3.40	Medium	Compliant	3.50	Medium	Compliant
A 04 04	Bed 3	3.30	Medium	Compliant	3.50	Medium	Compliant
A 04 04	Bed 4	3.40	Medium	Compliant	3.40	Medium	Compliant
A 04 04	Bed 5	3.30	Medium	Compliant	3.30	Medium	Compliant
A 04 05	Studio	3.40	Medium	Compliant	3.40	Medium	Compliant
A 04 06	Kitchen	2.50	Minimum	Compliant	2.50	Minimum	Compliant
A 04 06	Living Room	1.90	Minimum	Compliant	1.90	Minimum	Compliant
A 04 06	Bed 1	1.80	Minimum	Compliant	1.80	Minimum	Compliant
A 04 06	Bed 2	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A 04 06	Bed 3	1.80	Minimum	Compliant	1.80	Minimum	Compliant
A 04 06	Bed 4	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A 04 06	Bed 5	2.00	Minimum	Compliant	2.00	Minimum	Compliant
A 04 06	Bed 6	1.30	Below Minimum	Compliant	1.30	Below Minimum	Compliant
A 04 06	Bed 7	2.00	Minimum	Compliant	2.00	Minimum	Compliant
A 04 06	Bed 8	1.30	Below Minimum	Compliant	1.30	Below Minimum	Compliant
A 04 07	Studio	2.80	Minimum	Compliant	2.80	Minimum	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.
 ** For a unit to be compliant all occupants should have access to a room that can receive a minimum of 1.5 hours of direct sunlight on March 21st. The SE circa compliance rates can be found in section 5.2.2 on page 32.
 *** For the interpretation of levels of Sunlight Exposure please refer to "3.3.1 Level of Sunlight Exposure:" on page 12.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.3.5 SE Results: Core A - Level 05

Table No. C.3.5 - Sunlight Exposure Results: Core A - Level 05

Unit Number	Room Description	Deciduous Trees as Opaque Objects*			Without Deciduous Trees*		
		SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**	SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**
A 05 01	LKD	2.50	Minimum	Compliant	2.50	Minimum	Compliant
A 05 01	Bed 1	2.70	Minimum	Compliant	2.70	Minimum	Compliant
A 05 01	Bed 2	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 05 01	Bed 3	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 05 01	Bed 4	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 05 01	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 05 01	Bed 6	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 05 02	Studio	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A 05 03	LKD	3.20	Medium	Compliant	3.20	Medium	Compliant
A 05 03	Bed 1	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 05 03	Bed 2	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 05 03	Bed 3	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 05 03	Bed 4	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 05 03	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 05 03	Bed 6	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 05 04	LKD	6.50	High	Compliant	6.60	High	Compliant
A 05 04	Bed 1	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A 05 04	Bed 2	4.20	High	Compliant	4.30	High	Compliant
A 05 04	Bed 3	4.30	High	Compliant	4.40	High	Compliant
A 05 04	Bed 4	4.40	High	Compliant	4.40	High	Compliant
A 05 04	Bed 5	4.30	High	Compliant	4.30	High	Compliant
A 05 05	Studio	4.20	High	Compliant	4.20	High	Compliant
A 05 06	Kitchen	2.80	Minimum	Compliant	2.80	Minimum	Compliant
A 05 06	Living Room	2.30	Minimum	Compliant	2.30	Minimum	Compliant
A 05 06	Bed 1	2.50	Minimum	Compliant	2.50	Minimum	Compliant
A 05 06	Bed 2	3.10	Medium	Compliant	3.10	Medium	Compliant
A 05 06	Bed 3	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A 05 06	Bed 4	3.10	Medium	Compliant	3.10	Medium	Compliant
A 05 06	Bed 5	2.40	Minimum	Compliant	2.50	Minimum	Compliant
A 05 06	Bed 6	1.70	Minimum	Compliant	1.70	Minimum	Compliant
A 05 06	Bed 7	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A 05 06	Bed 8	1.70	Minimum	Compliant	1.70	Minimum	Compliant
A 05 07	Studio	3.60	Medium	Compliant	3.60	Medium	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.
 ** For a unit to be compliant all occupants should have access to a room that can receive a minimum of 1.5 hours of direct sunlight on March 21st. The SE circa compliance rates can be found in section 5.2.2 on page 32.
 *** For the interpretation of levels of Sunlight Exposure please refer to "3.3.1 Level of Sunlight Exposure:" on page 12.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.3.6 SE Results: Core A - Level 06 & 07

Table No. C.3.6 - Sunlight Exposure Results: Core A - Level 06 & 07							
Unit Number	Room Description	Deciduous Trees as Opaque Objects*			Without Deciduous Trees*		
		SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**	SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**
A 06 03	Studio	3.90	Medium	Compliant	3.90	Medium	Compliant
A 06 04	LKD	4.50	High	Compliant	4.50	High	Compliant
A 06 04	Bed 1	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A 06 04	Bed 2	4.90	High	Compliant	4.90	High	Compliant
A 06 04	Bed 3	5.20	High	Compliant	5.20	High	Compliant
A 06 04	Bed 4	5.50	High	Compliant	5.50	High	Compliant
A 06 04	Bed 5	5.50	High	Compliant	5.50	High	Compliant
A 06 04	Bed 6	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 06 04	Bed 7	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 06 04	Bed 8	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
A 06 05	Studio	5.30	High	Compliant	5.60	High	Compliant
A 06 07	Kitchen	3.70	Medium	Compliant	3.70	Medium	Compliant
A 06 07	Living Room	2.70	Minimum	Compliant	2.70	Minimum	Compliant
A 06 07	Bed 1	3.30	Medium	Compliant	3.30	Medium	Compliant
A 06 07	Bed 2	4.00	High	Compliant	4.00	High	Compliant
A 06 07	Bed 3	3.30	Medium	Compliant	3.30	Medium	Compliant
A 06 07	Bed 4	4.00	High	Compliant	4.00	High	Compliant
A 06 07	Bed 5	2.90	Minimum	Compliant	3.10	Medium	Compliant
A 06 07	Bed 6	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A 06 07	Bed 7	2.90	Minimum	Compliant	2.90	Minimum	Compliant
A 06 07	Bed 8	2.10	Minimum	Compliant	2.10	Minimum	Compliant
A 07 02	Studio	5.10	High	Compliant	5.10	High	Compliant
A 07 04	LKD	4.70	High	Compliant	4.70	High	Compliant
A 07 04	Bed 1	3.20	Medium	Compliant	3.20	Medium	Compliant
A 07 04	Bed 2	7.20	High	Compliant	7.20	High	Compliant
A 07 04	Bed 3	6.90	High	Compliant	6.90	High	Compliant
A 07 04	Bed 4	7.70	High	Compliant	7.70	High	Compliant
A 07 04	Bed 5	7.40	High	Compliant	7.60	High	Compliant
A 07 05	Studio	7.00	High	Compliant	7.00	High	Compliant
A 07 07	Kitchen	4.90	High	Compliant	4.90	High	Compliant
A 07 07	Living Room	3.20	Medium	Compliant	3.20	Medium	Compliant
A 07 07	Bed 1	4.50	High	Compliant	4.50	High	Compliant
A 07 07	Bed 2	5.10	High	Compliant	5.10	High	Compliant
A 07 07	Bed 3	4.50	High	Compliant	4.50	High	Compliant
A 07 07	Bed 4	5.10	High	Compliant	5.10	High	Compliant
A 07 07	Bed 5	3.30	Medium	Compliant	3.30	Medium	Compliant
A 07 07	Bed 6	2.60	Minimum	Compliant	2.60	Minimum	Compliant
A 07 07	Bed 7	3.30	Medium	Compliant	3.30	Medium	Compliant
A 07 07	Bed 8	2.60	Minimum	Compliant	2.60	Minimum	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.
 ** For a unit to be compliant all occupants should have access to a room that can receive a minimum of 1.5 hours of direct sunlight on March 21st. The SE circa compliance rates can be found in section 5.2.2 on page 32.
 *** For the interpretation of levels of Sunlight Exposure please refer to "3.3.1 Level of Sunlight Exposure:" on page 12.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.3.7 SE Results: Core B - Level 01 & 02

Table No. C.3.7 - Sunlight Exposure Results: Core B - Level 01 & 02							
Unit Number	Room Description	Deciduous Trees as Opaque Objects*			Without Deciduous Trees*		
		SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**	SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**
B 01 01	Kitchen	1.70	Minimum	Compliant	1.70	Minimum	Compliant
B 01 01	Living Room	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 01 01	Bed 1	0.10	Below Minimum	Compliant	0.10	Below Minimum	Compliant
B 01 01	Bed 2	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 01 01	Bed 3	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 01 01	Bed 4	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 01 01	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 01 01	Bed 6	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 01 01	Bed 7	0.90	Below Minimum	Compliant	0.90	Below Minimum	Compliant
B 01 01	Bed 8	1.70	Minimum	Compliant	1.70	Minimum	Compliant
B 01 02	LKD	5.10	High	Compliant	5.10	High	Compliant
B 01 02	Bed 1	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 01 02	Bed 2	5.10	High	Compliant	5.10	High	Compliant
B 01 02	Bed 3	5.10	High	Compliant	5.10	High	Compliant
B 01 02	Bed 4	5.10	High	Compliant	5.10	High	Compliant
B 01 02	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 02 01	Kitchen	1.90	Minimum	Compliant	1.90	Minimum	Compliant
B 02 01	Living Room	1.10	Below Minimum	Compliant	1.10	Below Minimum	Compliant
B 02 01	Bed 1	0.10	Below Minimum	Compliant	0.10	Below Minimum	Compliant
B 02 01	Bed 2	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 02 01	Bed 3	0.10	Below Minimum	Compliant	0.10	Below Minimum	Compliant
B 02 01	Bed 4	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 02 01	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 02 01	Bed 6	1.10	Below Minimum	Compliant	1.10	Below Minimum	Compliant
B 02 01	Bed 7	1.70	Minimum	Compliant	1.70	Minimum	Compliant
B 02 01	Bed 8	2.00	Minimum	Compliant	2.00	Minimum	Compliant
B 02 02	LKD	5.10	High	Compliant	5.10	High	Compliant
B 02 02	Bed 1	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 02 02	Bed 2	5.10	High	Compliant	5.10	High	Compliant
B 02 02	Bed 3	5.10	High	Compliant	5.10	High	Compliant
B 02 02	Bed 4	5.10	High	Compliant	5.10	High	Compliant
B 02 02	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.
 ** For a unit to be compliant all occupants should have access to a room that can receive a minimum of 1.5 hours of direct sunlight on March 21st. The SE circa compliance rates can be found in section 5.2.2 on page 32.
 *** For the interpretation of levels of Sunlight Exposure please refer to "3.3.1 Level of Sunlight Exposure:" on page 12.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.3.8 SE Results: Core B - Level 03 & 04

Table No. C.3.8 - Sunlight Exposure Results: Core B - Level 03 & 04							
Unit Number	Room Description	Deciduous Trees as Opaque Objects*			Without Deciduous Trees*		
		SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**	SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**
B 03 01	Kitchen	1.90	Minimum	Compliant	1.90	Minimum	Compliant
B 03 01	Living Room	2.00	Minimum	Compliant	2.00	Minimum	Compliant
B 03 01	Bed 1	1.50	Minimum	Compliant	1.50	Minimum	Compliant
B 03 01	Bed 2	0.20	Below Minimum	Compliant	0.20	Below Minimum	Compliant
B 03 01	Bed 3	0.10	Below Minimum	Compliant	0.10	Below Minimum	Compliant
B 03 01	Bed 4	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 03 01	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 03 01	Bed 6	1.40	Below Minimum	Compliant	1.40	Below Minimum	Compliant
B 03 01	Bed 7	2.00	Minimum	Compliant	2.00	Minimum	Compliant
B 03 01	Bed 8	2.00	Minimum	Compliant	2.00	Minimum	Compliant
B 03 02	LKD	5.50	High	Compliant	5.50	High	Compliant
B 03 02	Bed 1	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 03 02	Bed 2	5.50	High	Compliant	5.50	High	Compliant
B 03 02	Bed 3	5.50	High	Compliant	5.50	High	Compliant
B 03 02	Bed 4	5.50	High	Compliant	5.50	High	Compliant
B 03 02	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 04 01	Kitchen	2.30	Minimum	Compliant	2.30	Minimum	Compliant
B 04 01	Living Room	2.20	Minimum	Compliant	2.20	Minimum	Compliant
B 04 01	Bed 1	2.70	Minimum	Compliant	2.70	Minimum	Compliant
B 04 01	Bed 2	1.40	Below Minimum	Compliant	1.40	Below Minimum	Compliant
B 04 01	Bed 3	2.00	Minimum	Compliant	2.00	Minimum	Compliant
B 04 01	Bed 4	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 04 01	Bed 5	0.50	Below Minimum	Compliant	0.50	Below Minimum	Compliant
B 04 01	Bed 6	1.60	Minimum	Compliant	1.60	Minimum	Compliant
B 04 01	Bed 7	2.00	Minimum	Compliant	2.00	Minimum	Compliant
B 04 01	Bed 8	2.00	Minimum	Compliant	2.00	Minimum	Compliant
B 04 02	LKD	7.90	High	Compliant	7.90	High	Compliant
B 04 02	Bed 1	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant
B 04 02	Bed 2	7.90	High	Compliant	7.90	High	Compliant
B 04 02	Bed 3	7.90	High	Compliant	7.90	High	Compliant
B 04 02	Bed 4	7.90	High	Compliant	7.90	High	Compliant
B 04 02	Bed 5	0.00	Below Minimum	Compliant	0.00	Below Minimum	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.
 ** For a unit to be compliant all occupants should have access to a room that can receive a minimum of 1.5 hours of direct sunlight on March 21st. The SE circa compliance rates can be found in section 5.2.2 on page 32.
 *** For the interpretation of levels of Sunlight Exposure please refer to "3.3.1 Level of Sunlight Exposure:" on page 12.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.3.9 SE Results: Core B - Level 05, 06 & 07

Table No. C.3.9 - Sunlight Exposure Results: Core B - Level 05, 06 & 07							
Unit Number	Room Description	Deciduous Trees as Opaque Objects*			Without Deciduous Trees*		
		SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**	SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**
B 05 01	Kitchen	3.00	Medium	Compliant	3.00	Medium	Compliant
B 05 01	Living Room	2.30	Minimum	Compliant	2.30	Minimum	Compliant
B 05 01	Bed 1	2.70	Minimum	Compliant	2.70	Minimum	Compliant
B 05 01	Bed 2	2.30	Minimum	Compliant	2.30	Minimum	Compliant
B 05 01	Bed 3	3.30	Medium	Compliant	3.30	Medium	Compliant
B 05 01	Bed 4	2.10	Minimum	Compliant	2.10	Minimum	Compliant
B 05 01	Bed 5	0.50	Below Minimum	Compliant	0.50	Below Minimum	Compliant
B 05 01	Bed 6	1.60	Minimum	Compliant	1.60	Minimum	Compliant
B 05 01	Bed 7	2.40	Minimum	Compliant	2.40	Minimum	Compliant
B 05 01	Bed 8	2.70	Minimum	Compliant	2.70	Minimum	Compliant
B 06 01	Kitchen	3.70	Medium	Compliant	3.70	Medium	Compliant
B 06 01	Living Room	2.80	Minimum	Compliant	2.80	Minimum	Compliant
B 06 01	Bed 1	3.00	Medium	Compliant	3.00	Medium	Compliant
B 06 01	Bed 2	2.30	Minimum	Compliant	2.30	Minimum	Compliant
B 06 01	Bed 3	3.30	Medium	Compliant	3.30	Medium	Compliant
B 06 01	Bed 4	2.60	Minimum	Compliant	2.60	Minimum	Compliant
B 06 01	Bed 5	0.80	Below Minimum	Compliant	0.80	Below Minimum	Compliant
B 06 01	Bed 6	2.30	Minimum	Compliant	2.30	Minimum	Compliant
B 06 01	Bed 7	3.10	Medium	Compliant	3.10	Medium	Compliant
B 06 01	Bed 8	3.40	Medium	Compliant	3.40	Medium	Compliant
B 07 01	Kitchen	4.90	High	Compliant	4.90	High	Compliant
B 07 01	Living Room	3.20	Medium	Compliant	3.20	Medium	Compliant
B 07 01	Bed 1	3.30	Medium	Compliant	3.30	Medium	Compliant
B 07 01	Bed 2	2.60	Minimum	Compliant	2.60	Minimum	Compliant
B 07 01	Bed 3	3.30	Medium	Compliant	3.30	Medium	Compliant
B 07 01	Bed 4	2.60	Minimum	Compliant	2.60	Minimum	Compliant
B 07 01	Bed 5	1.60	Minimum	Compliant	1.60	Minimum	Compliant
B 07 01	Bed 6	3.10	Medium	Compliant	3.10	Medium	Compliant
B 07 01	Bed 7	4.10	High	Compliant	4.10	High	Compliant
B 07 01	Bed 8	5.10	High	Compliant	5.10	High	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.
 ** For a unit to be compliant all occupants should have access to a room that can receive a minimum of 1.5 hours of direct sunlight on March 21st. The SE circa compliance rates can be found in section 5.2.2 on page 32.
 *** For the interpretation of levels of Sunlight Exposure please refer to "3.3.1 Level of Sunlight Exposure:" on page 12.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.3.10 SE Results: Core C - Level 01, 02 & 03

Table No. C.3.10 - Sunlight Exposure Results: Core C - Level 01, 02 & 03							
Unit Number	Room Description	Deciduous Trees as Opaque Objects*			Without Deciduous Trees*		
		SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**	SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**
C 01 01	LKD	0.50	Below Minimum	Non-Compliant	0.50	Below Minimum	Non-Compliant
C 01 01	Bed 1	1.90	Minimum	Non-Compliant	1.90	Minimum	Non-Compliant
C 01 01	Bed 2	1.20	Below Minimum	Non-Compliant	1.20	Below Minimum	Non-Compliant
C 01 01	Bed 3	1.50	Minimum	Non-Compliant	1.50	Minimum	Non-Compliant
C 01 01	Bed 4	1.60	Minimum	Non-Compliant	1.60	Minimum	Non-Compliant
C 01 01	Bed 5	0.50	Below Minimum	Non-Compliant	0.50	Below Minimum	Non-Compliant
C 01 01	Bed 6	0.50	Below Minimum	Non-Compliant	0.50	Below Minimum	Non-Compliant
C 01 02	Studio	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
C 01 03	Studio	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
C 01 04	Studio	8.30	High	Compliant	8.30	High	Compliant
C 01 05	Studio	8.10	High	Compliant	8.10	High	Compliant
C 01 06	Studio	8.30	High	Compliant	8.30	High	Compliant
C 01 07	Studio	8.30	High	Compliant	8.30	High	Compliant
C 02 01	LKD	0.70	Below Minimum	Compliant	0.80	Below Minimum	Compliant
C 02 01	Bed 1	2.10	Minimum	Compliant	2.10	Minimum	Compliant
C 02 01	Bed 2	1.50	Minimum	Compliant	1.50	Minimum	Compliant
C 02 01	Bed 3	2.20	Minimum	Compliant	2.20	Minimum	Compliant
C 02 01	Bed 4	1.60	Minimum	Compliant	1.60	Minimum	Compliant
C 02 01	Bed 5	1.80	Minimum	Compliant	1.80	Minimum	Compliant
C 02 01	Bed 6	1.50	Minimum	Compliant	1.50	Minimum	Compliant
C 02 02	Studio	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
C 02 03	Studio	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
C 02 04	Studio	8.30	High	Compliant	8.30	High	Compliant
C 02 05	Studio	8.10	High	Compliant	8.10	High	Compliant
C 02 06	Studio	8.30	High	Compliant	8.30	High	Compliant
C 02 07	Studio	8.30	High	Compliant	8.30	High	Compliant
C 02 08	Studio	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
C 03 01	LKD	0.90	Below Minimum	Compliant	1.30	Below Minimum	Compliant
C 03 01	Bed 1	2.30	Minimum	Compliant	2.40	Minimum	Compliant
C 03 01	Bed 2	1.80	Minimum	Compliant	1.80	Minimum	Compliant
C 03 01	Bed 3	2.60	Minimum	Compliant	2.60	Minimum	Compliant
C 03 01	Bed 4	1.90	Minimum	Compliant	1.90	Minimum	Compliant
C 03 01	Bed 5	2.10	Minimum	Compliant	2.10	Minimum	Compliant
C 03 01	Bed 6	1.50	Minimum	Compliant	1.50	Minimum	Compliant
C 03 02	Studio	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
C 03 03	Studio	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
C 03 04	Studio	8.30	High	Compliant	8.30	High	Compliant
C 03 05	Studio	8.10	High	Compliant	8.10	High	Compliant
C 03 06	Studio	8.30	High	Compliant	8.30	High	Compliant
C 03 07	Studio	8.30	High	Compliant	8.30	High	Compliant
C 03 08	Studio	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.
 ** For a unit to be compliant all occupants should have access to a room that can receive a minimum of 1.5 hours of direct sunlight on March 21st. The SE circa compliance rates can be found in section 5.2.2 on page 32.
 *** For the interpretation of levels of Sunlight Exposure please refer to "3.3.1 Level of Sunlight Exposure:" on page 12.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.3.11 SE Results: Core C - Level 04, 05, 06 & 07

Table No. C.3.11 - Sunlight Exposure Results: Core C - Level 04, 05, 06 & 07							
Unit Number	Room Description	Deciduous Trees as Opaque Objects*			Without Deciduous Trees*		
		SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**	SE Hours on March 21st	Level of SE on March 21st***	Unit Compliance**
C 04 01	LKD	1.70	Minimum	Compliant	1.80	Minimum	Compliant
C 04 01	Bed 1	2.50	Minimum	Compliant	3.00	Medium	Compliant
C 04 01	Bed 2	2.10	Minimum	Compliant	2.30	Minimum	Compliant
C 04 01	Bed 3	2.80	Minimum	Compliant	3.00	Medium	Compliant
C 04 01	Bed 4	2.30	Minimum	Compliant	2.30	Minimum	Compliant
C 04 01	Bed 5	2.60	Minimum	Compliant	2.60	Minimum	Compliant
C 04 01	Bed 6	1.80	Minimum	Compliant	1.80	Minimum	Compliant
C 04 04	Studio	7.80	High	Compliant	7.80	High	Compliant
C 04 05	Studio	9.10	High	Compliant	9.10	High	Compliant
C 04 06	Studio	9.10	High	Compliant	9.10	High	Compliant
C 05 01	LKD	2.40	Minimum	Compliant	2.50	Minimum	Compliant
C 05 01	Bed 1	3.50	Medium	Compliant	3.60	Medium	Compliant
C 05 01	Bed 2	2.50	Minimum	Compliant	3.00	Medium	Compliant
C 05 01	Bed 3	3.20	Medium	Compliant	3.60	Medium	Compliant
C 05 01	Bed 4	2.70	Minimum	Compliant	3.00	Medium	Compliant
C 05 01	Bed 5	3.10	Medium	Compliant	3.20	Medium	Compliant
C 05 01	Bed 6	2.40	Minimum	Compliant	2.40	Minimum	Compliant
C 06 01	LKD	3.10	Medium	Compliant	3.20	Medium	Compliant
C 06 01	Bed 1	4.40	High	Compliant	4.50	High	Compliant
C 06 01	Bed 2	3.50	Medium	Compliant	3.80	Medium	Compliant
C 06 01	Bed 3	4.00	High	Compliant	4.40	High	Compliant
C 06 01	Bed 4	3.50	Medium	Compliant	3.90	Medium	Compliant
C 06 01	Bed 5	3.40	Medium	Compliant	4.00	High	Compliant
C 06 01	Bed 6	2.90	Minimum	Compliant	3.10	Medium	Compliant
C 07 01	LKD	3.60	Medium	Compliant	3.60	Medium	Compliant
C 07 01	Bed 1	5.20	High	Compliant	5.20	High	Compliant
C 07 01	Bed 2	4.50	High	Compliant	4.50	High	Compliant
C 07 01	Bed 3	5.10	High	Compliant	5.20	High	Compliant
C 07 01	Bed 4	4.40	High	Compliant	4.50	High	Compliant
C 07 01	Bed 5	4.70	High	Compliant	5.20	High	Compliant
C 07 01	Bed 6	3.50	Medium	Compliant	3.90	Medium	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.
 ** For a unit to be compliant all occupants should have access to a room that can receive a minimum of 1.5 hours of direct sunlight on March 21st. The SE circa compliance rates can be found in section 5.2.2 on page 32.
 *** For the interpretation of levels of Sunlight Exposure please refer to "3.3.1 Level of Sunlight Exposure:" on page 12.
 For floor plans of the assessed units please refer to section C.1 on page 75.

C.4 Sun On Ground (SOG) in Proposed Outdoor Amenity Areas

Below is an example of the table used to describe SOG in proposed gardens and amenity spaces.

Table Example. C.4 - Scheme Performance SOG					
Assigned Area Number	Assessed Area	Area Capable of Receiving 2 Hours of Sunlight on March 21st	Recommended Minimum	Level of Compliance with BRE Guidelines	Meets BR 209 Criteria
A	B	C	D	E	F

- A: Assigned Area Number**
This column indicates the number that 3DDB have assigned to the assessed areas, which is included for the sole purpose of aiding in the identification of the corresponding space shown in the corresponding figure.
- B: Assessed Area**
This column identifies the assessed garden/amenity area.
- C: Area Capable of Receiving 2 Hours of Sunlight on March 21st**
The percentage of the proposed area that can receive more than 2 hours of sunlight on March 21st.
- D: Recommended Minimum**
The BRE Guidelines state that the percentage of a garden/amenity area that can receive more than 2 hours of sunlight on March 21st should be 50%. The target value for all spaces is set to 50%.
- E: Level of Compliance with BRE Guidelines**
This column states the compliance of the assessed space with the *BRE Target Value*. If the assessed garden or amenity area complies with the BRE Guidelines this cell will state “*BRE Compliant*”. If the garden or amenity area does not meet the criteria as set out in the BRE Guidelines, a percentage of compliance with the *recommended minimum* will be stated.
- F: Meets BR 209 Criteria**
This column states if the assessed area achieves the recommended level of sunlight on March 21st as per BR 209.
- It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation of these figures may yield a negligible difference and should not be considered an error.

C.4.1 Sun On Ground in Proposed Outdoor Amenity Areas

Table No. C.4.1 - SOG in Proposed Outdoor Amenity Areas Results:					
Assigned Area Number	Assessed Area	Area Capable of Receiving 2 Hours of Sunlight on March 21st	Recommended minimum	Level of Compliance with BRE Guidelines*	Meets BR 209 Criteria*
1	Basement Level Communal Amenity	0.00%	50.00%	0%	No
2	Level 5 Communal Amenity	95.56%	50.00%	BRE Compliant	Yes
3	Level 6 Communal Amenity	23.95%	50.00%	48%	No
4	Level 8, West Communal Amenity	87.53%	50.00%	BRE Compliant	Yes
5	Level 8, North Communal Amenity	81.83%	50.00%	BRE Compliant	Yes
1-5**	Combined Communal Amenity**	71.59%	50.00%	BRE Compliant	Yes

* The BRE Guidelines recommend that for a garden or amenity 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 March 21st.

** Average values have been calculated by considering all the relevant areas as a singular area and calculating what portion of the spaces as a whole can receive at least two hours of sunlight on March 21st.



Fig. C.25: Indication of the amenity areas that have been analysed (L), Area capable of receiving 2 hours of sunlight on March 21st shown in white (R)

D.0 Supplementary Study Results

D.1 SDA study, under the I.S. EN 17037 criteria

Below is an example of the table used to describe the supplementary study results for proposed units in the assessment of SDA under the I.S. EN 17037 criteria.

Table Example. D.1 - Supplementary SDA Results (I.S. EN 17037 criteria)						
Unit Number	Room Description	No Trees		With Trees		Compliance with I.S. EN 17037 Criteria
		Area above 300 Lux	Area above 100 Lux	Area above 300 Lux	Area above 100 Lux	
A	B	C	D	E	F	G

A: Unit Number

This column identifies the assessed unit. All unit numbers are determined by the architect's drawings, unless otherwise stated.

B: Room Description

Room Description details which room in the unit has been assessed, e.g. bedroom, LKD, etc.

C: % of area above 300 Lux (No Trees)

I.S. EN 17037 recommends at least 50% of the working plane receives above 300 lux for at least half the daylight hours.

This column states percentage of the working plane of the assessed room that is capable of receiving more than 300 lux for at least half the daylight hours when the assessment is carried out without trees in the analytical model.

D: % of area above 100 Lux (No Trees)

I.S. EN 17037 recommends at least 95% of the working plane receives above 100 lux for at least half the daylight hours.

This column states percentage of the working plane of the assessed room that is capable of receiving more than 100 lux for at least half the daylight hours when the assessment is carried out without trees in the analytical model.

E: % of area above 300 Lux (Winter Trees)

I.S. EN 17037 recommends at least 50% of the working plane receives above 300 lux for at least half the daylight hours.

This column states percentage of the working plane of the assessed room that is capable of receiving more than 300 lux for at least half the daylight hours with the foliage of deciduous trees varied to account for summer and winter conditions, i.e. full leaf and bare branch.

F: % of area above 100 Lux (Winter Trees)

I.S. EN 17037 recommends at least 95% of the working plane receives above 100 lux for at least half the daylight hours.

This column states percentage of the working plane of the assessed room that is capable of receiving more than 100 lux for at least half the daylight hours with the foliage of deciduous trees varied to account for summer and winter conditions.

G: Compliance with I.S. EN 17037 Criteria

This column states if the assessed room achieves the recommended level of daylight as per I.S. EN 17037 with consideration to the various tree states.

If the recommended lux levels are achieved on the working plane, for half the daylight hours, both with and without trees, this column will state: *'Compliant'*.

If the recommended lux levels are not achieved on the working plane, for half the daylight hours, both with and without trees, this column will state: *'Non-compliant'*.

If the recommended lux levels are achieved on the working plane, for half the daylight hours, without trees but are not achieved with trees, this column will state: *'Trees affecting compliance'*.

Compliance rates will be stated for SDA compliance with trees in all of the above states.

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation of these figures may yield a negligible difference and should not be considered an error.

D.1.1 Supplementary SDA Results (I.S. EN 17037 criteria): Core A - Level 01

Table No. D.1.1 - Supplementary SDA Results (I.S. EN 17037 criteria): Core A - Level 01						
Unit Number	Room Description	No Trees		With Trees		Compliance with I.S. EN 17037 Criteria*
		Area above 300 Lux*	Area above 100 Lux*	Area above 300 Lux*	Area above 100 Lux*	
A 01 01	LKD	67%	100%	67%	100%	Compliant
A 01 01	Bed 1	0%	86%	0%	86%	Non-compliant
A 01 01	Bed 2	81%	100%	81%	100%	Compliant
A 01 01	Bed 3	53%	88%	53%	88%	Non-compliant
A 01 01	Bed 4	38%	100%	38%	100%	Non-compliant
A 01 01	Bed 5	25%	100%	25%	100%	Non-compliant
A 01 01	Bed 6	29%	100%	29%	100%	Non-compliant
A 01 02	Studio	23%	100%	23%	100%	Non-compliant
A 01 03	LKD	60%	100%	60%	100%	Compliant
A 01 03	Bed 1	26%	100%	26%	100%	Non-compliant
A 01 03	Bed 2	24%	100%	24%	100%	Non-compliant
A 01 03	Bed 3	19%	96%	19%	96%	Non-compliant
A 01 03	Bed 4	14%	82%	14%	82%	Non-compliant
A 01 03	Bed 5	14%	68%	14%	68%	Non-compliant
A 01 03	Bed 6	10%	60%	10%	60%	Non-compliant
A 01 04	LKD	10%	49%	10%	49%	Non-compliant
A 01 04	Bed 1	100%	100%	100%	100%	Compliant
A 01 04	Bed 2	88%	100%	88%	100%	Compliant
A 01 04	Bed 3	83%	100%	83%	100%	Compliant
A 01 04	Bed 4	88%	100%	88%	100%	Compliant
A 01 04	Bed 5	79%	100%	79%	100%	Compliant
A 01 05	Studio	73%	100%	73%	100%	Compliant
A 01 06	Kitchen	25%	84%	25%	84%	Non-compliant
A 01 06	Living Room	21%	76%	21%	76%	Non-compliant
A 01 06	Bed 1	25%	100%	25%	100%	Non-compliant
A 01 06	Bed 2	25%	100%	25%	100%	Non-compliant
A 01 06	Bed 3	25%	100%	25%	100%	Non-compliant
A 01 06	Bed 4	25%	100%	25%	100%	Non-compliant
A 01 06	Bed 5	38%	100%	38%	100%	Non-compliant
A 01 06	Bed 6	38%	100%	38%	100%	Non-compliant
A 01 06	Bed 7	38%	96%	38%	96%	Non-compliant
A 01 06	Bed 8	38%	100%	38%	100%	Non-compliant
A 01 07	Studio	58%	100%	58%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
For floor plans of the assessed units please refer to section C.1 on page 75.

D.1.2 Supplementary SDA Results (I.S. EN 17037 criteria): Core A - Level 02

Table No. D.1.2 - Supplementary SDA Results (I.S. EN 17037 criteria): Core A - Level 02						
Unit Number	Room Description	No Trees		With Trees		Compliance with I.S. EN 17037 Criteria*
		Area above 300 Lux*	Area above 100 Lux*	Area above 300 Lux*	Area above 100 Lux*	
A 02 01	LKD	67%	100%	67%	100%	Compliant
A 02 01	Bed 1	2%	94%	2%	94%	Non-compliant
A 02 01	Bed 2	88%	100%	88%	100%	Compliant
A 02 01	Bed 3	59%	88%	59%	88%	Non-compliant
A 02 01	Bed 4	50%	100%	50%	100%	Compliant
A 02 01	Bed 5	38%	100%	38%	100%	Non-compliant
A 02 01	Bed 6	43%	100%	43%	100%	Non-compliant
A 02 02	Studio	46%	100%	46%	100%	Non-compliant
A 02 03	LKD	65%	100%	65%	100%	Compliant
A 02 03	Bed 1	52%	100%	52%	100%	Compliant
A 02 03	Bed 2	36%	100%	36%	100%	Non-compliant
A 02 03	Bed 3	35%	100%	35%	100%	Non-compliant
A 02 03	Bed 4	32%	100%	32%	100%	Non-compliant
A 02 03	Bed 5	25%	100%	25%	100%	Non-compliant
A 02 03	Bed 6	27%	87%	27%	87%	Non-compliant
A 02 04	LKD	17%	85%	17%	85%	Non-compliant
A 02 04	Bed 1	100%	100%	100%	100%	Compliant
A 02 04	Bed 2	96%	100%	96%	100%	Compliant
A 02 04	Bed 3	96%	100%	96%	100%	Compliant
A 02 04	Bed 4	100%	100%	100%	100%	Compliant
A 02 04	Bed 5	100%	100%	100%	100%	Compliant
A 02 05	Studio	87%	100%	87%	100%	Compliant
A 02 06	Kitchen	30%	95%	30%	95%	Non-compliant
A 02 06	Living Room	29%	100%	29%	98%	Non-compliant
A 02 06	Bed 1	25%	100%	25%	100%	Non-compliant
A 02 06	Bed 2	29%	100%	29%	100%	Non-compliant
A 02 06	Bed 3	25%	100%	25%	100%	Non-compliant
A 02 06	Bed 4	25%	100%	25%	100%	Non-compliant
A 02 06	Bed 5	38%	100%	38%	100%	Non-compliant
A 02 06	Bed 6	38%	100%	38%	100%	Non-compliant
A 02 06	Bed 7	42%	100%	42%	100%	Non-compliant
A 02 06	Bed 8	50%	100%	50%	100%	Compliant
A 02 07	Studio	58%	100%	58%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
For floor plans of the assessed units please refer to section C.1 on page 75.

D.1.3 Supplementary SDA Results (I.S. EN 17037 criteria): Core A - Level 03

Table No. D.1.3 - Supplementary SDA Results (I.S. EN 17037 criteria): Core A - Level 03						
Unit Number	Room Description	No Trees		With Trees		Compliance with I.S. EN 17037 Criteria*
		Area above 300 Lux*	Area above 100 Lux*	Area above 300 Lux*	Area above 100 Lux*	
A 03 01	LKD	80%	100%	80%	100%	Compliant
A 03 01	Bed 1	27%	100%	27%	100%	Non-compliant
A 03 01	Bed 2	96%	100%	96%	100%	Compliant
A 03 01	Bed 3	78%	88%	78%	88%	Non-compliant
A 03 01	Bed 4	79%	100%	79%	100%	Compliant
A 03 01	Bed 5	67%	100%	67%	100%	Compliant
A 03 01	Bed 6	81%	100%	81%	100%	Compliant
A 03 02	Studio	81%	100%	81%	100%	Compliant
A 03 03	LKD	99%	100%	99%	100%	Compliant
A 03 03	Bed 1	70%	100%	70%	100%	Compliant
A 03 03	Bed 2	67%	100%	67%	100%	Compliant
A 03 03	Bed 3	54%	100%	54%	100%	Compliant
A 03 03	Bed 4	70%	97%	70%	97%	Compliant
A 03 03	Bed 5	46%	100%	46%	100%	Non-compliant
A 03 03	Bed 6	48%	100%	48%	100%	Non-compliant
A 03 04	LKD	27%	97%	27%	97%	Non-compliant
A 03 04	Bed 1	100%	100%	100%	100%	Compliant
A 03 04	Bed 2	100%	100%	100%	100%	Compliant
A 03 04	Bed 3	100%	100%	100%	100%	Compliant
A 03 04	Bed 4	100%	100%	100%	100%	Compliant
A 03 04	Bed 5	100%	100%	100%	100%	Compliant
A 03 05	Studio	98%	100%	98%	100%	Compliant
A 03 06	Kitchen	45%	100%	45%	100%	Non-compliant
A 03 06	Living Room	51%	100%	50%	100%	Compliant
A 03 06	Bed 1	42%	100%	42%	100%	Non-compliant
A 03 06	Bed 2	50%	100%	46%	100%	Trees affecting compliance
A 03 06	Bed 3	38%	100%	38%	100%	Non-compliant
A 03 06	Bed 4	38%	100%	38%	100%	Non-compliant
A 03 06	Bed 5	54%	100%	54%	100%	Compliant
A 03 06	Bed 6	63%	100%	58%	100%	Compliant
A 03 06	Bed 7	67%	100%	67%	100%	Compliant
A 03 06	Bed 8	67%	100%	67%	100%	Compliant
A 03 07	Studio	69%	100%	68%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
For floor plans of the assessed units please refer to section C.1 on page 75.

D.1.4 Supplementary SDA Results (I.S. EN 17037 criteria): Core A - Level 04

Table No. D.1.4 - Supplementary SDA Results (I.S. EN 17037 criteria): Core A - Level 04						
Unit Number	Room Description	No Trees		With Trees		Compliance with I.S. EN 17037 Criteria*
		Area above 300 Lux*	Area above 100 Lux*	Area above 300 Lux*	Area above 100 Lux*	
A 04 01	LKD	100%	100%	100%	100%	Compliant
A 04 01	Bed 1	81%	100%	81%	100%	Compliant
A 04 01	Bed 2	100%	100%	100%	100%	Compliant
A 04 01	Bed 3	88%	88%	88%	88%	Non-compliant
A 04 01	Bed 4	100%	100%	100%	100%	Compliant
A 04 01	Bed 5	100%	100%	100%	100%	Compliant
A 04 01	Bed 6	100%	100%	100%	100%	Compliant
A 04 02	Studio	100%	100%	100%	100%	Compliant
A 04 03	LKD	100%	100%	100%	100%	Compliant
A 04 03	Bed 1	100%	100%	100%	100%	Compliant
A 04 03	Bed 2	100%	100%	100%	100%	Compliant
A 04 03	Bed 3	96%	100%	92%	100%	Compliant
A 04 03	Bed 4	79%	100%	79%	100%	Compliant
A 04 03	Bed 5	71%	100%	71%	100%	Compliant
A 04 03	Bed 6	72%	100%	72%	100%	Compliant
A 04 04	LKD	57%	100%	56%	100%	Compliant
A 04 04	Bed 1	100%	100%	100%	100%	Compliant
A 04 04	Bed 2	100%	100%	100%	100%	Compliant
A 04 04	Bed 3	100%	100%	100%	100%	Compliant
A 04 04	Bed 4	100%	100%	100%	100%	Compliant
A 04 04	Bed 5	100%	100%	100%	100%	Compliant
A 04 05	Studio	100%	100%	100%	100%	Compliant
A 04 06	Kitchen	60%	100%	60%	100%	Compliant
A 04 06	Living Room	65%	100%	65%	100%	Compliant
A 04 06	Bed 1	67%	100%	67%	100%	Compliant
A 04 06	Bed 2	67%	100%	67%	100%	Compliant
A 04 06	Bed 3	67%	100%	63%	100%	Compliant
A 04 06	Bed 4	67%	100%	67%	100%	Compliant
A 04 06	Bed 5	79%	100%	79%	100%	Compliant
A 04 06	Bed 6	83%	100%	83%	100%	Compliant
A 04 06	Bed 7	100%	100%	88%	100%	Compliant
A 04 06	Bed 8	100%	100%	100%	100%	Compliant
A 04 07	Studio	93%	100%	93%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
For floor plans of the assessed units please refer to section C.1 on page 75.

D.1.5 Supplementary SDA Results (I.S. EN 17037 criteria): Core A - Level 05

Table No. D.1.5 - Supplementary SDA Results (I.S. EN 17037 criteria): Core A - Level 05						
Unit Number	Room Description	No Trees		With Trees		Compliance with I.S. EN 17037 Criteria*
		Area above 300 Lux*	Area above 100 Lux*	Area above 300 Lux*	Area above 100 Lux*	
A 05 01	LKD	100%	100%	100%	100%	Compliant
A 05 01	Bed 1	100%	100%	100%	100%	Compliant
A 05 01	Bed 2	100%	100%	100%	100%	Compliant
A 05 01	Bed 3	88%	88%	88%	88%	Non-compliant
A 05 01	Bed 4	100%	100%	100%	100%	Compliant
A 05 01	Bed 5	100%	100%	100%	100%	Compliant
A 05 01	Bed 6	100%	100%	100%	100%	Compliant
A 05 02	Studio	100%	100%	100%	100%	Compliant
A 05 03	LKD	100%	100%	100%	100%	Compliant
A 05 03	Bed 1	100%	100%	100%	100%	Compliant
A 05 03	Bed 2	88%	92%	88%	92%	Non-compliant
A 05 03	Bed 3	100%	100%	100%	100%	Compliant
A 05 03	Bed 4	97%	97%	97%	97%	Compliant
A 05 03	Bed 5	100%	100%	100%	100%	Compliant
A 05 03	Bed 6	100%	100%	100%	100%	Compliant
A 05 04	LKD	76%	100%	76%	100%	Compliant
A 05 04	Bed 1	100%	100%	100%	100%	Compliant
A 05 04	Bed 2	100%	100%	100%	100%	Compliant
A 05 04	Bed 3	100%	100%	100%	100%	Compliant
A 05 04	Bed 4	100%	100%	100%	100%	Compliant
A 05 04	Bed 5	100%	100%	100%	100%	Compliant
A 05 05	Studio	100%	100%	100%	100%	Compliant
A 05 06	Kitchen	72%	100%	71%	100%	Compliant
A 05 06	Living Room	79%	100%	79%	100%	Compliant
A 05 06	Bed 1	100%	100%	100%	100%	Compliant
A 05 06	Bed 2	100%	100%	100%	100%	Compliant
A 05 06	Bed 3	100%	100%	100%	100%	Compliant
A 05 06	Bed 4	100%	100%	100%	100%	Compliant
A 05 06	Bed 5	100%	100%	100%	100%	Compliant
A 05 06	Bed 6	100%	100%	100%	100%	Compliant
A 05 06	Bed 7	100%	100%	100%	100%	Compliant
A 05 06	Bed 8	100%	100%	100%	100%	Compliant
A 05 07	Studio	100%	100%	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
For floor plans of the assessed units please refer to section C.1 on page 75.

D.1.6 Supplementary SDA Results (I.S. EN 17037 criteria): Core A - Level 06 & 07

Table No. D.1.6 - Supplementary SDA Results (I.S. EN 17037 criteria): Core A - Level 06 & 07						
Unit Number	Room Description	No Trees		With Trees		Compliance with I.S. EN 17037 Criteria*
		Area above 300 Lux*	Area above 100 Lux*	Area above 300 Lux*	Area above 100 Lux*	
A 06 03	Studio	100%	100%	93%	100%	Compliant
A 06 04	LKD	84%	100%	83%	100%	Compliant
A 06 04	Bed 1	100%	100%	100%	100%	Compliant
A 06 04	Bed 2	100%	100%	100%	100%	Compliant
A 06 04	Bed 3	100%	100%	100%	100%	Compliant
A 06 04	Bed 4	100%	100%	100%	100%	Compliant
A 06 04	Bed 5	100%	100%	100%	100%	Compliant
A 06 04	Bed 6	100%	100%	100%	100%	Compliant
A 06 04	Bed 7	100%	100%	100%	100%	Compliant
A 06 04	Bed 8	100%	100%	100%	100%	Compliant
A 06 05	Studio	100%	100%	100%	100%	Compliant
A 06 07	Kitchen	100%	100%	100%	100%	Compliant
A 06 07	Living Room	100%	100%	100%	100%	Compliant
A 06 07	Bed 1	100%	100%	100%	100%	Compliant
A 06 07	Bed 2	100%	100%	100%	100%	Compliant
A 06 07	Bed 3	100%	100%	100%	100%	Compliant
A 06 07	Bed 4	100%	100%	100%	100%	Compliant
A 06 07	Bed 5	100%	100%	100%	100%	Compliant
A 06 07	Bed 6	100%	100%	100%	100%	Compliant
A 06 07	Bed 7	100%	100%	100%	100%	Compliant
A 06 07	Bed 8	100%	100%	100%	100%	Compliant
A 07 02	Studio	100%	100%	100%	100%	Compliant
A 07 04	LKD	100%	100%	100%	100%	Compliant
A 07 04	Bed 1	100%	100%	100%	100%	Compliant
A 07 04	Bed 2	100%	100%	100%	100%	Compliant
A 07 04	Bed 3	100%	100%	100%	100%	Compliant
A 07 04	Bed 4	100%	100%	100%	100%	Compliant
A 07 04	Bed 5	100%	100%	100%	100%	Compliant
A 07 05	Studio	100%	100%	100%	100%	Compliant
A 07 07	Kitchen	100%	100%	100%	100%	Compliant
A 07 07	Living Room	100%	100%	100%	100%	Compliant
A 07 07	Bed 1	100%	100%	100%	100%	Compliant
A 07 07	Bed 2	100%	100%	100%	100%	Compliant
A 07 07	Bed 3	100%	100%	100%	100%	Compliant
A 07 07	Bed 4	100%	100%	100%	100%	Compliant
A 07 07	Bed 5	100%	100%	100%	100%	Compliant
A 07 07	Bed 6	100%	100%	100%	100%	Compliant
A 07 07	Bed 7	100%	100%	100%	100%	Compliant
A 07 07	Bed 8	100%	100%	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
For floor plans of the assessed units please refer to section C.1 on page 75.

D.1.7 Supplementary SDA Results (I.S. EN 17037 criteria): Core B - Level 01 & 02

Table No. D.1.7 - Supplementary SDA Results (I.S. EN 17037 criteria): Core B - Level 01 & 02						
Unit Number	Room Description	No Trees		With Trees		Compliance with I.S. EN 17037 Criteria*
		Area above 300 Lux*	Area above 100 Lux*	Area above 300 Lux*	Area above 100 Lux*	
B 01 01	Kitchen	27%	88%	27%	88%	Non-compliant
B 01 01	Living Room	21%	78%	21%	77%	Non-compliant
B 01 01	Bed 1	38%	100%	38%	100%	Non-compliant
B 01 01	Bed 2	25%	83%	25%	83%	Non-compliant
B 01 01	Bed 3	21%	54%	21%	54%	Non-compliant
B 01 01	Bed 4	25%	75%	25%	71%	Non-compliant
B 01 01	Bed 5	33%	100%	33%	100%	Non-compliant
B 01 01	Bed 6	38%	100%	38%	100%	Non-compliant
B 01 01	Bed 7	38%	100%	38%	100%	Non-compliant
B 01 01	Bed 8	33%	100%	33%	100%	Non-compliant
B 01 02	LKD	50%	100%	50%	100%	Compliant
B 01 02	Bed 1	11%	79%	9%	79%	Non-compliant
B 01 02	Bed 2	100%	100%	100%	100%	Compliant
B 01 02	Bed 3	91%	100%	91%	100%	Compliant
B 01 02	Bed 4	100%	100%	100%	100%	Compliant
B 01 02	Bed 5	0%	24%	0%	24%	Non-compliant
B 02 01	Kitchen	32%	96%	32%	96%	Non-compliant
B 02 01	Living Room	30%	100%	30%	100%	Non-compliant
B 02 01	Bed 1	50%	100%	46%	100%	Trees affecting compliance
B 02 01	Bed 2	38%	100%	38%	100%	Non-compliant
B 02 01	Bed 3	38%	100%	38%	100%	Non-compliant
B 02 01	Bed 4	38%	100%	38%	100%	Non-compliant
B 02 01	Bed 5	38%	100%	38%	100%	Non-compliant
B 02 01	Bed 6	42%	100%	42%	100%	Non-compliant
B 02 01	Bed 7	42%	100%	42%	100%	Non-compliant
B 02 01	Bed 8	38%	100%	38%	100%	Non-compliant
B 02 02	LKD	51%	100%	51%	100%	Compliant
B 02 02	Bed 1	10%	80%	10%	80%	Non-compliant
B 02 02	Bed 2	100%	100%	100%	100%	Compliant
B 02 02	Bed 3	91%	100%	91%	100%	Compliant
B 02 02	Bed 4	100%	100%	100%	100%	Compliant
B 02 02	Bed 5	0%	22%	0%	22%	Non-compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
For floor plans of the assessed units please refer to section C.1 on page 75.

D.1.8 Supplementary SDA Results (I.S. EN 17037 criteria): Core B - Level 03 & 04

Table No. D.1.8 - Supplementary SDA Results (I.S. EN 17037 criteria): Core B - Level 03 & 04						
Unit Number	Room Description	No Trees		With Trees		Compliance with I.S. EN 17037 Criteria*
		Area above 300 Lux*	Area above 100 Lux*	Area above 300 Lux*	Area above 100 Lux*	
B 03 01	Kitchen	48%	100%	48%	100%	Non-compliant
B 03 01	Living Room	55%	100%	54%	100%	Compliant
B 03 01	Bed 1	67%	100%	67%	100%	Compliant
B 03 01	Bed 2	67%	100%	67%	100%	Compliant
B 03 01	Bed 3	67%	100%	67%	100%	Compliant
B 03 01	Bed 4	67%	100%	67%	100%	Compliant
B 03 01	Bed 5	50%	100%	50%	100%	Compliant
B 03 01	Bed 6	63%	100%	63%	100%	Compliant
B 03 01	Bed 7	63%	100%	63%	100%	Compliant
B 03 01	Bed 8	63%	100%	63%	100%	Compliant
B 03 02	LKD	32%	100%	32%	100%	Non-compliant
B 03 02	Bed 1	18%	100%	18%	100%	Non-compliant
B 03 02	Bed 2	100%	100%	100%	100%	Compliant
B 03 02	Bed 3	59%	100%	59%	100%	Compliant
B 03 02	Bed 4	100%	100%	100%	100%	Compliant
B 03 02	Bed 5	2%	63%	2%	63%	Non-compliant
B 04 01	Kitchen	63%	100%	63%	100%	Compliant
B 04 01	Living Room	70%	100%	68%	100%	Compliant
B 04 01	Bed 1	100%	100%	100%	100%	Compliant
B 04 01	Bed 2	100%	100%	100%	100%	Compliant
B 04 01	Bed 3	100%	100%	100%	100%	Compliant
B 04 01	Bed 4	100%	100%	92%	100%	Compliant
B 04 01	Bed 5	71%	100%	71%	100%	Compliant
B 04 01	Bed 6	92%	100%	92%	100%	Compliant
B 04 01	Bed 7	83%	100%	83%	100%	Compliant
B 04 01	Bed 8	83%	100%	83%	100%	Compliant
B 04 02	LKD	10%	89%	10%	89%	Non-compliant
B 04 02	Bed 1	24%	100%	22%	100%	Non-compliant
B 04 02	Bed 2	53%	100%	53%	100%	Compliant
B 04 02	Bed 3	24%	100%	24%	100%	Non-compliant
B 04 02	Bed 4	35%	100%	35%	100%	Non-compliant
B 04 02	Bed 5	11%	100%	11%	100%	Non-compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
For floor plans of the assessed units please refer to section C.1 on page 75.

D.1.9 Supplementary SDA Results (I.S. EN 17037 criteria): Core B - Level 05, 06 & 07

Table No. D.1.9 - Supplementary SDA Results (I.S. EN 17037 criteria): Core B - Level 05, 06 & 07						
Unit Number	Room Description	No Trees		With Trees		Compliance with I.S. EN 17037 Criteria*
		Area above 300 Lux*	Area above 100 Lux*	Area above 300 Lux*	Area above 100 Lux*	
B 05 01	Kitchen	77%	100%	77%	100%	Compliant
B 05 01	Living Room	82%	100%	79%	100%	Compliant
B 05 01	Bed 1	100%	100%	100%	100%	Compliant
B 05 01	Bed 2	100%	100%	100%	100%	Compliant
B 05 01	Bed 3	100%	100%	100%	100%	Compliant
B 05 01	Bed 4	100%	100%	100%	100%	Compliant
B 05 01	Bed 5	100%	100%	100%	100%	Compliant
B 05 01	Bed 6	100%	100%	100%	100%	Compliant
B 05 01	Bed 7	100%	100%	100%	100%	Compliant
B 05 01	Bed 8	100%	100%	100%	100%	Compliant
B 06 01	Kitchen	97%	100%	96%	100%	Compliant
B 06 01	Living Room	100%	100%	100%	100%	Compliant
B 06 01	Bed 1	100%	100%	100%	100%	Compliant
B 06 01	Bed 2	100%	100%	100%	100%	Compliant
B 06 01	Bed 3	100%	100%	100%	100%	Compliant
B 06 01	Bed 4	100%	100%	100%	100%	Compliant
B 06 01	Bed 5	100%	100%	100%	100%	Compliant
B 06 01	Bed 6	100%	100%	100%	100%	Compliant
B 06 01	Bed 7	100%	100%	100%	100%	Compliant
B 06 01	Bed 8	100%	100%	100%	100%	Compliant
B 07 01	Kitchen	100%	100%	100%	100%	Compliant
B 07 01	Living Room	100%	100%	100%	100%	Compliant
B 07 01	Bed 1	100%	100%	100%	100%	Compliant
B 07 01	Bed 2	100%	100%	100%	100%	Compliant
B 07 01	Bed 3	100%	100%	100%	100%	Compliant
B 07 01	Bed 4	100%	100%	100%	100%	Compliant
B 07 01	Bed 5	100%	100%	100%	100%	Compliant
B 07 01	Bed 6	100%	100%	100%	100%	Compliant
B 07 01	Bed 7	100%	100%	100%	100%	Compliant
B 07 01	Bed 8	100%	100%	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
For floor plans of the assessed units please refer to section C.1 on page 75.

D.1.10 Supplementary SDA Results (I.S. EN 17037 criteria): Core C - Level 01, 02 & 03

Table No. D.1.10 - Supplementary SDA Results (I.S. EN 17037 criteria): Core C - Level 01, 02 & 03						
Unit Number	Room Description	No Trees		With Trees		Compliance with I.S. EN 17037 Criteria*
		Area above 300 Lux*	Area above 100 Lux*	Area above 300 Lux*	Area above 100 Lux*	
C 01 01	LKD	23%	100%	23%	100%	Non-compliant
C 01 01	Bed 1	38%	100%	38%	100%	Non-compliant
C 01 01	Bed 2	38%	100%	38%	100%	Non-compliant
C 01 01	Bed 3	38%	100%	38%	100%	Non-compliant
C 01 01	Bed 4	38%	100%	38%	100%	Non-compliant
C 01 01	Bed 5	38%	100%	38%	100%	Non-compliant
C 01 01	Bed 6	38%	100%	38%	100%	Non-compliant
C 01 02	Studio	84%	100%	84%	100%	Compliant
C 01 03	Studio	79%	100%	78%	100%	Compliant
C 01 04	Studio	100%	100%	100%	100%	Compliant
C 01 05	Studio	93%	100%	93%	100%	Compliant
C 01 06	Studio	100%	100%	100%	100%	Compliant
C 01 07	Studio	100%	100%	100%	100%	Compliant
C 02 01	LKD	33%	100%	32%	100%	Non-compliant
C 02 01	Bed 1	50%	100%	50%	100%	Compliant
C 02 01	Bed 2	50%	100%	50%	100%	Compliant
C 02 01	Bed 3	50%	100%	50%	100%	Compliant
C 02 01	Bed 4	50%	100%	50%	100%	Compliant
C 02 01	Bed 5	50%	100%	50%	100%	Compliant
C 02 01	Bed 6	50%	100%	50%	100%	Compliant
C 02 02	Studio	97%	100%	97%	100%	Compliant
C 02 03	Studio	100%	100%	100%	100%	Compliant
C 02 04	Studio	100%	100%	100%	100%	Compliant
C 02 05	Studio	95%	100%	95%	100%	Compliant
C 02 06	Studio	100%	100%	100%	100%	Compliant
C 02 07	Studio	100%	100%	100%	100%	Compliant
C 02 08	Studio	24%	94%	24%	94%	Non-compliant
C 03 01	LKD	58%	100%	57%	100%	Compliant
C 03 01	Bed 1	67%	100%	67%	100%	Compliant
C 03 01	Bed 2	67%	100%	67%	100%	Compliant
C 03 01	Bed 3	67%	100%	67%	100%	Compliant
C 03 01	Bed 4	67%	100%	67%	100%	Compliant
C 03 01	Bed 5	67%	100%	67%	100%	Compliant
C 03 01	Bed 6	67%	100%	67%	100%	Compliant
C 03 02	Studio	99%	100%	99%	100%	Compliant
C 03 03	Studio	100%	100%	100%	100%	Compliant
C 03 04	Studio	100%	100%	100%	100%	Compliant
C 03 05	Studio	94%	100%	94%	100%	Compliant
C 03 06	Studio	100%	100%	100%	100%	Compliant
C 03 07	Studio	100%	100%	100%	100%	Compliant
C 03 08	Studio	38%	100%	38%	100%	Non-compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
For floor plans of the assessed units please refer to section C.1 on page 75.

D.1.11 Supplementary SDA Results (I.S. EN 17037 criteria): Core C - Level 04, 05, 06 & 07

Table No. D.1.11 - Supplementary SDA Results (I.S. EN 17037 criteria): Core C - Level 04, 05, 06 & 07						
Unit Number	Room Description	No Trees		With Trees		Compliance with I.S. EN 17037 Criteria*
		Area above 300 Lux*	Area above 100 Lux*	Area above 300 Lux*	Area above 100 Lux*	
C 04 01	LKD	75%	100%	74%	100%	Compliant
C 04 01	Bed 1	100%	100%	100%	100%	Compliant
C 04 01	Bed 2	100%	100%	96%	100%	Compliant
C 04 01	Bed 3	100%	100%	100%	100%	Compliant
C 04 01	Bed 4	100%	100%	100%	100%	Compliant
C 04 01	Bed 5	100%	100%	100%	100%	Compliant
C 04 01	Bed 6	100%	100%	100%	100%	Compliant
C 04 04	Studio	85%	100%	85%	100%	Compliant
C 04 05	Studio	97%	100%	97%	100%	Compliant
C 04 06	Studio	66%	100%	66%	100%	Compliant
C 05 01	LKD	90%	100%	90%	100%	Compliant
C 05 01	Bed 1	100%	100%	100%	100%	Compliant
C 05 01	Bed 2	100%	100%	100%	100%	Compliant
C 05 01	Bed 3	100%	100%	100%	100%	Compliant
C 05 01	Bed 4	100%	100%	100%	100%	Compliant
C 05 01	Bed 5	100%	100%	100%	100%	Compliant
C 05 01	Bed 6	100%	100%	100%	100%	Compliant
C 06 01	LKD	66%	100%	64%	100%	Compliant
C 06 01	Bed 1	100%	100%	100%	100%	Compliant
C 06 01	Bed 2	100%	100%	100%	100%	Compliant
C 06 01	Bed 3	100%	100%	100%	100%	Compliant
C 06 01	Bed 4	100%	100%	100%	100%	Compliant
C 06 01	Bed 5	100%	100%	100%	100%	Compliant
C 06 01	Bed 6	100%	100%	100%	100%	Compliant
C 07 01	LKD	90%	100%	88%	100%	Compliant
C 07 01	Bed 1	100%	100%	100%	100%	Compliant
C 07 01	Bed 2	100%	100%	100%	100%	Compliant
C 07 01	Bed 3	100%	100%	100%	100%	Compliant
C 07 01	Bed 4	100%	100%	100%	100%	Compliant
C 07 01	Bed 5	100%	100%	100%	100%	Compliant
C 07 01	Bed 6	100%	100%	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 20.
For floor plans of the assessed units please refer to section C.1 on page 75.

D.2 Supplementary No Sky Line (NSL) assessment in proposed units.

Below is an example of the table used to describe the supplementary assessment results for ‘No Sky Line’ in proposed units.

Table Example. D.2 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%
A	B	C	D

- A: Unit Number**
 This column identifies the assessed unit. All unit numbers are determined by the architect’s drawings, unless otherwise stated.
- B: Room Description**
Room Description details which room in the unit has been assessed, e.g. bedroom, LKD, etc.
- C: % of room where the sky is visible from the working plane**
 This column states the percentage of the room from which there is a direct line of sight to the sky when assessed at the working plane height, which is 850mm above the finished floor level in residential rooms or 700mm above the finished floor level in offices or classrooms.
- D: Above 80%**
 Whilst the BRE Guidelines only provide recommendations for NSL in the context of an impact analysis, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”
 If this column states: ‘Yes’, it signifies that the sky will be visible from more than 80% of the working plane.
 If this column states: ‘No’, it signifies that the sky will be visible from less than 80% of the working plane and supplementary electric lighting may be required.



D.2.1 Supplementary NSL Results: Core A - Level 01

Table No. D.2.1 - Supplementary NSL Results: Core A - Level 01			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
A 01 01	LKD	100%	Yes
A 01 01	Bed 1	33%	No
A 01 01	Bed 2	91%	Yes
A 01 01	Bed 3	77%	No
A 01 01	Bed 4	67%	No
A 01 01	Bed 5	42%	No
A 01 01	Bed 6	44%	No
A 01 02	Studio	41%	No
A 01 03	LKD	70%	No
A 01 03	Bed 1	37%	No
A 01 03	Bed 2	35%	No
A 01 03	Bed 3	33%	No
A 01 03	Bed 4	34%	No
A 01 03	Bed 5	33%	No
A 01 03	Bed 6	33%	No
A 01 04	LKD	54%	No
A 01 04	Bed 1	85%	Yes
A 01 04	Bed 2	99%	Yes
A 01 04	Bed 3	95%	Yes
A 01 04	Bed 4	99%	Yes
A 01 04	Bed 5	99%	Yes
A 01 05	Studio	97%	Yes
A 01 06	Kitchen	30%	No
A 01 06	Living Room	32%	No
A 01 06	Bed 1	37%	No
A 01 06	Bed 2	37%	No
A 01 06	Bed 3	37%	No
A 01 06	Bed 4	36%	No
A 01 06	Bed 5	53%	No
A 01 06	Bed 6	54%	No
A 01 06	Bed 7	55%	No
A 01 06	Bed 8	54%	No
A 01 07	Studio	64%	No

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 75.

D.2.2 Supplementary NSL Results: Core A - Level 02

Table No. D.2.2 - Supplementary NSL Results: Core A - Level 02			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
A 02 01	LKD	100%	Yes
A 02 01	Bed 1	33%	No
A 02 01	Bed 2	92%	Yes
A 02 01	Bed 3	78%	No
A 02 01	Bed 4	70%	No
A 02 01	Bed 5	50%	No
A 02 01	Bed 6	52%	No
A 02 02	Studio	57%	No
A 02 03	LKD	71%	No
A 02 03	Bed 1	54%	No
A 02 03	Bed 2	52%	No
A 02 03	Bed 3	48%	No
A 02 03	Bed 4	48%	No
A 02 03	Bed 5	46%	No
A 02 03	Bed 6	46%	No
A 02 04	LKD	69%	No
A 02 04	Bed 1	85%	Yes
A 02 04	Bed 2	99%	Yes
A 02 04	Bed 3	95%	Yes
A 02 04	Bed 4	99%	Yes
A 02 04	Bed 5	98%	Yes
A 02 05	Studio	96%	Yes
A 02 06	Kitchen	30%	No
A 02 06	Living Room	31%	No
A 02 06	Bed 1	36%	No
A 02 06	Bed 2	36%	No
A 02 06	Bed 3	36%	No
A 02 06	Bed 4	35%	No
A 02 06	Bed 5	52%	No
A 02 06	Bed 6	53%	No
A 02 06	Bed 7	55%	No
A 02 06	Bed 8	53%	No
A 02 07	Studio	63%	No

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 75.

D.2.3 Supplementary NSL Results: Core A - Level 03

Table No. D.2.3 - Supplementary NSL Results: Core - Level 03			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
A 03 01	LKD	100%	Yes
A 03 01	Bed 1	39%	No
A 03 01	Bed 2	98%	Yes
A 03 01	Bed 3	91%	Yes
A 03 01	Bed 4	85%	Yes
A 03 01	Bed 5	82%	Yes
A 03 01	Bed 6	87%	Yes
A 03 02	Studio	81%	Yes
A 03 03	LKD	95%	Yes
A 03 03	Bed 1	82%	Yes
A 03 03	Bed 2	78%	No
A 03 03	Bed 3	74%	No
A 03 03	Bed 4	71%	No
A 03 03	Bed 5	68%	No
A 03 03	Bed 6	65%	No
A 03 04	LKD	43%	No
A 03 04	Bed 1	86%	Yes
A 03 04	Bed 2	99%	Yes
A 03 04	Bed 3	97%	Yes
A 03 04	Bed 4	99%	Yes
A 03 04	Bed 5	99%	Yes
A 03 05	Studio	98%	Yes
A 03 06	Kitchen	36%	No
A 03 06	Living Room	37%	No
A 03 06	Bed 1	49%	No
A 03 06	Bed 2	49%	No
A 03 06	Bed 3	48%	No
A 03 06	Bed 4	48%	No
A 03 06	Bed 5	70%	No
A 03 06	Bed 6	69%	No
A 03 06	Bed 7	71%	No
A 03 06	Bed 8	70%	No
A 03 07	Studio	67%	No

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 75.

D.2.4 Supplementary NSL Results: Core A - Level 04

Table No. D.2.4 - Supplementary NSL Results: Core - Level 04			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
A 04 01	LKD	100%	Yes
A 04 01	Bed 1	69%	No
A 04 01	Bed 2	99%	Yes
A 04 01	Bed 3	99%	Yes
A 04 01	Bed 4	99%	Yes
A 04 01	Bed 5	99%	Yes
A 04 01	Bed 6	99%	Yes
A 04 02	Studio	99%	Yes
A 04 03	LKD	99%	Yes
A 04 03	Bed 1	99%	Yes
A 04 03	Bed 2	99%	Yes
A 04 03	Bed 3	99%	Yes
A 04 03	Bed 4	99%	Yes
A 04 03	Bed 5	99%	Yes
A 04 03	Bed 6	99%	Yes
A 04 04	LKD	87%	Yes
A 04 04	Bed 1	87%	Yes
A 04 04	Bed 2	99%	Yes
A 04 04	Bed 3	98%	Yes
A 04 04	Bed 4	99%	Yes
A 04 04	Bed 5	99%	Yes
A 04 05	Studio	98%	Yes
A 04 06	Kitchen	44%	No
A 04 06	Living Room	48%	No
A 04 06	Bed 1	67%	No
A 04 06	Bed 2	67%	No
A 04 06	Bed 3	67%	No
A 04 06	Bed 4	67%	No
A 04 06	Bed 5	96%	Yes
A 04 06	Bed 6	95%	Yes
A 04 06	Bed 7	97%	Yes
A 04 06	Bed 8	95%	Yes
A 04 07	Studio	73%	No

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 75.

D.2.5 Supplementary NSL Results: Core A - Level 05

Table No. D.2.5 - Supplementary NSL Results: Core - Level 05			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
A 05 01	LKD	100%	Yes
A 05 01	Bed 1	92%	Yes
A 05 01	Bed 2	99%	Yes
A 05 01	Bed 3	99%	Yes
A 05 01	Bed 4	99%	Yes
A 05 01	Bed 5	99%	Yes
A 05 01	Bed 6	99%	Yes
A 05 02	Studio	99%	Yes
A 05 03	LKD	100%	Yes
A 05 03	Bed 1	99%	Yes
A 05 03	Bed 2	99%	Yes
A 05 03	Bed 3	99%	Yes
A 05 03	Bed 4	99%	Yes
A 05 03	Bed 5	99%	Yes
A 05 03	Bed 6	99%	Yes
A 05 04	LKD	96%	Yes
A 05 04	Bed 1	90%	Yes
A 05 04	Bed 2	99%	Yes
A 05 04	Bed 3	99%	Yes
A 05 04	Bed 4	99%	Yes
A 05 04	Bed 5	99%	Yes
A 05 05	Studio	99%	Yes
A 05 06	Kitchen	61%	No
A 05 06	Living Room	67%	No
A 05 06	Bed 1	99%	Yes
A 05 06	Bed 2	99%	Yes
A 05 06	Bed 3	99%	Yes
A 05 06	Bed 4	99%	Yes
A 05 06	Bed 5	99%	Yes
A 05 06	Bed 6	98%	Yes
A 05 06	Bed 7	99%	Yes
A 05 06	Bed 8	99%	Yes
A 05 07	Studio	87%	Yes

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 75.

D.2.6 Supplementary NSL Results: Core A - Level 06 & 07

Table No. D.2.6 - Supplementary NSL Results: Core - Level 06 & 07			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
A 06 03	Studio	100%	Yes
A 06 04	LKD	100%	Yes
A 06 04	Bed 1	93%	Yes
A 06 04	Bed 2	99%	Yes
A 06 04	Bed 3	99%	Yes
A 06 04	Bed 4	99%	Yes
A 06 04	Bed 5	99%	Yes
A 06 04	Bed 6	99%	Yes
A 06 04	Bed 7	99%	Yes
A 06 04	Bed 8	99%	Yes
A 06 05	Studio	99%	Yes
A 06 07	Kitchen	95%	Yes
A 06 07	Living Room	100%	Yes
A 06 07	Bed 1	100%	Yes
A 06 07	Bed 2	100%	Yes
A 06 07	Bed 3	100%	Yes
A 06 07	Bed 4	99%	Yes
A 06 07	Bed 5	99%	Yes
A 06 07	Bed 6	99%	Yes
A 06 07	Bed 7	100%	Yes
A 06 07	Bed 8	100%	Yes
A 07 02	Studio	98%	Yes
A 07 04	LKD	100%	Yes
A 07 04	Bed 1	96%	Yes
A 07 04	Bed 2	99%	Yes
A 07 04	Bed 3	100%	Yes
A 07 04	Bed 4	99%	Yes
A 07 04	Bed 5	99%	Yes
A 07 05	Studio	98%	Yes
A 07 07	Kitchen	100%	Yes
A 07 07	Living Room	100%	Yes
A 07 07	Bed 1	100%	Yes
A 07 07	Bed 2	100%	Yes
A 07 07	Bed 3	100%	Yes
A 07 07	Bed 4	99%	Yes
A 07 07	Bed 5	99%	Yes
A 07 07	Bed 6	100%	Yes
A 07 07	Bed 7	100%	Yes
A 07 07	Bed 8	100%	Yes

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 75.

D.2.7 Supplementary NSL Results: Core B - Level 01 & 02

Table No. D.2.7 - Supplementary NSL Results: Core B - Level 01 & 02			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
B 01 01	Kitchen	33%	No
B 01 01	Living Room	32%	No
B 01 01	Bed 1	53%	No
B 01 01	Bed 2	53%	No
B 01 01	Bed 3	55%	No
B 01 01	Bed 4	57%	No
B 01 01	Bed 5	52%	No
B 01 01	Bed 6	61%	No
B 01 01	Bed 7	48%	No
B 01 01	Bed 8	48%	No
B 01 02	LKD	86%	Yes
B 01 02	Bed 1	79%	No
B 01 02	Bed 2	95%	Yes
B 01 02	Bed 3	91%	Yes
B 01 02	Bed 4	98%	Yes
B 01 02	Bed 5	51%	No
B 02 01	Kitchen	33%	No
B 02 01	Living Room	32%	No
B 02 01	Bed 1	53%	No
B 02 01	Bed 2	53%	No
B 02 01	Bed 3	57%	No
B 02 01	Bed 4	58%	No
B 02 01	Bed 5	53%	No
B 02 01	Bed 6	62%	No
B 02 01	Bed 7	49%	No
B 02 01	Bed 8	48%	No
B 02 02	LKD	97%	Yes
B 02 02	Bed 1	77%	No
B 02 02	Bed 2	95%	Yes
B 02 02	Bed 3	91%	Yes
B 02 02	Bed 4	98%	Yes
B 02 02	Bed 5	46%	No

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 75.

D.2.8 Supplementary NSL Results: Core B - Level 03 & 04

Table No. D.2.8 - Supplementary NSL Results: Core B - Level 03 & 04			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
B 03 01	Kitchen	40%	No
B 03 01	Living Room	39%	No
B 03 01	Bed 1	68%	No
B 03 01	Bed 2	68%	No
B 03 01	Bed 3	72%	No
B 03 01	Bed 4	74%	No
B 03 01	Bed 5	70%	No
B 03 01	Bed 6	74%	No
B 03 01	Bed 7	59%	No
B 03 01	Bed 8	58%	No
B 03 02	LKD	97%	Yes
B 03 02	Bed 1	80%	No
B 03 02	Bed 2	95%	Yes
B 03 02	Bed 3	91%	Yes
B 03 02	Bed 4	98%	Yes
B 03 02	Bed 5	53%	No
B 04 01	Kitchen	48%	No
B 04 01	Living Room	48%	No
B 04 01	Bed 1	92%	Yes
B 04 01	Bed 2	92%	Yes
B 04 01	Bed 3	92%	Yes
B 04 01	Bed 4	92%	Yes
B 04 01	Bed 5	84%	Yes
B 04 01	Bed 6	85%	Yes
B 04 01	Bed 7	76%	No
B 04 01	Bed 8	74%	No
B 04 02	LKD	97%	Yes
B 04 02	Bed 1	79%	No
B 04 02	Bed 2	95%	Yes
B 04 02	Bed 3	91%	Yes
B 04 02	Bed 4	97%	Yes
B 04 02	Bed 5	58%	No
* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line." For floor plans of the assessed units please refer to section C.1 on page 75.			

D.2.9 Supplementary NSL Results: Core B - Level 05, 06 & 07

Table No. D.2.9 - Supplementary NSL Results: Core B - Level 05, 06 & 07			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
B 05 01	Kitchen	63%	No
B 05 01	Living Room	66%	No
B 05 01	Bed 1	100%	Yes
B 05 01	Bed 2	100%	Yes
B 05 01	Bed 3	100%	Yes
B 05 01	Bed 4	100%	Yes
B 05 01	Bed 5	99%	Yes
B 05 01	Bed 6	99%	Yes
B 05 01	Bed 7	99%	Yes
B 05 01	Bed 8	99%	Yes
B 06 01	Kitchen	95%	Yes
B 06 01	Living Room	100%	Yes
B 06 01	Bed 1	100%	Yes
B 06 01	Bed 2	100%	Yes
B 06 01	Bed 3	100%	Yes
B 06 01	Bed 4	100%	Yes
B 06 01	Bed 5	99%	Yes
B 06 01	Bed 6	99%	Yes
B 06 01	Bed 7	100%	Yes
B 06 01	Bed 8	99%	Yes
B 07 01	Kitchen	100%	Yes
B 07 01	Living Room	100%	Yes
B 07 01	Bed 1	100%	Yes
B 07 01	Bed 2	100%	Yes
B 07 01	Bed 3	100%	Yes
B 07 01	Bed 4	100%	Yes
B 07 01	Bed 5	99%	Yes
B 07 01	Bed 6	99%	Yes
B 07 01	Bed 7	100%	Yes
B 07 01	Bed 8	99%	Yes
* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line." For floor plans of the assessed units please refer to section C.1 on page 75.			

D.2.10 Supplementary NSL Results: Core C - Level 01, 02 & 03

Table No. D.2.10 - Supplementary NSL Results: Core C - Level 01, 02 & 03			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
C 01 01	LKD	48%	No
C 01 01	Bed 1	53%	No
C 01 01	Bed 2	52%	No
C 01 01	Bed 3	54%	No
C 01 01	Bed 4	53%	No
C 01 01	Bed 5	57%	No
C 01 01	Bed 6	58%	No
C 01 02	Studio	89%	Yes
C 01 03	Studio	92%	Yes
C 01 04	Studio	99%	Yes
C 01 05	Studio	96%	Yes
C 01 06	Studio	99%	Yes
C 01 07	Studio	98%	Yes
C 02 01	LKD	65%	No
C 02 01	Bed 1	52%	No
C 02 01	Bed 2	51%	No
C 02 01	Bed 3	53%	No
C 02 01	Bed 4	52%	No
C 02 01	Bed 5	57%	No
C 02 01	Bed 6	57%	No
C 02 02	Studio	51%	No
C 02 03	Studio	83%	Yes
C 02 04	Studio	99%	Yes
C 02 05	Studio	96%	Yes
C 02 06	Studio	99%	Yes
C 02 07	Studio	98%	Yes
C 02 08	Studio	35%	No
C 03 01	LKD	74%	No
C 03 01	Bed 1	67%	No
C 03 01	Bed 2	67%	No
C 03 01	Bed 3	68%	No
C 03 01	Bed 4	68%	No
C 03 01	Bed 5	70%	No
C 03 01	Bed 6	71%	No
C 03 02	Studio	99%	Yes
C 03 03	Studio	100%	Yes
C 03 04	Studio	99%	Yes
C 03 05	Studio	95%	Yes
C 03 06	Studio	98%	Yes
C 03 07	Studio	99%	Yes
C 03 08	Studio	96%	Yes

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 75.

D.2.11 Supplementary NSL Results: Core C - Level 04, 05, 06 & 07

Table No. D.2.11 - Supplementary NSL Results: Core C - Level 04, 05, 06 & 07			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
C 04 01	LKD	78%	No
C 04 01	Bed 1	91%	Yes
C 04 01	Bed 2	91%	Yes
C 04 01	Bed 3	92%	Yes
C 04 01	Bed 4	92%	Yes
C 04 01	Bed 5	92%	Yes
C 04 01	Bed 6	93%	Yes
C 04 04	Studio	97%	Yes
C 04 05	Studio	97%	Yes
C 04 06	Studio	97%	Yes
C 05 01	LKD	79%	No
C 05 01	Bed 1	99%	Yes
C 05 01	Bed 2	99%	Yes
C 05 01	Bed 3	99%	Yes
C 05 01	Bed 4	99%	Yes
C 05 01	Bed 5	99%	Yes
C 05 01	Bed 6	99%	Yes
C 06 01	LKD	92%	Yes
C 06 01	Bed 1	99%	Yes
C 06 01	Bed 2	99%	Yes
C 06 01	Bed 3	99%	Yes
C 06 01	Bed 4	99%	Yes
C 06 01	Bed 5	99%	Yes
C 06 01	Bed 6	99%	Yes
C 07 01	LKD	99%	Yes
C 07 01	Bed 1	99%	Yes
C 07 01	Bed 2	99%	Yes
C 07 01	Bed 3	99%	Yes
C 07 01	Bed 4	99%	Yes
C 07 01	Bed 5	99%	Yes
C 07 01	Bed 6	100%	Yes

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 75.