May 2026

Large-Scale Residential Development, Whitestown Way, Dublin 24

Daylight and Sunlight Assessment Report

Applicant: ARP 4.2 Sustainable Communities (Ireland) Fund

"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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Report Contents

The following report has been prepared by 3D Design Bureau (3DDB). 3DDB have over eight 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 bachelor's degree in Building Information Modelling (BIM) with over 20 years experience in the industry.

1.0 Executive Summary

1.1 Summary of Assessment

3D Design Bureau (3DDB) were commissioned to carry out a comprehensive daylight and sunlight assessment, along with an accompanying shadow study for the proposed mixed use development, which is primarily residential. The proposed structures are laid out in two blocks with an East-West orientation, joined by a podium at level 01 above a car park and plant area. The Eastern block faces on to Whitestown Way with an active frontage including commercial uses and a Crèche.

The assessments in this report will focus on impact to the surrounding properties and scheme performance within the proposed apartments and crèche.

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

Explanations of key terms and the relevant daylight and sunlight assessment standards are included in sections E.0 & F.0 at the end of this report.

Impact Assessment

Following advice within section 2.2 of the BRE Guidelines (BR 209 - 2022), the surrounding context was carefully considered to ensure all properties and amenity spaces that may potentially experience a level of effect were included in the study. A more detailed explanation of the criterion applied can be found in section "2.1 Impact Assessment, Window Selection Criteria" on page 8.

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 have been assessed in the 'baseline state' versus the 'proposed state'. For definitions of the model states, including visual representations, please refer to section "2.2 Preparing the analytical model" on page 10.

The considered properties, as indicated in Figure 1.1, include:

- Unit 3 Riverside Business Park (1)
- Units 1 and 2 Riverside Business Park (2)
- Industrial Building, Vita Activities (3)
- Tallaght Arena (4)
- Residential Development on Whitestown Way (5)

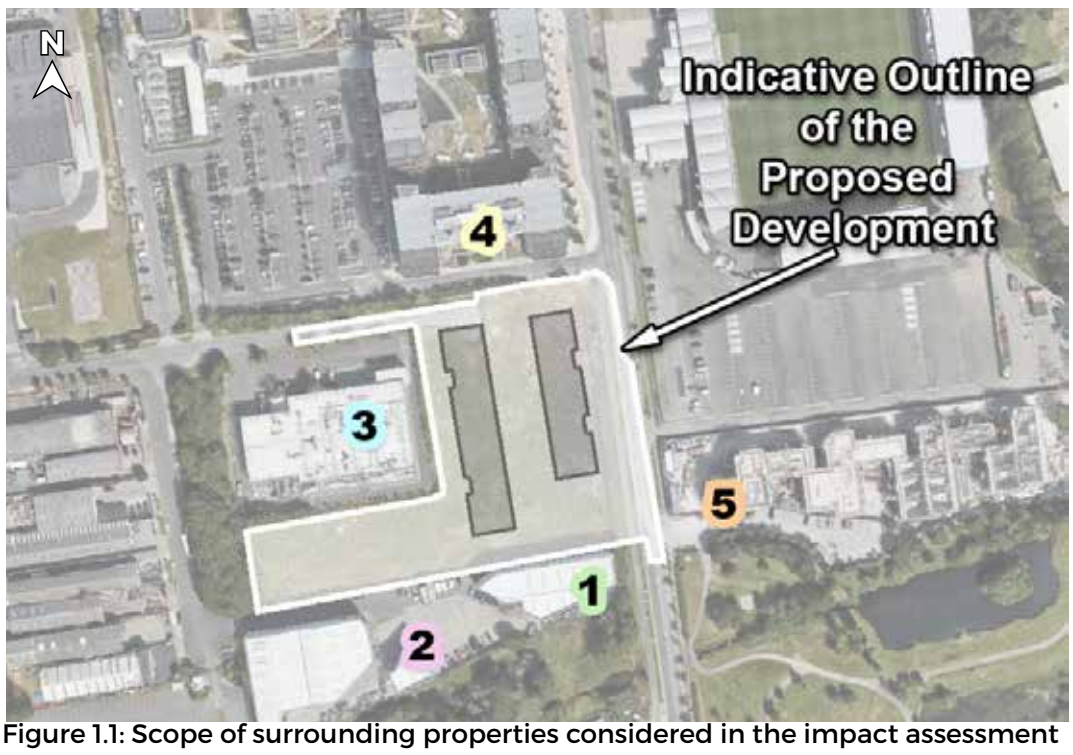

Figure 1.1: Scope of surrounding properties considered in the impact assessment

The impact assessment, in accordance with the BRE Guidelines, covered the following metrics:

- **Vertical Sky Component (VSC):** Assessment of the potential effect on daylight to the windows of the offices of Unit 3 Riverside Business Park only. No VSC assessment was conducted on any of the other properties within three times the height of the proposed development as the proposed structures do not subtend an angle of 25° when measured in a perpendicular section.
- **No Sky Line (NSL):** A NSL impact assessment was also conducted on the offices of Unit 3 Riverside Business Park. This study was facilitated by ground floor drawings for this development which were taken from the planning portal. Note: no drawings were available for subsequent floors, but a similar arrangement has been assumed.
- **Annual and Winter Probable Sunlight Hours (APSH/WPSH):** Sunlight impact assessments are only required on windows that meet the BRE criteria, as explained in section 2.1 on page 8 of this report, and are oriented within 90° of due south. On this basis, no APSH/WPSH assessment has been conducted.
- **Sun on Ground (SOG):** The areas considered for assessment are either located to the south of the proposed development (5), meaning shadows will be cast in the opposite direction, or they have sufficient separation distance from the proposed development (4), making overshadowing highly unlikely. Although no quantitative SOG impact assessment has been conducted, a qualitative assessment has been undertaken by comparing the false colour plans of the baseline and proposed model states shown in section A.3 on page 36 and also through the hourly renderings of the shadow study in section B.0 on page 37.

The results of the impact assessments can be found in section A.0 on page 31. These results are summarised in section 1.2 and explained in section "3.1.1 Analysis of Daylight Impact Assessment Results" on page 20.

Scheme Performance

- **Spatial Daylight Autonomy (SDA):** Assessment of daylight availability within the habitable rooms of the proposed development.
- **Sunlight Exposure (SE):** Assessment of sunlight exposure within the same habitable rooms.
- **Sun on Ground (SOG):** Assessment of sunlight availability across the proposed external amenity spaces on March 21st. This date corresponds to the spring equinox, when day and night are of approximately equal duration, and is commonly used as a representative assessment date.

The results of these scheme performance assessments, which are in accordance with the BRE Guidelines, can be found in section C.0 on page 46. These results are summarised in section 1.3 and explained in "3.2 Analysis of Scheme Performance Results" on page 22.

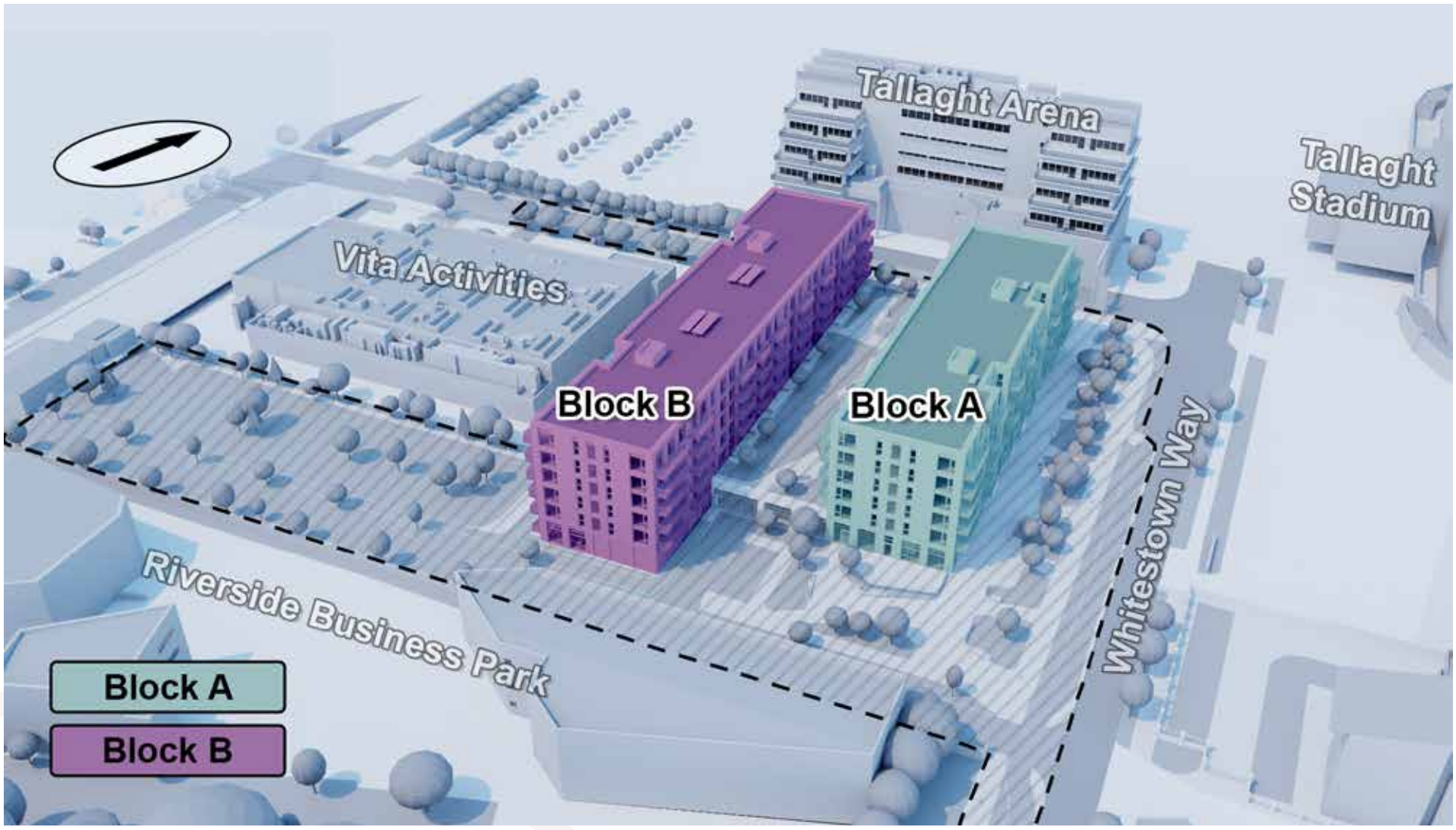

Figure 1.2: Model View of the proposed development

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 78.

Note: All daylight and sunlight assessments have been conducted on the proposed residential units and the proposed crèche. However, any compliance rate that is stated throughout this report refers to the residential portion of the proposed development only.

Qualitative Assessment

In addition to the quantitative assessments detailed in the 'Impact Assessment' and 'Scheme Performance' sections, a qualitative assessment has been undertaken to provide further understanding of the variation in sunlight across the surrounding environment. This includes:

- **Shadow Study:** Hourly renderings illustrating the movement and extent of shadow on three key dates: the spring equinox (March 21st), the summer solstice (June 21st), and the winter solstice (December 21st) (section B.0 on page 37).

The false colour plans produced as part of the Sun on Ground (SOG) assessment (section C.4 on page 76) also provide a qualitative indication of sunlight distribution across the amenity areas.

1.2 Impact Assessment Results Overview - Neighbouring Properties:

The levels of effect in the tables below describe the effect the proposed development would have, based on its compliance with the various BRE Target Values. A full list of definitions and a numerical rationale for each can be found in the section "Definition of Effects" on page 103 of this report.

Note: The number of assessed rooms is lower than typically seen in a daylight and sunlight impact assessment. This is because the majority of surrounding properties have adequate separation distances, making detailed assessment unnecessary. Additionally, the windows assessed have been grouped according to the specific rooms they serve.

Effect to Daylight - Vertical Sky Component (VSC) :

Effect to Vertical Sky Component (VSC)	
Rooms Assessed Total	3
Compliance Total	3
Categorisation of Effects	
Beneficial Impact*	0
Negligible	3
Minor Adverse	0
Moderate Adverse	0
Major Adverse	0
n.a.**	0

Effect to Daylight - No Sky Line (NSL):

Effect to No Sky Line (NSL)	
Rooms Assessed	3
Compliant	3
Categorisation of Effects	
Beneficial Impact*	0
Negligible	3
Minor Adverse	0
Moderate Adverse	0
Major Adverse	0
n.a.**	0

* '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, APSH/WPSH or SOG studies is below 1%, 3DDB have categorised the level of effect as n.a. (not applicable).

1.3 Scheme Performance Results Overview:

Spatial Daylight Autonomy (SDA):

Spatial Daylight Autonomy (SDA) BRE 209 Criteria	
Unit Count	169
Rooms Assessed	431
Without Trees	
Compliant	403
Non-compliant	28
Compliance Rate*	c. 94%
With Trees (Proposed and Existing Trees)	
Compliant	403
Non-compliant	28
Compliance Rate*	c. 94%
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 within the residential portion of the proposed development. SDA assessments have also been conducted for the proposed crèche, but have not been included in the calculated compliance rates.

Compensatory design solutions have been provided by the project architects for units which contain non-compliant rooms.

Sunlight Exposure (SE):

Sunlight Exposure (SE)	
Units Assessed	169
SE without deciduous trees	
Non-Compliant	11
Minimum	37
Medium	60
High	61
Compliance Rate*	c. 93%
SE with trees as opaque objects	
Non-Compliant	15
Minimum	33
Medium	61
High	60
Compliance Rate*	c. 91%

For the interpretation of levels of Sunlight Exposure please refer to “E.3 Definition of Levels of Sunlight Exposure” on page 104.

* Compliance rates stated for the SE analysis are based on the residential units only. However, SE assessments have also been conducted on the rooms of the proposed crèche.

Sun On Ground (SOG) in proposed gardens / amenity areas:

Sun On Ground (SOG)	
Areas Assessed	4
Areas meeting the guidelines	4
Areas not meeting the guidelines	0

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	169
Rooms Assessed	431
Without Trees	
Compliant	340
Non-compliant	91
Compliance Rate*	c. 79%
With Trees (Proposed and Existing Trees)	
Compliant	336
Non-compliant	95
Compliance Rate*	c. 78%
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 residential portion of the proposed development. 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 be adequately daylit. 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.

No Sky Line (NSL) within the proposed scheme:

No Sky Line (NSL):	
Unit Count	169
Rooms Assessed	431
Yes	318
No	113
Compliance Rate*	c. 74%
Note: 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 residential portion of the proposed development.

2.0 Methodology

2.1 Impact Assessment, Window Selection Criteria

To determine the properties to be included in the impact assessment, the decision chart taken from Figure 20 of the BRE Guidelines has been followed, as shown in Figure 2.1 below.

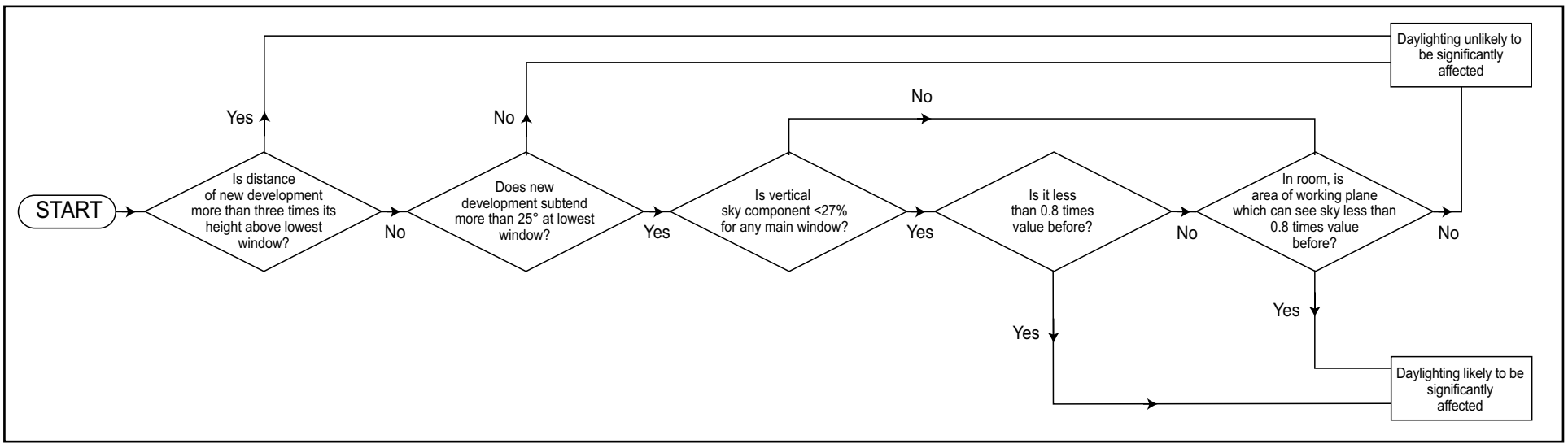

Figure 2.1: VSC decision chart, replicated from section 2.2 of the BRE Guidelines

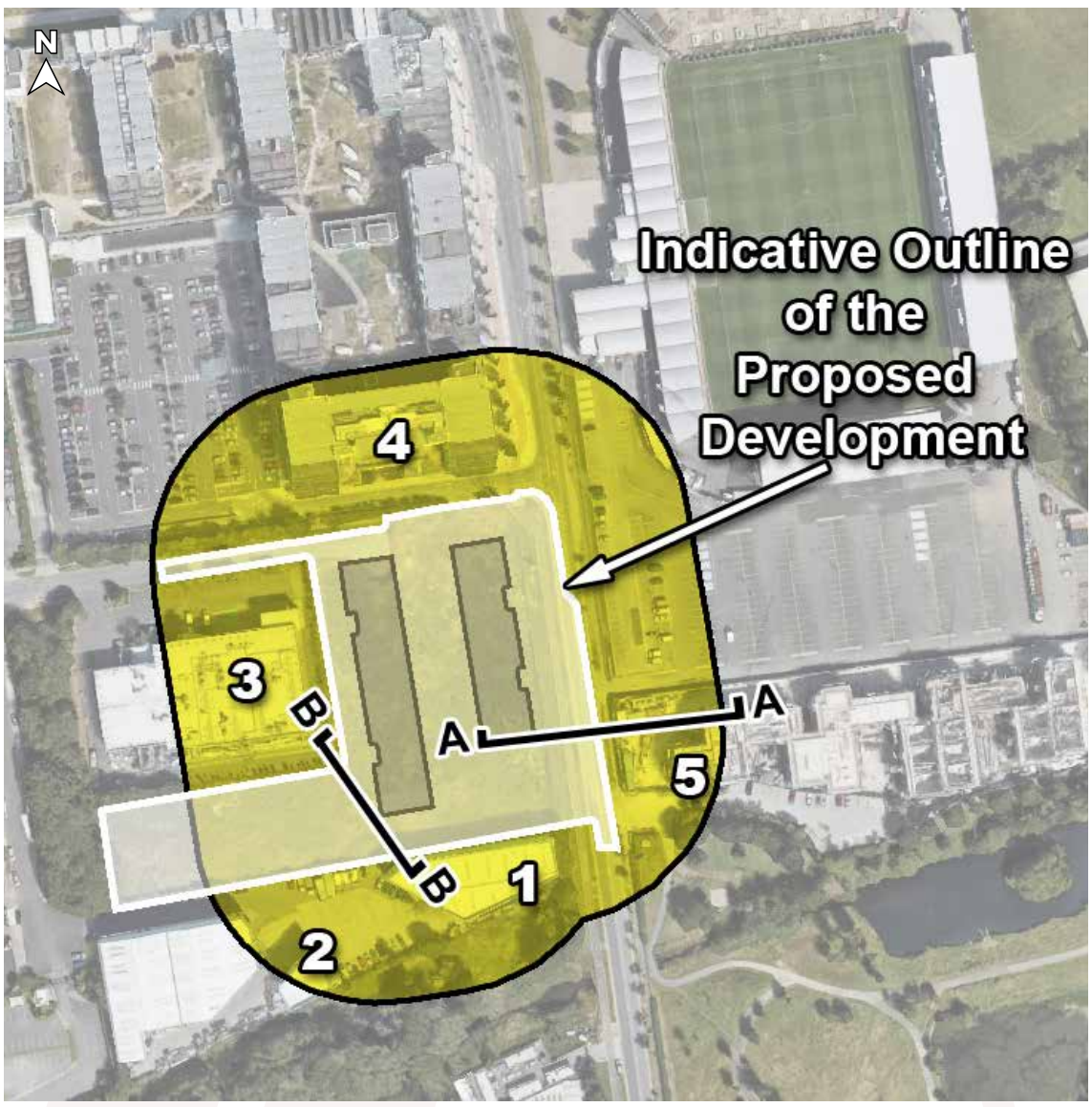

Figure 2.2: Properties within three times the height of the proposed development

Accordingly, all properties within a distance of three times the height of the proposed development, as illustrated in Figure 2.2, have been considered for impact assessment. This includes:

- **1** - Unit 3 Riverside Business Park
- **2** - Unit 1 & 2 Riverside Business Park
- **3** - Industrial Building (Vita Activities)
- **4** - Tallaght Arena
- **5** - Residential Development, Whitestown Way

As per the recommendation made in section 2.2.5 of 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 an angle of 25˚ in this section, then a VSC assessment should be conducted.

In the case of this application, the proposed development does not subtend an angle of 25˚ when measured in a perpendicular section from any of the windows of habitable rooms in the neighbouring properties.

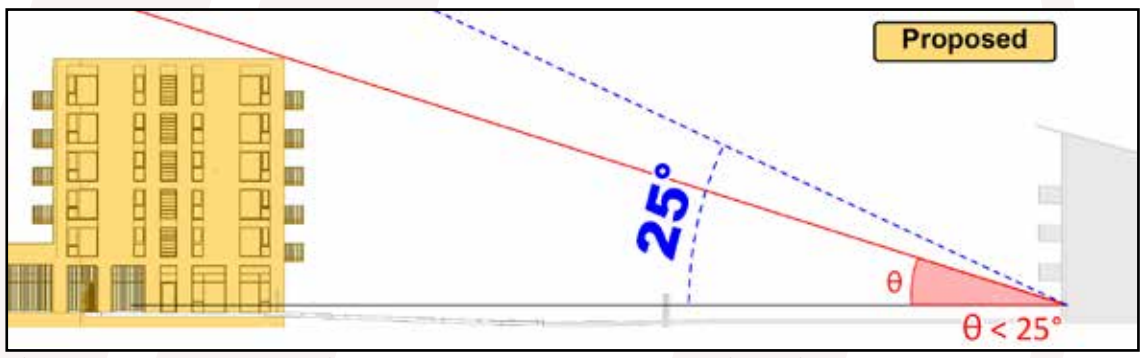

Figure 2.3: Example Section A-A taken through the Residential Development on Whitestown Way

In instances where 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.

Figure 2.3 shows a perpendicular section taken through the Residential Development on Whitestown Way (indicated as '5' in Figure 2.2). This provides an example of where an existing window is within three times the height of the proposed development, but the proposed development does not subtend 25˚ when measured in a perpendicular section.

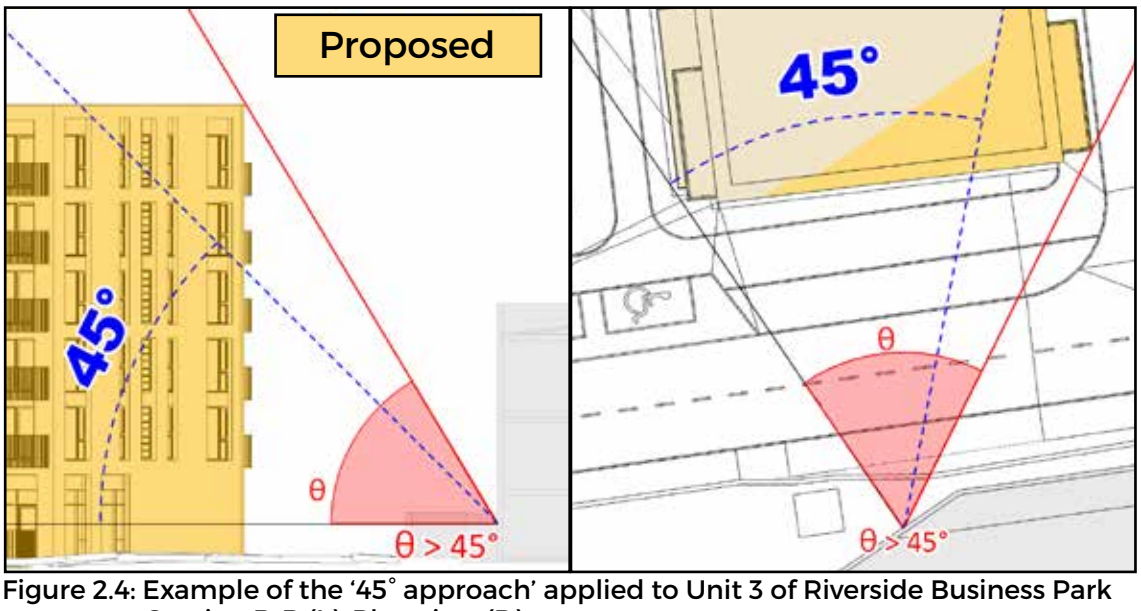

Figure 2.4: Example of the '45° approach' applied to Unit 3 of Riverside Business Park Section B-B (L), Plan view (R),

Additionally, if a proposed 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 section 2.2.17 of 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.

Unit 3 of Riverside Business Park, indicated as '1' in Figure 2.2 on page 8, is located to the south of the proposed development. The windows of the ground floor office of this industrial building are not directly perpendicular to the proposed structures. As such, the proposed development does not subtend 25° when measured in a perpendicular section. However, this property has been included in the impact assessment on the basis of the 45° approach.

Figure 2.4 shows both a plan view and a section through Unit 3 of Riverside Business Park, 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.

According to section 2.2.10 of the BRE Guidelines, it is advisable that where VSC assessments are conducted, a No Sky Line (NSL) assessment should also be carried out where room layouts are known. For the assessed office at Riverside Business park a ground floor layout was obtained from the planning portal. It is assumed that the office layout is repeated on level 01 and 02. A detailed description regarding the methodology of the VSC and NSL impact assessments can be found in 2.3 on page 13.

Section 3.2.9 of BRE Guidelines also applies 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. The BRE recommends assessing 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 section 2.1.21 and 2.2.23 of the BRE Guidelines recommends 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, other windows facing the proposed development on that property may also be assessed. This approach provides a more comprehensive understanding of the overall impact on the property.

2.2 Preparing the analytical model

2.2.1 Building the Model States

The project architect, Reddy Architecture + Urbanism (RAU), supplied 3DDB with a 3D model of the proposed development. Landscape drawings were provided by Mitchell + Associates, who are the landscape architects for this application. Using this information, 3DDB created a detailed 3D analytical model for daylight and sunlight analysis.

In line with standard practice, a desktop-based approach has been adopted to gather information regarding the existing subject site and its surroundings. In lieu of a bespoke on-site survey, a combination of available survey information, aerial photography, and ordnance survey data was used to model the context and assessed buildings. As information gathered from online sources is not as precise as a physical survey, a reasonable tolerance should be allowed for the placement of windows, boundary treatments, and the results generated.

Baseline model state

As illustrated in Figure 2.5, the baseline model state reflects the existing environment. It includes the surrounding context and the subject site in their current standing. Existing trees were placed using photogrammetry information, with assumptions made regarding exact size, position and species.

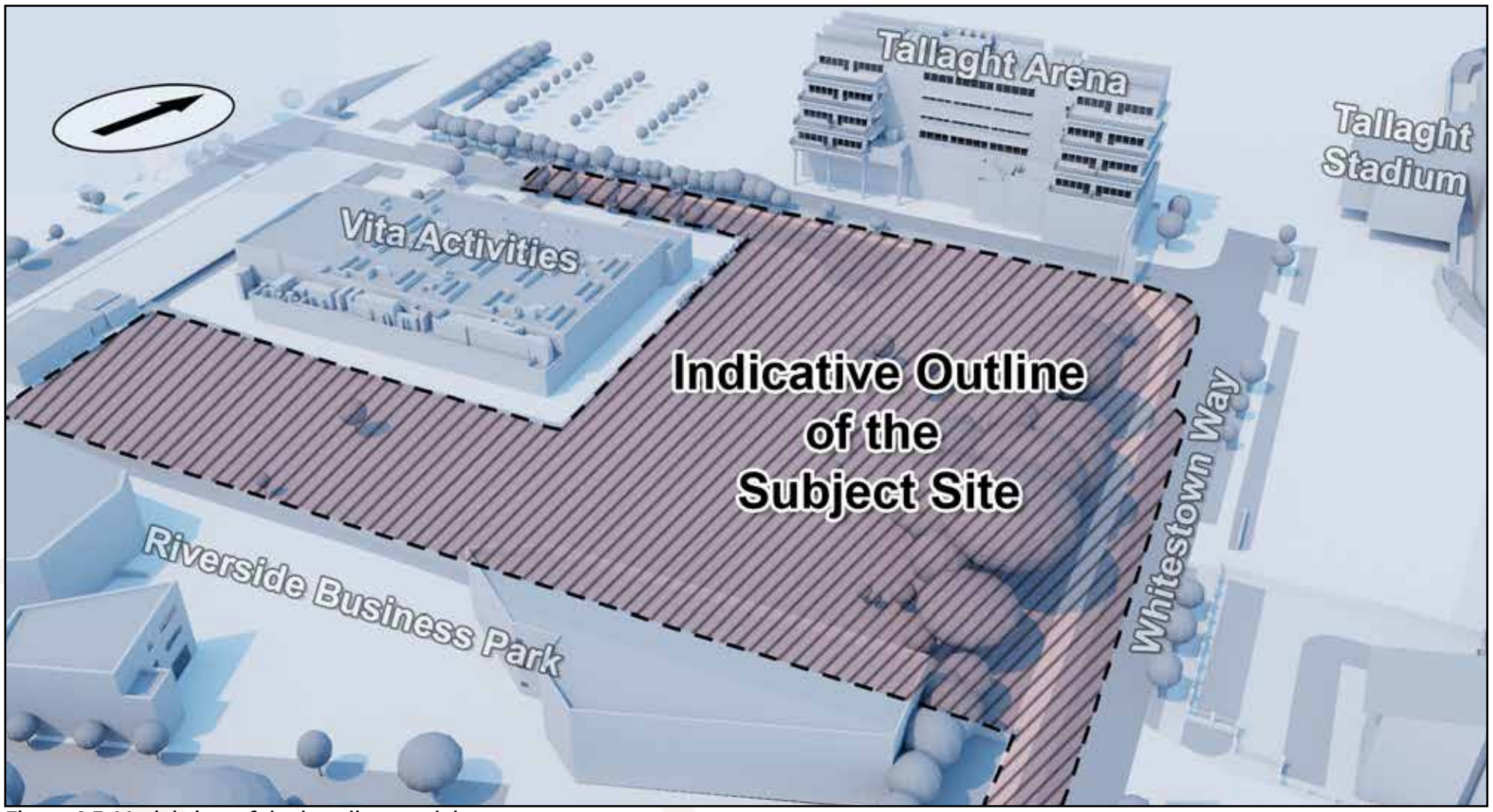

Figure 2.5: Model view of the baseline model state

As explained in section 2.1 of this report, section 2.2.5 of 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 NSL impact assessments.

Note: An APSH/WPSH impact assessment was not conducted for this application. This is on the basis that all existing windows meeting the BRE selection criteria have a northerly orientation, and therefore are not included in accordance with the guidance given in the BRE Guidelines.

Proposed model state

As illustrated in Figure 2.6, 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 removal of some existing trees. Proposed buildings have been accurately positioned in their location on the subject site with relevant surrounding context included. Proposed trees have been included in the assessment model using information provided by Mitchell and Associates.

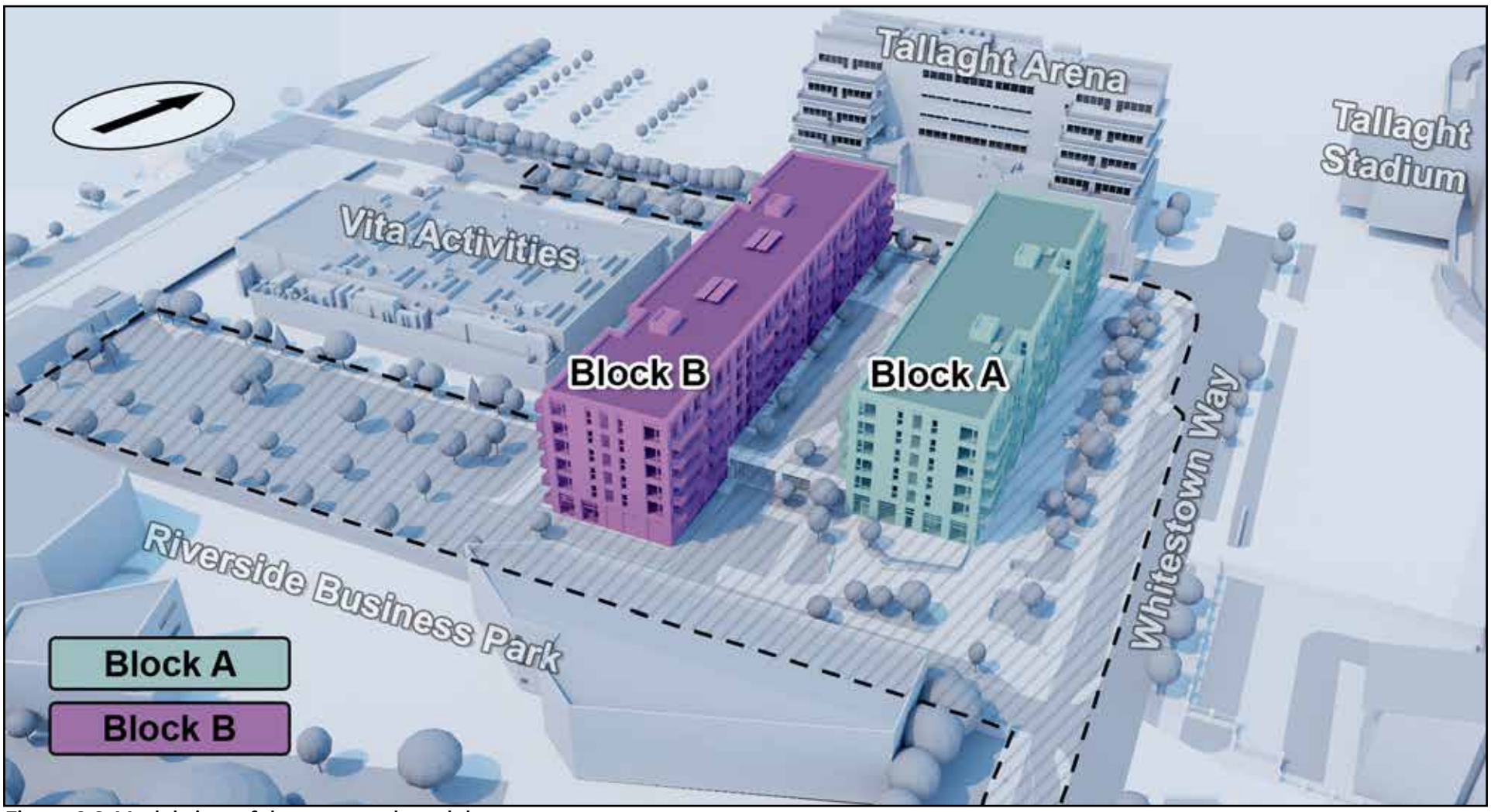

Figure 2.6: Model view of the proposed model state

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_EM_Casement.AP.039670_TMYx.epw).

2.2.2 Trees

As stated in section 3.3.9 of the BRE Guidelines, the exact shapes of trees are "almost impossible to predict". When modelling trees for this assessment tree geometry has been simplified. Where tree survey information was not provided, the position and size of existing trees have been estimated using photogrammetry information. The shape of the trees has been simplified and an average transmittance value has been applied using information from table G1 from the BRE Guidelines. 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)

Section G1.2 of the BRE Guidelines states 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)

Regarding SOG assessments, section G4.1 of the BRE Guidelines states:

"...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)

Section G3.1 of the BRE Guidelines states 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. Firstly, 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 dates from *BRE Digest 350*, appropriate light transmittance values have been applied to deciduous trees to represent the 'full leaf' and 'bare branch' states.

Evergreen trees are represented as 'full-leaf' throughout the year.

The BRE Guidelines (section G2.3) also state:

"The calculation model should account for the obstruction to daylight caused by the trees. This needs to be done by modelling a representative shape of the trees. Often trees are irregularly shaped and simple modelling, using height and spread data and assuming a circular tree, will give inaccurate results. A special survey on site is generally required to produce the required data on the tree profile, using a clinometer or other device to measure tree height. Buildings and other solid objects should also be taken into account."

In the absence of a 'special survey' being conducted, as mentioned above, simplified models representing trees have been used. The information for these trees has been taken from photogrammetry information and an arborist report when available. A reasonable tolerance should be applied to the results generated to account for trees not being represented exactly as they appear on site.

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 are not 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 will be 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.

2.3 Quantitative Impact Assessment Overview

2.3.1 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 2.1 on page 8 outlines the decision process which was used to determine the appropriate properties to be included in the VSC impact assessment.

For proposed developments, all properties within a distance of three times the height of the proposed development are considered with regards to an 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 Sky Line 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.

Where applicable, 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.

Section 2.1.6 of the BRE Guidelines states 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.

Where a VSC assessment is warranted, the values for each relevant window/room may be calculated in the corresponding model states, as outlined in section 2.2 on page 10. A comparison of these results can be used to indicate 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 (section 2.2.2), 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 may be included in this study to give a more comprehensive assessment.

Assessment Points

The VSC impact assessment is carried out on the windows/rooms of the neighbouring properties that could be affected by the proposed development as highlighted in Figure 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 servicing the same room, each window has been assessed and a room VSC will be 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 estimations 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 Figure 2.1 on page 8, 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 Figure 1.1 on page 3.

The only assessed property included in the analysis is Unit 3, Riverside Business Park, as indicated in Figure 1.1 on page 3, for which 3 no. offices have been assessed.

No VSC impact assessment was conducted for other properties that are within three times the height of the proposed development. This is because none of the windows to these properties satisfy the relevant BRE screening criteria, namely the 25˚ test (measured in a perpendicular section) or the 45˚ approach (measured in both plan and elevation).

The results for the VSC impact assessment can be found in the appendix results section A.1 on page 31, with analysis of the results in section Section 3.1.1 on page 20.

2.3.2 Effect on No Sky Line (NSL)

No Sky Line (NSL) is a study of whether or not the sky is visible from a hypothetical working plane within a room. In residential properties the working plane is assumed to be 850mm above the finished floor level, and for offices, it is set at 700mm.

The BRE advises that if, following the construction of a new development, the no sky line moves in such a way that the area of the existing room, which currently receives direct skylight, is reduced to less than 0.80 times its former value, this change will be noticeable to the occupants, and more of the room will appear poorly lit.

NSL assessment is recommended for main rooms where daylight is expected. In residential properties these include living rooms, dining rooms, and kitchens. The BRE Guidelines state that *"bedrooms should also be analysed although they are less important."*

A No Sky Line (NSL) assessment has been carried out for the ground floor office of Unit 3 Riverside Business Park where the room layout is known, and for the assumed offices on subsequent floors in the same location where layouts have been inferred from the ground floor drawings.

3D Design Bureau asserts that the No Sky Line (NSL) assessment is more informative than a Vertical Sky Component (VSC) assessment. This is because a VSC assessment considers only the light reaching a single point on a window, whereas an NSL assessment evaluates daylight distribution throughout the room. If a window or room fails to meet the BRE recommendation for VSC impact but meets the criteria for NSL impact, it indicates that while light intensity is reduced, its distribution will not be adversely affected.

Project Assessment

A NSL impact assessment has been carried out in the offices of the Unit 3 Riverside Business Park as mentioned above.

The results for the NSL impact assessment can be found in the appendix results section A.1 on page 31, with analysis of the results in section Section 3.1.1 on page 20

2.3.3 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 its 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 an angle of 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, section 3.2.3 of the BRE Guidelines suggest that windows with an orientation within 90 degrees of due south should be assessed.

Section 2.1 on page 8 outlines the decision process which is used to determine the appropriate properties to be included in an APSH/WPSH impact assessment.

If it can be determined or reasonably assumed that multiple windows are servicing the same room, the APSH/WPSH will be 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. Despite being two components of the same technical study, the results for APSH and WPSH are presented separately in this report. This approach distinguishes between annual and winter sunlight impacts, thereby facilitating a more detailed analysis of the effect of the proposed development.

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.

According to section 3.2.3 of the BRE Guidelines, only main living-rooms, or rooms comprising living space, 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 will be 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.

Project Assessment

Following the BRE decision chart, as illustrated in Figure 2.1 on page 8, no APSH/WPSH impact assessment has been carried out on the windows/rooms of the neighbouring properties as the proposed development does not subtend 25° when measured in a perpendicular section from any of the existing windows with a southerly orientation.

This indicates that the proposed development would not have an adverse effect on the sunlight of any of the existing properties.

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

Section 3.3.17 of 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 do not provide 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 a shadow study and/or false colour plans.

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.

In accordance with section 3.3.9 of the BRE Guidelines, typically deciduous trees will not be included unless there is a particularly dense belt. The analytical model for SOG impact assessment includes evergreen trees, where applicable.

Where applicable, the percentage of assessed areas which can receive two hours or more of direct sunlight on March 21st is calculated in the relevant model states, as outlined in section 2.2 on page 10. A comparison between the results generated with these model states can be used to 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 north of the proposed development, as areas located to the south are unlikely to be affected as the sun does not cast shadows in this 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. The areas considered for assessment are either located to the south of the proposed development, meaning shadows from the proposed development will be cast in the opposite direction, or they have sufficient separation distance from the proposed development, making overshadowing highly unlikely.

The false colour plans in section A.3 on page 36 and the hourly renderings of the shadow study on Page 37, allow for a qualitative sunlight assessment of the surrounding areas.

2.4 Qualitative Assessment - Shadow Study

2.4.1 Shadow Study

A shadow study has been carried out to allow a qualitative comparison between the relevant model states, as outlined in section 2.2 on page 10. 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 37.

Hourly renderings have been shown from sunrise to sunset on the following dates in 2026:

- Spring equinox: March 21st Sunrise 6:32 | Sunset 18:32. (GMT)
- Summer solstice: June 21st Sunrise 5:04 | Sunset 21:49. (BST) (Daylight savings)
- 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 2.2.1. 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 section 3.3.14 of the BRE Guidelines.

2.5 Quantitative Scheme Performance Assessment Overview

2.5.1 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 as the preferred SDA assessment methodology by 3DDB. A localised EnergyPlus Weather File is used to apply the relevant climate information. In the case of this report, the weather file used is IRL_EM_Casement.AP.039670_TMYx.epw.

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 apartments, 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, SDA assessments have also been conducted in the classrooms and office of the proposed crèche on the ground floor of Block A. 3DDB recommend that an SDA target value of 200 Lux be applied to these spaces. The rationale for this target value is that they will typically be used for performing tasks that require sufficient light levels. However, the rooms of the crèche, which all meet the assigned targets, have not been included in the calculated compliance rates which relate only to the residential portion of the proposed development.

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

The definition of rooms are typically taken directly from the architectural drawings supplied by the project architect. Sometimes, the applied names of rooms may differ slightly. e.g. A “Kitchen / Living / Dining room (KLD)” may be referred to as a “Living / Kitchen / Dining room (LKD).

According to section 2.1.14 of the BRE Guidelines areas like bathrooms, stairwells, garages, and storage areas do not have a special requirement for daylight. As such these spaces have not been assessed.

Where an SDA assessment has been conducted, an indication of the assessed space in each room will be indicated in the floor plans that correspond to the SDA results in the appendix section “Proposed Apartment Floor Plans” on page 46.

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 the crèche 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 design team, material values used for SDA calculations are as per the table below:

Table No. 2.5.1 - Material Palette for SDA Calculations

Object	Material	Reflectance	Object	Material	Reflectance / Transmittance
Exterior walls	Standard Brick	0.3	Interior Walls	Pastel paint	0.7
	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	Glass transmittance value	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 52.

Analysis of the results can be found in section 3.2.1 on page 22.

The results of the supplementary SDA study under the I.S. EN 17037 criterion can be found in section D.0 on page 78.

This study indicates the daylight potential of the proposed development. As-built daylight performance within the occupied development may vary from the results of this assessment due to changes to the exterior context, weather conditions and/or occupiers choice of interior finishes and furniture placement.

2.5.2 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. Section 3.1.10 of the BRE guidelines suggests 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 section G3 of 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

The recommendation for dwellings is that at least one habitable room, preferably a main living room, should receive at least the minimum criterion. Should no room within a given unit meet the recommended minimum level of sunlight exposure, it will be stated as non-compliant.

Sunlight exposure is assessed 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 (whichever 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. In the case of this report, SE assessment have been conducted for the classrooms and office of the proposed crèche, but these have not been included in the calculated compliance rates, which remains limited to residential rooms. All assessed rooms within the crèche are compliant with the BRE criteria for sunlight exposure.

Project Assessment

The results for the study on sunlight exposure can be found in the appendix results section C.3 on page 64, with analysis of the results in section 3.2.2 on page 25.

This study predicts the sunlight potential of the proposed units. Real-world performance post-construction can vary based on actual weather patterns and any alterations to the external environment.

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

Section 3.3.17 of the BRE Guidelines recommends 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 section G4.1 of the BRE Guidelines. Typically, deciduous trees will not be included unless there is a particularly dense belt.

A quantitative SOG assessment may be carried out on the areas as indicated by the project architect. Shadow studies and false colour plans can 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 should be calculated individually. These areas can be combined to give the development average where appropriate.

Project Assessment

The levels of sunlight to proposed amenity areas, as indicated by the architect, have been assessed. However, it should be noted that the numbering 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 numbered the same.

The results for the study of 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 76, with analysis of the results in section 3.2.3 on page 26.

This analysis quantifies the anticipated sunlight levels within the assessed amenity areas. The as-built outcome is subject to variation, depending on real-world weather and any changes to the exterior setting.

2.5.4 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.

Section D3 of the BRE Guidelines recommends 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 (section 2.2) 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). Although the proposed development is not under Dublin City Council’s jurisdiction, the NSL study has been included to provide consistency across 3DDB daylight and sunlight assessments.

Since the BRE Guidelines do not provide a recommended minimum NSL for proposed developments, compliance rates are calculated using criteria applied by 3DDB, derived from the logic of the Guidelines. Specifically, an NSL of 80% is considered an appropriate benchmark; this aligns with Section 2.2.10 of the BRE Guidelines, which states that supplementary electric lighting is required if a significant portion of the working plane—defined as 20% or more—lies beyond the No Sky Line.

The results of the supplementary NSL study can be found in section D.0 on page 78.

3.0 Analysis of Results

3.1 Analysis of Impact Assessment Results

Figure 3.7 below, outlines the subject site (white), the proposed apartment blocks (grey) and the area within three times the height of the proposed development (yellow).

The neighbouring properties, within three times the height of the proposed development, have been labelled in the image below. The following list explains the approach taken for each property regarding the daylight and sunlight impact assessment.

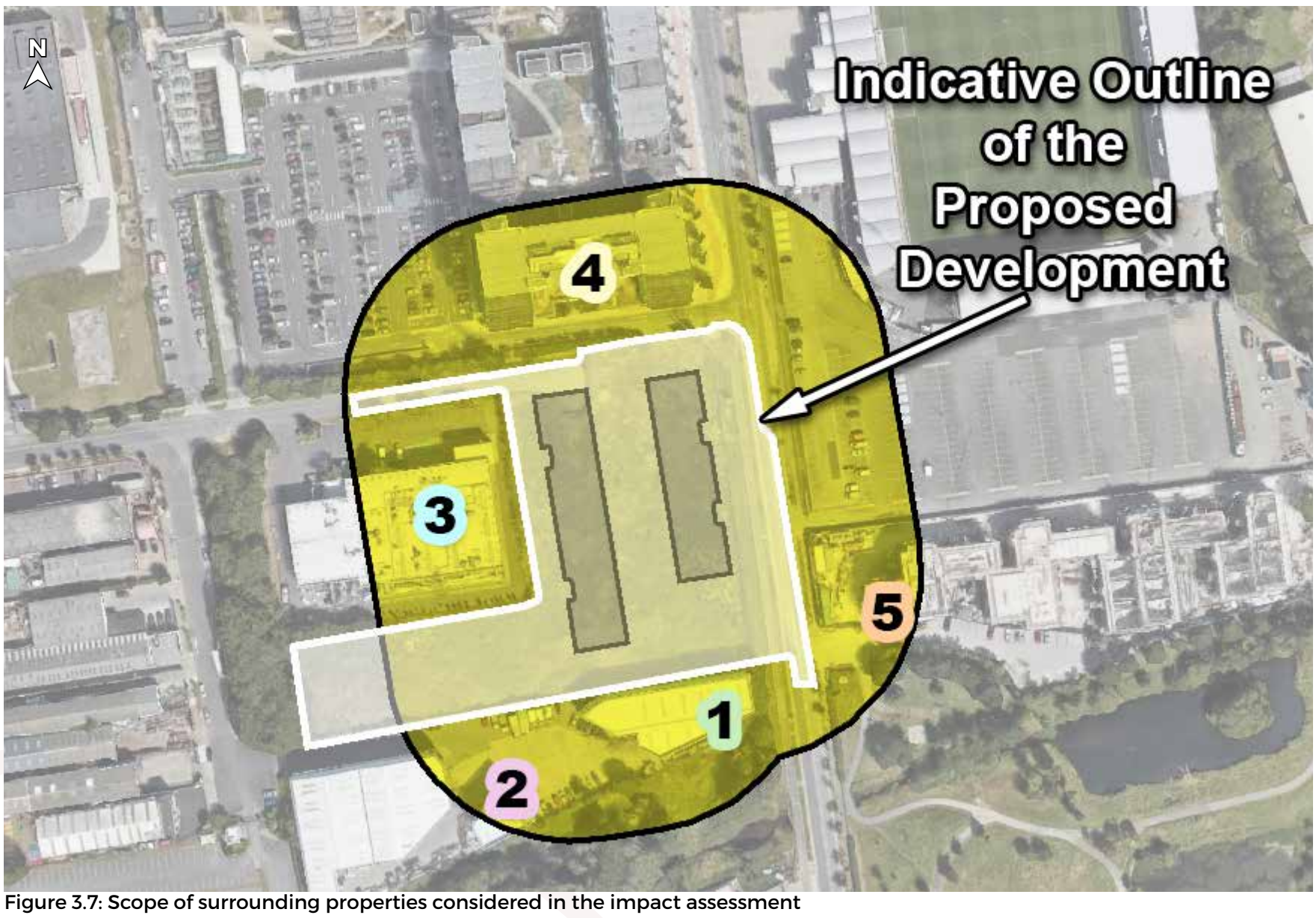

Figure 3.7: Scope of surrounding properties considered in the impact assessment

(1) Unit 3 Riverside Business Park:

- Planning drawings indicate that there is a dual aspect office, at ground floor level, on the west side of this building. It has been assumed that a similar internal layout exists at level 01 and level 02 of the same building. While the proposed development does not subtend an angle of 25˚ when measured in a perpendicular section from these windows. However, a detailed daylight impact assessment has been conducted based on the 45˚ approach (see section “2.1 Impact Assessment, Window Selection Criteria” on page 8 for more details on the 45 approach). No impact assessment was conducted on the other windows along this facade as they do not appear to serve habitable rooms.

(2) Unit 1 & 2 Riverside Business Park:

- Although these industrial premises are within three times the height of the proposed development, the proposed structures do not subtend 25˚ when measured in a perpendicular section from any of the windows. As per the BRE decision chart, as shown in Figure 2.1 on page 8, daylight is unlikely to be affected. As such, no further assessment has been conducted.

(3) Vita Activities:

- This industrial development is located to the west of the proposed development, and shares a boundary with the proposed development. Given the industrial nature of this premises it would typically not be included in a daylight and sunlight impact assessment. In this instance no impact assessment has been considered on the basis that there are no windows facing the proposed structures.

(4) Tallaght Arena:

- Although the function of the windows of this building that face the proposed development has not been established; they appear to be an open plan office or function space. Regardless a detailed impact assessment has not been carried out as the proposed development does not subtend 25˚ when measured in a perpendicular section from the window at the lowest level, and therefore, in accordance with the BRE Guidelines, is unlikely to experience any material change to their levels of daylight within.

(5) Residential Development on Whitestown Way:

- East of the subject site, located across Whitestown Way is an ‘older person’s residential development’ that has been constructed after receiving permission in 2018. Similar to the majority of other neighbouring properties within three times the height of the proposed development, the separation distance of this property is sufficient to ensure the proposed development does not subtend 25˚ from the windows at the lowest level, meaning that no further impact assessment is required.

3.1.1 Analysis of Daylight Impact Assessment Results

Daylight impact was assessed for three rooms within Unit 3 of Riverside Business Park, located south of the subject site. The assessment calculated Vertical Sky Component (VSC) and No Sky Line (NSL) values for both baseline and proposed states to determine the level of impact.

For the assessed offices of this property, multiple windows serve the same room. In the VSC impact assessment, each individual window is assessed and a weighted average based on the window size is calculated to determine the level of effect on the room. Windows labelled with a hash-tag and a serial number (e.g. G#[1], G#[2]) denote that the window is part of a room. The room will be identified with the hash tag, but without the serial number. This would be room 'G#' in the example below.

The VSC assessment shows a 'minor adverse' impact on one of the two north-facing ground floor windows (Window G#1). However, the second north-facing window (G#2) meets BRE Guidelines, and the two south-facing windows (G#3 and G#4) serving the same office are unaffected. A weighted average of all windows indicates a 'negligible' impact to the VSC of the office space on the ground floor.

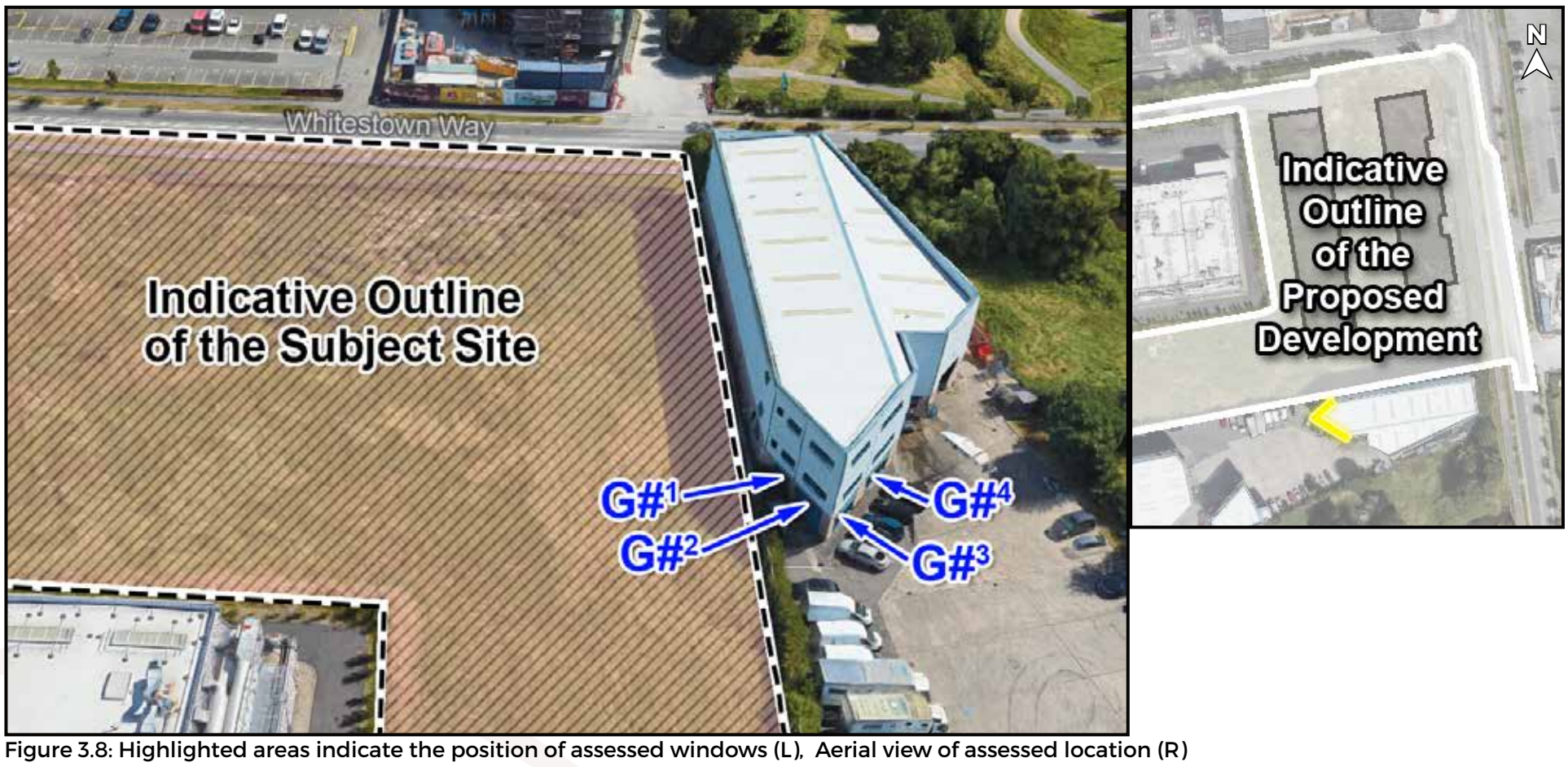

Figure 3.8: Highlighted areas indicate the position of assessed windows (L), Aerial view of assessed location (R)

The level of effect to VSC in all windows of the offices on subsequent levels have met the criteria of the BRE Guidelines. As such these are also categorised as 'negligible'.

The No Sky Line (NSL) assessment has shown no reduction to the portion of the rooms from which there would be an unobstructed view of the sky.

In summary, the VSC results indicate the development will not adversely affect daylight intensity, while the NSL results demonstrate that daylight distribution within the offices remains unaffected.

The results of the study on VSC and NSL can be found in section A.1 on page 31.

None of the other properties within three times the height of the proposed development have been assessed as the BRE selection criteria, as expanded in section 2.1 on page 8, has shown that the proposed development has an adequate separation distance and that no further assessment is required.

3.1.2 Analysis of Sunlight Impact Assessment Results

A quantitative SOG impact assessment has not been conducted for this application. Amenity areas that would typically be considered for assessment are either located to the south of the proposed development (the existing older person's residential development on Whitestown Way), meaning shadows from the proposed development will be cast in the opposite direction, or they have sufficient separation distance (Tallaght Arena) from the proposed development, making overshadowing highly unlikely.

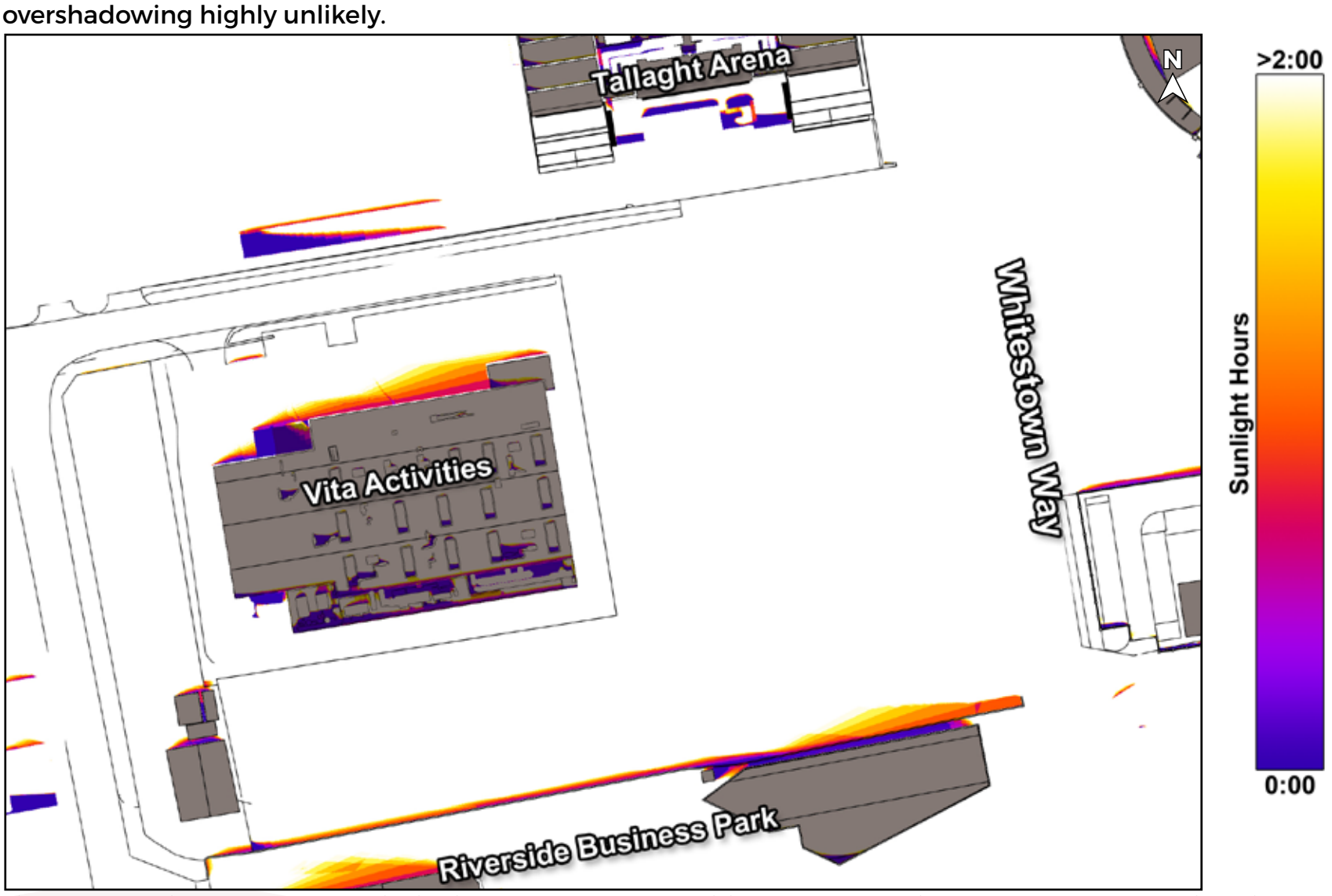

Figure 3.9: Baseline false colour plan indicating areas capable of receiving 2 hours of sunlight on March 21st (shown in white)

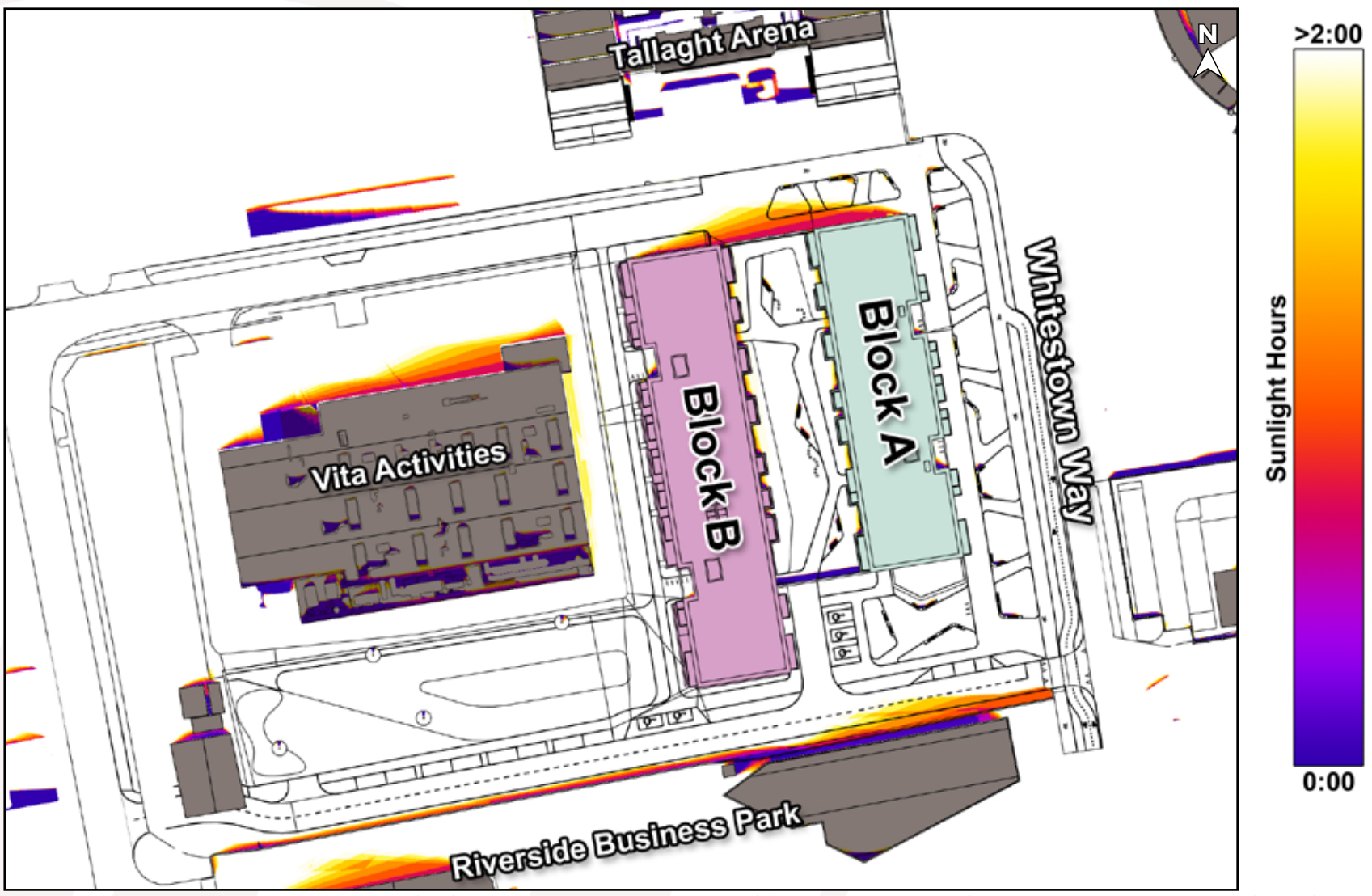

Figure 3.10: Proposed false colour plan indicating areas capable of receiving 2 hours of sunlight on March 21st (shown in white)

The false colour plans shown above, clearly demonstrate that the proposed development would impose no reduction to the portion of these areas that are capable of receiving two hours of sunlight on March 21st. In addition to these images, the hourly renderings of the shadow study in section B.0 on page 37, allow for a qualitative sunlight assessment of the additional shadows cast by the proposed development.

3.2 Analysis of Scheme Performance Results

3.2.1 Spatial Daylight Autonomy (SDA)

This study has assessed the Spatial Daylight Autonomy (SDA) for all habitable rooms within the residential portion of the proposed development both with and without trees. This dual approach ensures a comprehensive understanding of the development's daylight potential.

This proposed development consists of 169 no. residential units, which makes up approximately 431 no. habitable rooms.

Under the criteria as set out in the BR 209, both with and without trees, the SDA value in 403 no. habitable rooms meets or exceeds the appropriate target values. This gives a favourable compliance rate of c. 94%.

All instances of non-compliance in the SDA assessment occur in the LKDs facing onto the landscaped courtyard at podium level, as highlighted in Figure 3.11.

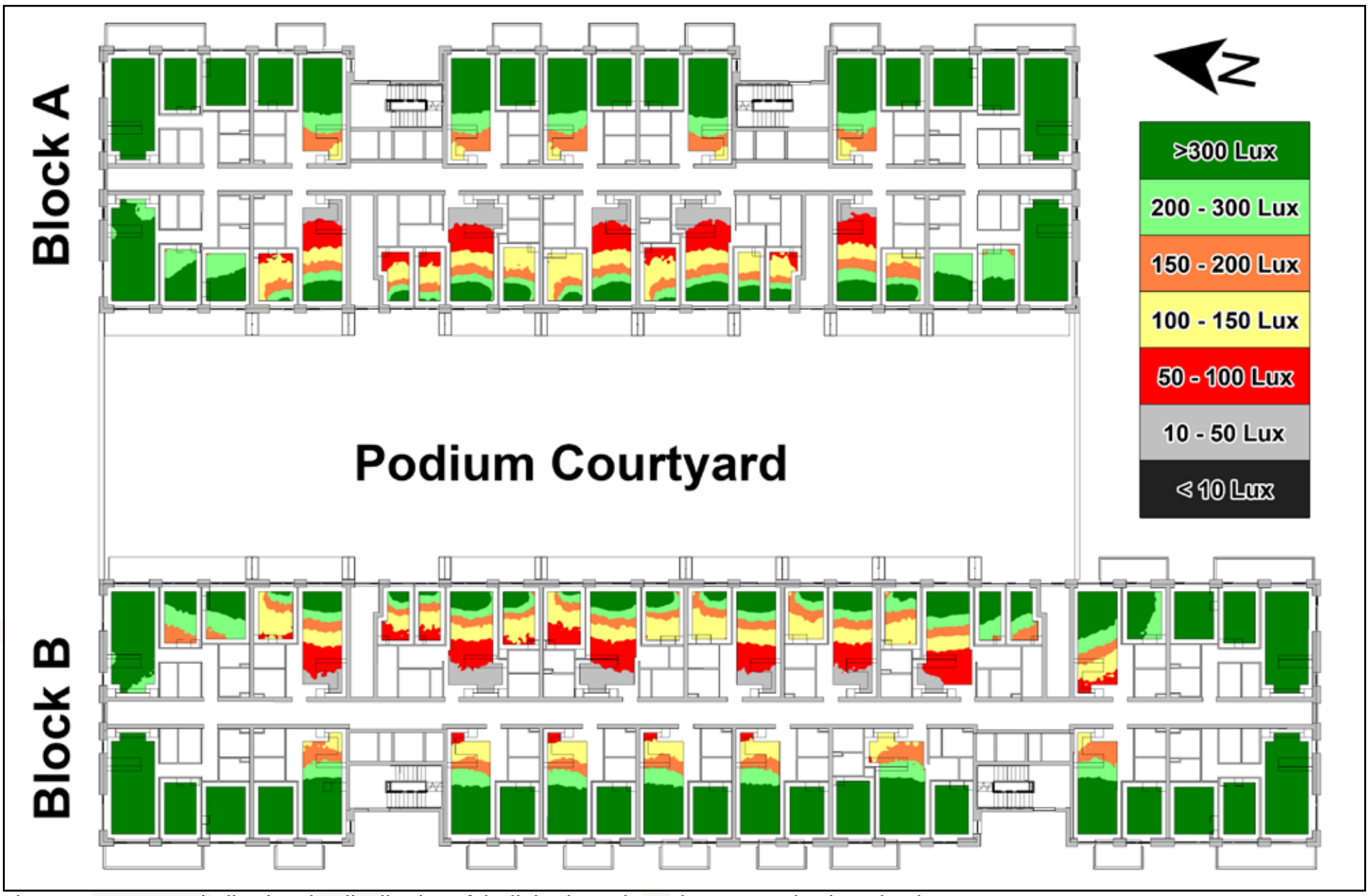

Figure 3.11: Heatmap indicating the distribution of daylight throughout the proposed units at level 01

These rooms are partly constrained by the adjacent proposed block and also by balconies above the windows. Where possible, balconies have been offset to allow direct daylight access into the LKDs. As shown in the heat map in Figure 3.11, this design intervention ensures the living areas at the front of all LKDs receive natural daylight in excess of 150 lux. This meets the minimum level recommended by the BRE Guidelines. The kitchen area towards the back of the more constrained units may need supplementary electric lighting for longer periods of the day when in use.

In addition to the proposed residential units, a supplementary daylight assessment was also conducted for the rooms of the proposed crèche. All assessed rooms within the crèche have shown excellent daylight availability. Note: the crèche rooms have not been included when calculating compliance rates for the proposed development.

Compensatory Design Solutions (CDS)

A-L01-02:
This unit is 10% above the minimum required floor area. Located on the podium at first floor level facing west, it incorporates compensatory measures in the form of an increased provision of private open space on the podium. As with all other units, this unit also benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedroom of this unit will have adequate levels of daylight.

A-L01-03:
This unit, on the podium at first floor level facing west, it incorporates compensatory measures in the form of an increased provision of private open space on the podium. As with all other units, this unit also benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

A-L01-04:
This unit is 10% above the minimum required floor area. Located on the podium at first floor level facing west, it incorporates compensatory measures in the form of an increased provision of private open space on the podium. As with all other units, this unit also benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedroom of this unit will have adequate levels of daylight.

A-L01-05:
This unit, on the podium at first floor level facing west, it incorporates compensatory measures in the form of an increased provision of private open space on the podium. As with all other units, this unit also benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

A-L01-06:
This unit is 10% above the minimum required floor area. Located on the podium at first floor level facing west, it incorporates compensatory measures in the form of an increased provision of private open space on the podium. As with all other units, this unit also benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedroom of this unit will have adequate levels of daylight.

A-L02-02:
This unit, above the podium at second floor level facing west, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

A-L02-03:
This unit, above the podium at second floor level facing west, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

A-L02-04:
This unit is 10% above the minimum required floor area. Located on the podium at second floor level facing west, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedroom of this unit will have adequate levels of daylight.

A-L02-05:
This unit, above the podium at second floor level facing west, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

A-L02-06:
This unit, above the podium at second floor level facing west, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

A-L03-03:
This unit, above the podium at third floor level facing west, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

A-L03-04:
This unit, above the podium at third floor level facing west, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedroom of this unit will have adequate levels of daylight.

A-L03-05:
This unit, above the podium at third floor level facing west, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

B-L01-12:
This unit, on the podium at first floor level facing east, it incorporates compensatory measures in the form of an increased provision of private open space on the podium. As with all other units, this unit also benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

B-L01-13:
This unit is 10% above the minimum required floor area. Located on the podium at first floor level facing east, it incorporates compensatory measures in the form of an increased provision of private open space on the podium. As with all other units, this unit also benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedroom of this unit will have adequate levels of daylight.

B-L01-14:
This unit is 10% above the minimum required floor area. Located on the podium at first floor level facing east, it incorporates compensatory measures in the form of an increased provision of private open space on the podium. As with all other units, this unit also benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedroom of this unit will have adequate levels of daylight.

B-L01-15:
This unit, on the podium at first floor level facing east, it incorporates compensatory measures in the form of an increased provision of private open space on the podium. As with all other units, this unit also benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

B-L01-16:
This unit, on the podium at first floor level facing east, it incorporates compensatory measures in the form of an increased provision of private open space on the podium. As with all other units, this unit also benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

B-L01-17:
This unit is 10% above the minimum required floor area. Located on the podium at first floor level facing east, it incorporates compensatory measures in the form of an increased provision of private open space on the podium. As with all other units, this unit also benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedroom of this unit will have adequate levels of daylight.

B-L02-12:
This unit, above the podium at second floor level facing east, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

B-L02-13:
This unit is 10% above the minimum required floor area. Located on the podium at second floor level facing east, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedroom of this unit will have adequate levels of daylight.

B-L02-14:
This unit is 10% above the minimum required floor area. Located on the podium at second floor level facing east, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedroom of this unit will have adequate levels of daylight.

B-L02-15:
This unit, above the podium at second floor level facing east, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

B-L02-16:
This unit, above the podium at second floor level facing east, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

B-L02-17:
This unit, above the podium at second floor level facing east, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

B-L03-15:
This unit, above the podium at third floor level facing east, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

B-L03-16:
This unit, above the podium at third floor level facing east, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

B-L03-17:
This unit, above the podium at third floor level facing east, benefits from the increased provision of public open space to the west of the site. While the kitchen area to the rear of the LKD may require supplementary electric lighting, analysis has shown that the living area and bedrooms of this unit will have adequate levels of daylight.

It is the expert opinion of 3D Design Bureau, that the results of the SDA assessment represent a considered balance between delivering units with favourable daylight levels and achieving appropriate density on the subject site.

Floor plans indicating unit numbers can be found in section C.1 on page 46. The results for the study on SDA can be seen in section C.2 on page 52.

3.2.2 Sunlight Exposure (SE)

A sunlight exposure assessment has been carried out on all habitable rooms within the residential portion of the proposed development. As part of this assessment, both existing surrounding trees and proposed trees have been incorporated into the analytical model and treated as opaque elements.

The assessments have been carried out in two states:

- Only evergreen trees included in the assessment model.
- All trees (evergreen and deciduous) included in the assessment model.

This approach provides a range of potential sunlight hours, accounting for the seasonal variability of deciduous trees and is in accordance with section G3 of the BRE Guidelines.

In total, 169 no. units have been assessed. Using the rationale explained in section E.3 on page 104, the level of sunlight exposure for the assessed units is as follows:

With only evergreen trees included in the assessment model:

- high: 61 no. (at least 4 hours)
- medium: 60 no. (at least 3 hours)
- minimum: 37 no. (at least 1.5 hours)
- below minimum recommendation: 11 no. (less than 1.5 hours)

In the assessment carried out with all tree types:

- high: 60 no. (at least 4 hours)
- medium: 61 no. (at least 3 hours)
- minimum: 33 no. (at least 1.5 hours)
- below minimum recommendation: 15 no. (less than 1.5 hours)

The SE assessment has shown that, depending on the effect of trees, the approximate compliance rate for the assessed units, in accordance with the BRE Guidelines, is between 91% & 93%

Note: For a unit to be compliant under BR 209, at least one habitable room within the unit needs to meet the guideline values.

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.

The layout of the proposed development sees units with a predominantly east or west facing orientation. As such the east facing units will be sunlit in the morning time, with the west facing units benefiting from direct sunlight in the evening. While the vast majority of assessed units have achieved the recommended level of sunlight in accordance with the BRE recommendations, sunlight access is constrained in some units. Morning sunlight access in the east facing units of Block B will be obstructed by Block A. Likewise, Block B will reduce evening sunlight access in the west facing units of Block A. These obstructions are most evident at lower levels, and gradually improve as the floor level increases. In some instances, sunlight access from the south is restricted by the balconies of units on the levels above.

Although not included in the calculated compliance rates, the SE assessment was extended to the rooms of the proposed crèche, all of which can expect a 'high' level of sunlight exposure.

No recommendation is made regarding the performance of a development as a whole for SE performance within the BRE Guidelines. However, it is the opinion of 3DDB that the proposed development performs favourably in this regard considering the number of single aspect units.

The results for the study on SE in the habitable rooms of the proposed units can be seen in section C.3 on page 64.

3.2.3 Sun On Ground in Proposed Outdoor Amenity Areas

This study has assessed the level of sunlight on March 21st within the external amenity areas of the proposed development

In total 4 no. spaces have been assessed, all of which meet the criteria as set out in section 3.3 of the BRE Guidelines.

The public open space to the south-west of the subject site, indicated as 1 Figure 3.12 below, is relatively unobstructed and will have excellent sunlight potential.

The public open space to the south-east of the subject site, indicated as 2, also has excellent sunlight potential. This area will have sunlight access for the majority of the day.

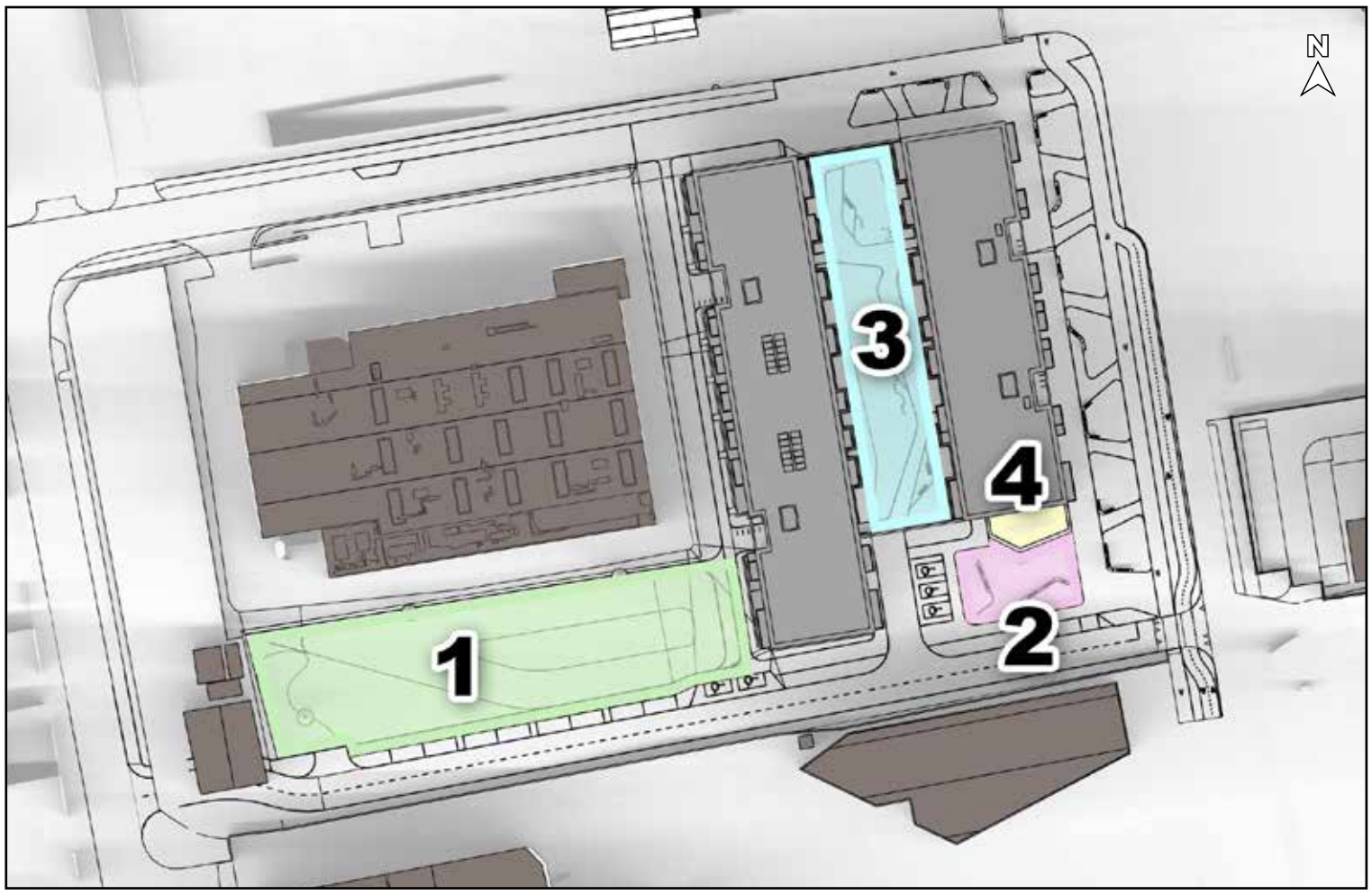

Figure 3.12: Indication of the proposed amenity areas that have been analysed

The shared communal open space at podium level between the two blocks, indicated as 3, comfortably meets the BRE criteria with the vast majority of the space being capable of receiving two hours of sunlight on March 21st. However, it should be noted that there will be transient shadows across this space for the majority of the day. The images below are taken from the hourly renderings of the shadow study. These illustrate that while almost all of the courtyard (97.4%) receives the recommended two hours of sunlight on the spring equinox (March 21st). This does not mean that there will be an abundance of sunlight, but rather that the whole space achieves the minimum recommendation.

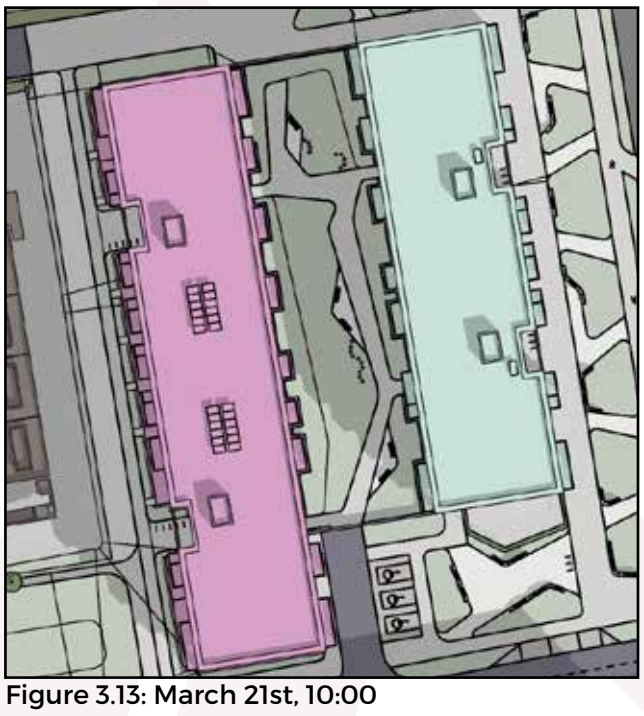

Figure 3.13: March 21st, 10:00

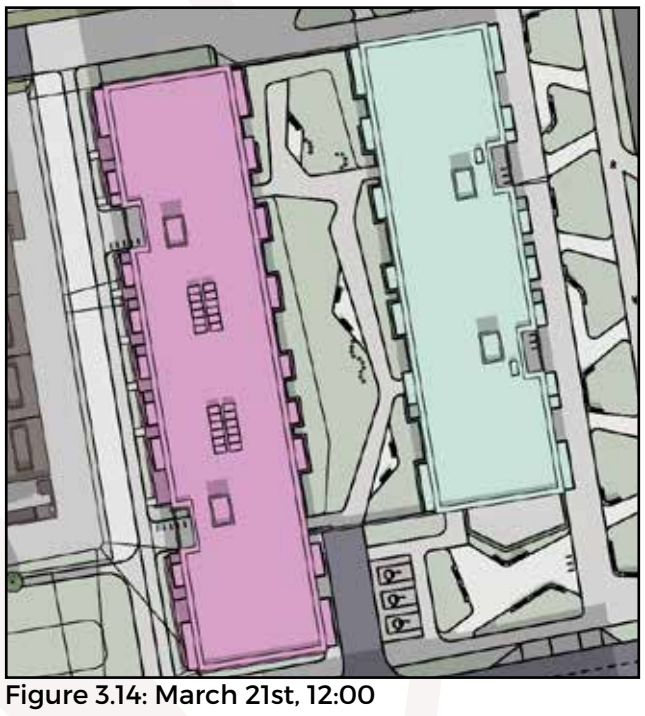

Figure 3.14: March 21st, 12:00

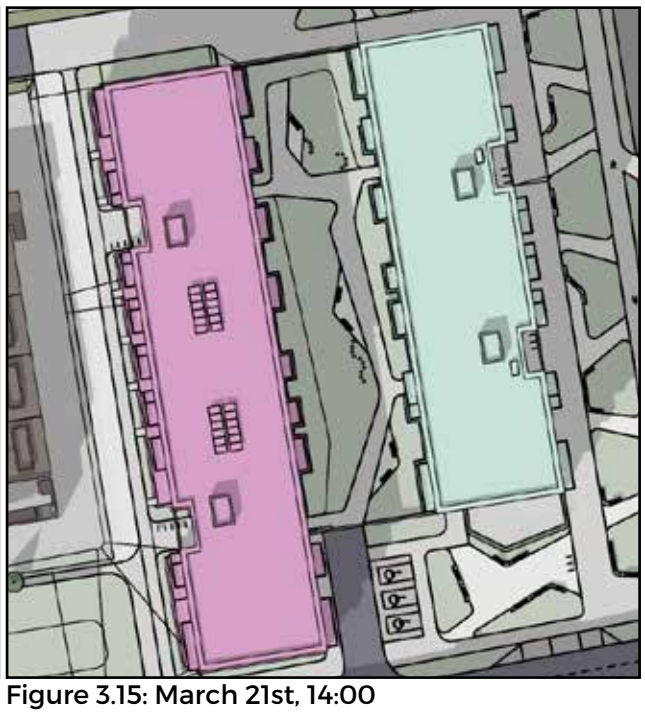

Figure 3.15: March 21st, 14:00

At 10:00 Block A casts shadows across the majority of the courtyard. By 12:00 the sun is due south and the courtyard is almost in complete sunlight. By 14:00 Block B is casting majority of the courtyard into shade once again. From this we can plainly see that the recommended two hours of sunlight on March 21st is achieved between 10:00 and 14:00.

However, the BRE recommendation of 'two hours' of sunlight on March 21st does not mean that these two hours are what is necessarily important. This metric is used as a guide to indicate if a space will appear 'adequately sunlit throughout the year'.

This is evident in the examples below taken from the hourly renderings for June 21st, the summer solstice. The courtyard remains mainly in shade at 10:00 on this day, due to the low position of the still rising sun. At 12:00, similar to the Equinox rendering, the courtyard is predominantly in sunlight. It is not until 16:00 that the shadow cast by Block B extends mostly across this space.

This demonstrates, that the courtyard will have sunlight potential for a sustained period during the summer months, which can be deemed 'adequate'.

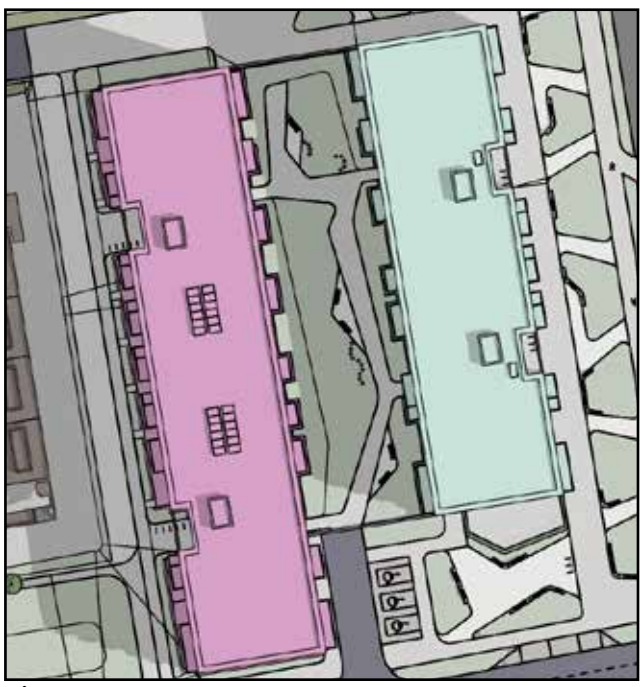

Figure 3.16: June 21st, 10:00

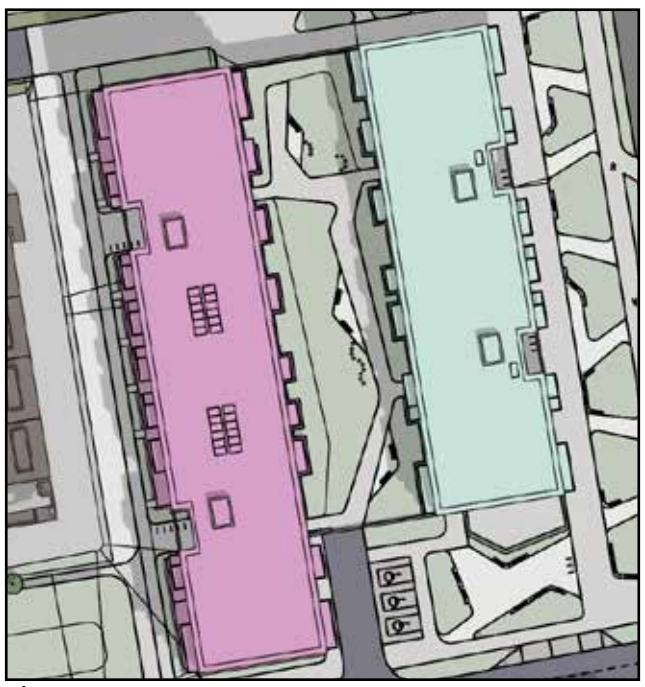

Figure 3.17: June 21st, 12:00

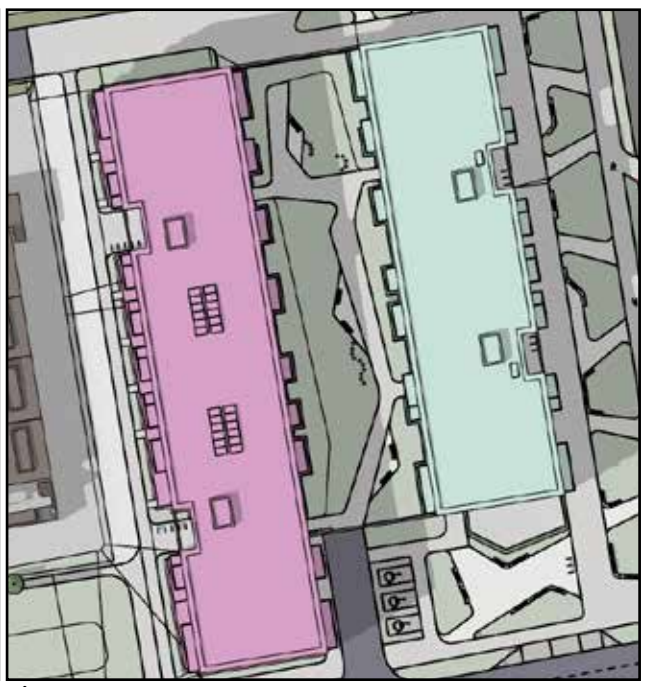

Figure 3.18: June 21st, 16:00

By contrast, the crèche play area, indicated as 4 in Figure 3.12 on page 26, is located to the south of Block A. This area has very little obstructions to the south and will be capable of receiving sunlight for the majority of the day from spring to autumn, but will be shaded by the existing context in the winter time as is evident in the renderings of the winter solstice which can be found in Section B.3 on page 44.

In summary, the SOG assessment has demonstrated that design of the proposed scheme that achieves appropriate site density without having a detrimental effect on sunlight access in the various external amenity areas.

The results for the study on sunlighting in the proposed outdoor amenity spaces can be found in section C.4 on page 76.

A visual representation of these readings can be seen in the false colour plan in section C.4 and in the hourly shadow diagrams for March 21st in section B.1 on page 37 of the appendix section of this report.

4.0 Conclusion

3D Design Bureau (3DDB) have carried out a detailed daylight and sunlight assessment for the proposed mixed-use development at Whitestown Way, Dublin 24. This study was conducted in strict accordance with the BRE Guidelines (BR 209 - 2022) and involved a comparative analysis of the existing baseline environment against the proposed development state. The assessment utilised quantitative metrics, including Vertical Sky Component (VSC) and No Sky Line (NSL) for impact, and Spatial Daylight Autonomy (SDA), Sunlight Exposure (SE), and Sun on Ground (SOG) for scheme performance.

4.1 Summary of Impact Assessment

The impact assessment focused on neighbouring properties, specifically identifying Unit 3 of the Riverside Business Park as the primary area for detailed study due to its proximity. The analysis demonstrated that the proposed structures will have a 'negligible' level of effect on both the Vertical Sky Component (VSC) and the No Sky Line (NSL) of the existing offices. Furthermore, due to adequate separation distances, no adverse sunlight impacts (APSH/WPSH) were identified for surrounding habitable rooms. The qualitative assessments, in the form of false colour plans and shadow studies, indicate that the development will not cause significant overshadowing to surrounding areas.

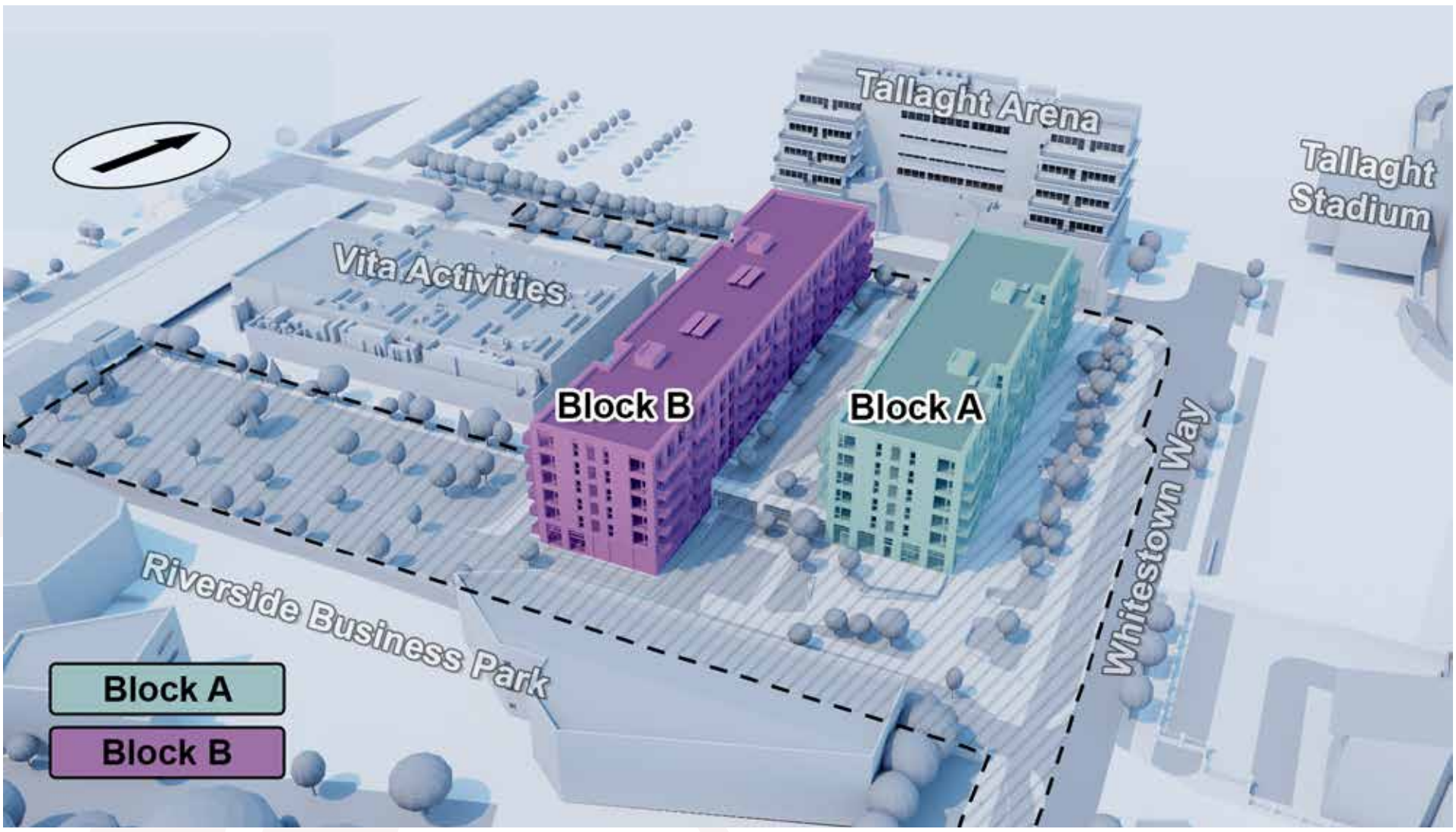

Figure 4.19: Model View of the proposed development

4.2 Summary of Scheme Performance

The internal performance of the proposed residential units and the crèche demonstrates a high level of design quality regarding natural light:

Spatial Daylight Autonomy (SDA):

The residential portion of the scheme achieves a robust compliance rate of c. 94%, with a rationale / compensatory design solutions provided by the project architect for all rooms failing to meet the BRE recommendations, all of which face into the courtyard amenity space.

Sunlight Exposure (SE):

The development performs very well in terms of internal sunlight access. Even when accounting for the potential shading of trees, 91% of the units receive the recommended minimum of 1.5 hours of sunlight on March 21st.

Sun on Ground (SOG):

All assessed external amenity areas, including the level 01 podium courtyard and the crèche play area, meet the BRE recommendations. These spaces are well-positioned to provide quality, sunlit environments for future residents.

In conclusion, while any development of this scale will inevitably alter its immediate surroundings, the results of this analysis show that the Whitestown Way project has been thoughtfully designed to mitigate the impact on the neighbouring developments, successfully balancing high-density living with a high standard of residential amenity and natural light for the future occupants.

Appendix - Results

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Appendix Contents

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	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**

A: Window Number

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

B: 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 10).

C: 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 10).

D: Ratio of Proposed VSC to Baseline VSC

This column expresses the ratio of change between the baseline VSC value and the proposed VSC value. Section 2.2.23 of 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.

E: Recommended minimum VSC

The *BRE Target Value* for each window has been set according to section 2.2.23 of 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.

F: 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.

G: 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 103.

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 Effect on No Sky Line (NSL)

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

Table Example. A.2 - NSL Impact Assessment						
Room Number	Baseline NSL Value	Proposed NSL Value	Ratio of Proposed NSL to Baseline NSL	Recommended minimum NSL	Level of Compliance with BRE Guidelines	Effect of Proposed Development
A	**B**	**C**	**D**	**E**	**F**	**G**

A: Room Number

The number in this column will identify the assessed room. The relevant façade of the assessed rooms are represented visually in the corresponding figure.

B: Baseline NSL Value

The *Baseline NSL Value* represents the NSL value of the assessed room which is calculated in the existing baseline model state (as explained in the "Building the Model States" on page 10).

C: Proposed NSL Value

The *Proposed NSL Value* represents the NSL value of the assessed room which is calculated in the proposed model state (as explained in the "Building the Model States" on page 10).

D: Ratio of Proposed NSL to Baseline NSL

This column expresses the ratio of change between the baseline NSL value and the proposed NSL 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.

E: Recommended minimum NSL

The *BRE Target Value* for each room 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 room, if the NSL value **both** drops below the guideline value of 80% **and** the NSL value is less than 0.8 times the baseline value.

Therefore, to determine the *recommended minimum Value*, 80% of the *Baseline NSL value* has been calculated. If this value is above the 80% threshold, then 80% of the baseline value is the appropriate target value.

F: Level of Compliance with the BRE Guidelines

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

G: Effect of Proposed Development

The levels of effect in this column describe the effect an assessed 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 103.

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

A.2.1 Unit 3 Riverside Business Park: Effect on daylight of ground floor office (VSC & NSL)

Table No. A.2.1 - VSC Results:						
Window Number	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**
G#1	34.59%	24.41%	0.71	27.00%	90%	-
G#2	32.72%	26.19%	0.80	26.18%	BRE Compliant	-
G#3	36.14%	36.14%	1.00	27.00%	BRE Compliant	-
G#4	36.58%	36.58%	1.00	27.00%	BRE Compliant	-
G#	35.14%	31.83%	0.91	27.00%	BRE Compliant	Negligible

* Section 2.2.23 of the BRE Guidelines states 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"E.2 Definition of Effects" on page 103.

If it can be determined or reasonably assumed that multiple windows serve the same room, each individual window is labelled with a hash-tag and a serial number (e.g. Xa#1, Xa#2). Each window is assessed, and a weighted average is calculated to determine the level of effect on the room. Rooms are identified with a hash-tag at the end (e.g. Xa#). In such cases, the 'effect of proposed development' column will display a dash (-) for the individual windows, with the overall level of effect indicated in the row corresponding to the room.

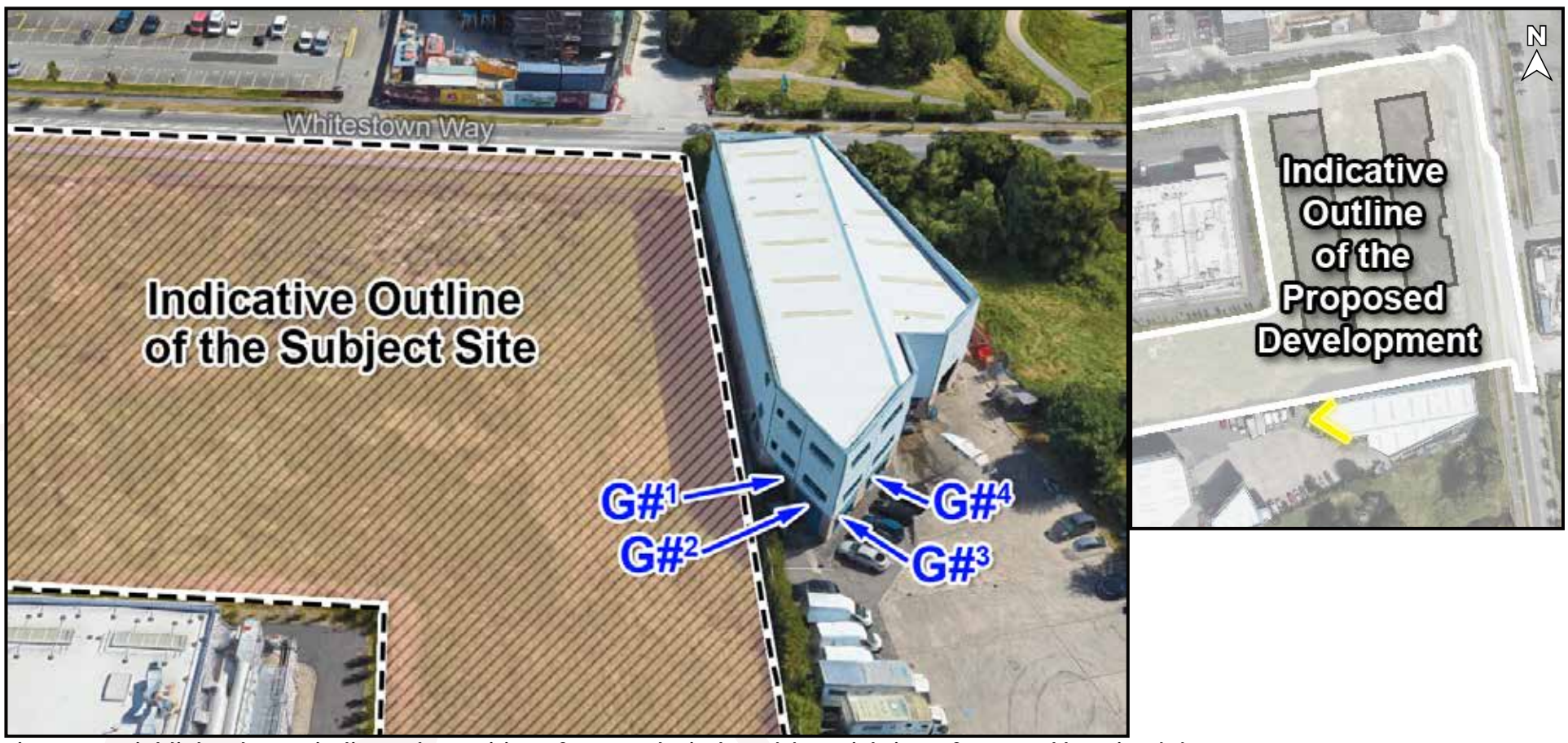


Figure A.1: Highlighted areas indicate the position of assessed windows (L), Aerial view of assessed location (R)

Table No. A.2.1 - No Sky Line Results:						
Room Number	Baseline NSL Value	Proposed NSL Value	Ratio of Proposed NSL to Baseline NSL	Recommended minimum NSL	Level of Compliance with BRE Guidelines	Effect of Proposed Development
G#	99.84%	99.84%	1.00	79.87%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the daylight received by an existing room, the value needs to both drop below the guideline value of 80% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"E.2 Definition of Effects" on page 103.

Rooms are identified by the corresponding window reference with the addition of a hash-tag (e.g. Xa#). The assessment is undertaken at room level, and the reported 'effect of proposed development' relates to the room.

A.2.2 Unit 3 Riverside Business Park: Effect on daylight of 1st floor office (VSC & NSL)

Table No. A.2.2 - VSC Results:						
Window Number	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**
1#1	37.43%	27.67%	0.74	27.00%	BRE Compliant	-
1#2	37.45%	30.20%	0.81	27.00%	BRE Compliant	-
1#3	37.24%	37.24%	1.00	27.00%	BRE Compliant	-
1#4	37.55%	37.55%	1.00	27.00%	BRE Compliant	-
1#	37.41%	33.99%	0.91	27.00%	BRE Compliant	Negligible

* Section 2.2.23 of the BRE Guidelines states 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"E.2 Definition of Effects" on page 103.

If it can be determined or reasonably assumed that multiple windows serve the same room, each individual window is labelled with a hash-tag and a serial number (e.g. Xa#1, Xa#2). Each window is assessed, and a weighted average is calculated to determine the level of effect on the room. Rooms are identified with a hash-tag at the end (e.g. Xa#). In such cases, the 'effect of proposed development' column will display a dash (-) for the individual windows, with the overall level of effect indicated in the row corresponding to the room.

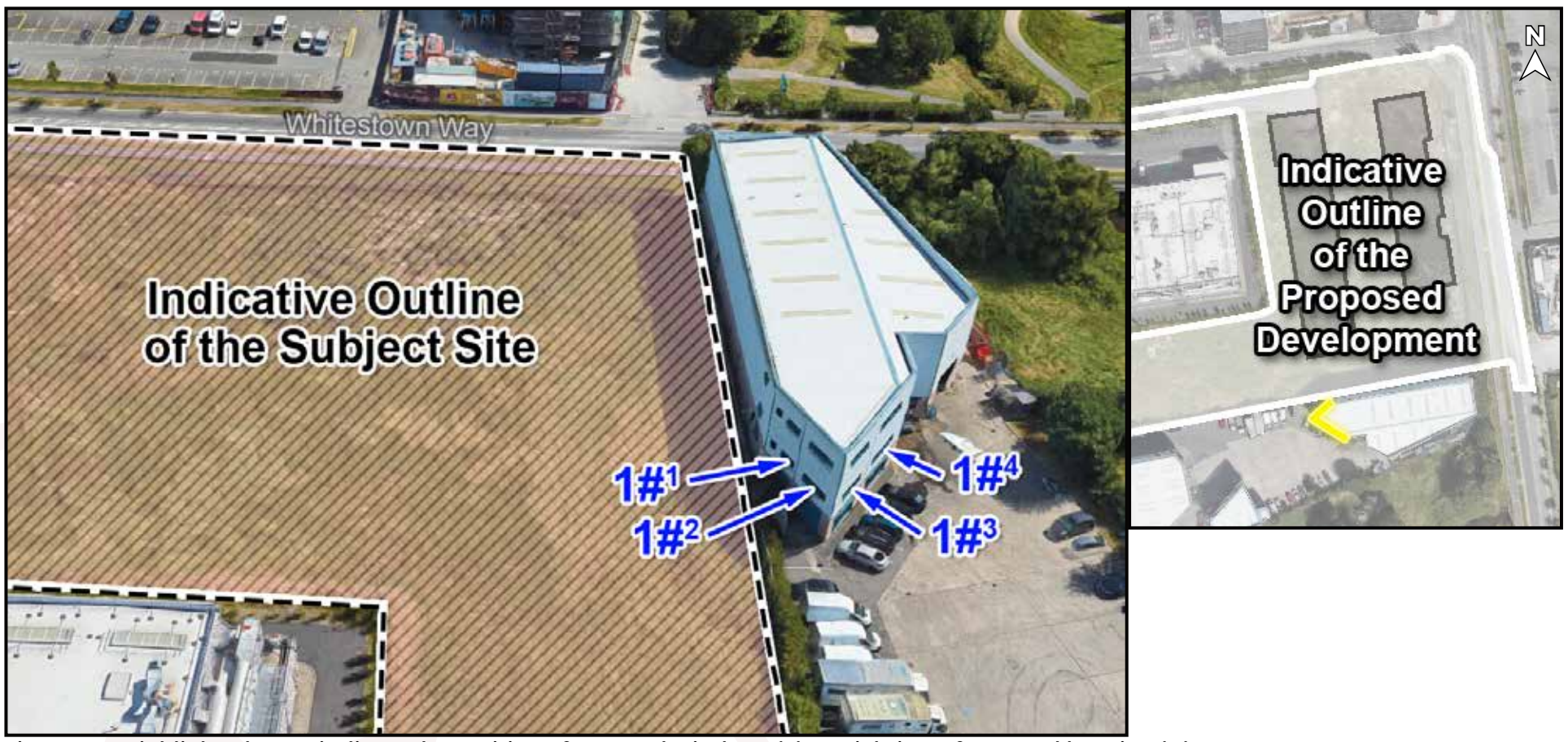


Figure A.2: Highlighted areas indicate the position of assessed windows (L), Aerial view of assessed location (R)

Table No. A.2.2 - No Sky Line Results:						
Room Number	Baseline NSL Value	Proposed NSL Value	Ratio of Proposed NSL to Baseline NSL	Recommended minimum NSL	Level of Compliance with BRE Guidelines	Effect of Proposed Development
1#	99.82%	99.82%	1.00	79.86%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the daylight received by an existing room, the value needs to both drop below the guideline value of 80% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"E.2 Definition of Effects" on page 103.

Rooms are identified by the corresponding window reference with the addition of a hash-tag (e.g. Xa#). The assessment is undertaken at room level, and the reported 'effect of proposed development' relates to the room.

A.2.3 Unit 3 Riverside Business Park: Effect on daylight of 2nd floor office (VSC & NSL)

Table No. A.2.3 - VSC Results:						
Window Number	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**
2#1	38.40%	30.67%	0.80	27.00%	BRE Compliant	-
2#2	38.44%	32.88%	0.86	27.00%	BRE Compliant	-
2#3	38.58%	38.58%	1.00	27.00%	BRE Compliant	-
2#4	38.72%	38.72%	1.00	27.00%	BRE Compliant	-
2#	38.56%	35.89%	0.93	27.00%	BRE Compliant	Negligible

* Section 2.2.23 of the BRE Guidelines states 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"E.2 Definition of Effects" on page 103.

If it can be determined or reasonably assumed that multiple windows serve the same room, each individual window is labelled with a hash-tag and a serial number (e.g. Xa#1, Xa#2). Each window is assessed, and a weighted average is calculated to determine the level of effect on the room. Rooms are identified with a hash-tag at the end (e.g. Xa#). In such cases, the 'effect of proposed development' column will display a dash (-) for the individual windows, with the overall level of effect indicated in the row corresponding to the room.

Figure A.3: Highlighted areas indicate the position of assessed windows (L), Aerial view of assessed location (R)

Table No. A.2.3 - No Sky Line Results:						
Room Number	Baseline NSL Value	Proposed NSL Value	Ratio of Proposed NSL to Baseline NSL	Recommended minimum NSL	Level of Compliance with BRE Guidelines	Effect of Proposed Development
2#	98.24%	98.24%	1.00	78.59%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the daylight received by an existing room, the value needs to both drop below the guideline value of 80% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"E.2 Definition of Effects" on page 103.

Rooms are identified by the corresponding window reference with the addition of a hash-tag (e.g. Xa#). The assessment is undertaken at room level, and the reported 'effect of proposed development' relates to the room.

A.3 Effect on Sun On Ground (SOG) Around the Proposed Development

A quantitative SOG impact assessment has not been conducted for this application. Amenity areas that would typically be considered for assessment are either located to the south of the proposed development (the residential development on Whitestown Way), meaning shadows will be cast in the opposite direction, or they have sufficient separation distance (Tallaght Arena) from the proposed development, making overshadowing highly unlikely.

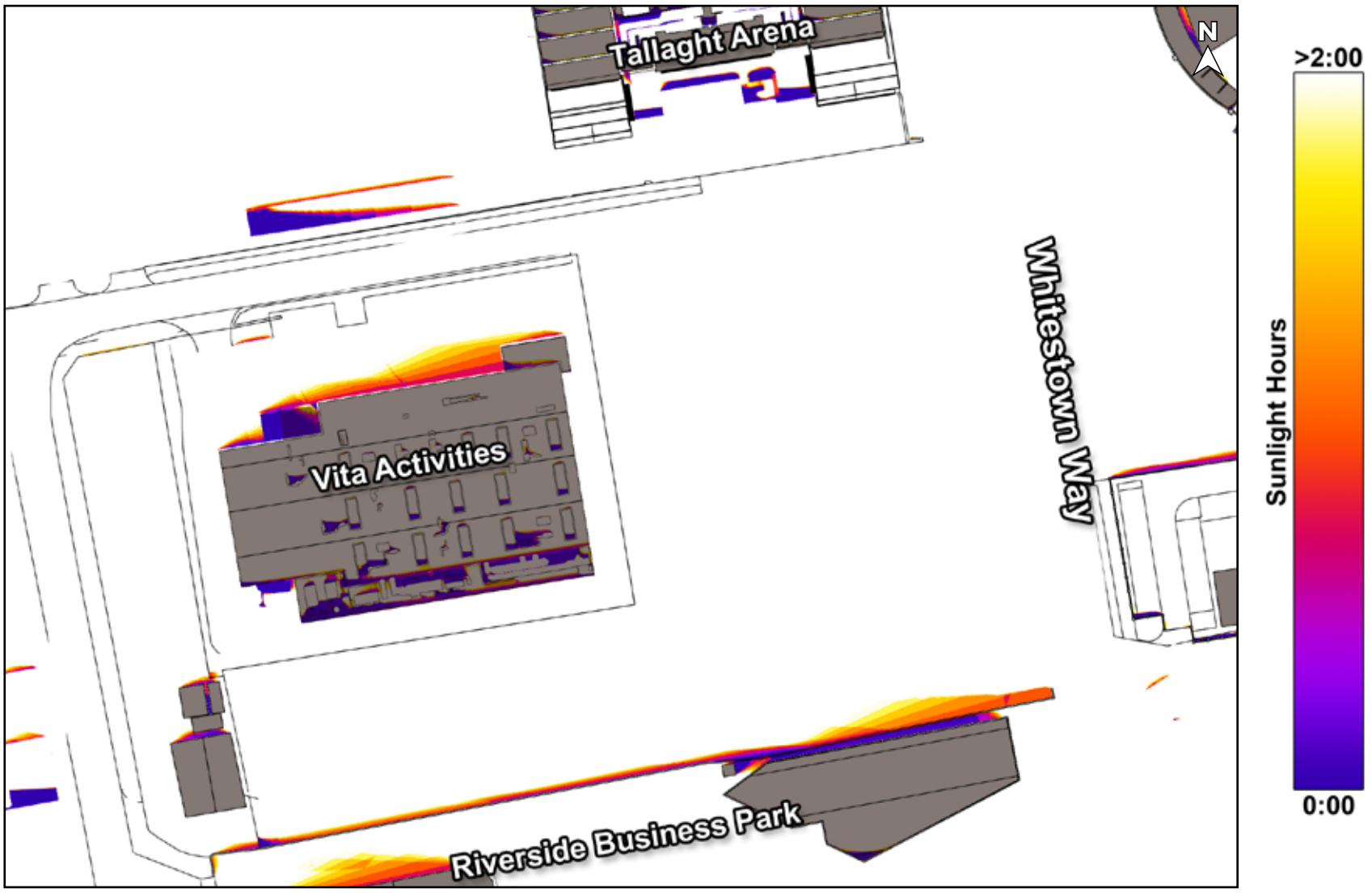


Figure A.4: Baseline false colour plan indicating areas capable of receiving 2 hours of sunlight on March 21st (shown in white)

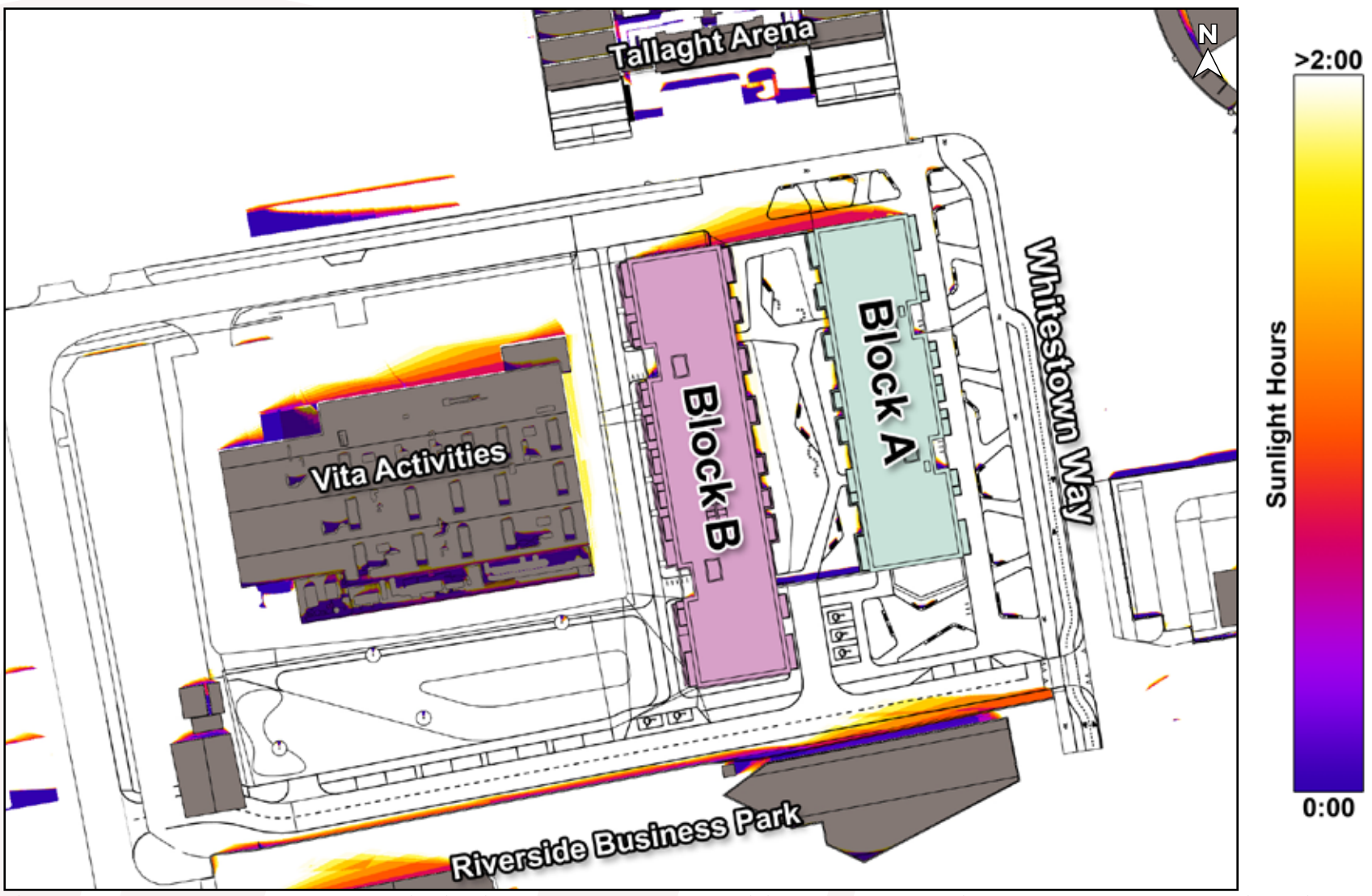


Figure A.5: Proposed false colour plan indicating areas capable of receiving 2 hours of sunlight on March 21st (shown in white)

The false colour plans shown above, clearly demonstrate that the proposed development would impose no reduction to the portion of these areas that are capable of receiving two hours of sunlight on March 21st. In addition to these images, the hourly renderings of the shadow study in section B.0 on page 37, allow for a qualitative sunlight assessment of the additional shadows cast by the proposed development.

N

Baseline	Proposed
March 21st 7:00	
March 21st 8:00	
March 21st 9:00	
March 21st 10:00	

B.0 **B.1**	**Shadow Studies** **Shadow Study 21 March**	**Project:** Large-Scale Residential Development, Whitestown Way, Dublin 24	**Proposed Block A**	**Proposed Block B**
	March 21st **Sunrise 6:32 | Sunset 18:32**	**Applicant:** ARP 4.2 Sustainable Communities (Ireland) Fund		3D DESIGN BUREAU

N

Baseline	Proposed
March 21st 11:00	
March 21st 12:00	
March 21st 13:00	
March 21st 14:00	

Project: Large-Scale Residential Development, Whitestown Way, Dublin 24

Proposed Block A **Proposed Block B**

March 21st
Sunrise 6:32 | Sunset 18:32

Applicant: ARP 4.2 Sustainable Communities (Ireland) Fund

3D DESIGN BUREAU

N

Baseline	Proposed
March 21st 15:00	
March 21st 16:00	
March 21st 17:00	
March 21st 18:00	

Project: Large-Scale Residential Development, Whitestown Way, Dublin 24

Proposed Block A **Proposed Block B**

March 21st
Sunrise 6:32 | Sunset 18:32

Applicant: ARP 4.2 Sustainable Communities (Ireland) Fund

3D DESIGN BUREAU

N

Baseline	Proposed
June 21st 6:00	
June 21st 7:00	
June 21st 8:00	
June 21st 9:00	

B.2	**Shadow Study 21 June**	**Project:** Large-Scale Residential Development, Whitestown Way, Dublin 24	**Proposed Block A**	**Proposed Block B**
	June 21st **Sunrise 5:04 | Sunset 21:49**	**Applicant:** ARP 4.2 Sustainable Communities (Ireland) Fund		3D DESIGN BUREAU

N

Baseline	Proposed
June 21st 10:00	
June 21st 11:00	
June 21st 12:00	
June 21st 13:00	

Project: Large-Scale Residential Development, Whitestown Way, Dublin 24

Proposed Block A **Proposed Block B**

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

Applicant: ARP 4.2 Sustainable Communities (Ireland) Fund

3D DESIGN BUREAU

N

Baseline	Proposed
June 21st 14:00	
June 21st 15:00	
June 21st 16:00	
June 21st 17:00	

Project: Large-Scale Residential Development, Whitestown Way, Dublin 24

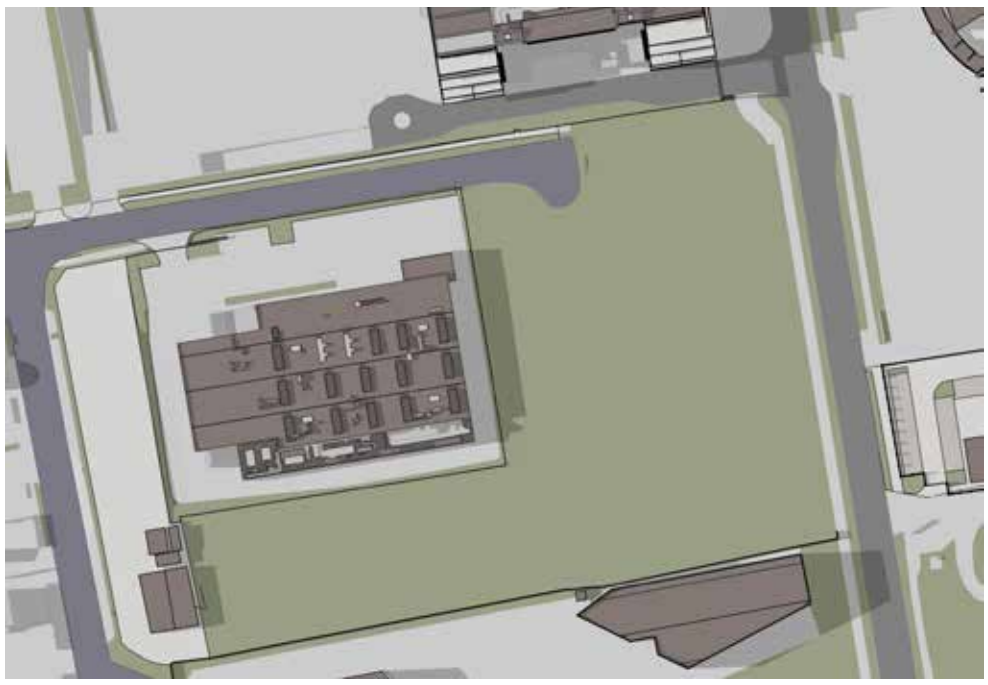
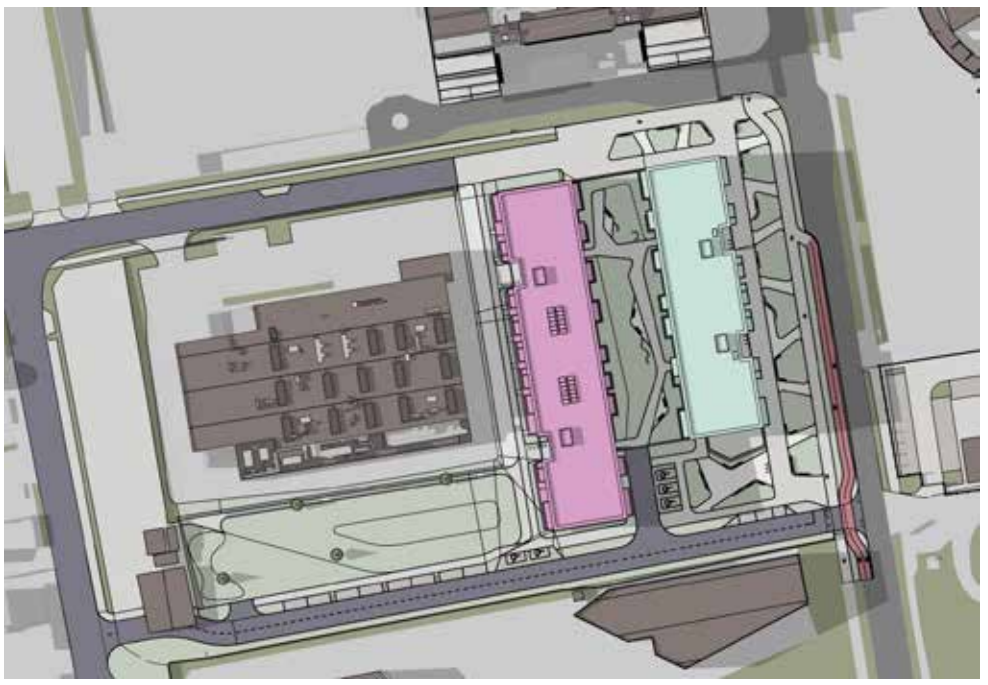
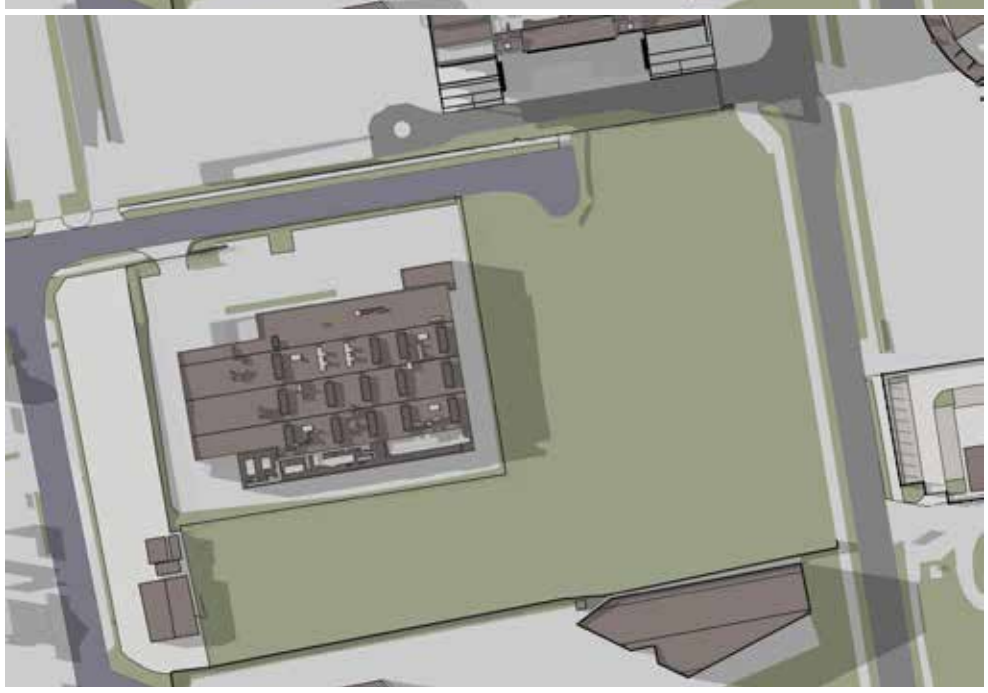
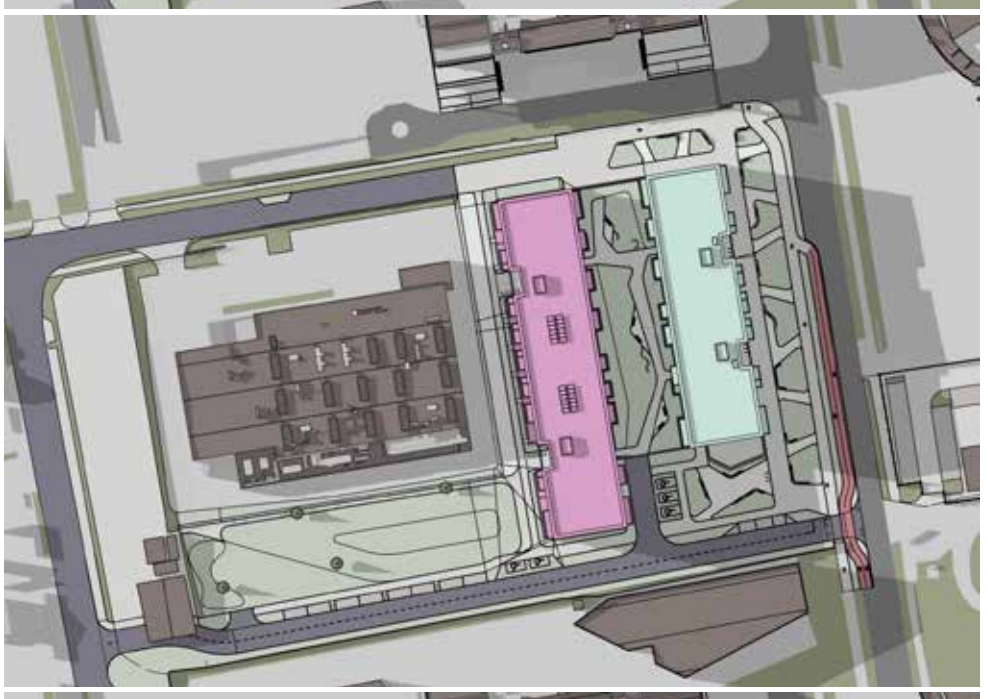
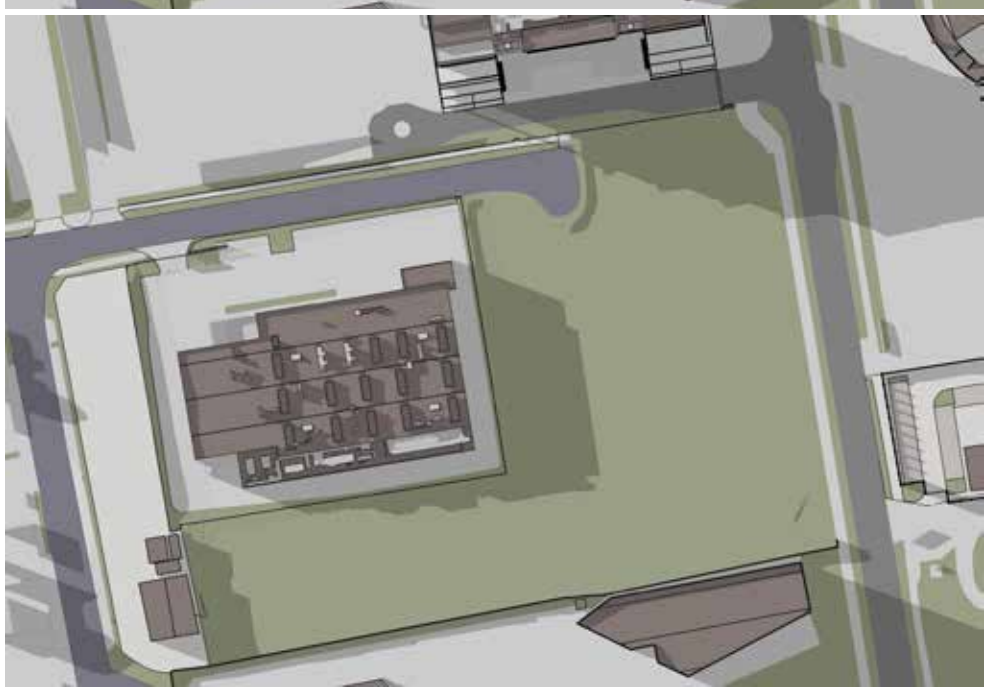
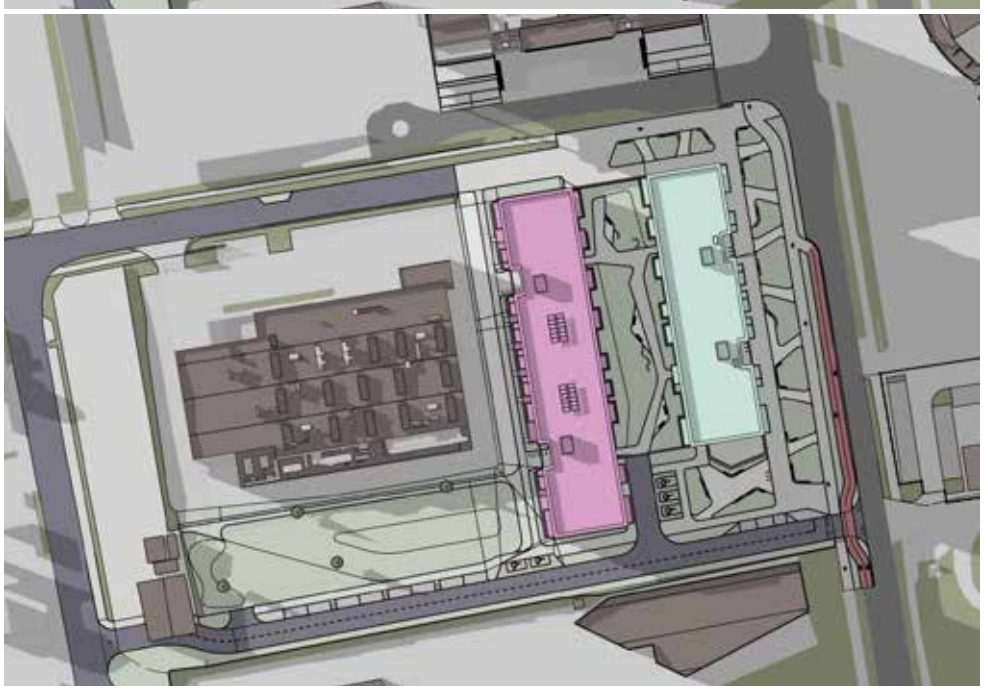
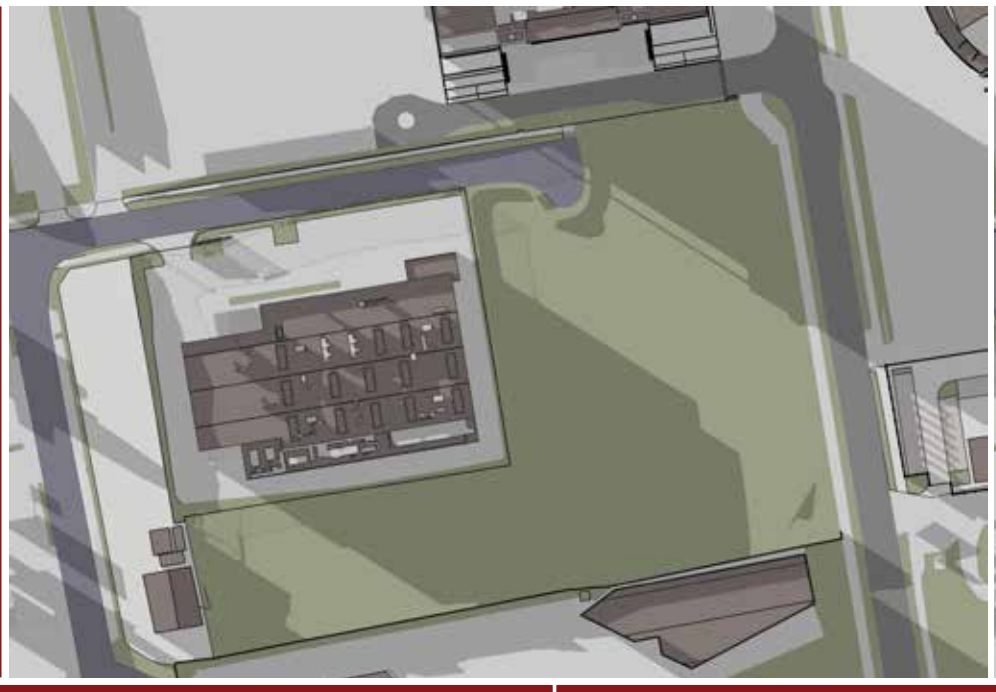
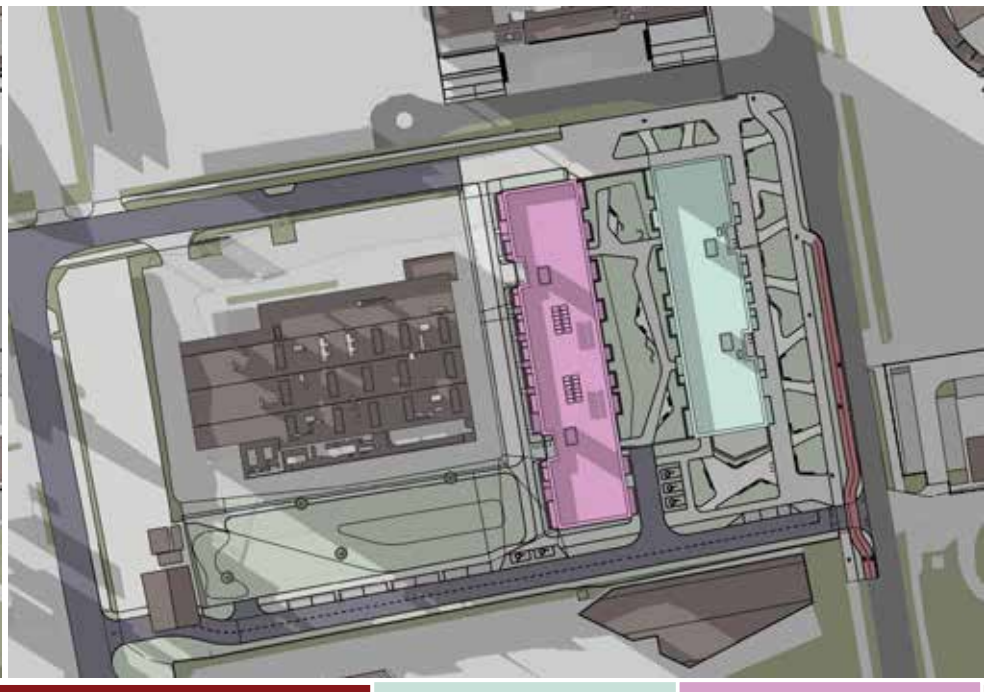
Proposed Block A **Proposed Block B**

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

Applicant: ARP 4.2 Sustainable Communities (Ireland) Fund

3D DESIGN BUREAU

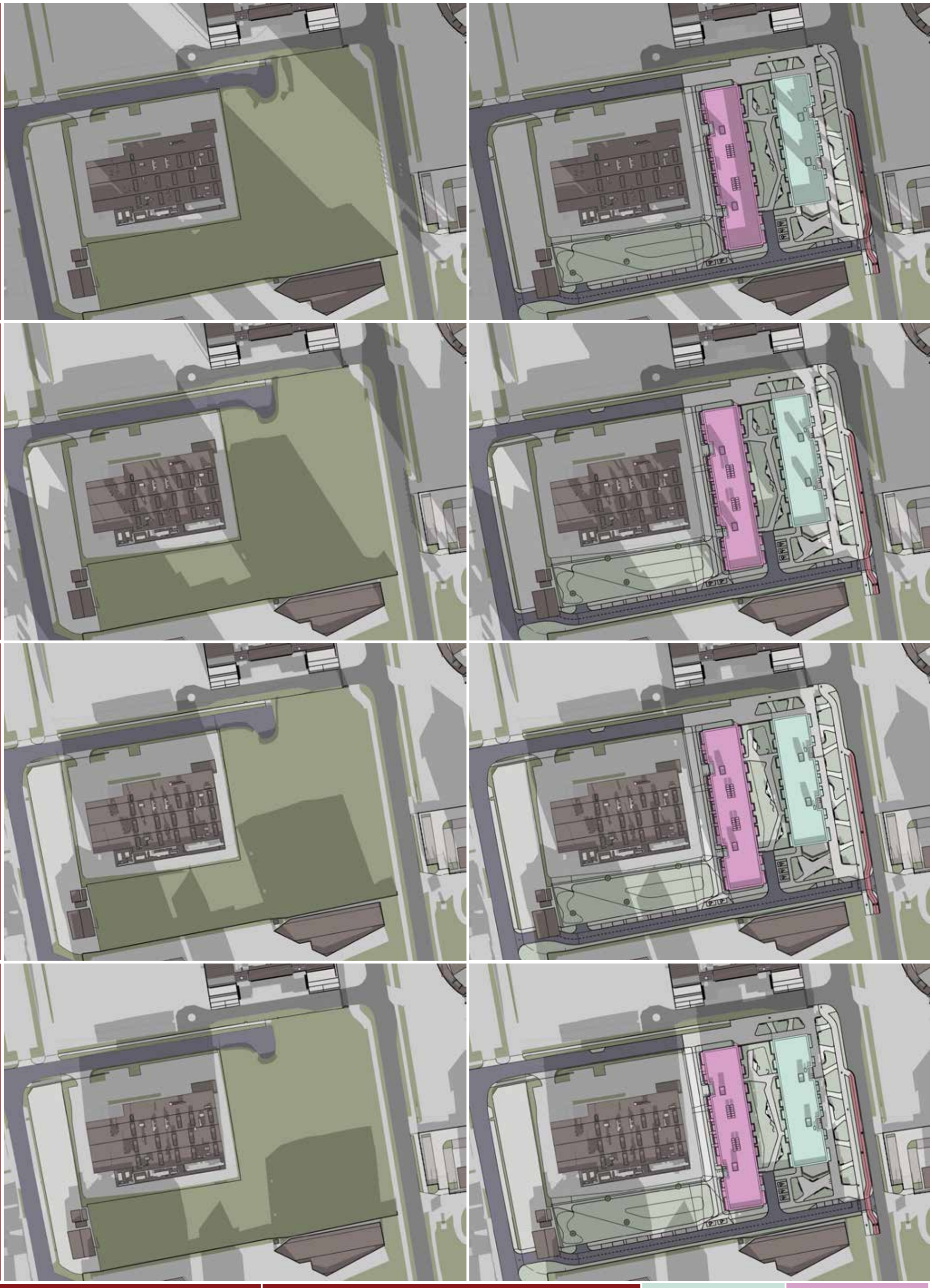
N

Baseline	Proposed
June 21st 18:00	
	
June 21st 19:00	
	
June 21st 20:00	
	
June 21st 21:00	
	

	Project: Large-Scale Residential Development, Whitestown Way, Dublin 24	**Proposed Block A**	**Proposed Block B**
June 21st **Sunrise 5:04 | Sunset 21:49**	**Applicant:** ARP 4.2 Sustainable Communities (Ireland) Fund		3D DESIGN BUREAU

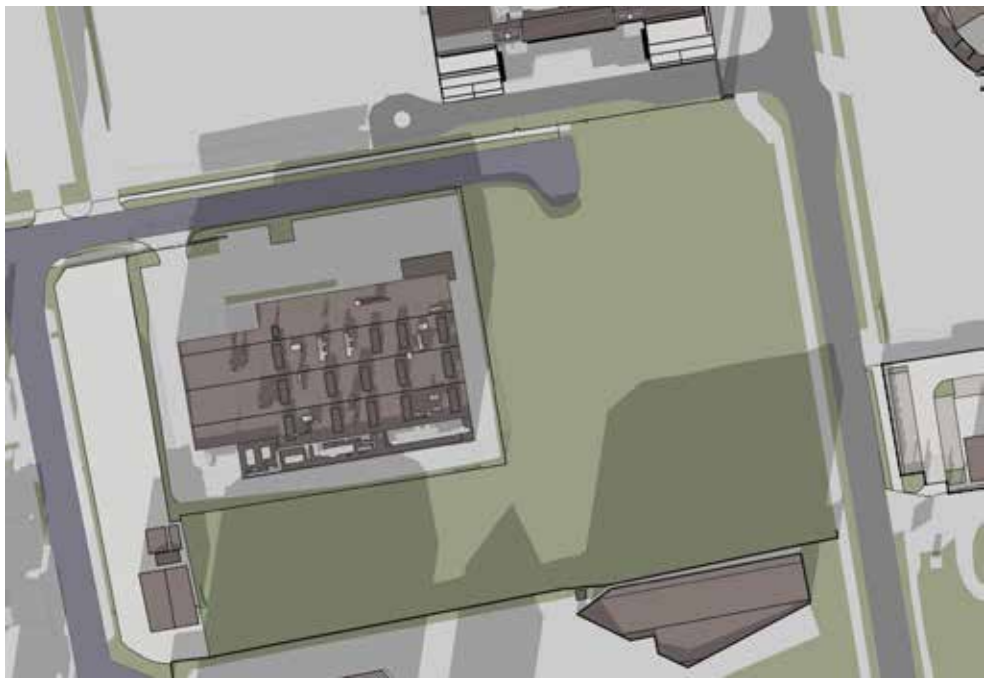
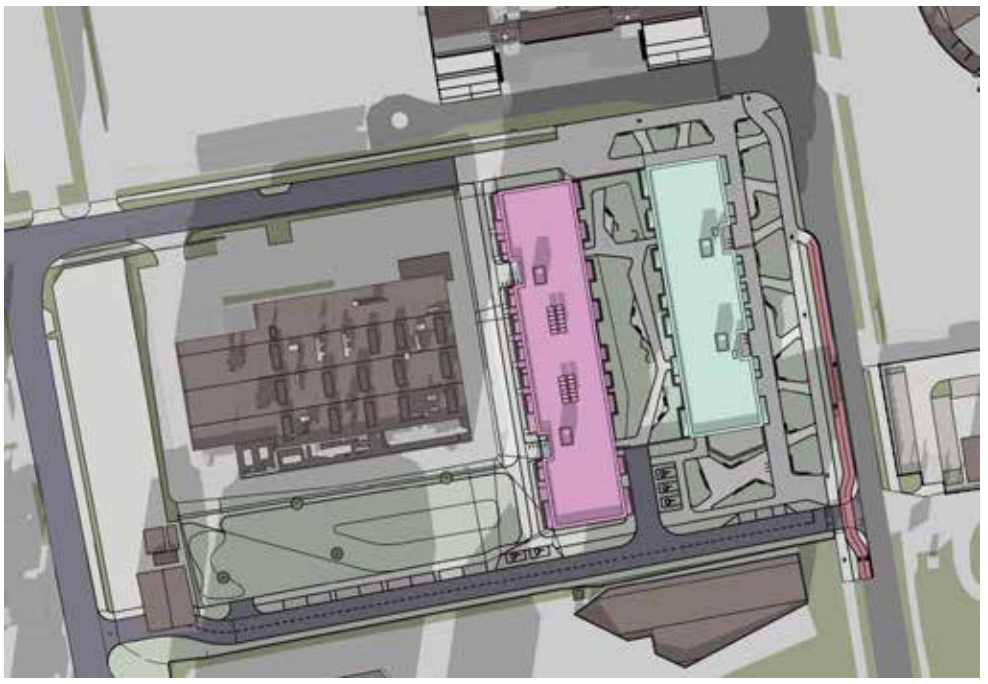
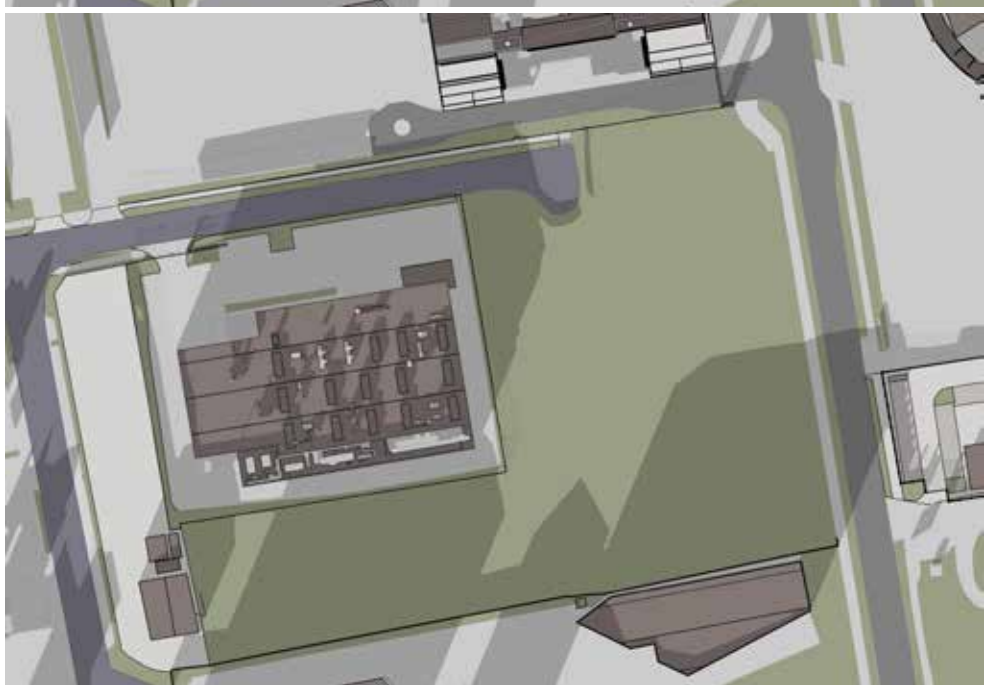
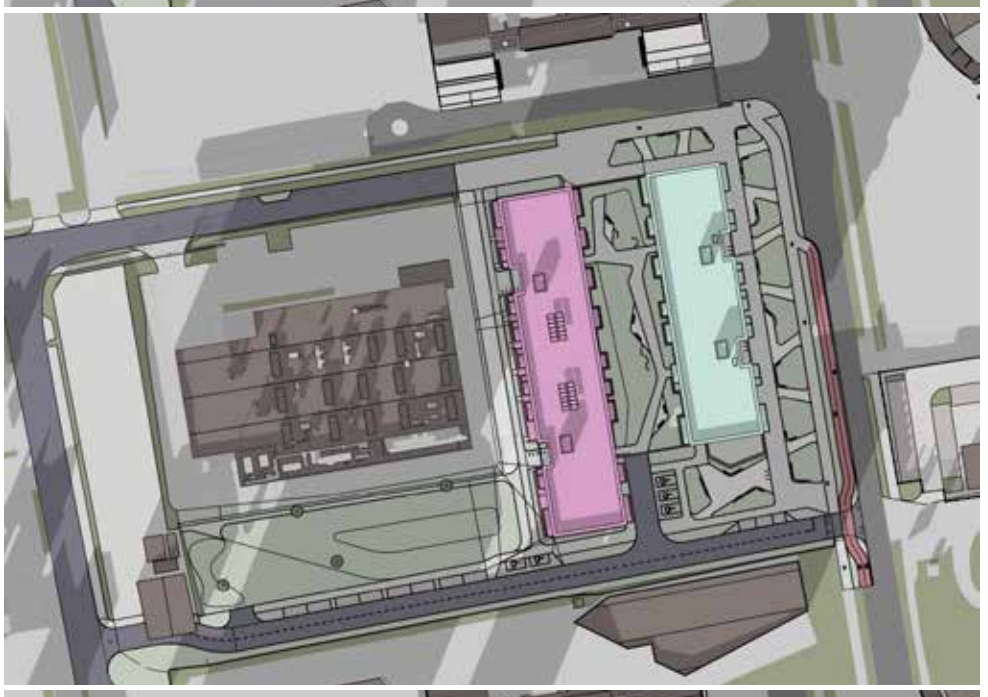
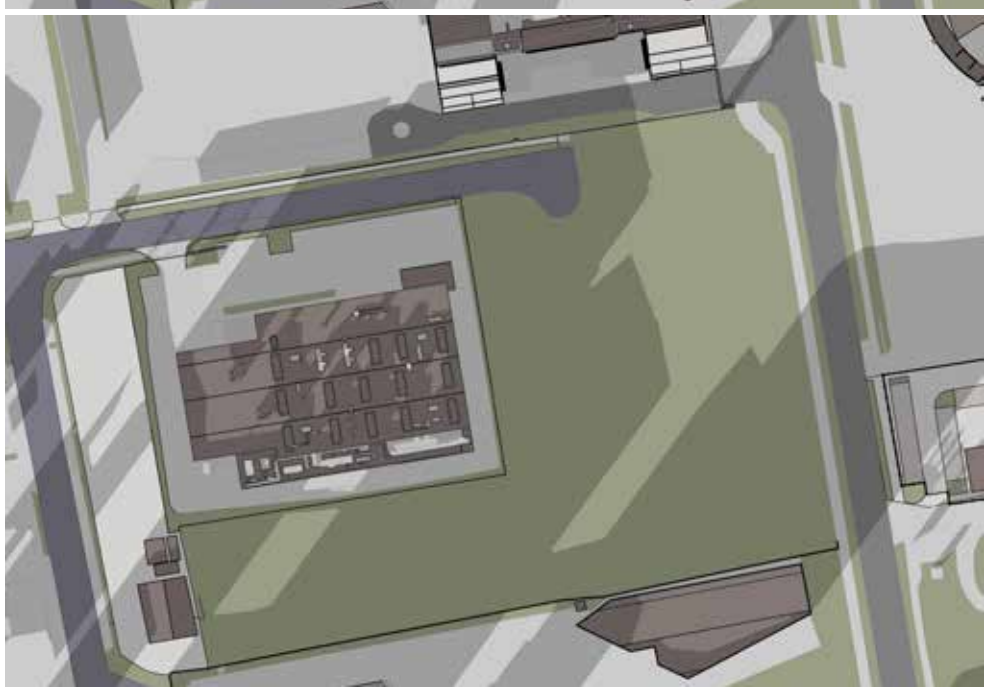
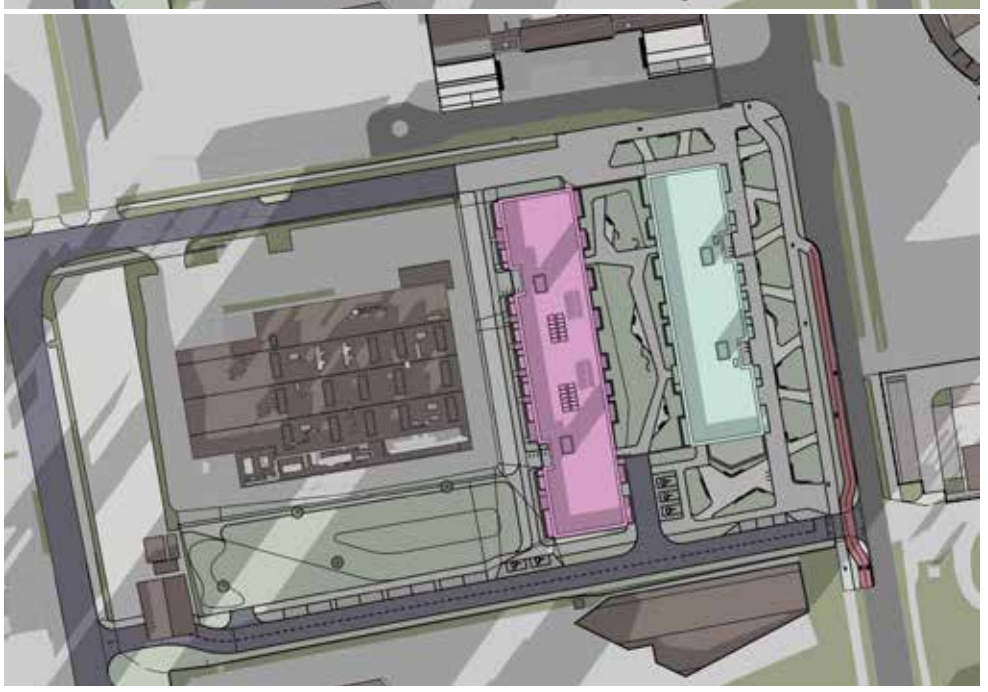
N

Baseline	Proposed
December 21st 9:00	
December 21st 10:00	
December 21st 11:00	
December 21st 12:00	



B.3	**Shadow Study 21 December**	**Project:** Large-Scale Residential Development, Whitestown Way, Dublin 24	**Proposed Block A**	**Proposed Block B**
	December 21st **Sunrise 8:45 | Sunset 16:00**	**Applicant:** ARP 4.2 Sustainable Communities (Ireland) Fund		3D DESIGN BUREAU

N

Baseline	Proposed
December 21st 13:00	
	
December 21st 14:00	
	
December 21st 15:00	
	
December 21st 16:00	
	

	Project: Large-Scale Residential Development, Whitestown Way, Dublin 24	**Proposed Block A**	**Proposed Block B**
December 21st **Sunrise 8:45 | Sunset 16:00**	**Applicant:** ARP 4.2 Sustainable Communities (Ireland) Fund		3D DESIGN BUREAU

C.0 Scheme Performance

C.1 Proposed Apartment Floor Plans

Figure C.1: Block A and B - Level 00

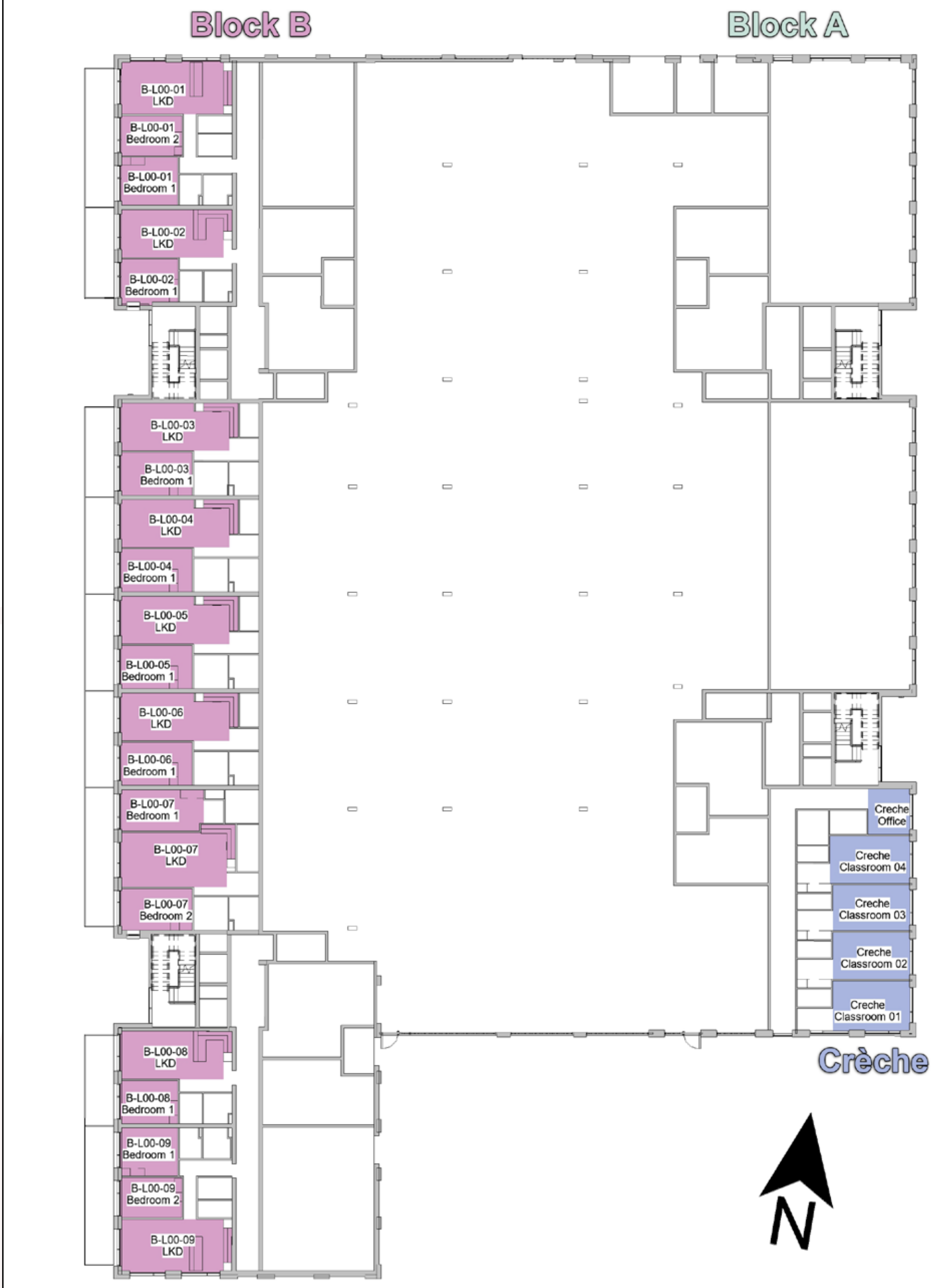


Figure C.2: Block A and B - Level 01

Figure C.3: Block A and B - Level 02

Figure C.4: Block A and B - Level 03

Figure C.5: Block A and B - Level 04

Figure C.6: Block A and B - Level 01

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. The unit numbers for the proposed residential units are determined by the architect's drawings, but 3DDB have applied their own numbering to the rooms of the proposed crèche.

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: Block A, Crèche Level 00, and Apartments Level 01

Table No. C.2.1 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation ≥50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
Crèche	Classroom 01	200	100%	100%	Compliant
Crèche	Classroom 02	200	100%	100%	Compliant
Crèche	Classroom 03	200	100%	100%	Compliant
Crèche	Classroom 04	200	100%	100%	Compliant
Crèche	Creche Office	200	100%	100%	Compliant
A-L01-01	LKD	200	100%	100%	Compliant
A-L01-01	Bedroom 1	100	100%	100%	Compliant
A-L01-01	Bedroom 2	100	100%	100%	Compliant
A-L01-02	LKD	200	32%	30%	Non-compliant
A-L01-02	Bedroom 1	100	100%	86%	Compliant
A-L01-03	LKD	200	28%	25%	Non-compliant
A-L01-03	Bedroom 1	100	100%	100%	Compliant
A-L01-03	Bedroom 2	100	88%	74%	Compliant
A-L01-03	Bedroom 3	100	84%	69%	Compliant
A-L01-04	LKD	200	28%	27%	Non-compliant
A-L01-04	Bedroom 1	100	100%	98%	Compliant
A-L01-05	LKD	200	28%	25%	Non-compliant
A-L01-05	Bedroom 1	100	88%	78%	Compliant
A-L01-05	Bedroom 2	100	100%	100%	Compliant
A-L01-05	Bedroom 3	100	100%	83%	Compliant
A-L01-06	LKD	200	36%	33%	Non-compliant
A-L01-06	Bedroom 1	100	100%	100%	Compliant
A-L01-07	LKD	200	100%	100%	Compliant
A-L01-07	Bedroom 1	100	100%	100%	Compliant
A-L01-07	Bedroom 2	100	100%	100%	Compliant
A-L01-08	LKD	200	100%	100%	Compliant
A-L01-08	Bedroom 1	100	100%	100%	Compliant
A-L01-08	Bedroom 2	100	100%	100%	Compliant
A-L01-09	LKD	200	78%	76%	Compliant
A-L01-09	Bedroom 1	100	100%	100%	Compliant
A-L01-10	LKD	200	85%	81%	Compliant
A-L01-10	Bedroom 1	100	100%	100%	Compliant
A-L01-11	LKD	200	81%	77%	Compliant
A-L01-11	Bedroom 1	100	100%	100%	Compliant
A-L01-12	LKD	200	81%	78%	Compliant
A-L01-12	Bedroom 1	100	100%	100%	Compliant
A-L01-13	LKD	200	83%	78%	Compliant
A-L01-13	Bedroom 1	100	100%	100%	Compliant
A-L01-14	LKD	200	100%	100%	Compliant
A-L01-14	Bedroom 1	100	100%	100%	Compliant
A-L01-14	Bedroom 2	100	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.

** 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 3.2.1 on page 22.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.2.2 SDA Results: Block A Level 02

Table No. C.2.2 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation ≥50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
A-L02-01	LKD	200	100%	100%	Compliant
A-L02-01	Bedroom 1	100	100%	100%	Compliant
A-L02-01	Bedroom 2	100	100%	100%	Compliant
A-L02-02	LKD	200	36%	35%	Non-compliant
A-L02-02	Bedroom 1	100	100%	100%	Compliant
A-L02-02	Bedroom 2	100	100%	100%	Compliant
A-L02-03	LKD	200	35%	34%	Non-compliant
A-L02-03	Bedroom 1	100	100%	100%	Compliant
A-L02-03	Bedroom 2	100	100%	100%	Compliant
A-L02-04	LKD	200	35%	34%	Non-compliant
A-L02-04	Bedroom 1	100	100%	100%	Compliant
A-L02-05	LKD	200	35%	34%	Non-compliant
A-L02-05	Bedroom 1	100	100%	100%	Compliant
A-L02-05	Bedroom 2	100	100%	100%	Compliant
A-L02-06	LKD	200	37%	35%	Non-compliant
A-L02-06	Bedroom 1	100	100%	100%	Compliant
A-L02-06	Bedroom 2	100	100%	100%	Compliant
A-L02-07	LKD	200	100%	100%	Compliant
A-L02-07	Bedroom 1	100	100%	100%	Compliant
A-L02-07	Bedroom 2	100	100%	100%	Compliant
A-L02-08	LKD	200	100%	100%	Compliant
A-L02-08	Bedroom 1	100	100%	100%	Compliant
A-L02-08	Bedroom 2	100	100%	100%	Compliant
A-L02-09	LKD	200	82%	81%	Compliant
A-L02-09	Bedroom 1	100	100%	100%	Compliant
A-L02-10	LKD	200	83%	81%	Compliant
A-L02-10	Bedroom 1	100	100%	100%	Compliant
A-L02-11	LKD	200	83%	82%	Compliant
A-L02-11	Bedroom 1	100	100%	100%	Compliant
A-L02-12	LKD	200	83%	82%	Compliant
A-L02-12	Bedroom 1	100	100%	100%	Compliant
A-L02-13	LKD	200	92%	88%	Compliant
A-L02-13	Bedroom 1	100	100%	100%	Compliant
A-L02-14	LKD	200	100%	100%	Compliant
A-L02-14	Bedroom 1	100	100%	100%	Compliant
A-L02-14	Bedroom 2	100	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.

** 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 3.2.1 on page 22.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.2.3 SDA Results: Block A Level 03

Table No. C.2.3 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation ≥50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
A-L03-01	LKD	200	100%	100%	Compliant
A-L03-01	Bedroom 1	100	100%	100%	Compliant
A-L03-01	Bedroom 2	100	100%	100%	Compliant
A-L03-02	LKD	200	50%	50%	Compliant
A-L03-02	Bedroom 1	100	100%	100%	Compliant
A-L03-02	Bedroom 2	100	100%	100%	Compliant
A-L03-03	LKD	200	48%	47%	Non-compliant
A-L03-03	Bedroom 1	100	100%	100%	Compliant
A-L03-03	Bedroom 2	100	100%	100%	Compliant
A-L03-04	LKD	200	48%	48%	Non-compliant
A-L03-04	Bedroom 1	100	100%	100%	Compliant
A-L03-05	LKD	200	48%	48%	Non-compliant
A-L03-05	Bedroom 1	100	100%	100%	Compliant
A-L03-05	Bedroom 2	100	100%	100%	Compliant
A-L03-06	LKD	200	50%	50%	Compliant
A-L03-06	Bedroom 1	100	100%	100%	Compliant
A-L03-06	Bedroom 2	100	100%	100%	Compliant
A-L03-07	LKD	200	100%	100%	Compliant
A-L03-07	Bedroom 1	100	100%	100%	Compliant
A-L03-07	Bedroom 2	100	100%	100%	Compliant
A-L03-08	LKD	200	100%	100%	Compliant
A-L03-08	Bedroom 1	100	100%	100%	Compliant
A-L03-08	Bedroom 2	100	100%	100%	Compliant
A-L03-09	LKD	200	85%	85%	Compliant
A-L03-09	Bedroom 1	100	100%	100%	Compliant
A-L03-10	LKD	200	92%	92%	Compliant
A-L03-10	Bedroom 1	100	100%	100%	Compliant
A-L03-11	LKD	200	93%	92%	Compliant
A-L03-11	Bedroom 1	100	100%	100%	Compliant
A-L03-12	LKD	200	93%	93%	Compliant
A-L03-12	Bedroom 1	100	100%	100%	Compliant
A-L03-13	LKD	200	95%	93%	Compliant
A-L03-13	Bedroom 1	100	100%	100%	Compliant
A-L03-14	LKD	200	100%	100%	Compliant
A-L03-14	Bedroom 1	100	100%	100%	Compliant
A-L03-14	Bedroom 2	100	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.

** 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 3.2.1 on page 22.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.2.4 SDA Results: Block A Level 04

Table No. C.2.4 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation ≥50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
A-L04-01	LKD	200	100%	100%	Compliant
A-L04-01	Bedroom 1	100	100%	100%	Compliant
A-L04-01	Bedroom 2	100	100%	100%	Compliant
A-L04-02	LKD	200	62%	62%	Compliant
A-L04-02	Bedroom 1	100	100%	100%	Compliant
A-L04-02	Bedroom 2	100	100%	100%	Compliant
A-L04-03	LKD	200	62%	62%	Compliant
A-L04-03	Bedroom 1	100	100%	100%	Compliant
A-L04-03	Bedroom 2	100	100%	100%	Compliant
A-L04-04	LKD	200	61%	60%	Compliant
A-L04-04	Bedroom 1	100	100%	100%	Compliant
A-L04-05	LKD	200	62%	62%	Compliant
A-L04-05	Bedroom 1	100	100%	100%	Compliant
A-L04-05	Bedroom 2	100	100%	100%	Compliant
A-L04-06	LKD	200	63%	63%	Compliant
A-L04-06	Bedroom 1	100	100%	100%	Compliant
A-L04-06	Bedroom 2	100	100%	100%	Compliant
A-L04-07	LKD	200	100%	100%	Compliant
A-L04-07	Bedroom 1	100	100%	100%	Compliant
A-L04-07	Bedroom 2	100	100%	100%	Compliant
A-L04-08	LKD	200	100%	100%	Compliant
A-L04-08	Bedroom 1	100	100%	100%	Compliant
A-L04-08	Bedroom 2	100	100%	100%	Compliant
A-L04-09	LKD	200	90%	90%	Compliant
A-L04-09	Bedroom 1	100	100%	100%	Compliant
A-L04-10	LKD	200	91%	90%	Compliant
A-L04-10	Bedroom 1	100	100%	100%	Compliant
A-L04-11	LKD	200	91%	90%	Compliant
A-L04-11	Bedroom 1	100	100%	100%	Compliant
A-L04-12	LKD	200	91%	91%	Compliant
A-L04-12	Bedroom 1	100	100%	100%	Compliant
A-L04-13	LKD	200	96%	96%	Compliant
A-L04-13	Bedroom 1	100	100%	100%	Compliant
A-L04-14	LKD	200	100%	100%	Compliant
A-L04-14	Bedroom 1	100	100%	100%	Compliant
A-L04-14	Bedroom 2	100	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.

** 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 3.2.1 on page 22.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.2.5 SDA Results: Block A Level 05

Table No. C.2.5 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation ≥50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
A-L05-01	LKD	200	100%	100%	Compliant
A-L05-01	Bedroom 1	100	100%	100%	Compliant
A-L05-01	Bedroom 2	100	100%	100%	Compliant
A-L05-02	LKD	200	80%	79%	Compliant
A-L05-02	Bedroom 1	100	100%	100%	Compliant
A-L05-02	Bedroom 2	100	100%	100%	Compliant
A-L05-03	LKD	200	79%	79%	Compliant
A-L05-03	Bedroom 1	100	100%	100%	Compliant
A-L05-03	Bedroom 2	100	100%	100%	Compliant
A-L05-04	LKD	200	80%	79%	Compliant
A-L05-04	Bedroom 1	100	100%	100%	Compliant
A-L05-05	LKD	200	80%	80%	Compliant
A-L05-05	Bedroom 1	100	100%	100%	Compliant
A-L05-05	Bedroom 2	100	100%	100%	Compliant
A-L05-06	LKD	200	80%	80%	Compliant
A-L05-06	Bedroom 1	100	100%	100%	Compliant
A-L05-06	Bedroom 2	100	100%	100%	Compliant
A-L05-07	LKD	200	100%	100%	Compliant
A-L05-07	Bedroom 1	100	100%	100%	Compliant
A-L05-07	Bedroom 2	100	100%	100%	Compliant
A-L05-08	LKD	200	100%	100%	Compliant
A-L05-08	Bedroom 1	100	100%	100%	Compliant
A-L05-08	Bedroom 2	100	100%	100%	Compliant
A-L05-09	LKD	200	92%	92%	Compliant
A-L05-09	Bedroom 1	100	100%	100%	Compliant
A-L05-10	LKD	200	95%	95%	Compliant
A-L05-10	Bedroom 1	100	100%	100%	Compliant
A-L05-11	LKD	200	95%	95%	Compliant
A-L05-11	Bedroom 1	100	100%	100%	Compliant
A-L05-12	LKD	200	96%	96%	Compliant
A-L05-12	Bedroom 1	100	100%	100%	Compliant
A-L05-13	LKD	200	97%	97%	Compliant
A-L05-13	Bedroom 1	100	100%	100%	Compliant
A-L05-14	LKD	200	100%	100%	Compliant
A-L05-14	Bedroom 1	100	100%	100%	Compliant
A-L05-14	Bedroom 2	100	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.

** 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 3.2.1 on page 22.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.2.6 SDA Results: Block B Level 00

Table No. C.2.6 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation ≥50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
B-L00-01	LKD	200	100%	100%	Compliant
B-L00-01	Bedroom 1	100	100%	100%	Compliant
B-L00-01	Bedroom 2	100	100%	100%	Compliant
B-L00-02	LKD	200	93%	78%	Compliant
B-L00-02	Bedroom 1	100	100%	100%	Compliant
B-L00-03	LKD	200	67%	61%	Compliant
B-L00-03	Bedroom 1	100	100%	100%	Compliant
B-L00-04	LKD	200	66%	60%	Compliant
B-L00-04	Bedroom 1	100	100%	100%	Compliant
B-L00-05	LKD	200	66%	64%	Compliant
B-L00-05	Bedroom 1	100	100%	100%	Compliant
B-L00-06	LKD	200	68%	65%	Compliant
B-L00-06	Bedroom 1	100	100%	100%	Compliant
B-L00-07	LKD	200	77%	68%	Compliant
B-L00-07	Bedroom 1	100	100%	100%	Compliant
B-L00-07	Bedroom 2	100	100%	100%	Compliant
B-L00-08	LKD	200	99%	90%	Compliant
B-L00-08	Bedroom 1	100	100%	100%	Compliant
B-L00-09	LKD	200	100%	100%	Compliant
B-L00-09	Bedroom 1	100	100%	100%	Compliant
B-L00-09	Bedroom 2	100	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.

** 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 3.2.1 on page 22.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.2.7 SDA Results: Block B Level 01

Table No. C.2.7 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation ≥50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
B-L01-01	LKD	200	100%	100%	Compliant
B-L01-01	Bedroom 1	100	100%	100%	Compliant
B-L01-01	Bedroom 2	100	100%	100%	Compliant
B-L01-02	LKD	200	81%	76%	Compliant
B-L01-02	Bedroom 1	100	100%	100%	Compliant
B-L01-03	LKD	200	72%	68%	Compliant
B-L01-03	Bedroom 1	100	100%	100%	Compliant
B-L01-04	LKD	200	70%	67%	Compliant
B-L01-04	Bedroom 1	100	100%	100%	Compliant
B-L01-05	LKD	200	71%	68%	Compliant
B-L01-05	Bedroom 1	100	100%	100%	Compliant
B-L01-06	LKD	200	72%	68%	Compliant
B-L01-06	Bedroom 1	100	100%	100%	Compliant
B-L01-07	LKD	200	78%	73%	Compliant
B-L01-07	Bedroom 1	100	100%	100%	Compliant
B-L01-07	Bedroom 2	100	100%	100%	Compliant
B-L01-08	LKD	200	89%	79%	Compliant
B-L01-08	Bedroom 1	100	100%	100%	Compliant
B-L01-09	LKD	200	100%	100%	Compliant
B-L01-09	Bedroom 1	100	100%	100%	Compliant
B-L01-09	Bedroom 2	100	100%	100%	Compliant
B-L01-10	LKD	200	100%	100%	Compliant
B-L01-10	Bedroom 1	100	100%	100%	Compliant
B-L01-10	Bedroom 2	100	100%	100%	Compliant
B-L01-11	LKD	200	62%	58%	Compliant
B-L01-11	Bedroom 1	100	100%	100%	Compliant
B-L01-12	LKD	200	41%	35%	Non-compliant
B-L01-12	Bedroom 1	100	100%	99%	Compliant
B-L01-12	Bedroom 2	100	100%	100%	Compliant
B-L01-12	Bedroom 3	100	100%	100%	Compliant
B-L01-13	LKD	200	34%	30%	Non-compliant
B-L01-13	Bedroom 1	100	100%	100%	Compliant
B-L01-14	LKD	200	30%	30%	Non-compliant
B-L01-14	Bedroom 1	100	100%	100%	Compliant
B-L01-15	LKD	200	29%	26%	Non-compliant
B-L01-15	Bedroom 1	100	75%	65%	Compliant
B-L01-15	Bedroom 2	100	100%	100%	Compliant
B-L01-16	LKD	200	28%	25%	Non-compliant
B-L01-16	Bedroom 1	100	100%	88%	Compliant
B-L01-16	Bedroom 2	100	83%	75%	Compliant
B-L01-16	Bedroom 3	100	78%	72%	Compliant
B-L01-17	LKD	200	32%	30%	Non-compliant
B-L01-17	Bedroom 1	100	100%	90%	Compliant
B-L01-18	LKD	200	100%	100%	Compliant
B-L01-18	Bedroom 1	100	100%	100%	Compliant
B-L01-18	Bedroom 2	100	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.

** 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 3.2.1 on page 22.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.2.8 SDA Results: Block B Level 02

Table No. C.2.8 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation ≥50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
B-L02-01	LKD	200	100%	100%	Compliant
B-L02-01	Bedroom 1	100	100%	100%	Compliant
B-L02-01	Bedroom 2	100	100%	100%	Compliant
B-L02-02	LKD	200	93%	92%	Compliant
B-L02-02	Bedroom 1	100	100%	100%	Compliant
B-L02-03	LKD	200	85%	84%	Compliant
B-L02-03	Bedroom 1	100	100%	100%	Compliant
B-L02-04	LKD	200	84%	83%	Compliant
B-L02-04	Bedroom 1	100	100%	100%	Compliant
B-L02-05	LKD	200	84%	83%	Compliant
B-L02-05	Bedroom 1	100	100%	100%	Compliant
B-L02-06	LKD	200	83%	82%	Compliant
B-L02-06	Bedroom 1	100	100%	100%	Compliant
B-L02-07	LKD	200	87%	83%	Compliant
B-L02-07	Bedroom 1	100	100%	100%	Compliant
B-L02-07	Bedroom 2	100	100%	100%	Compliant
B-L02-08	LKD	200	94%	91%	Compliant
B-L02-08	Bedroom 1	100	100%	100%	Compliant
B-L02-09	LKD	200	100%	100%	Compliant
B-L02-09	Bedroom 1	100	100%	100%	Compliant
B-L02-09	Bedroom 2	100	100%	100%	Compliant
B-L02-10	LKD	200	100%	100%	Compliant
B-L02-10	Bedroom 1	100	100%	100%	Compliant
B-L02-10	Bedroom 2	100	100%	100%	Compliant
B-L02-11	LKD	200	62%	60%	Compliant
B-L02-11	Bedroom 1	100	100%	100%	Compliant
B-L02-11	Bedroom 2	100	100%	100%	Compliant
B-L02-12	LKD	200	48%	47%	Non-compliant
B-L02-12	Bedroom 1	100	100%	100%	Compliant
B-L02-12	Bedroom 2	100	100%	100%	Compliant
B-L02-13	LKD	200	39%	38%	Non-compliant
B-L02-13	Bedroom 1	100	100%	100%	Compliant
B-L02-14	LKD	200	37%	37%	Non-compliant
B-L02-14	Bedroom 1	100	100%	100%	Compliant
B-L02-15	LKD	200	33%	33%	Non-compliant
B-L02-15	Bedroom 1	100	99%	99%	Compliant
B-L02-15	Bedroom 2	100	100%	100%	Compliant
B-L02-16	LKD	200	34%	33%	Non-compliant
B-L02-16	Bedroom 1	100	100%	100%	Compliant
B-L02-16	Bedroom 2	100	100%	100%	Compliant
B-L02-17	LKD	200	36%	35%	Non-compliant
B-L02-17	Bedroom 1	100	100%	100%	Compliant
B-L02-17	Bedroom 2	100	100%	100%	Compliant
B-L02-18	LKD	200	100%	100%	Compliant
B-L02-18	Bedroom 1	100	100%	100%	Compliant
B-L02-18	Bedroom 2	100	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.

** 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 3.2.1 on page 22.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.2.9 SDA Results: Block B Level 03

Table No. C.2.9 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation ≥50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
B-L03-01	LKD	200	100%	100%	Compliant
B-L03-01	Bedroom 1	100	100%	100%	Compliant
B-L03-01	Bedroom 2	100	100%	100%	Compliant
B-L03-02	LKD	200	95%	95%	Compliant
B-L03-02	Bedroom 1	100	100%	100%	Compliant
B-L03-03	LKD	200	92%	90%	Compliant
B-L03-03	Bedroom 1	100	100%	100%	Compliant
B-L03-04	LKD	200	90%	90%	Compliant
B-L03-04	Bedroom 1	100	100%	100%	Compliant
B-L03-05	LKD	200	91%	91%	Compliant
B-L03-05	Bedroom 1	100	100%	100%	Compliant
B-L03-06	LKD	200	90%	90%	Compliant
B-L03-06	Bedroom 1	100	100%	100%	Compliant
B-L03-07	LKD	200	91%	90%	Compliant
B-L03-07	Bedroom 1	100	100%	100%	Compliant
B-L03-07	Bedroom 2	100	100%	100%	Compliant
B-L03-08	LKD	200	96%	95%	Compliant
B-L03-08	Bedroom 1	100	100%	100%	Compliant
B-L03-09	LKD	200	100%	100%	Compliant
B-L03-09	Bedroom 1	100	100%	100%	Compliant
B-L03-09	Bedroom 2	100	100%	100%	Compliant
B-L03-10	LKD	200	100%	100%	Compliant
B-L03-10	Bedroom 1	100	100%	100%	Compliant
B-L03-10	Bedroom 2	100	100%	100%	Compliant
B-L03-11	LKD	200	66%	66%	Compliant
B-L03-11	Bedroom 1	100	100%	100%	Compliant
B-L03-11	Bedroom 2	100	100%	100%	Compliant
B-L03-12	LKD	200	57%	56%	Compliant
B-L03-12	Bedroom 1	100	100%	100%	Compliant
B-L03-12	Bedroom 2	100	100%	100%	Compliant
B-L03-13	LKD	200	51%	51%	Compliant
B-L03-13	Bedroom 1	100	100%	100%	Compliant
B-L03-14	LKD	200	50%	50%	Compliant
B-L03-14	Bedroom 1	100	100%	100%	Compliant
B-L03-15	LKD	200	47%	47%	Non-compliant
B-L03-15	Bedroom 1	100	100%	100%	Compliant
B-L03-15	Bedroom 2	100	100%	100%	Compliant
B-L03-16	LKD	200	47%	47%	Non-compliant
B-L03-16	Bedroom 1	100	100%	100%	Compliant
B-L03-16	Bedroom 2	100	100%	100%	Compliant
B-L03-17	LKD	200	48%	47%	Non-compliant
B-L03-17	Bedroom 1	100	100%	100%	Compliant
B-L03-17	Bedroom 2	100	100%	100%	Compliant
B-L03-18	LKD	200	100%	100%	Compliant
B-L03-18	Bedroom 1	100	100%	100%	Compliant
B-L03-18	Bedroom 2	100	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.

** 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 3.2.1 on page 22.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.2.10 SDA Results: Block B Level 04

Table No. C.2.10 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation ≥50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
B-L04-01	LKD	200	100%	100%	Compliant
B-L04-01	Bedroom 1	100	100%	100%	Compliant
B-L04-01	Bedroom 2	100	100%	100%	Compliant
B-L04-02	LKD	200	97%	97%	Compliant
B-L04-02	Bedroom 1	100	100%	100%	Compliant
B-L04-03	LKD	200	95%	94%	Compliant
B-L04-03	Bedroom 1	100	100%	100%	Compliant
B-L04-04	LKD	200	94%	94%	Compliant
B-L04-04	Bedroom 1	100	100%	100%	Compliant
B-L04-05	LKD	200	94%	94%	Compliant
B-L04-05	Bedroom 1	100	100%	100%	Compliant
B-L04-06	LKD	200	92%	92%	Compliant
B-L04-06	Bedroom 1	100	100%	100%	Compliant
B-L04-07	LKD	200	91%	91%	Compliant
B-L04-07	Bedroom 1	100	100%	100%	Compliant
B-L04-07	Bedroom 2	100	100%	100%	Compliant
B-L04-08	LKD	200	95%	95%	Compliant
B-L04-08	Bedroom 1	100	100%	100%	Compliant
B-L04-09	LKD	200	100%	100%	Compliant
B-L04-09	Bedroom 1	100	100%	100%	Compliant
B-L04-09	Bedroom 2	100	100%	100%	Compliant
B-L04-10	LKD	200	100%	100%	Compliant
B-L04-10	Bedroom 1	100	100%	100%	Compliant
B-L04-10	Bedroom 2	100	100%	100%	Compliant
B-L04-11	LKD	200	71%	70%	Compliant
B-L04-11	Bedroom 1	100	100%	100%	Compliant
B-L04-11	Bedroom 2	100	100%	100%	Compliant
B-L04-12	LKD	200	65%	64%	Compliant
B-L04-12	Bedroom 1	100	100%	100%	Compliant
B-L04-12	Bedroom 2	100	100%	100%	Compliant
B-L04-13	LKD	200	64%	63%	Compliant
B-L04-13	Bedroom 1	100	100%	100%	Compliant
B-L04-14	LKD	200	64%	64%	Compliant
B-L04-14	Bedroom 1	100	100%	100%	Compliant
B-L04-15	LKD	200	59%	59%	Compliant
B-L04-15	Bedroom 1	100	100%	100%	Compliant
B-L04-15	Bedroom 2	100	100%	100%	Compliant
B-L04-16	LKD	200	59%	59%	Compliant
B-L04-16	Bedroom 1	100	100%	100%	Compliant
B-L04-16	Bedroom 2	100	100%	100%	Compliant
B-L04-17	LKD	200	58%	58%	Compliant
B-L04-17	Bedroom 1	100	100%	100%	Compliant
B-L04-17	Bedroom 2	100	100%	100%	Compliant
B-L04-18	LKD	200	100%	100%	Compliant
B-L04-18	Bedroom 1	100	100%	100%	Compliant
B-L04-18	Bedroom 2	100	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.

** 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 3.2.1 on page 22.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.2.11 SDA Results: Block B Level 05

Table No. C.2.11 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation ≥50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
B-L05-01	LKD	200	100%	100%	Compliant
B-L05-01	Bedroom 1	100	100%	100%	Compliant
B-L05-01	Bedroom 2	100	100%	100%	Compliant
B-L05-02	LKD	200	99%	99%	Compliant
B-L05-02	Bedroom 1	100	100%	100%	Compliant
B-L05-03	LKD	200	97%	96%	Compliant
B-L05-03	Bedroom 1	100	100%	100%	Compliant
B-L05-04	LKD	200	97%	96%	Compliant
B-L05-04	Bedroom 1	100	100%	100%	Compliant
B-L05-05	LKD	200	96%	96%	Compliant
B-L05-05	Bedroom 1	100	100%	100%	Compliant
B-L05-06	LKD	200	96%	96%	Compliant
B-L05-06	Bedroom 1	100	100%	100%	Compliant
B-L05-07	LKD	200	93%	92%	Compliant
B-L05-07	Bedroom 1	100	100%	100%	Compliant
B-L05-07	Bedroom 2	100	100%	100%	Compliant
B-L05-08	LKD	200	97%	97%	Compliant
B-L05-08	Bedroom 1	100	100%	100%	Compliant
B-L05-09	LKD	200	100%	100%	Compliant
B-L05-09	Bedroom 1	100	100%	100%	Compliant
B-L05-09	Bedroom 2	100	100%	100%	Compliant
B-L05-10	LKD	200	100%	100%	Compliant
B-L05-10	Bedroom 1	100	100%	100%	Compliant
B-L05-10	Bedroom 2	100	100%	100%	Compliant
B-L05-11	LKD	200	83%	81%	Compliant
B-L05-11	Bedroom 1	100	100%	100%	Compliant
B-L05-11	Bedroom 2	100	100%	100%	Compliant
B-L05-12	LKD	200	77%	77%	Compliant
B-L05-12	Bedroom 1	100	100%	100%	Compliant
B-L05-12	Bedroom 2	100	100%	100%	Compliant
B-L05-13	LKD	200	74%	74%	Compliant
B-L05-13	Bedroom 1	100	100%	100%	Compliant
B-L05-14	LKD	200	76%	76%	Compliant
B-L05-14	Bedroom 1	100	100%	100%	Compliant
B-L05-15	LKD	200	75%	74%	Compliant
B-L05-15	Bedroom 1	100	100%	100%	Compliant
B-L05-15	Bedroom 2	100	100%	100%	Compliant
B-L05-16	LKD	200	75%	75%	Compliant
B-L05-16	Bedroom 1	100	100%	100%	Compliant
B-L05-16	Bedroom 2	100	100%	100%	Compliant
B-L05-17	LKD	200	75%	75%	Compliant
B-L05-17	Bedroom 1	100	100%	100%	Compliant
B-L05-17	Bedroom 2	100	100%	100%	Compliant
B-L05-18	LKD	200	100%	100%	Compliant
B-L05-18	Bedroom 1	100	100%	100%	Compliant
B-L05-18	Bedroom 2	100	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.

** 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 3.2.1 on page 22.

For floor plans of the assessed units please refer to section C.1 on page 46.

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 based on highest performing room	SE Hours on March 21st	Level of SE on March 21st	Unit compliance based on highest performing room
A	**B**	**C**	**D**	**E**	**F**	**G**	**H**

A: Unit Number

This column identifies the assessed unit. The unit numbers for the proposed residential units are determined by the architect's drawings, but 3DDB have applied their own numbering to the rooms of the proposed crèche.

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 categorises 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 based on highest performing room (Deciduous Trees as Opaque Objects)

A proposed unit is considered to be compliant provided any habitable room within the unit is capable of receiving at least 1.5 hours of sunlight on the assessment date. This column will identify the highest performing room within a unit and state compliance for the associated unit based on that room with the assessment carried out with deciduous trees as opaque objects.

Typically unit compliance will be stated for the best performing room per unit only, with lesser performing rooms indicated with a dash (-).

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 based on highest performing room (Without Deciduous Trees)

A proposed unit is considered to be compliant provided any habitable room within the unit is capable of receiving at least 1.5 hours of sunlight on March 21st. This column will identify the highest performing room within a unit and state compliance for the associated unit based on that room with the assessment carried out without deciduous trees. Typically only one room per unit will be populated in this column, with lesser performing rooms indicated with a dash (-).

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: Crèche Level 00, and Apartments Level 01

Table No. C.3.1 - Sunlight Exposure Results:							
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 based on highest performing room**	SE Hours on March 21st	Level of SE on March 21st***	Unit compliance based on highest performing room**
Crèche	Classroom 01	7.90	High	Compliant	7.90	High	Compliant
Crèche	Classroom 02	2.90	Minimum	-	2.90	Minimum	-
Crèche	Classroom 03	2.90	Minimum	-	2.90	Minimum	-
Crèche	Classroom 04	3.40	Medium	-	3.40	Medium	-
Crèche	Creche Office	3.30	Medium	-	3.50	Medium	-
A-L01-01	LKD	0.10	Below Minimum	-	0.10	Below Minimum	-
A-L01-01	Bedroom 1	0.10	Below Minimum	-	0.10	Below Minimum	-
A-L01-01	Bedroom 2	0.90	Below Minimum	Non-Compliant	0.90	Below Minimum	Non-Compliant
A-L01-02	LKD	1.70	Minimum	Compliant	1.70	Minimum	Compliant
A-L01-02	Bedroom 1	0.00	Below Minimum	-	0.00	Below Minimum	-
A-L01-03	LKD	1.80	Minimum	Compliant	1.80	Minimum	Compliant
A-L01-03	Bedroom 1	1.20	Below Minimum	-	1.40	Below Minimum	-
A-L01-03	Bedroom 2	0.00	Below Minimum	-	0.10	Below Minimum	-
A-L01-03	Bedroom 3	0.10	Below Minimum	-	0.10	Below Minimum	-
A-L01-04	LKD	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	Non-Compliant
A-L01-04	Bedroom 1	0.00	Below Minimum	-	0.00	Below Minimum	-
A-L01-05	LKD	0.80	Below Minimum	Non-Compliant	1.70	Minimum	Compliant
A-L01-05	Bedroom 1	0.10	Below Minimum	-	0.10	Below Minimum	-
A-L01-05	Bedroom 2	0.40	Below Minimum	-	0.40	Below Minimum	-
A-L01-05	Bedroom 3	0.00	Below Minimum	-	0.00	Below Minimum	-
A-L01-06	LKD	0.50	Below Minimum	-	1.90	Minimum	Compliant
A-L01-06	Bedroom 1	0.80	Below Minimum	Non-Compliant	1.60	Minimum	-
A-L01-07	LKD	7.60	High	Compliant	7.60	High	Compliant
A-L01-07	Bedroom 1	0.10	Below Minimum	-	0.10	Below Minimum	-
A-L01-07	Bedroom 2	0.10	Below Minimum	-	0.10	Below Minimum	-
A-L01-08	LKD	8.20	High	Compliant	8.20	High	Compliant
A-L01-08	Bedroom 1	1.90	Minimum	-	1.90	Minimum	-
A-L01-08	Bedroom 2	1.90	Minimum	-	1.90	Minimum	-
A-L01-09	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L01-09	Bedroom 1	3.30	Medium	Compliant	3.30	Medium	Compliant
A-L01-10	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
A-L01-10	Bedroom 1	1.90	Minimum	-	1.90	Minimum	-
A-L01-11	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L01-11	Bedroom 1	2.60	Minimum	Compliant	2.60	Minimum	Compliant
A-L01-12	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L01-12	Bedroom 1	2.70	Minimum	Compliant	2.70	Minimum	Compliant
A-L01-13	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
A-L01-13	Bedroom 1	1.90	Minimum	-	1.90	Minimum	-
A-L01-14	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L01-14	Bedroom 1	3.30	Medium	Compliant	3.30	Medium	Compliant
A-L01-14	Bedroom 2	3.30	Medium	-	3.30	Medium	-

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** Section 3.1.15 of the BRE Guidelines recommends that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 3.2.2 on page 25.

*** For the interpretation of levels of Sunlight Exposure please refer to “E.3 Definition of Levels of Sunlight Exposure” on page 104.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.3.2 SE Results: Block A Level 02

Table No. C.3.2 - Sunlight Exposure Results:							
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 based on highest performing room**	SE Hours on March 21st	Level of SE on March 21st***	Unit compliance based on highest performing room**
A-L02-01	LKD	0.60	Below Minimum	-	0.60	Below Minimum	-
A-L02-01	Bedroom 1	0.60	Below Minimum	-	0.60	Below Minimum	-
A-L02-01	Bedroom 2	1.40	Below Minimum	Non-Compliant	1.40	Below Minimum	Non-Compliant
A-L02-02	LKD	2.20	Minimum	Compliant	2.20	Minimum	Compliant
A-L02-02	Bedroom 1	0.90	Below Minimum	-	0.90	Below Minimum	-
A-L02-02	Bedroom 2	0.50	Below Minimum	-	0.50	Below Minimum	-
A-L02-03	LKD	2.30	Minimum	Compliant	2.30	Minimum	Compliant
A-L02-03	Bedroom 1	0.60	Below Minimum	-	0.60	Below Minimum	-
A-L02-03	Bedroom 2	1.90	Minimum	-	1.90	Minimum	-
A-L02-04	LKD	0.50	Below Minimum	Non-Compliant	0.50	Below Minimum	Non-Compliant
A-L02-04	Bedroom 1	0.50	Below Minimum	-	0.50	Below Minimum	-
A-L02-05	LKD	2.20	Minimum	Compliant	2.20	Minimum	Compliant
A-L02-05	Bedroom 1	0.60	Below Minimum	-	0.60	Below Minimum	-
A-L02-05	Bedroom 2	0.60	Below Minimum	-	0.60	Below Minimum	-
A-L02-06	LKD	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A-L02-06	Bedroom 1	0.60	Below Minimum	-	0.60	Below Minimum	-
A-L02-06	Bedroom 2	2.10	Minimum	-	2.10	Minimum	-
A-L02-07	LKD	7.70	High	Compliant	7.70	High	Compliant
A-L02-07	Bedroom 1	0.60	Below Minimum	-	0.60	Below Minimum	-
A-L02-07	Bedroom 2	0.60	Below Minimum	-	0.60	Below Minimum	-
A-L02-08	LKD	8.70	High	Compliant	8.70	High	Compliant
A-L02-08	Bedroom 1	1.90	Minimum	-	1.90	Minimum	-
A-L02-08	Bedroom 2	1.90	Minimum	-	1.90	Minimum	-
A-L02-09	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
A-L02-09	Bedroom 1	3.30	Medium	-	3.30	Medium	-
A-L02-10	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L02-10	Bedroom 1	3.40	Medium	Compliant	3.40	Medium	Compliant
A-L02-11	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L02-11	Bedroom 1	3.30	Medium	Compliant	3.30	Medium	Compliant
A-L02-12	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L02-12	Bedroom 1	3.30	Medium	Compliant	3.30	Medium	Compliant
A-L02-13	LKD	3.20	Medium	Compliant	3.20	Medium	Compliant
A-L02-13	Bedroom 1	1.90	Minimum	-	1.90	Minimum	-
A-L02-14	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L02-14	Bedroom 1	2.80	Minimum	-	2.80	Minimum	-
A-L02-14	Bedroom 2	3.40	Medium	Compliant	3.40	Medium	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** Section 3.1.15 of the BRE Guidelines recommends that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 3.2.2 on page 25.

*** For the interpretation of levels of Sunlight Exposure please refer to “E.3 Definition of Levels of Sunlight Exposure” on page 104.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.3.3 SE Results: Block A Level 03

Table No. C.3.3 - Sunlight Exposure Results:							
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 based on highest performing room**	SE Hours on March 21st	Level of SE on March 21st***	Unit compliance based on highest performing room**
A-L03-01	LKD	1.20	Below Minimum	-	1.20	Below Minimum	-
A-L03-01	Bedroom 1	1.30	Below Minimum	-	1.30	Below Minimum	-
A-L03-01	Bedroom 2	2.10	Minimum	Compliant	2.10	Minimum	Compliant
A-L03-02	LKD	2.90	Minimum	Compliant	2.90	Minimum	Compliant
A-L03-02	Bedroom 1	1.50	Minimum	-	1.50	Minimum	-
A-L03-02	Bedroom 2	1.20	Below Minimum	-	1.20	Below Minimum	-
A-L03-03	LKD	3.00	Medium	Compliant	3.00	Medium	Compliant
A-L03-03	Bedroom 1	1.20	Below Minimum	-	1.20	Below Minimum	-
A-L03-03	Bedroom 2	2.50	Minimum	-	2.50	Minimum	-
A-L03-04	LKD	1.20	Below Minimum	Non-Compliant	1.20	Below Minimum	Non-Compliant
A-L03-04	Bedroom 1	1.20	Below Minimum	-	1.20	Below Minimum	-
A-L03-05	LKD	2.90	Minimum	Compliant	2.90	Minimum	Compliant
A-L03-05	Bedroom 1	1.20	Below Minimum	-	1.20	Below Minimum	-
A-L03-05	Bedroom 2	1.20	Below Minimum	-	1.20	Below Minimum	-
A-L03-06	LKD	3.10	Medium	Compliant	3.10	Medium	Compliant
A-L03-06	Bedroom 1	1.20	Below Minimum	-	1.20	Below Minimum	-
A-L03-06	Bedroom 2	2.70	Minimum	-	2.70	Minimum	-
A-L03-07	LKD	8.30	High	Compliant	8.30	High	Compliant
A-L03-07	Bedroom 1	1.20	Below Minimum	-	1.20	Below Minimum	-
A-L03-07	Bedroom 2	1.20	Below Minimum	-	1.20	Below Minimum	-
A-L03-08	LKD	9.00	High	Compliant	9.00	High	Compliant
A-L03-08	Bedroom 1	1.90	Minimum	-	1.90	Minimum	-
A-L03-08	Bedroom 2	1.90	Minimum	-	1.90	Minimum	-
A-L03-09	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L03-09	Bedroom 1	3.30	Medium	Compliant	3.30	Medium	Compliant
A-L03-10	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L03-10	Bedroom 1	3.40	Medium	Compliant	3.40	Medium	Compliant
A-L03-11	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L03-11	Bedroom 1	2.60	Minimum	Compliant	2.60	Minimum	Compliant
A-L03-12	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L03-12	Bedroom 1	2.70	Minimum	Compliant	2.70	Minimum	Compliant
A-L03-13	LKD	3.50	Medium	Compliant	3.50	Medium	Compliant
A-L03-13	Bedroom 1	1.90	Minimum	-	1.90	Minimum	-
A-L03-14	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L03-14	Bedroom 1	3.30	Medium	Compliant	3.30	Medium	Compliant
A-L03-14	Bedroom 2	3.30	Medium	-	3.30	Medium	-

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** Section 3.1.15 of the BRE Guidelines recommends that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 3.2.2 on page 25.

*** For the interpretation of levels of Sunlight Exposure please refer to “E.3 Definition of Levels of Sunlight Exposure” on page 104.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.3.4 SE Results: Block A Level 04

Table No. C.3.4 - Sunlight Exposure Results:							
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 based on highest performing room**	SE Hours on March 21st	Level of SE on March 21st***	Unit compliance based on highest performing room**
A-L04-01	LKD	2.10	Minimum	-	2.10	Minimum	-
A-L04-01	Bedroom 1	2.10	Minimum	-	2.10	Minimum	-
A-L04-01	Bedroom 2	3.10	Medium	Compliant	3.10	Medium	Compliant
A-L04-02	LKD	3.90	Medium	Compliant	3.90	Medium	Compliant
A-L04-02	Bedroom 1	2.40	Minimum	-	2.40	Minimum	-
A-L04-02	Bedroom 2	2.00	Minimum	-	2.00	Minimum	-
A-L04-03	LKD	3.90	Medium	Compliant	3.90	Medium	Compliant
A-L04-03	Bedroom 1	2.10	Minimum	-	2.10	Minimum	-
A-L04-03	Bedroom 2	3.40	Medium	-	3.40	Medium	-
A-L04-04	LKD	2.00	Minimum	Compliant	2.00	Minimum	Compliant
A-L04-04	Bedroom 1	2.00	Minimum	-	2.00	Minimum	-
A-L04-05	LKD	3.90	Medium	Compliant	3.90	Medium	Compliant
A-L04-05	Bedroom 1	2.10	Minimum	-	2.10	Minimum	-
A-L04-05	Bedroom 2	2.10	Minimum	-	2.10	Minimum	-
A-L04-06	LKD	3.90	Medium	Compliant	3.90	Medium	Compliant
A-L04-06	Bedroom 1	2.10	Minimum	-	2.10	Minimum	-
A-L04-06	Bedroom 2	3.60	Medium	-	3.60	Medium	-
A-L04-07	LKD	9.00	High	Compliant	9.00	High	Compliant
A-L04-07	Bedroom 1	2.10	Minimum	-	2.10	Minimum	-
A-L04-07	Bedroom 2	2.10	Minimum	-	2.10	Minimum	-
A-L04-08	LKD	9.00	High	Compliant	9.00	High	Compliant
A-L04-08	Bedroom 1	1.90	Minimum	-	1.90	Minimum	-
A-L04-08	Bedroom 2	1.90	Minimum	-	1.90	Minimum	-
A-L04-09	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
A-L04-09	Bedroom 1	3.40	Medium	-	3.40	Medium	-
A-L04-10	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L04-10	Bedroom 1	3.50	Medium	Compliant	3.50	Medium	Compliant
A-L04-11	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L04-11	Bedroom 1	3.40	Medium	Compliant	3.40	Medium	Compliant
A-L04-12	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L04-12	Bedroom 1	3.40	Medium	Compliant	3.40	Medium	Compliant
A-L04-13	LKD	3.50	Medium	Compliant	3.50	Medium	Compliant
A-L04-13	Bedroom 1	1.90	Minimum	-	1.90	Minimum	-
A-L04-14	LKD	1.90	Minimum	-	1.90	Minimum	-
A-L04-14	Bedroom 1	2.80	Minimum	-	2.80	Minimum	-
A-L04-14	Bedroom 2	3.40	Medium	Compliant	3.40	Medium	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** Section 3.1.15 of the BRE Guidelines recommends that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 3.2.2 on page 25.

*** For the interpretation of levels of Sunlight Exposure please refer to “E.3 Definition of Levels of Sunlight Exposure” on page 104.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.3.5 SE Results: Block A Level 05

Table No. C.3.5 - Sunlight Exposure Results:							
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 based on highest performing room**	SE Hours on March 21st	Level of SE on March 21st***	Unit compliance based on highest performing room**
A-L05-01	LKD	4.40	High	Compliant	4.40	High	Compliant
A-L05-01	Bedroom 1	4.40	High	-	4.40	High	-
A-L05-01	Bedroom 2	4.40	High	-	4.40	High	-
A-L05-02	LKD	4.40	High	Compliant	4.40	High	Compliant
A-L05-02	Bedroom 1	4.10	High	-	4.10	High	-
A-L05-02	Bedroom 2	4.10	High	-	4.10	High	-
A-L05-03	LKD	4.40	High	Compliant	4.40	High	Compliant
A-L05-03	Bedroom 1	4.40	High	-	4.40	High	-
A-L05-03	Bedroom 2	4.10	High	-	4.10	High	-
A-L05-04	LKD	4.40	High	Compliant	4.40	High	Compliant
A-L05-04	Bedroom 1	4.10	High	-	4.10	High	-
A-L05-05	LKD	4.40	High	Compliant	4.40	High	Compliant
A-L05-05	Bedroom 1	4.10	High	-	4.10	High	-
A-L05-05	Bedroom 2	4.40	High	-	4.40	High	-
A-L05-06	LKD	4.40	High	Compliant	4.40	High	Compliant
A-L05-06	Bedroom 1	4.10	High	-	4.10	High	-
A-L05-06	Bedroom 2	4.10	High	-	4.10	High	-
A-L05-07	LKD	9.40	High	Compliant	9.40	High	Compliant
A-L05-07	Bedroom 1	4.40	High	-	4.40	High	-
A-L05-07	Bedroom 2	4.40	High	-	4.40	High	-
A-L05-08	LKD	9.00	High	Compliant	9.00	High	Compliant
A-L05-08	Bedroom 1	3.40	Medium	-	3.40	Medium	-
A-L05-08	Bedroom 2	3.40	Medium	-	3.40	Medium	-
A-L05-09	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
A-L05-09	Bedroom 1	3.40	Medium	-	3.40	Medium	-
A-L05-10	LKD	3.40	Medium	-	3.40	Medium	-
A-L05-10	Bedroom 1	5.10	High	Compliant	5.10	High	Compliant
A-L05-11	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
A-L05-11	Bedroom 1	3.40	Medium	-	3.40	Medium	-
A-L05-12	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
A-L05-12	Bedroom 1	3.40	Medium	-	3.40	Medium	-
A-L05-13	LKD	5.10	High	Compliant	5.10	High	Compliant
A-L05-13	Bedroom 1	3.40	Medium	-	3.40	Medium	-
A-L05-14	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
A-L05-14	Bedroom 1	3.40	Medium	-	3.40	Medium	-
A-L05-14	Bedroom 2	3.40	Medium	-	3.40	Medium	-

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** Section 3.1.15 of the BRE Guidelines recommends that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 3.2.2 on page 25.

*** For the interpretation of levels of Sunlight Exposure please refer to “E.3 Definition of Levels of Sunlight Exposure” on page 104.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.3.6 SE Results: Block B Level 00

Table No. C.3.6 - Sunlight Exposure Results:							
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 based on highest performing room**	SE Hours on March 21st	Level of SE on March 21st***	Unit compliance based on highest performing room**
B-L00-01	LKD	2.40	Minimum	-	3.70	Medium	-
B-L00-01	Bedroom 1	3.20	Medium	-	3.20	Medium	-
B-L00-01	Bedroom 2	4.40	High	Compliant	4.40	High	Compliant
B-L00-02	LKD	2.40	Minimum	Compliant	2.50	Minimum	-
B-L00-02	Bedroom 1	2.30	Minimum	-	2.80	Minimum	Compliant
B-L00-03	LKD	1.50	Minimum	-	2.40	Minimum	Compliant
B-L00-03	Bedroom 1	1.90	Minimum	Compliant	2.40	Minimum	-
B-L00-04	LKD	2.30	Minimum	-	2.40	Minimum	Compliant
B-L00-04	Bedroom 1	2.40	Minimum	Compliant	2.40	Minimum	-
B-L00-05	LKD	2.40	Minimum	Compliant	2.40	Minimum	-
B-L00-05	Bedroom 1	2.40	Minimum	-	2.50	Minimum	Compliant
B-L00-06	LKD	2.40	Minimum	-	2.40	Minimum	-
B-L00-06	Bedroom 1	2.90	Minimum	Compliant	2.90	Minimum	Compliant
B-L00-07	LKD	3.20	Medium	-	4.20	High	Compliant
B-L00-07	Bedroom 1	3.00	Medium	-	3.80	Medium	-
B-L00-07	Bedroom 2	3.30	Medium	Compliant	4.00	High	-
B-L00-08	LKD	3.70	Medium	-	3.70	Medium	-
B-L00-08	Bedroom 1	3.80	Medium	Compliant	3.80	Medium	Compliant
B-L00-09	LKD	8.30	High	Compliant	8.30	High	Compliant
B-L00-09	Bedroom 1	3.60	Medium	-	3.70	Medium	-
B-L00-09	Bedroom 2	3.40	Medium	-	3.70	Medium	-

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** Section 3.1.15 of the BRE Guidelines recommends that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 3.2.2 on page 25.

*** For the interpretation of levels of Sunlight Exposure please refer to “E.3 Definition of Levels of Sunlight Exposure” on page 104.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.3.7 SE Results: Block B Level 01

Table No. C.3.7 - Sunlight Exposure Results:							
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 based on highest performing room**	SE Hours on March 21st	Level of SE on March 21st***	Unit compliance based on highest performing room**
B-L01-01	LKD	2.50	Minimum	-	2.50	Minimum	-
B-L01-01	Bedroom 1	4.20	High	-	4.20	High	-
B-L01-01	Bedroom 2	4.40	High	Compliant	4.40	High	Compliant
B-L01-02	LKD	4.40	High	Compliant	4.40	High	Compliant
B-L01-02	Bedroom 1	2.60	Minimum	-	2.60	Minimum	-
B-L01-03	LKD	4.00	High	Compliant	4.00	High	Compliant
B-L01-03	Bedroom 1	2.90	Minimum	-	2.90	Minimum	-
B-L01-04	LKD	4.00	High	Compliant	4.00	High	Compliant
B-L01-04	Bedroom 1	2.90	Minimum	-	2.90	Minimum	-
B-L01-05	LKD	4.10	High	Compliant	4.10	High	Compliant
B-L01-05	Bedroom 1	2.90	Minimum	-	2.90	Minimum	-
B-L01-06	LKD	3.90	Medium	Compliant	3.90	Medium	Compliant
B-L01-06	Bedroom 1	2.90	Minimum	-	2.90	Minimum	-
B-L01-07	LKD	4.40	High	Compliant	4.40	High	Compliant
B-L01-07	Bedroom 1	2.50	Minimum	-	2.50	Minimum	-
B-L01-07	Bedroom 2	4.30	High	-	4.30	High	-
B-L01-08	LKD	4.10	High	Compliant	4.10	High	Compliant
B-L01-08	Bedroom 1	4.10	High	-	4.10	High	-
B-L01-09	LKD	9.40	High	Compliant	9.40	High	Compliant
B-L01-09	Bedroom 1	2.60	Minimum	-	2.60	Minimum	-
B-L01-09	Bedroom 2	2.50	Minimum	-	2.50	Minimum	-
B-L01-10	LKD	8.70	High	Compliant	8.70	High	Compliant
B-L01-10	Bedroom 1	1.90	Minimum	-	1.90	Minimum	-
B-L01-10	Bedroom 2	1.90	Minimum	-	1.90	Minimum	-
B-L01-11	LKD	1.90	Minimum	-	1.90	Minimum	-
B-L01-11	Bedroom 1	3.00	Medium	Compliant	3.00	Medium	Compliant
B-L01-12	LKD	0.60	Below Minimum	-	3.30	Medium	-
B-L01-12	Bedroom 1	1.30	Below Minimum	-	1.30	Below Minimum	-
B-L01-12	Bedroom 2	3.40	Medium	Compliant	3.40	Medium	Compliant
B-L01-12	Bedroom 3	3.00	Medium	-	3.00	Medium	-
B-L01-13	LKD	0.40	Below Minimum	Non-Compliant	0.80	Below Minimum	Non-Compliant
B-L01-13	Bedroom 1	0.30	Below Minimum	-	0.30	Below Minimum	-
B-L01-14	LKD	0.40	Below Minimum	Non-Compliant	0.90	Below Minimum	Non-Compliant
B-L01-14	Bedroom 1	0.00	Below Minimum	-	0.00	Below Minimum	-
B-L01-15	LKD	0.70	Below Minimum	-	1.40	Below Minimum	Non-Compliant
B-L01-15	Bedroom 1	0.00	Below Minimum	-	0.00	Below Minimum	-
B-L01-15	Bedroom 2	0.80	Below Minimum	Non-Compliant	0.80	Below Minimum	-
B-L01-16	LKD	0.80	Below Minimum	Non-Compliant	1.50	Minimum	Compliant
B-L01-16	Bedroom 1	0.10	Below Minimum	-	0.10	Below Minimum	-
B-L01-16	Bedroom 2	0.00	Below Minimum	-	0.00	Below Minimum	-
B-L01-16	Bedroom 3	0.00	Below Minimum	-	0.00	Below Minimum	-
B-L01-17	LKD	0.50	Below Minimum	Non-Compliant	1.50	Minimum	Compliant
B-L01-17	Bedroom 1	0.00	Below Minimum	-	0.00	Below Minimum	-
B-L01-18	LKD	0.10	Below Minimum	-	0.10	Below Minimum	-
B-L01-18	Bedroom 1	0.00	Below Minimum	-	0.00	Below Minimum	-
B-L01-18	Bedroom 2	1.50	Minimum	Compliant	1.50	Minimum	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** Section 3.1.15 of the BRE Guidelines recommends that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 3.2.2 on page 25.

*** For the interpretation of levels of Sunlight Exposure please refer to "E.3 Definition of Levels of Sunlight Exposure" on page 104.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.3.8 SE Results: Block B Level 02

Table No. C.3.8 - Sunlight Exposure Results:							
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 based on highest performing room**	SE Hours on March 21st	Level of SE on March 21st***	Unit compliance based on highest performing room**
B-L02-01	LKD	2.50	Minimum	-	2.50	Minimum	-
B-L02-01	Bedroom 1	3.90	Medium	-	3.90	Medium	-
B-L02-01	Bedroom 2	4.40	High	Compliant	4.40	High	Compliant
B-L02-02	LKD	4.40	High	Compliant	4.40	High	Compliant
B-L02-02	Bedroom 1	2.60	Minimum	-	2.60	Minimum	-
B-L02-03	LKD	2.60	Minimum	-	2.60	Minimum	-
B-L02-03	Bedroom 1	3.70	Medium	Compliant	3.70	Medium	Compliant
B-L02-04	LKD	2.60	Minimum	-	2.60	Minimum	-
B-L02-04	Bedroom 1	3.80	Medium	Compliant	3.80	Medium	Compliant
B-L02-05	LKD	2.60	Minimum	-	2.60	Minimum	-
B-L02-05	Bedroom 1	3.80	Medium	Compliant	3.80	Medium	Compliant
B-L02-06	LKD	2.60	Minimum	-	2.60	Minimum	-
B-L02-06	Bedroom 1	2.90	Minimum	Compliant	2.90	Minimum	Compliant
B-L02-07	LKD	4.40	High	Compliant	4.40	High	Compliant
B-L02-07	Bedroom 1	2.50	Minimum	-	2.50	Minimum	-
B-L02-07	Bedroom 2	4.20	High	-	4.20	High	-
B-L02-08	LKD	2.50	Minimum	-	2.50	Minimum	-
B-L02-08	Bedroom 1	4.10	High	Compliant	4.10	High	Compliant
B-L02-09	LKD	9.40	High	Compliant	9.40	High	Compliant
B-L02-09	Bedroom 1	2.60	Minimum	-	2.60	Minimum	-
B-L02-09	Bedroom 2	2.50	Minimum	-	2.50	Minimum	-
B-L02-10	LKD	8.70	High	Compliant	8.70	High	Compliant
B-L02-10	Bedroom 1	1.90	Minimum	-	1.90	Minimum	-
B-L02-10	Bedroom 2	1.90	Minimum	-	1.90	Minimum	-
B-L02-11	LKD	1.90	Minimum	-	1.90	Minimum	-
B-L02-11	Bedroom 1	2.50	Minimum	-	2.50	Minimum	-
B-L02-11	Bedroom 2	3.00	Medium	Compliant	3.00	Medium	Compliant
B-L02-12	LKD	3.30	Medium	-	3.30	Medium	-
B-L02-12	Bedroom 1	1.30	Below Minimum	-	1.30	Below Minimum	-
B-L02-12	Bedroom 2	3.40	Medium	Compliant	3.40	Medium	Compliant
B-L02-13	LKD	0.80	Below Minimum	Non-Compliant	0.80	Below Minimum	Non-Compliant
B-L02-13	Bedroom 1	0.40	Below Minimum	-	0.40	Below Minimum	-
B-L02-14	LKD	1.20	Below Minimum	Non-Compliant	1.20	Below Minimum	Non-Compliant
B-L02-14	Bedroom 1	0.40	Below Minimum	-	0.40	Below Minimum	-
B-L02-15	LKD	1.80	Minimum	Compliant	1.80	Minimum	Compliant
B-L02-15	Bedroom 1	0.40	Below Minimum	-	0.40	Below Minimum	-
B-L02-15	Bedroom 2	1.20	Below Minimum	-	1.20	Below Minimum	-
B-L02-16	LKD	1.80	Minimum	Compliant	1.80	Minimum	Compliant
B-L02-16	Bedroom 1	0.40	Below Minimum	-	0.40	Below Minimum	-
B-L02-16	Bedroom 2	0.40	Below Minimum	-	0.40	Below Minimum	-
B-L02-17	LKD	1.80	Minimum	Compliant	1.80	Minimum	Compliant
B-L02-17	Bedroom 1	0.40	Below Minimum	-	0.40	Below Minimum	-
B-L02-17	Bedroom 2	0.40	Below Minimum	-	0.40	Below Minimum	-
B-L02-18	LKD	0.40	Below Minimum	-	0.40	Below Minimum	-
B-L02-18	Bedroom 1	0.40	Below Minimum	-	0.40	Below Minimum	-
B-L02-18	Bedroom 2	1.80	Minimum	Compliant	1.80	Minimum	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** Section 3.1.15 of the BRE Guidelines recommends that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 3.2.2 on page 25.

*** For the interpretation of levels of Sunlight Exposure please refer to "E.3 Definition of Levels of Sunlight Exposure" on page 104.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.3.9 SE Results: Block B Level 03

Table No. C.3.9 - Sunlight Exposure Results:							
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 based on highest performing room**	SE Hours on March 21st	Level of SE on March 21st***	Unit compliance based on highest performing room**
B-L03-01	LKD	2.50	Minimum	-	2.50	Minimum	-
B-L03-01	Bedroom 1	4.20	High	-	4.20	High	-
B-L03-01	Bedroom 2	4.40	High	Compliant	4.40	High	Compliant
B-L03-02	LKD	4.60	High	Compliant	4.60	High	Compliant
B-L03-02	Bedroom 1	2.60	Minimum	-	2.60	Minimum	-
B-L03-03	LKD	4.00	High	Compliant	4.00	High	Compliant
B-L03-03	Bedroom 1	2.90	Minimum	-	2.90	Minimum	-
B-L03-04	LKD	4.00	High	Compliant	4.00	High	Compliant
B-L03-04	Bedroom 1	2.90	Minimum	-	2.90	Minimum	-
B-L03-05	LKD	4.10	High	Compliant	4.10	High	Compliant
B-L03-05	Bedroom 1	2.90	Minimum	-	2.90	Minimum	-
B-L03-06	LKD	3.90	Medium	Compliant	3.90	Medium	Compliant
B-L03-06	Bedroom 1	2.90	Minimum	-	2.90	Minimum	-
B-L03-07	LKD	4.40	High	-	4.40	High	-
B-L03-07	Bedroom 1	2.50	Minimum	-	2.50	Minimum	-
B-L03-07	Bedroom 2	4.60	High	Compliant	4.60	High	Compliant
B-L03-08	LKD	4.10	High	Compliant	4.10	High	Compliant
B-L03-08	Bedroom 1	4.10	High	-	4.10	High	-
B-L03-09	LKD	9.40	High	Compliant	9.40	High	Compliant
B-L03-09	Bedroom 1	2.60	Minimum	-	2.60	Minimum	-
B-L03-09	Bedroom 2	2.50	Minimum	-	2.50	Minimum	-
B-L03-10	LKD	8.70	High	Compliant	8.70	High	Compliant
B-L03-10	Bedroom 1	1.90	Minimum	-	1.90	Minimum	-
B-L03-10	Bedroom 2	1.90	Minimum	-	1.90	Minimum	-
B-L03-11	LKD	1.90	Minimum	-	1.90	Minimum	-
B-L03-11	Bedroom 1	2.50	Minimum	-	2.50	Minimum	-
B-L03-11	Bedroom 2	3.00	Medium	Compliant	3.00	Medium	Compliant
B-L03-12	LKD	3.30	Medium	-	3.30	Medium	-
B-L03-12	Bedroom 1	1.30	Below Minimum	-	1.30	Below Minimum	-
B-L03-12	Bedroom 2	3.40	Medium	Compliant	3.40	Medium	Compliant
B-L03-13	LKD	1.00	Below Minimum	Non-Compliant	1.00	Below Minimum	Non-Compliant
B-L03-13	Bedroom 1	0.90	Below Minimum	-	0.90	Below Minimum	-
B-L03-14	LKD	1.70	Minimum	Compliant	1.70	Minimum	Compliant
B-L03-14	Bedroom 1	0.90	Below Minimum	-	0.90	Below Minimum	-
B-L03-15	LKD	2.30	Minimum	Compliant	2.30	Minimum	Compliant
B-L03-15	Bedroom 1	0.90	Below Minimum	-	0.90	Below Minimum	-
B-L03-15	Bedroom 2	1.70	Minimum	-	1.70	Minimum	-
B-L03-16	LKD	2.30	Minimum	Compliant	2.30	Minimum	Compliant
B-L03-16	Bedroom 1	0.90	Below Minimum	-	0.90	Below Minimum	-
B-L03-16	Bedroom 2	0.90	Below Minimum	-	0.90	Below Minimum	-
B-L03-17	LKD	2.30	Minimum	Compliant	2.30	Minimum	Compliant
B-L03-17	Bedroom 1	0.90	Below Minimum	-	0.90	Below Minimum	-
B-L03-17	Bedroom 2	0.90	Below Minimum	-	0.90	Below Minimum	-
B-L03-18	LKD	0.90	Below Minimum	-	0.90	Below Minimum	-
B-L03-18	Bedroom 1	0.90	Below Minimum	-	0.90	Below Minimum	-
B-L03-18	Bedroom 2	2.30	Minimum	Compliant	2.30	Minimum	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** Section 3.1.15 of the BRE Guidelines recommends that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 3.2.2 on page 25.

*** For the interpretation of levels of Sunlight Exposure please refer to "E.3 Definition of Levels of Sunlight Exposure" on page 104.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.3.10 SE Results: Block B Level 04

Table No. C.3.10 - Sunlight Exposure Results:							
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 based on highest performing room**	SE Hours on March 21st	Level of SE on March 21st***	Unit compliance based on highest performing room**
B-L04-01	LKD	2.50	Minimum	-	2.50	Minimum	-
B-L04-01	Bedroom 1	4.10	High	-	4.10	High	-
B-L04-01	Bedroom 2	4.40	High	Compliant	4.40	High	Compliant
B-L04-02	LKD	4.60	High	Compliant	4.60	High	Compliant
B-L04-02	Bedroom 1	2.60	Minimum	-	2.60	Minimum	-
B-L04-03	LKD	2.60	Minimum	-	2.60	Minimum	-
B-L04-03	Bedroom 1	3.70	Medium	Compliant	3.70	Medium	Compliant
B-L04-04	LKD	2.60	Minimum	-	2.60	Minimum	-
B-L04-04	Bedroom 1	3.80	Medium	Compliant	3.80	Medium	Compliant
B-L04-05	LKD	2.60	Minimum	-	2.60	Minimum	-
B-L04-05	Bedroom 1	3.80	Medium	Compliant	3.80	Medium	Compliant
B-L04-06	LKD	2.60	Minimum	-	2.60	Minimum	-
B-L04-06	Bedroom 1	2.90	Minimum	Compliant	2.90	Minimum	Compliant
B-L04-07	LKD	4.40	High	-	4.40	High	-
B-L04-07	Bedroom 1	2.50	Minimum	-	2.50	Minimum	-
B-L04-07	Bedroom 2	4.60	High	Compliant	4.60	High	Compliant
B-L04-08	LKD	2.50	Minimum	-	2.50	Minimum	-
B-L04-08	Bedroom 1	4.10	High	Compliant	4.10	High	Compliant
B-L04-09	LKD	9.40	High	Compliant	9.40	High	Compliant
B-L04-09	Bedroom 1	2.60	Minimum	-	2.60	Minimum	-
B-L04-09	Bedroom 2	2.50	Minimum	-	2.50	Minimum	-
B-L04-10	LKD	8.70	High	Compliant	8.70	High	Compliant
B-L04-10	Bedroom 1	1.90	Minimum	-	1.90	Minimum	-
B-L04-10	Bedroom 2	1.90	Minimum	-	1.90	Minimum	-
B-L04-11	LKD	1.90	Minimum	-	1.90	Minimum	-
B-L04-11	Bedroom 1	2.50	Minimum	-	2.50	Minimum	-
B-L04-11	Bedroom 2	3.00	Medium	Compliant	3.00	Medium	Compliant
B-L04-12	LKD	3.30	Medium	-	3.30	Medium	-
B-L04-12	Bedroom 1	1.60	Minimum	-	1.60	Minimum	-
B-L04-12	Bedroom 2	3.40	Medium	Compliant	3.40	Medium	Compliant
B-L04-13	LKD	1.60	Minimum	Compliant	1.60	Minimum	Compliant
B-L04-13	Bedroom 1	1.60	Minimum	-	1.60	Minimum	-
B-L04-14	LKD	2.40	Minimum	Compliant	2.40	Minimum	Compliant
B-L04-14	Bedroom 1	1.60	Minimum	-	1.60	Minimum	-
B-L04-15	LKD	3.10	Medium	Compliant	3.10	Medium	Compliant
B-L04-15	Bedroom 1	1.60	Minimum	-	1.60	Minimum	-
B-L04-15	Bedroom 2	2.30	Minimum	-	2.30	Minimum	-
B-L04-16	LKD	3.10	Medium	Compliant	3.10	Medium	Compliant
B-L04-16	Bedroom 1	1.60	Minimum	-	1.60	Minimum	-
B-L04-16	Bedroom 2	1.60	Minimum	-	1.60	Minimum	-
B-L04-17	LKD	3.10	Medium	Compliant	3.10	Medium	Compliant
B-L04-17	Bedroom 1	1.60	Minimum	-	1.60	Minimum	-
B-L04-17	Bedroom 2	1.60	Minimum	-	1.60	Minimum	-
B-L04-18	LKD	1.60	Minimum	-	1.60	Minimum	-
B-L04-18	Bedroom 1	1.60	Minimum	-	1.60	Minimum	-
B-L04-18	Bedroom 2	3.10	Medium	Compliant	3.10	Medium	Compliant

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** Section 3.1.15 of the BRE Guidelines recommends that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 3.2.2 on page 25.

*** For the interpretation of levels of Sunlight Exposure please refer to "E.3 Definition of Levels of Sunlight Exposure" on page 104.

For floor plans of the assessed units please refer to section C.1 on page 46.

C.3.11 SE Results: Block B Level 05

Table No. C.3.11 - Sunlight Exposure Results:							
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 based on highest performing room**	SE Hours on March 21st	Level of SE on March 21st***	Unit compliance based on highest performing room**
B-L05-01	LKD	4.40	High	Compliant	4.40	High	Compliant
B-L05-01	Bedroom 1	4.40	High	-	4.40	High	-
B-L05-01	Bedroom 2	4.40	High	-	4.40	High	-
B-L05-02	LKD	6.10	High	Compliant	6.10	High	Compliant
B-L05-02	Bedroom 1	4.10	High	-	4.10	High	-
B-L05-03	LKD	4.40	High	Compliant	4.40	High	Compliant
B-L05-03	Bedroom 1	4.10	High	-	4.10	High	-
B-L05-04	LKD	4.40	High	Compliant	4.40	High	Compliant
B-L05-04	Bedroom 1	4.10	High	-	4.10	High	-
B-L05-05	LKD	4.40	High	Compliant	4.40	High	Compliant
B-L05-05	Bedroom 1	4.10	High	-	4.10	High	-
B-L05-06	LKD	4.40	High	Compliant	4.40	High	Compliant
B-L05-06	Bedroom 1	4.10	High	-	4.10	High	-
B-L05-07	LKD	4.40	High	-	4.40	High	-
B-L05-07	Bedroom 1	4.10	High	-	4.10	High	-
B-L05-07	Bedroom 2	6.10	High	Compliant	6.10	High	Compliant
B-L05-08	LKD	4.40	High	Compliant	4.40	High	Compliant
B-L05-08	Bedroom 1	4.10	High	-	4.10	High	-
B-L05-09	LKD	9.40	High	Compliant	9.40	High	Compliant
B-L05-09	Bedroom 1	4.40	High	-	4.40	High	-
B-L05-09	Bedroom 2	4.40	High	-	4.40	High	-
B-L05-10	LKD	8.70	High	Compliant	8.70	High	Compliant
B-L05-10	Bedroom 1	3.40	Medium	-	3.40	Medium	-
B-L05-10	Bedroom 2	3.40	Medium	-	3.40	Medium	-
B-L05-11	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
B-L05-11	Bedroom 1	3.00	Medium	-	3.00	Medium	-
B-L05-11	Bedroom 2	3.00	Medium	-	3.00	Medium	-
B-L05-12	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
B-L05-12	Bedroom 1	3.00	Medium	-	3.00	Medium	-
B-L05-12	Bedroom 2	3.40	Medium	-	3.40	Medium	-
B-L05-13	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
B-L05-13	Bedroom 1	3.00	Medium	-	3.00	Medium	-
B-L05-14	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
B-L05-14	Bedroom 1	3.00	Medium	-	3.00	Medium	-
B-L05-15	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
B-L05-15	Bedroom 1	3.00	Medium	-	3.00	Medium	-
B-L05-15	Bedroom 2	3.00	Medium	-	3.00	Medium	-
B-L05-16	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
B-L05-16	Bedroom 1	3.40	Medium	-	3.40	Medium	-
B-L05-16	Bedroom 2	3.00	Medium	-	3.00	Medium	-
B-L05-17	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
B-L05-17	Bedroom 1	3.00	Medium	-	3.00	Medium	-
B-L05-17	Bedroom 2	3.00	Medium	-	3.00	Medium	-
B-L05-18	LKD	3.40	Medium	Compliant	3.40	Medium	Compliant
B-L05-18	Bedroom 1	3.40	Medium	-	3.40	Medium	-
B-L05-18	Bedroom 2	3.40	Medium	-	3.40	Medium	-

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** Section 3.1.15 of the BRE Guidelines recommends that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 3.2.2 on page 25.

*** For the interpretation of levels of Sunlight Exposure please refer to "E.3 Definition of Levels of Sunlight Exposure" on page 104.

For floor plans of the assessed units please refer to section C.1 on page 46.

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

Section 3.3.17 of 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	Public Open Space (SW)	99.92%	50.00%	BRE Compliant	Yes
2	Public Open Space (SE)	99.38%	50.00%	BRE Compliant	Yes
3	Communal Open Space (Podium)	97.42%	50.00%	BRE Compliant	Yes
4	Crèche Play Area	100.00%	50.00%	BRE Compliant	Yes
* Section 3.3.17 of the BRE Guidelines recommends 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.					

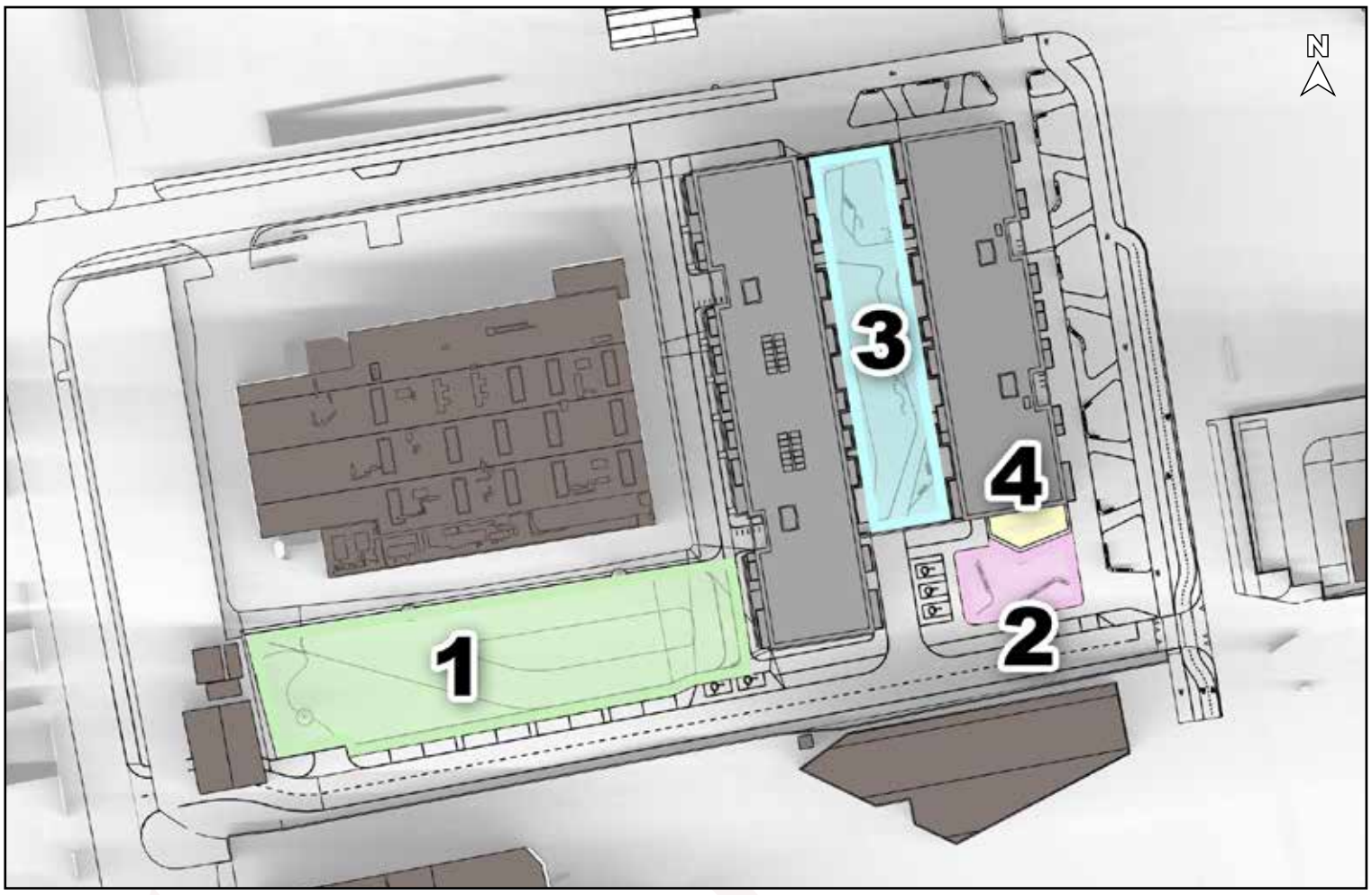


Figure C.7: Indication of the amenity areas that have been analysed

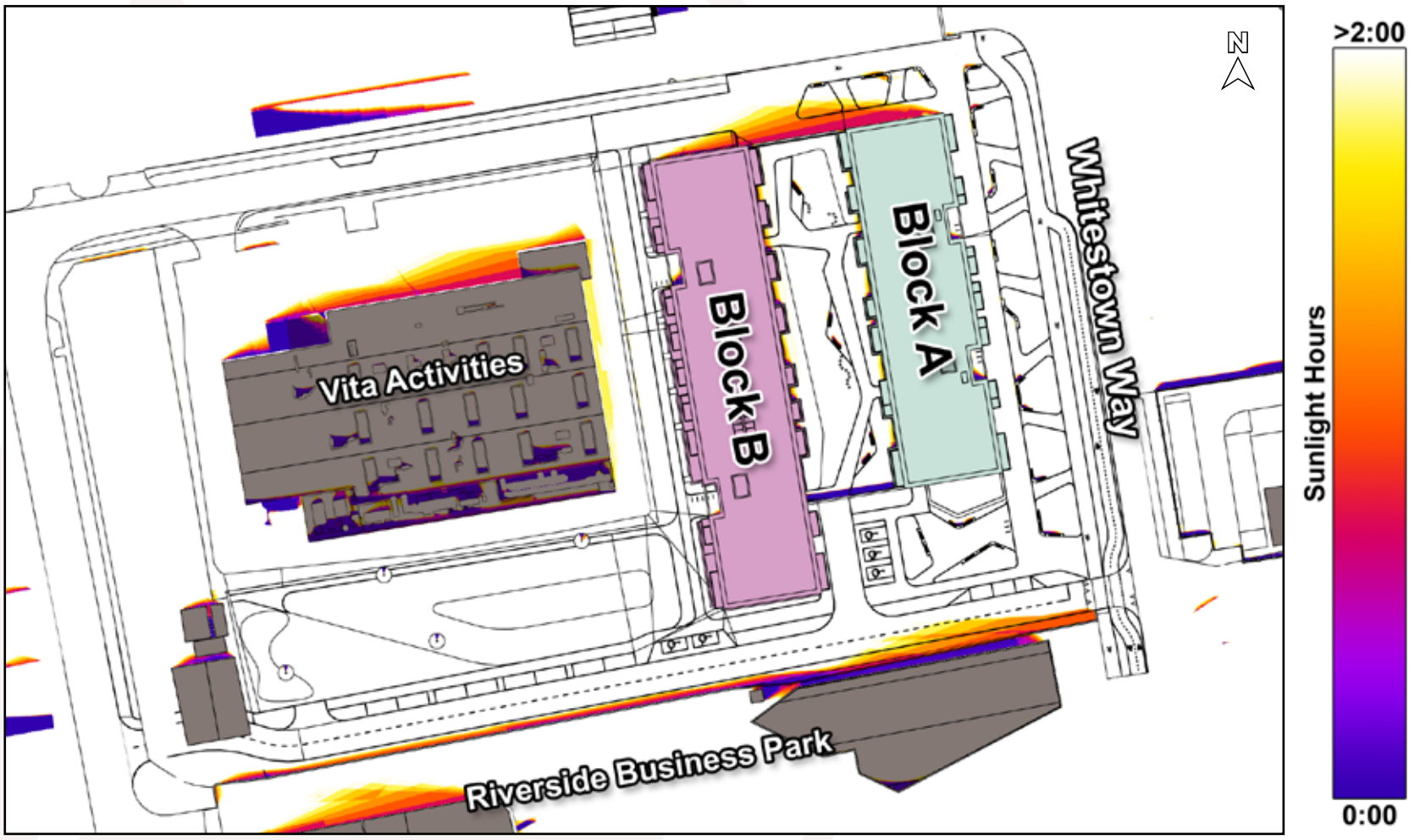


Figure C.8: Area capable of receiving 2 hours of sunlight on March 21st shown in white

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. 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 be adequately daylit. 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.

Table Example. D.1 - Supplementary Scheme Performance SDA (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. The unit numbers for the proposed residential units are determined by the architect's drawings, but 3DDB have applied their own numbering to the rooms of the proposed crèche.

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): Block A, Level 00, and Level 01

Table No. D.1.1 - 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*	
Crèche	Classroom 01	100%	100%	100%	100%	Compliant
Crèche	Classroom 02	100%	100%	100%	100%	Compliant
Crèche	Classroom 03	100%	100%	100%	100%	Compliant
Crèche	Classroom 04	100%	100%	100%	100%	Compliant
Crèche	Creche Office	100%	100%	100%	100%	Compliant
A-L01-01	LKD	100%	100%	95%	100%	Compliant
A-L01-01	Bedroom 1	77%	100%	55%	100%	Compliant
A-L01-01	Bedroom 2	76%	100%	61%	100%	Compliant
A-L01-02	LKD	19%	59%	18%	57%	Non-compliant
A-L01-02	Bedroom 1	3%	100%	0%	93%	Non-compliant
A-L01-03	LKD	17%	54%	16%	49%	Non-compliant
A-L01-03	Bedroom 1	30%	100%	26%	100%	Non-compliant
A-L01-03	Bedroom 2	0%	96%	0%	77%	Non-compliant
A-L01-03	Bedroom 3	16%	85%	13%	72%	Non-compliant
A-L01-04	LKD	17%	56%	17%	54%	Non-compliant
A-L01-04	Bedroom 1	9%	100%	6%	99%	Non-compliant
A-L01-05	LKD	17%	53%	16%	49%	Non-compliant
A-L01-05	Bedroom 1	0%	92%	0%	78%	Non-compliant
A-L01-05	Bedroom 2	33%	100%	27%	100%	Non-compliant
A-L01-05	Bedroom 3	24%	100%	19%	90%	Non-compliant
A-L01-06	LKD	21%	63%	20%	60%	Non-compliant
A-L01-06	Bedroom 1	37%	100%	33%	100%	Non-compliant
A-L01-07	LKD	100%	100%	100%	100%	Compliant
A-L01-07	Bedroom 1	72%	100%	53%	100%	Compliant
A-L01-07	Bedroom 2	51%	100%	44%	100%	Trees affecting compliance
A-L01-08	LKD	100%	100%	100%	100%	Compliant
A-L01-08	Bedroom 1	100%	100%	100%	100%	Compliant
A-L01-08	Bedroom 2	100%	100%	100%	100%	Compliant
A-L01-09	LKD	61%	100%	59%	100%	Compliant
A-L01-09	Bedroom 1	100%	100%	100%	100%	Compliant
A-L01-10	LKD	66%	100%	64%	100%	Compliant
A-L01-10	Bedroom 1	100%	100%	100%	100%	Compliant
A-L01-11	LKD	62%	100%	59%	100%	Compliant
A-L01-11	Bedroom 1	100%	100%	100%	100%	Compliant
A-L01-12	LKD	63%	100%	59%	100%	Compliant
A-L01-12	Bedroom 1	100%	100%	100%	100%	Compliant
A-L01-13	LKD	64%	100%	61%	100%	Compliant
A-L01-13	Bedroom 1	100%	100%	100%	100%	Compliant
A-L01-14	LKD	100%	100%	100%	100%	Compliant
A-L01-14	Bedroom 1	100%	100%	100%	100%	Compliant
A-L01-14	Bedroom 2	100%	100%	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.
For floor plans of the assessed units please refer to section C.1 on page 46.

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

Table No. D.1.2 - 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-L02-01	LKD	100%	100%	100%	100%	Compliant
A-L02-01	Bedroom 1	93%	100%	84%	100%	Compliant
A-L02-01	Bedroom 2	91%	100%	88%	100%	Compliant
A-L02-02	LKD	24%	62%	23%	62%	Non-compliant
A-L02-02	Bedroom 1	39%	100%	38%	100%	Non-compliant
A-L02-02	Bedroom 2	15%	100%	13%	100%	Non-compliant
A-L02-03	LKD	23%	62%	22%	60%	Non-compliant
A-L02-03	Bedroom 1	37%	100%	33%	100%	Non-compliant
A-L02-03	Bedroom 2	45%	100%	42%	100%	Non-compliant
A-L02-04	LKD	22%	62%	22%	62%	Non-compliant
A-L02-04	Bedroom 1	15%	100%	15%	100%	Non-compliant
A-L02-05	LKD	24%	63%	22%	60%	Non-compliant
A-L02-05	Bedroom 1	9%	100%	8%	100%	Non-compliant
A-L02-05	Bedroom 2	79%	100%	71%	100%	Compliant
A-L02-06	LKD	24%	67%	23%	66%	Non-compliant
A-L02-06	Bedroom 1	10%	100%	9%	100%	Non-compliant
A-L02-06	Bedroom 2	49%	100%	46%	100%	Non-compliant
A-L02-07	LKD	100%	100%	100%	100%	Compliant
A-L02-07	Bedroom 1	92%	100%	85%	100%	Compliant
A-L02-07	Bedroom 2	68%	100%	65%	100%	Compliant
A-L02-08	LKD	100%	100%	100%	100%	Compliant
A-L02-08	Bedroom 1	100%	100%	100%	100%	Compliant
A-L02-08	Bedroom 2	100%	100%	100%	100%	Compliant
A-L02-09	LKD	62%	100%	61%	100%	Compliant
A-L02-09	Bedroom 1	100%	100%	100%	100%	Compliant
A-L02-10	LKD	64%	100%	64%	100%	Compliant
A-L02-10	Bedroom 1	100%	100%	100%	100%	Compliant
A-L02-11	LKD	64%	100%	63%	100%	Compliant
A-L02-11	Bedroom 1	100%	100%	100%	100%	Compliant
A-L02-12	LKD	64%	100%	64%	100%	Compliant
A-L02-12	Bedroom 1	100%	100%	100%	100%	Compliant
A-L02-13	LKD	70%	100%	68%	100%	Compliant
A-L02-13	Bedroom 1	100%	100%	100%	100%	Compliant
A-L02-14	LKD	100%	100%	100%	100%	Compliant
A-L02-14	Bedroom 1	100%	100%	100%	100%	Compliant
A-L02-14	Bedroom 2	100%	100%	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.
For floor plans of the assessed units please refer to section C.1 on page 46.

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

Table No. D.1.3 - 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-L03-01	LKD	100%	100%	100%	100%	Compliant
A-L03-01	Bedroom 1	100%	100%	100%	100%	Compliant
A-L03-01	Bedroom 2	100%	100%	100%	100%	Compliant
A-L03-02	LKD	36%	77%	36%	76%	Non-compliant
A-L03-02	Bedroom 1	62%	100%	61%	100%	Compliant
A-L03-02	Bedroom 2	43%	100%	43%	100%	Non-compliant
A-L03-03	LKD	34%	74%	34%	74%	Non-compliant
A-L03-03	Bedroom 1	71%	100%	71%	100%	Compliant
A-L03-03	Bedroom 2	76%	100%	75%	100%	Compliant
A-L03-04	LKD	35%	77%	35%	76%	Non-compliant
A-L03-04	Bedroom 1	37%	100%	37%	100%	Non-compliant
A-L03-05	LKD	34%	75%	34%	75%	Non-compliant
A-L03-05	Bedroom 1	33%	100%	33%	100%	Non-compliant
A-L03-05	Bedroom 2	100%	100%	100%	100%	Compliant
A-L03-06	LKD	37%	77%	37%	76%	Non-compliant
A-L03-06	Bedroom 1	35%	100%	34%	100%	Non-compliant
A-L03-06	Bedroom 2	81%	100%	79%	100%	Compliant
A-L03-07	LKD	100%	100%	100%	100%	Compliant
A-L03-07	Bedroom 1	100%	100%	100%	100%	Compliant
A-L03-07	Bedroom 2	100%	100%	100%	100%	Compliant
A-L03-08	LKD	100%	100%	100%	100%	Compliant
A-L03-08	Bedroom 1	100%	100%	100%	100%	Compliant
A-L03-08	Bedroom 2	100%	100%	100%	100%	Compliant
A-L03-09	LKD	66%	100%	66%	100%	Compliant
A-L03-09	Bedroom 1	100%	100%	100%	100%	Compliant
A-L03-10	LKD	69%	100%	68%	100%	Compliant
A-L03-10	Bedroom 1	100%	100%	100%	100%	Compliant
A-L03-11	LKD	69%	100%	68%	100%	Compliant
A-L03-11	Bedroom 1	100%	100%	100%	100%	Compliant
A-L03-12	LKD	70%	100%	69%	100%	Compliant
A-L03-12	Bedroom 1	100%	100%	100%	100%	Compliant
A-L03-13	LKD	71%	100%	70%	100%	Compliant
A-L03-13	Bedroom 1	100%	100%	100%	100%	Compliant
A-L03-14	LKD	100%	100%	100%	100%	Compliant
A-L03-14	Bedroom 1	100%	100%	100%	100%	Compliant
A-L03-14	Bedroom 2	100%	100%	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.
For floor plans of the assessed units please refer to section C.1 on page 46.

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

Table No. D.1.4 - 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-L04-01	LKD	100%	100%	100%	100%	Compliant
A-L04-01	Bedroom 1	100%	100%	100%	100%	Compliant
A-L04-01	Bedroom 2	100%	100%	100%	100%	Compliant
A-L04-02	LKD	50%	93%	50%	93%	Non-compliant
A-L04-02	Bedroom 1	95%	100%	93%	100%	Compliant
A-L04-02	Bedroom 2	89%	100%	87%	100%	Compliant
A-L04-03	LKD	50%	94%	50%	94%	Non-compliant
A-L04-03	Bedroom 1	100%	100%	100%	100%	Compliant
A-L04-03	Bedroom 2	100%	100%	100%	100%	Compliant
A-L04-04	LKD	48%	89%	48%	88%	Non-compliant
A-L04-04	Bedroom 1	83%	100%	82%	100%	Compliant
A-L04-05	LKD	49%	94%	49%	93%	Non-compliant
A-L04-05	Bedroom 1	71%	100%	70%	100%	Compliant
A-L04-05	Bedroom 2	100%	100%	100%	100%	Compliant
A-L04-06	LKD	51%	94%	49%	93%	Non-compliant
A-L04-06	Bedroom 1	72%	100%	71%	100%	Compliant
A-L04-06	Bedroom 2	100%	100%	100%	100%	Compliant
A-L04-07	LKD	100%	100%	100%	100%	Compliant
A-L04-07	Bedroom 1	100%	100%	100%	100%	Compliant
A-L04-07	Bedroom 2	100%	100%	100%	100%	Compliant
A-L04-08	LKD	100%	100%	100%	100%	Compliant
A-L04-08	Bedroom 1	100%	100%	100%	100%	Compliant
A-L04-08	Bedroom 2	100%	100%	100%	100%	Compliant
A-L04-09	LKD	67%	100%	67%	100%	Compliant
A-L04-09	Bedroom 1	100%	100%	100%	100%	Compliant
A-L04-10	LKD	69%	100%	69%	100%	Compliant
A-L04-10	Bedroom 1	100%	100%	100%	100%	Compliant
A-L04-11	LKD	68%	100%	68%	100%	Compliant
A-L04-11	Bedroom 1	100%	100%	100%	100%	Compliant
A-L04-12	LKD	69%	100%	69%	100%	Compliant
A-L04-12	Bedroom 1	100%	100%	100%	100%	Compliant
A-L04-13	LKD	75%	100%	75%	100%	Compliant
A-L04-13	Bedroom 1	100%	100%	100%	100%	Compliant
A-L04-14	LKD	100%	100%	100%	100%	Compliant
A-L04-14	Bedroom 1	100%	100%	100%	100%	Compliant
A-L04-14	Bedroom 2	100%	100%	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.
For floor plans of the assessed units please refer to section C.1 on page 46.

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

Table No. D.1.5 - 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-L05-01	LKD	100%	100%	100%	100%	Compliant
A-L05-01	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-01	Bedroom 2	100%	100%	100%	100%	Compliant
A-L05-02	LKD	65%	100%	65%	100%	Compliant
A-L05-02	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-02	Bedroom 2	100%	100%	100%	100%	Compliant
A-L05-03	LKD	65%	100%	64%	100%	Compliant
A-L05-03	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-03	Bedroom 2	100%	100%	100%	100%	Compliant
A-L05-04	LKD	63%	100%	63%	100%	Compliant
A-L05-04	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-05	LKD	65%	100%	65%	100%	Compliant
A-L05-05	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-05	Bedroom 2	100%	100%	100%	100%	Compliant
A-L05-06	LKD	66%	100%	66%	100%	Compliant
A-L05-06	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-06	Bedroom 2	100%	100%	100%	100%	Compliant
A-L05-07	LKD	100%	100%	100%	100%	Compliant
A-L05-07	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-07	Bedroom 2	100%	100%	100%	100%	Compliant
A-L05-08	LKD	100%	100%	100%	100%	Compliant
A-L05-08	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-08	Bedroom 2	100%	100%	100%	100%	Compliant
A-L05-09	LKD	71%	100%	71%	100%	Compliant
A-L05-09	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-10	LKD	77%	100%	76%	100%	Compliant
A-L05-10	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-11	LKD	77%	100%	76%	100%	Compliant
A-L05-11	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-12	LKD	79%	100%	78%	100%	Compliant
A-L05-12	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-13	LKD	82%	100%	82%	100%	Compliant
A-L05-13	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-14	LKD	100%	100%	100%	100%	Compliant
A-L05-14	Bedroom 1	100%	100%	100%	100%	Compliant
A-L05-14	Bedroom 2	100%	100%	100%	100%	Compliant
* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16. For floor plans of the assessed units please refer to section C.1 on page 46.						

D.1.6 Supplementary SDA Results (I.S. EN 17037 criteria): Block B Level 00

Table No. D.1.6 - 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*	
B-L00-01	LKD	100%	100%	100%	100%	Compliant
B-L00-01	Bedroom 1	100%	100%	100%	100%	Compliant
B-L00-01	Bedroom 2	100%	100%	100%	100%	Compliant
B-L00-02	LKD	74%	100%	62%	100%	Compliant
B-L00-02	Bedroom 1	100%	100%	100%	100%	Compliant
B-L00-03	LKD	59%	87%	48%	78%	Non-compliant
B-L00-03	Bedroom 1	100%	100%	100%	100%	Compliant
B-L00-04	LKD	58%	86%	47%	77%	Non-compliant
B-L00-04	Bedroom 1	100%	100%	100%	100%	Compliant
B-L00-05	LKD	59%	87%	54%	83%	Non-compliant
B-L00-05	Bedroom 1	100%	100%	100%	100%	Compliant
B-L00-06	LKD	61%	90%	55%	84%	Non-compliant
B-L00-06	Bedroom 1	100%	100%	100%	100%	Compliant
B-L00-07	LKD	64%	100%	54%	100%	Compliant
B-L00-07	Bedroom 1	100%	100%	95%	100%	Compliant
B-L00-07	Bedroom 2	100%	100%	100%	100%	Compliant
B-L00-08	LKD	85%	100%	70%	100%	Compliant
B-L00-08	Bedroom 1	100%	100%	100%	100%	Compliant
B-L00-09	LKD	100%	100%	100%	100%	Compliant
B-L00-09	Bedroom 1	100%	100%	100%	100%	Compliant
B-L00-09	Bedroom 2	100%	100%	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.
For floor plans of the assessed units please refer to section C.1 on page 46.

D.1.7 Supplementary SDA Results (I.S. EN 17037 criteria): Block B Level 01

Table No. D.1.7 - 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*	
B-L01-01	LKD	100%	100%	100%	100%	Compliant
B-L01-01	Bedroom 1	100%	100%	100%	100%	Compliant
B-L01-01	Bedroom 2	100%	100%	100%	100%	Compliant
B-L01-02	LKD	66%	100%	62%	100%	Compliant
B-L01-02	Bedroom 1	100%	100%	100%	100%	Compliant
B-L01-03	LKD	56%	100%	52%	99%	Compliant
B-L01-03	Bedroom 1	100%	100%	100%	100%	Compliant
B-L01-04	LKD	55%	99%	52%	98%	Compliant
B-L01-04	Bedroom 1	100%	100%	100%	100%	Compliant
B-L01-05	LKD	56%	99%	53%	99%	Compliant
B-L01-05	Bedroom 1	100%	100%	100%	100%	Compliant
B-L01-06	LKD	56%	100%	54%	99%	Compliant
B-L01-06	Bedroom 1	100%	100%	100%	100%	Compliant
B-L01-07	LKD	63%	100%	59%	100%	Compliant
B-L01-07	Bedroom 1	100%	100%	100%	100%	Compliant
B-L01-07	Bedroom 2	100%	100%	100%	100%	Compliant
B-L01-08	LKD	67%	100%	61%	100%	Compliant
B-L01-08	Bedroom 1	100%	100%	100%	100%	Compliant
B-L01-09	LKD	100%	100%	100%	100%	Compliant
B-L01-09	Bedroom 1	100%	100%	100%	100%	Compliant
B-L01-09	Bedroom 2	100%	100%	100%	100%	Compliant
B-L01-10	LKD	100%	100%	100%	100%	Compliant
B-L01-10	Bedroom 1	100%	100%	100%	100%	Compliant
B-L01-10	Bedroom 2	100%	100%	100%	100%	Compliant
B-L01-11	LKD	45%	99%	42%	96%	Non-compliant
B-L01-11	Bedroom 1	83%	100%	73%	100%	Compliant
B-L01-12	LKD	27%	65%	23%	58%	Non-compliant
B-L01-12	Bedroom 1	15%	100%	7%	99%	Non-compliant
B-L01-12	Bedroom 2	71%	100%	62%	100%	Compliant
B-L01-12	Bedroom 3	52%	100%	47%	100%	Trees affecting compliance
B-L01-13	LKD	20%	62%	19%	55%	Non-compliant
B-L01-13	Bedroom 1	13%	100%	9%	100%	Non-compliant
B-L01-14	LKD	19%	58%	19%	56%	Non-compliant
B-L01-14	Bedroom 1	10%	100%	8%	100%	Non-compliant
B-L01-15	LKD	19%	55%	17%	52%	Non-compliant
B-L01-15	Bedroom 1	2%	80%	0%	64%	Non-compliant
B-L01-15	Bedroom 2	33%	100%	24%	100%	Non-compliant
B-L01-16	LKD	17%	54%	16%	48%	Non-compliant
B-L01-16	Bedroom 1	25%	100%	22%	93%	Non-compliant
B-L01-16	Bedroom 2	1%	82%	1%	76%	Non-compliant
B-L01-16	Bedroom 3	14%	82%	13%	75%	Non-compliant
B-L01-17	LKD	20%	60%	20%	58%	Non-compliant
B-L01-17	Bedroom 1	5%	100%	0%	97%	Non-compliant
B-L01-18	LKD	100%	100%	95%	100%	Compliant
B-L01-18	Bedroom 1	57%	100%	47%	100%	Trees affecting compliance
B-L01-18	Bedroom 2	60%	100%	36%	100%	Trees affecting compliance

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.
For floor plans of the assessed units please refer to section C.1 on page 46.

D.1.8 Supplementary SDA Results (I.S. EN 17037 criteria): Block B Level 02

Table No. D.1.8 - 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*	
B-L02-01	LKD	100%	100%	100%	100%	Compliant
B-L02-01	Bedroom 1	100%	100%	100%	100%	Compliant
B-L02-01	Bedroom 2	100%	100%	100%	100%	Compliant
B-L02-02	LKD	74%	100%	73%	100%	Compliant
B-L02-02	Bedroom 1	100%	100%	100%	100%	Compliant
B-L02-03	LKD	68%	100%	66%	100%	Compliant
B-L02-03	Bedroom 1	100%	100%	100%	100%	Compliant
B-L02-04	LKD	67%	100%	65%	100%	Compliant
B-L02-04	Bedroom 1	100%	100%	100%	100%	Compliant
B-L02-05	LKD	67%	100%	65%	100%	Compliant
B-L02-05	Bedroom 1	100%	100%	100%	100%	Compliant
B-L02-06	LKD	66%	100%	66%	100%	Compliant
B-L02-06	Bedroom 1	100%	100%	100%	100%	Compliant
B-L02-07	LKD	67%	100%	65%	100%	Compliant
B-L02-07	Bedroom 1	100%	100%	100%	100%	Compliant
B-L02-07	Bedroom 2	100%	100%	100%	100%	Compliant
B-L02-08	LKD	72%	100%	69%	100%	Compliant
B-L02-08	Bedroom 1	100%	100%	100%	100%	Compliant
B-L02-09	LKD	100%	100%	100%	100%	Compliant
B-L02-09	Bedroom 1	100%	100%	100%	100%	Compliant
B-L02-09	Bedroom 2	100%	100%	100%	100%	Compliant
B-L02-10	LKD	100%	100%	100%	100%	Compliant
B-L02-10	Bedroom 1	100%	100%	100%	100%	Compliant
B-L02-10	Bedroom 2	100%	100%	100%	100%	Compliant
B-L02-11	LKD	46%	100%	44%	100%	Non-compliant
B-L02-11	Bedroom 1	90%	100%	87%	100%	Compliant
B-L02-11	Bedroom 2	95%	100%	91%	100%	Compliant
B-L02-12	LKD	33%	76%	32%	74%	Non-compliant
B-L02-12	Bedroom 1	26%	100%	24%	100%	Non-compliant
B-L02-12	Bedroom 2	100%	100%	100%	100%	Compliant
B-L02-13	LKD	25%	66%	24%	65%	Non-compliant
B-L02-13	Bedroom 1	20%	100%	19%	100%	Non-compliant
B-L02-14	LKD	25%	65%	24%	64%	Non-compliant
B-L02-14	Bedroom 1	17%	100%	17%	100%	Non-compliant
B-L02-15	LKD	22%	59%	22%	58%	Non-compliant
B-L02-15	Bedroom 1	10%	100%	10%	100%	Non-compliant
B-L02-15	Bedroom 2	42%	100%	41%	100%	Non-compliant
B-L02-16	LKD	22%	60%	21%	59%	Non-compliant
B-L02-16	Bedroom 1	39%	100%	38%	100%	Non-compliant
B-L02-16	Bedroom 2	41%	100%	40%	100%	Non-compliant
B-L02-17	LKD	23%	61%	23%	61%	Non-compliant
B-L02-17	Bedroom 1	37%	100%	37%	100%	Non-compliant
B-L02-17	Bedroom 2	15%	100%	15%	100%	Non-compliant
B-L02-18	LKD	100%	100%	99%	100%	Compliant
B-L02-18	Bedroom 1	76%	100%	71%	100%	Compliant
B-L02-18	Bedroom 2	74%	100%	60%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.
For floor plans of the assessed units please refer to section C.1 on page 46.

D.1.9 Supplementary SDA Results (I.S. EN 17037 criteria): Block B Level 03

Table No. D.1.9 - 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*	
B-L03-01	LKD	100%	100%	100%	100%	Compliant
B-L03-01	Bedroom 1	100%	100%	100%	100%	Compliant
B-L03-01	Bedroom 2	100%	100%	100%	100%	Compliant
B-L03-02	LKD	76%	100%	74%	100%	Compliant
B-L03-02	Bedroom 1	100%	100%	100%	100%	Compliant
B-L03-03	LKD	70%	100%	70%	100%	Compliant
B-L03-03	Bedroom 1	100%	100%	100%	100%	Compliant
B-L03-04	LKD	69%	100%	68%	100%	Compliant
B-L03-04	Bedroom 1	100%	100%	100%	100%	Compliant
B-L03-05	LKD	69%	100%	69%	100%	Compliant
B-L03-05	Bedroom 1	100%	100%	100%	100%	Compliant
B-L03-06	LKD	69%	100%	69%	100%	Compliant
B-L03-06	Bedroom 1	100%	100%	100%	100%	Compliant
B-L03-07	LKD	71%	100%	70%	100%	Compliant
B-L03-07	Bedroom 1	100%	100%	100%	100%	Compliant
B-L03-07	Bedroom 2	100%	100%	100%	100%	Compliant
B-L03-08	LKD	75%	100%	72%	100%	Compliant
B-L03-08	Bedroom 1	100%	100%	100%	100%	Compliant
B-L03-09	LKD	100%	100%	100%	100%	Compliant
B-L03-09	Bedroom 1	100%	100%	100%	100%	Compliant
B-L03-09	Bedroom 2	100%	100%	100%	100%	Compliant
B-L03-10	LKD	100%	100%	100%	100%	Compliant
B-L03-10	Bedroom 1	100%	100%	100%	100%	Compliant
B-L03-10	Bedroom 2	100%	100%	100%	100%	Compliant
B-L03-11	LKD	52%	100%	50%	100%	Compliant
B-L03-11	Bedroom 1	100%	100%	99%	100%	Compliant
B-L03-11	Bedroom 2	100%	100%	100%	100%	Compliant
B-L03-12	LKD	43%	87%	43%	86%	Non-compliant
B-L03-12	Bedroom 1	45%	100%	44%	100%	Non-compliant
B-L03-12	Bedroom 2	100%	100%	100%	100%	Compliant
B-L03-13	LKD	39%	80%	38%	79%	Non-compliant
B-L03-13	Bedroom 1	43%	100%	43%	100%	Non-compliant
B-L03-14	LKD	38%	79%	38%	79%	Non-compliant
B-L03-14	Bedroom 1	39%	100%	39%	100%	Non-compliant
B-L03-15	LKD	35%	76%	35%	75%	Non-compliant
B-L03-15	Bedroom 1	32%	100%	31%	100%	Non-compliant
B-L03-15	Bedroom 2	69%	100%	69%	100%	Compliant
B-L03-16	LKD	35%	75%	35%	74%	Non-compliant
B-L03-16	Bedroom 1	71%	100%	70%	100%	Compliant
B-L03-16	Bedroom 2	67%	100%	67%	100%	Compliant
B-L03-17	LKD	36%	76%	36%	74%	Non-compliant
B-L03-17	Bedroom 1	59%	100%	59%	100%	Compliant
B-L03-17	Bedroom 2	37%	100%	37%	100%	Non-compliant
B-L03-18	LKD	100%	100%	100%	100%	Compliant
B-L03-18	Bedroom 1	100%	100%	100%	100%	Compliant
B-L03-18	Bedroom 2	99%	100%	98%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.
For floor plans of the assessed units please refer to section C.1 on page 46.

D.1.10 Supplementary SDA Results (I.S. EN 17037 criteria): Block B Level 04

Table No. D.1.10 - 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*	
B-L04-01	LKD	100%	100%	100%	100%	Compliant
B-L04-01	Bedroom 1	100%	100%	100%	100%	Compliant
B-L04-01	Bedroom 2	100%	100%	100%	100%	Compliant
B-L04-02	LKD	80%	100%	80%	100%	Compliant
B-L04-02	Bedroom 1	100%	100%	100%	100%	Compliant
B-L04-03	LKD	72%	100%	72%	100%	Compliant
B-L04-03	Bedroom 1	100%	100%	100%	100%	Compliant
B-L04-04	LKD	71%	100%	71%	100%	Compliant
B-L04-04	Bedroom 1	100%	100%	100%	100%	Compliant
B-L04-05	LKD	72%	100%	71%	100%	Compliant
B-L04-05	Bedroom 1	100%	100%	100%	100%	Compliant
B-L04-06	LKD	70%	100%	70%	100%	Compliant
B-L04-06	Bedroom 1	100%	100%	100%	100%	Compliant
B-L04-07	LKD	73%	100%	71%	100%	Compliant
B-L04-07	Bedroom 1	100%	100%	100%	100%	Compliant
B-L04-07	Bedroom 2	100%	100%	100%	100%	Compliant
B-L04-08	LKD	75%	100%	74%	100%	Compliant
B-L04-08	Bedroom 1	100%	100%	100%	100%	Compliant
B-L04-09	LKD	100%	100%	100%	100%	Compliant
B-L04-09	Bedroom 1	100%	100%	100%	100%	Compliant
B-L04-09	Bedroom 2	100%	100%	100%	100%	Compliant
B-L04-10	LKD	100%	100%	100%	100%	Compliant
B-L04-10	Bedroom 1	100%	100%	100%	100%	Compliant
B-L04-10	Bedroom 2	100%	100%	100%	100%	Compliant
B-L04-11	LKD	56%	100%	55%	100%	Compliant
B-L04-11	Bedroom 1	100%	100%	100%	100%	Compliant
B-L04-11	Bedroom 2	100%	100%	100%	100%	Compliant
B-L04-12	LKD	51%	95%	51%	95%	Compliant
B-L04-12	Bedroom 1	72%	100%	71%	100%	Compliant
B-L04-12	Bedroom 2	100%	100%	100%	100%	Compliant
B-L04-13	LKD	50%	97%	50%	97%	Compliant
B-L04-13	Bedroom 1	75%	100%	74%	100%	Compliant
B-L04-14	LKD	51%	97%	50%	97%	Compliant
B-L04-14	Bedroom 1	76%	100%	75%	100%	Compliant
B-L04-15	LKD	45%	91%	45%	90%	Non-compliant
B-L04-15	Bedroom 1	64%	100%	64%	100%	Compliant
B-L04-15	Bedroom 2	100%	100%	100%	100%	Compliant
B-L04-16	LKD	46%	92%	46%	91%	Non-compliant
B-L04-16	Bedroom 1	100%	100%	100%	100%	Compliant
B-L04-16	Bedroom 2	100%	100%	100%	100%	Compliant
B-L04-17	LKD	45%	92%	45%	91%	Non-compliant
B-L04-17	Bedroom 1	86%	100%	84%	100%	Compliant
B-L04-17	Bedroom 2	75%	100%	74%	100%	Compliant
B-L04-18	LKD	100%	100%	100%	100%	Compliant
B-L04-18	Bedroom 1	100%	100%	100%	100%	Compliant
B-L04-18	Bedroom 2	100%	100%	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.
For floor plans of the assessed units please refer to section C.1 on page 46.

D.1.11 Supplementary SDA Results (I.S. EN 17037 criteria): Block B Level 05

Table No. D.1.11 - 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*	
B-L05-01	LKD	100%	100%	100%	100%	Compliant
B-L05-01	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-01	Bedroom 2	100%	100%	100%	100%	Compliant
B-L05-02	LKD	87%	100%	86%	100%	Compliant
B-L05-02	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-03	LKD	80%	100%	78%	100%	Compliant
B-L05-03	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-04	LKD	78%	100%	77%	100%	Compliant
B-L05-04	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-05	LKD	78%	100%	78%	100%	Compliant
B-L05-05	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-06	LKD	78%	100%	78%	100%	Compliant
B-L05-06	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-07	LKD	75%	100%	74%	100%	Compliant
B-L05-07	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-07	Bedroom 2	100%	100%	100%	100%	Compliant
B-L05-08	LKD	81%	100%	81%	100%	Compliant
B-L05-08	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-09	LKD	100%	100%	100%	100%	Compliant
B-L05-09	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-09	Bedroom 2	100%	100%	100%	100%	Compliant
B-L05-10	LKD	100%	100%	100%	100%	Compliant
B-L05-10	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-10	Bedroom 2	100%	100%	100%	100%	Compliant
B-L05-11	LKD	66%	100%	65%	100%	Compliant
B-L05-11	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-11	Bedroom 2	100%	100%	100%	100%	Compliant
B-L05-12	LKD	63%	100%	63%	100%	Compliant
B-L05-12	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-12	Bedroom 2	100%	100%	100%	100%	Compliant
B-L05-13	LKD	60%	100%	60%	100%	Compliant
B-L05-13	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-14	LKD	61%	100%	61%	100%	Compliant
B-L05-14	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-15	LKD	59%	100%	59%	100%	Compliant
B-L05-15	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-15	Bedroom 2	100%	100%	100%	100%	Compliant
B-L05-16	LKD	61%	100%	61%	100%	Compliant
B-L05-16	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-16	Bedroom 2	100%	100%	100%	100%	Compliant
B-L05-17	LKD	60%	100%	60%	100%	Compliant
B-L05-17	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-17	Bedroom 2	100%	100%	100%	100%	Compliant
B-L05-18	LKD	100%	100%	100%	100%	Compliant
B-L05-18	Bedroom 1	100%	100%	100%	100%	Compliant
B-L05-18	Bedroom 2	100%	100%	100%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 16.
For floor plans of the assessed units please refer to section C.1 on page 46.

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 Scheme Performance NSL			
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. The unit numbers for the proposed residential units are determined by the architect's drawings, but 3DDB have applied their own numbering to the rooms of the proposed crèche.

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, section 2.2.10 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: Block A, Crèche Level 00, and Apartments Level 01

Table No. D.2.1 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
Crèche	Classroom 01	100%	Yes
Crèche	Classroom 02	100%	Yes
Crèche	Classroom 03	100%	Yes
Crèche	Classroom 04	100%	Yes
Crèche	Creche Office	100%	Yes
A-L01-01	LKD	97%	Yes
A-L01-01	Bedroom 1	67%	No
A-L01-01	Bedroom 2	78%	No
A-L01-02	LKD	26%	No
A-L01-02	Bedroom 1	21%	No
A-L01-03	LKD	22%	No
A-L01-03	Bedroom 1	39%	No
A-L01-03	Bedroom 2	18%	No
A-L01-03	Bedroom 3	32%	No
A-L01-04	LKD	24%	No
A-L01-04	Bedroom 1	29%	No
A-L01-05	LKD	23%	No
A-L01-05	Bedroom 1	11%	No
A-L01-05	Bedroom 2	39%	No
A-L01-05	Bedroom 3	36%	No
A-L01-06	LKD	24%	No
A-L01-06	Bedroom 1	44%	No
A-L01-07	LKD	96%	Yes
A-L01-07	Bedroom 1	45%	No
A-L01-07	Bedroom 2	30%	No
A-L01-08	LKD	100%	Yes
A-L01-08	Bedroom 1	100%	Yes
A-L01-08	Bedroom 2	100%	Yes
A-L01-09	LKD	100%	Yes
A-L01-09	Bedroom 1	100%	Yes
A-L01-10	LKD	100%	Yes
A-L01-10	Bedroom 1	100%	Yes
A-L01-11	LKD	100%	Yes
A-L01-11	Bedroom 1	100%	Yes
A-L01-12	LKD	100%	Yes
A-L01-12	Bedroom 1	100%	Yes
A-L01-13	LKD	100%	Yes
A-L01-13	Bedroom 1	100%	Yes
A-L01-14	LKD	100%	Yes
A-L01-14	Bedroom 1	100%	Yes
A-L01-14	Bedroom 2	100%	Yes

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, section 2.2.10 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 46.

D.2.2 Supplementary NSL Results: Block A Level 02

Table No. D.2.2 - 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-L02-01	LKD	97%	Yes
A-L02-01	Bedroom 1	72%	No
A-L02-01	Bedroom 2	80%	Yes
A-L02-02	LKD	30%	No
A-L02-02	Bedroom 1	49%	No
A-L02-02	Bedroom 2	28%	No
A-L02-03	LKD	28%	No
A-L02-03	Bedroom 1	34%	No
A-L02-03	Bedroom 2	53%	No
A-L02-04	LKD	29%	No
A-L02-04	Bedroom 1	40%	No
A-L02-05	LKD	28%	No
A-L02-05	Bedroom 1	22%	No
A-L02-05	Bedroom 2	54%	No
A-L02-06	LKD	29%	No
A-L02-06	Bedroom 1	22%	No
A-L02-06	Bedroom 2	53%	No
A-L02-07	LKD	96%	Yes
A-L02-07	Bedroom 1	56%	No
A-L02-07	Bedroom 2	36%	No
A-L02-08	LKD	100%	Yes
A-L02-08	Bedroom 1	100%	Yes
A-L02-08	Bedroom 2	100%	Yes
A-L02-09	LKD	100%	Yes
A-L02-09	Bedroom 1	100%	Yes
A-L02-10	LKD	100%	Yes
A-L02-10	Bedroom 1	100%	Yes
A-L02-11	LKD	100%	Yes
A-L02-11	Bedroom 1	100%	Yes
A-L02-12	LKD	100%	Yes
A-L02-12	Bedroom 1	100%	Yes
A-L02-13	LKD	100%	Yes
A-L02-13	Bedroom 1	100%	Yes
A-L02-14	LKD	100%	Yes
A-L02-14	Bedroom 1	100%	Yes
A-L02-14	Bedroom 2	100%	Yes

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, section 2.2.10 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 46.

D.2.3 Supplementary NSL Results: Block A Level 03

Table No. D.2.3 - 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-L03-01	LKD	97%	Yes
A-L03-01	Bedroom 1	91%	Yes
A-L03-01	Bedroom 2	86%	Yes
A-L03-02	LKD	44%	No
A-L03-02	Bedroom 1	77%	No
A-L03-02	Bedroom 2	55%	No
A-L03-03	LKD	44%	No
A-L03-03	Bedroom 1	57%	No
A-L03-03	Bedroom 2	83%	Yes
A-L03-04	LKD	46%	No
A-L03-04	Bedroom 1	67%	No
A-L03-05	LKD	44%	No
A-L03-05	Bedroom 1	51%	No
A-L03-05	Bedroom 2	85%	Yes
A-L03-06	LKD	44%	No
A-L03-06	Bedroom 1	51%	No
A-L03-06	Bedroom 2	83%	Yes
A-L03-07	LKD	97%	Yes
A-L03-07	Bedroom 1	87%	Yes
A-L03-07	Bedroom 2	57%	No
A-L03-08	LKD	100%	Yes
A-L03-08	Bedroom 1	100%	Yes
A-L03-08	Bedroom 2	100%	Yes
A-L03-09	LKD	100%	Yes
A-L03-09	Bedroom 1	100%	Yes
A-L03-10	LKD	100%	Yes
A-L03-10	Bedroom 1	100%	Yes
A-L03-11	LKD	100%	Yes
A-L03-11	Bedroom 1	100%	Yes
A-L03-12	LKD	100%	Yes
A-L03-12	Bedroom 1	100%	Yes
A-L03-13	LKD	100%	Yes
A-L03-13	Bedroom 1	100%	Yes
A-L03-14	LKD	100%	Yes
A-L03-14	Bedroom 1	100%	Yes
A-L03-14	Bedroom 2	100%	Yes

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, section 2.2.10 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 46.

D.2.4 Supplementary NSL Results: Block A Level 04

Table No. D.2.4 - 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-L04-01	LKD	99%	Yes
A-L04-01	Bedroom 1	100%	Yes
A-L04-01	Bedroom 2	100%	Yes
A-L04-02	LKD	74%	No
A-L04-02	Bedroom 1	98%	Yes
A-L04-02	Bedroom 2	98%	Yes
A-L04-03	LKD	74%	No
A-L04-03	Bedroom 1	100%	Yes
A-L04-03	Bedroom 2	98%	Yes
A-L04-04	LKD	75%	No
A-L04-04	Bedroom 1	98%	Yes
A-L04-05	LKD	74%	No
A-L04-05	Bedroom 1	98%	Yes
A-L04-05	Bedroom 2	100%	Yes
A-L04-06	LKD	74%	No
A-L04-06	Bedroom 1	98%	Yes
A-L04-06	Bedroom 2	98%	Yes
A-L04-07	LKD	99%	Yes
A-L04-07	Bedroom 1	100%	Yes
A-L04-07	Bedroom 2	100%	Yes
A-L04-08	LKD	100%	Yes
A-L04-08	Bedroom 1	100%	Yes
A-L04-08	Bedroom 2	100%	Yes
A-L04-09	LKD	100%	Yes
A-L04-09	Bedroom 1	100%	Yes
A-L04-10	LKD	100%	Yes
A-L04-10	Bedroom 1	100%	Yes
A-L04-11	LKD	100%	Yes
A-L04-11	Bedroom 1	100%	Yes
A-L04-12	LKD	100%	Yes
A-L04-12	Bedroom 1	100%	Yes
A-L04-13	LKD	100%	Yes
A-L04-13	Bedroom 1	100%	Yes
A-L04-14	LKD	100%	Yes
A-L04-14	Bedroom 1	100%	Yes
A-L04-14	Bedroom 2	100%	Yes

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, section 2.2.10 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 46.

D.2.5 Supplementary NSL Results: Block A Level 05

Table No. D.2.5 - 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-L05-01	LKD	100%	Yes
A-L05-01	Bedroom 1	100%	Yes
A-L05-01	Bedroom 2	100%	Yes
A-L05-02	LKD	98%	Yes
A-L05-02	Bedroom 1	98%	Yes
A-L05-02	Bedroom 2	98%	Yes
A-L05-03	LKD	98%	Yes
A-L05-03	Bedroom 1	100%	Yes
A-L05-03	Bedroom 2	98%	Yes
A-L05-04	LKD	98%	Yes
A-L05-04	Bedroom 1	98%	Yes
A-L05-05	LKD	98%	Yes
A-L05-05	Bedroom 1	98%	Yes
A-L05-05	Bedroom 2	100%	Yes
A-L05-06	LKD	98%	Yes
A-L05-06	Bedroom 1	98%	Yes
A-L05-06	Bedroom 2	98%	Yes
A-L05-07	LKD	100%	Yes
A-L05-07	Bedroom 1	100%	Yes
A-L05-07	Bedroom 2	100%	Yes
A-L05-08	LKD	100%	Yes
A-L05-08	Bedroom 1	100%	Yes
A-L05-08	Bedroom 2	100%	Yes
A-L05-09	LKD	100%	Yes
A-L05-09	Bedroom 1	100%	Yes
A-L05-10	LKD	100%	Yes
A-L05-10	Bedroom 1	100%	Yes
A-L05-11	LKD	100%	Yes
A-L05-11	Bedroom 1	100%	Yes
A-L05-12	LKD	100%	Yes
A-L05-12	Bedroom 1	100%	Yes
A-L05-13	LKD	100%	Yes
A-L05-13	Bedroom 1	100%	Yes
A-L05-14	LKD	100%	Yes
A-L05-14	Bedroom 1	100%	Yes
A-L05-14	Bedroom 2	100%	Yes

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, section 2.2.10 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 46.

D.2.6 Supplementary NSL Results: Block B Level 00

Table No. D.2.6 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
B-L00-01	LKD	100%	Yes
B-L00-01	Bedroom 1	100%	Yes
B-L00-01	Bedroom 2	100%	Yes
B-L00-02	LKD	100%	Yes
B-L00-02	Bedroom 1	100%	Yes
B-L00-03	LKD	56%	No
B-L00-03	Bedroom 1	86%	Yes
B-L00-04	LKD	55%	No
B-L00-04	Bedroom 1	89%	Yes
B-L00-05	LKD	60%	No
B-L00-05	Bedroom 1	86%	Yes
B-L00-06	LKD	53%	No
B-L00-06	Bedroom 1	89%	Yes
B-L00-07	LKD	85%	Yes
B-L00-07	Bedroom 1	91%	Yes
B-L00-07	Bedroom 2	100%	Yes
B-L00-08	LKD	100%	Yes
B-L00-08	Bedroom 1	100%	Yes
B-L00-09	LKD	100%	Yes
B-L00-09	Bedroom 1	100%	Yes
B-L00-09	Bedroom 2	100%	Yes

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, section 2.2.10 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 46.

D.2.7 Supplementary NSL Results: Block B Level 01

Table No. D.2.7 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
B-L01-01	LKD	100%	Yes
B-L01-01	Bedroom 1	100%	Yes
B-L01-01	Bedroom 2	100%	Yes
B-L01-02	LKD	100%	Yes
B-L01-02	Bedroom 1	99%	Yes
B-L01-03	LKD	100%	Yes
B-L01-03	Bedroom 1	98%	Yes
B-L01-04	LKD	100%	Yes
B-L01-04	Bedroom 1	98%	Yes
B-L01-05	LKD	100%	Yes
B-L01-05	Bedroom 1	98%	Yes
B-L01-06	LKD	100%	Yes
B-L01-06	Bedroom 1	98%	Yes
B-L01-07	LKD	98%	Yes
B-L01-07	Bedroom 1	99%	Yes
B-L01-07	Bedroom 2	98%	Yes
B-L01-08	LKD	100%	Yes
B-L01-08	Bedroom 1	99%	Yes
B-L01-09	LKD	100%	Yes
B-L01-09	Bedroom 1	100%	Yes
B-L01-09	Bedroom 2	100%	Yes
B-L01-10	LKD	100%	Yes
B-L01-10	Bedroom 1	99%	Yes
B-L01-10	Bedroom 2	100%	Yes
B-L01-11	LKD	89%	Yes
B-L01-11	Bedroom 1	74%	No
B-L01-12	LKD	45%	No
B-L01-12	Bedroom 1	41%	No
B-L01-12	Bedroom 2	74%	No
B-L01-12	Bedroom 3	61%	No
B-L01-13	LKD	27%	No
B-L01-13	Bedroom 1	42%	No
B-L01-14	LKD	24%	No
B-L01-14	Bedroom 1	36%	No
B-L01-15	LKD	22%	No
B-L01-15	Bedroom 1	10%	No
B-L01-15	Bedroom 2	42%	No
B-L01-16	LKD	22%	No
B-L01-16	Bedroom 1	39%	No
B-L01-16	Bedroom 2	19%	No
B-L01-16	Bedroom 3	32%	No
B-L01-17	LKD	26%	No
B-L01-17	Bedroom 1	21%	No
B-L01-18	LKD	96%	Yes
B-L01-18	Bedroom 1	66%	No
B-L01-18	Bedroom 2	75%	No

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, section 2.2.10 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 46.

D.2.8 Supplementary NSL Results: Block B Level 02

Table No. D.2.8 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
B-L02-01	LKD	100%	Yes
B-L02-01	Bedroom 1	100%	Yes
B-L02-01	Bedroom 2	100%	Yes
B-L02-02	LKD	100%	Yes
B-L02-02	Bedroom 1	99%	Yes
B-L02-03	LKD	100%	Yes
B-L02-03	Bedroom 1	98%	Yes
B-L02-04	LKD	100%	Yes
B-L02-04	Bedroom 1	98%	Yes
B-L02-05	LKD	100%	Yes
B-L02-05	Bedroom 1	98%	Yes
B-L02-06	LKD	100%	Yes
B-L02-06	Bedroom 1	98%	Yes
B-L02-07	LKD	98%	Yes
B-L02-07	Bedroom 1	99%	Yes
B-L02-07	Bedroom 2	98%	Yes
B-L02-08	LKD	100%	Yes
B-L02-08	Bedroom 1	98%	Yes
B-L02-09	LKD	100%	Yes
B-L02-09	Bedroom 1	100%	Yes
B-L02-09	Bedroom 2	100%	Yes
B-L02-10	LKD	100%	Yes
B-L02-10	Bedroom 1	99%	Yes
B-L02-10	Bedroom 2	100%	Yes
B-L02-11	LKD	90%	Yes
B-L02-11	Bedroom 1	90%	Yes
B-L02-11	Bedroom 2	79%	No
B-L02-12	LKD	47%	No
B-L02-12	Bedroom 1	44%	No
B-L02-12	Bedroom 2	82%	Yes
B-L02-13	LKD	31%	No
B-L02-13	Bedroom 1	48%	No
B-L02-14	LKD	29%	No
B-L02-14	Bedroom 1	43%	No
B-L02-15	LKD	28%	No
B-L02-15	Bedroom 1	22%	No
B-L02-15	Bedroom 2	53%	No
B-L02-16	LKD	28%	No
B-L02-16	Bedroom 1	35%	No
B-L02-16	Bedroom 2	52%	No
B-L02-17	LKD	30%	No
B-L02-17	Bedroom 1	49%	No
B-L02-17	Bedroom 2	28%	No
B-L02-18	LKD	96%	Yes
B-L02-18	Bedroom 1	71%	No
B-L02-18	Bedroom 2	77%	No

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, section 2.2.10 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 46.

D.2.9 Supplementary NSL Results: Block B Level 03

Table No. D.2.9 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
B-L03-01	LKD	100%	Yes
B-L03-01	Bedroom 1	100%	Yes
B-L03-01	Bedroom 2	100%	Yes
B-L03-02	LKD	100%	Yes
B-L03-02	Bedroom 1	99%	Yes
B-L03-03	LKD	100%	Yes
B-L03-03	Bedroom 1	98%	Yes
B-L03-04	LKD	100%	Yes
B-L03-04	Bedroom 1	98%	Yes
B-L03-05	LKD	100%	Yes
B-L03-05	Bedroom 1	98%	Yes
B-L03-06	LKD	100%	Yes
B-L03-06	Bedroom 1	98%	Yes
B-L03-07	LKD	98%	Yes
B-L03-07	Bedroom 1	99%	Yes
B-L03-07	Bedroom 2	98%	Yes
B-L03-08	LKD	100%	Yes
B-L03-08	Bedroom 1	98%	Yes
B-L03-09	LKD	100%	Yes
B-L03-09	Bedroom 1	100%	Yes
B-L03-09	Bedroom 2	100%	Yes
B-L03-10	LKD	100%	Yes
B-L03-10	Bedroom 1	99%	Yes
B-L03-10	Bedroom 2	100%	Yes
B-L03-11	LKD	92%	Yes
B-L03-11	Bedroom 1	94%	Yes
B-L03-11	Bedroom 2	90%	Yes
B-L03-12	LKD	55%	No
B-L03-12	Bedroom 1	58%	No
B-L03-12	Bedroom 2	93%	Yes
B-L03-13	LKD	46%	No
B-L03-13	Bedroom 1	71%	No
B-L03-14	LKD	46%	No
B-L03-14	Bedroom 1	71%	No
B-L03-15	LKD	43%	No
B-L03-15	Bedroom 1	52%	No
B-L03-15	Bedroom 2	82%	Yes
B-L03-16	LKD	44%	No
B-L03-16	Bedroom 1	58%	No
B-L03-16	Bedroom 2	82%	Yes
B-L03-17	LKD	44%	No
B-L03-17	Bedroom 1	77%	No
B-L03-17	Bedroom 2	55%	No
B-L03-18	LKD	97%	Yes
B-L03-18	Bedroom 1	90%	Yes
B-L03-18	Bedroom 2	83%	Yes

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, section 2.2.10 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 46.

D.2.10 Supplementary NSL Results: Block B Level 04

Table No. D.2.10 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
B-L04-01	LKD	100%	Yes
B-L04-01	Bedroom 1	100%	Yes
B-L04-01	Bedroom 2	100%	Yes
B-L04-02	LKD	100%	Yes
B-L04-02	Bedroom 1	99%	Yes
B-L04-03	LKD	100%	Yes
B-L04-03	Bedroom 1	98%	Yes
B-L04-04	LKD	100%	Yes
B-L04-04	Bedroom 1	98%	Yes
B-L04-05	LKD	100%	Yes
B-L04-05	Bedroom 1	98%	Yes
B-L04-06	LKD	100%	Yes
B-L04-06	Bedroom 1	98%	Yes
B-L04-07	LKD	98%	Yes
B-L04-07	Bedroom 1	99%	Yes
B-L04-07	Bedroom 2	98%	Yes
B-L04-08	LKD	100%	Yes
B-L04-08	Bedroom 1	98%	Yes
B-L04-09	LKD	100%	Yes
B-L04-09	Bedroom 1	100%	Yes
B-L04-09	Bedroom 2	100%	Yes
B-L04-10	LKD	100%	Yes
B-L04-10	Bedroom 1	99%	Yes
B-L04-10	Bedroom 2	100%	Yes
B-L04-11	LKD	97%	Yes
B-L04-11	Bedroom 1	98%	Yes
B-L04-11	Bedroom 2	98%	Yes
B-L04-12	LKD	78%	No
B-L04-12	Bedroom 1	98%	Yes
B-L04-12	Bedroom 2	100%	Yes
B-L04-13	LKD	78%	No
B-L04-13	Bedroom 1	98%	Yes
B-L04-14	LKD	78%	No
B-L04-14	Bedroom 1	98%	Yes
B-L04-15	LKD	74%	No
B-L04-15	Bedroom 1	98%	Yes
B-L04-15	Bedroom 2	98%	Yes
B-L04-16	LKD	74%	No
B-L04-16	Bedroom 1	100%	Yes
B-L04-16	Bedroom 2	98%	Yes
B-L04-17	LKD	73%	No
B-L04-17	Bedroom 1	98%	Yes
B-L04-17	Bedroom 2	98%	Yes
B-L04-18	LKD	99%	Yes
B-L04-18	Bedroom 1	100%	Yes
B-L04-18	Bedroom 2	100%	Yes

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, section 2.2.10 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 46.

D.2.11 Supplementary NSL Results: Block B Level 05

Table No. D.2.11 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
B-L05-01	LKD	100%	Yes
B-L05-01	Bedroom 1	100%	Yes
B-L05-01	Bedroom 2	100%	Yes
B-L05-02	LKD	100%	Yes
B-L05-02	Bedroom 1	98%	Yes
B-L05-03	LKD	100%	Yes
B-L05-03	Bedroom 1	98%	Yes
B-L05-04	LKD	100%	Yes
B-L05-04	Bedroom 1	98%	Yes
B-L05-05	LKD	100%	Yes
B-L05-05	Bedroom 1	98%	Yes
B-L05-06	LKD	100%	Yes
B-L05-06	Bedroom 1	98%	Yes
B-L05-07	LKD	98%	Yes
B-L05-07	Bedroom 1	98%	Yes
B-L05-07	Bedroom 2	99%	Yes
B-L05-08	LKD	100%	Yes
B-L05-08	Bedroom 1	98%	Yes
B-L05-09	LKD	100%	Yes
B-L05-09	Bedroom 1	100%	Yes
B-L05-09	Bedroom 2	100%	Yes
B-L05-10	LKD	100%	Yes
B-L05-10	Bedroom 1	100%	Yes
B-L05-10	Bedroom 2	100%	Yes
B-L05-11	LKD	98%	Yes
B-L05-11	Bedroom 1	98%	Yes
B-L05-11	Bedroom 2	98%	Yes
B-L05-12	LKD	98%	Yes
B-L05-12	Bedroom 1	98%	Yes
B-L05-12	Bedroom 2	100%	Yes
B-L05-13	LKD	98%	Yes
B-L05-13	Bedroom 1	98%	Yes
B-L05-14	LKD	98%	Yes
B-L05-14	Bedroom 1	98%	Yes
B-L05-15	LKD	98%	Yes
B-L05-15	Bedroom 1	98%	Yes
B-L05-15	Bedroom 2	98%	Yes
B-L05-16	LKD	98%	Yes
B-L05-16	Bedroom 1	100%	Yes
B-L05-16	Bedroom 2	98%	Yes
B-L05-17	LKD	98%	Yes
B-L05-17	Bedroom 1	98%	Yes
B-L05-17	Bedroom 2	98%	Yes
B-L05-18	LKD	100%	Yes
B-L05-18	Bedroom 1	100%	Yes
B-L05-18	Bedroom 2	100%	Yes

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, section 2.2.10 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 46.

E.0 Glossary

E.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 10.

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 one-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, section 3.2.9 of the BRE Guidelines suggest that windows with an orientation within 90 degrees of due north need not 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.

E.2 Definition of Effects

Section H3 and H4 of the BRE Guidelines states 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 section H6 of the BRE Guidelines is listed below, whilst the assessment of impact should depend on a combination of factors. The BRE Guidelines (section H2) 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 servicing 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. (-)

E.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. For dwellings, at least one habitable room, preferably a main living room, should meet at least the minimum criterion.

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 64. 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 of a proposed unit 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.

Unit Compliance:

In addition to the level of sunlight exposure expressed for each room, compliance will be stated on a unit-by-unit basis. A proposed unit is considered to be compliant if any habitable room within the unit is capable of receiving at least 1.5 hours of sunlight on the assessment date.

Non-Compliant
If no habitable rooms within a proposed unit can receive 1.5 hours of sunlight on the assessment date, the unit will be categorised as 'Non-Compliant'.

Compliant
If at least one habitable room within a proposed unit can receive 1.5 hours or more of sunlight on the assessment date, the unit will be categorised as 'Compliant'.

Typically unit compliance will be stated for the best performing room per unit only, with lesser performing rooms indicated with a dash (-). However, if more than one room in a given unit is considered to be the best performing room (i.e. they have the same number of SE hours on March 21st), then the unit compliance column will be populated in the first instance only.

F.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.

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 8 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 [sic – likely intended to reference BS EN 17037], 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.*"

While the 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 "2.3 Quantitative Impact Assessment Overview" on page 13 of this report.

EN 17037:2018: Daylight in Buildings (2018)

*EN 17037 i*s 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 i*s 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.

Planning Design Standards for Apartments: Guidelines for Planning Authorities (2025)

In July 2025, the Department of Housing, Local Government and Heritage published an updated guidance document for new apartments, *'Planning Design Standards for Apartments: Guidelines for Planning Authorities, 2025'*. This document, which may be referred to by the simplified name *'Apartment Guidelines'*, supersedes the previous guidance document for apartments '*Sustainable Urban Housing: Design Standards for New Apartments, 2023*'.

Unlike the 2023 edition, the current Apartment Guidelines do not directly reference any specific guidance document for daylight and sunlight. Instead, they refer to '*Sustainable Residential Development and Compact Settlements Guidelines (2024)*':

"The provision of acceptable levels of natural light in new apartment developments is an important planning consideration, as it contributes to the liveability and amenity enjoyed by apartment residents. It is also important to safeguard against a detrimental impact on the amenity of other sensitive occupiers of adjacent properties. Section 5.3.7 of the SRDCSGs outlines requirements for the provision of acceptable levels of daylight in new residential developments and adjoining properties." **(emphasis added.)**

The relevant section of '*Sustainable Residential Development and Compact Settlements Guidelines'* **(SRDCGS), 5.3.7, is referenced in the following section of this report.**

Paragraph 6.7 of the superseded 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."

Although the above requirement has been removed from the 2025 apartment guidelines, the request remains in some local authority development plans. As such, the design team may still provide a rationale and/or compensatory design solutions for instances where daylight and/or sunlight recommendations have not been achieved.

Note: Section 3.2 of the '*Urban Development and Building Height Guidelines 2018'*, provides similar guidance as the '*2023 apartment guidelines'* as referenced 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 its second edition, first published in 2011. Since then, a third 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 now referenced in BR 209 edition 3 is BS EN 17037.

Sustainable Residential Development and Compact Settlements Guidelines (2024)

Often referred to as "The Compact Growth Guidelines" this document advises 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.

(a) The potential for poor daylight performance in a proposed development or for a material impact on neighbouring

properties will generally arise in cases where the buildings are close together, where higher buildings are involved, or where there are other obstructions to daylight. Planning authorities do not need to undertake a detailed technical assessment in relation to daylight performance in all cases. It should be clear from the assessment of architectural drawings (including sections) in the case of low-rise housing with good separation from existing and proposed buildings that undue impact would not arise, and planning authorities may apply a level of discretion in this regard.

(b) In cases where a technical assessment of daylight performance is considered by the planning authority to be necessary regard should be had to quantitative performance approaches to daylight provision outlined in guides like A New European Standard for Daylighting in Buildings IS EN 17037:2018, UK National Annex BS EN 17037:2019 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.

South Dublin County Development Plan 2022-2028

The guidance provided in the South Dublin County Development Plan 2022-2028 references the 2nd Edition of the BRE Guidelines (BR 209-2011) and BS 8206-2:2008. The 2nd edition of the BRE Guidelines (BR 209-2011) has been withdrawn and replaced with the 3rd edition (BR 209-2022). BR 209-2011 used target values and criteria set out in BS 8206-2:2008 which has also been withdrawn and replaced with EN 17037. The 3rd edition of the BRE Guidelines (BR 209-2022) takes guidance from BS EN 17037.

Section 12.6.7 of the South Dublin County Development Plan states:

"Residential Developments shall be guided by the quantitative performance approaches and recommendations under the 'Site Layout Planning for Daylight and Sunlight' (2nd edition): A Guideline to Good Practice (BRE 2011) and BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting' or any updated guidance."

As the South Dublin County Development Plan allows for consideration of any updated or subsequent guidance, the 3rd edition of the BRE Guidelines (BR 209-2022) has been used as the primary guiding document for this report.

Guidelines / Standards 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.

Impact on the Surrounding Properties

Impact to daylight is assessed through a Vertical Sky Component (VSC) on all relevant surrounding windows: A VSC impact assessment is typically conducted, where appropriate, on the relevant surrounding windows determined by the BRE decision chart as illustrated in Figure 2.1 on page 8.

Impact to daylight can be further assessed through a No Sky Line (NSL) on surrounding properties: Section D3 of the BRE Guidelines recommends a No Sky Line study "where room layouts are known". Consequently, NSL assessments are typically conducted only on properties where detailed floor plans have been provided.

Impact to sunlight in neighbouring properties is assessed through an Annual Probable Sunlight Hours (APSH) and Winter Probable Sunlight Hours (WPSH) on all relevant surrounding windows: An APSH/WPSH impact assessment is typically conducted, where appropriate, on the relevant surrounding windows/rooms that have an orientation within 90° of due south.

Impact to sunlight in neighbouring gardens and/or amenity areas is assessed through a Sunlight on Ground (SOG) assessment in all surrounding amenity spaces: A SOG impact assessment is typically carried out, where appropriate, on the neighbouring gardens/ amenity spaces located within close proximity and to the north of the subject site.

Performance of the Proposed Development

Target Illuminance in all habitable rooms: A target illuminance assessment, also known as a Spatial Daylight Autonomy (SDA) assessment. The two recommended methodologies for this assessment are detailed in section 2.5.1 on page 16. In a scheme performance assessment, the SDA is typically calculated for the habitable rooms of the proposed development. A supplementary SDA assessment may also be conducted under the criteria of IS EN 17037.

When conducting a scheme performance assessment for sunlight in the habitable rooms of the proposed development, Sunlight Exposure (SE) is the relevant metric.

Sunlight on Ground (SOG) in all amenity spaces: A SOG assessment is typically carried out, for the amenity spaces of the proposed development.

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