February 2026

Glenamuck North
Northern Site

Daylight and Sunlight Assessment Report

Applicant: Durkan Carrickmines Developments Limited

"The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design." - BR 209

+353 (0) 1 288 0186

info@3ddesignbureau.com

www.3ddesignbureau.com

3D DESIGN BUREAU

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 large-scale residential development at Glenamuck North (Northern site), Kilternan, Dublin 18.

The proposed development site is bordered to the south by the newly constructed Glenamuck District Distributor Road, now known as the Kilternan Road, and by agricultural land to the west. This project is located north of the Glenamuck Manor residential development and is in proximity to the southern phase of the development. A planning application for the southern site was lodged with Dún Laoghaire-Rathdown County Council on December 18th, 2025, under the reference number LRD25A/0984/WEB. The southern site is situated immediately north of the Glenamuck Manor development, bounded by the Glenamuck District Distributor Road to the north and the under-construction Glenamuck Link Distributor Road to the east.

The project on the northern site, which is the subject of this report, will feature a creche and a total of 219 new homes, comprising a mix of housing types to cater to different needs. This includes 69 houses, consisting of 51 three-bedroom and 18 four-bedroom units. The plan also includes 108 apartments, with a breakdown of 38 one-bedroom, 31 two-bedroom, and 39 three-bedroom units, as well as 42 duplexes, which include 11 one-bedroom, 9 two-bedroom, and 22 three-bedroom units. The buildings are planned to be between two and four storeys in height. The apartment blocks and the duplexes form the basis of the scheme performance assessment.

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 the sections H.0 & I.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 reviewed to identify all properties and amenity spaces that could potentially be affected by the proposed development. Particular attention was given to the proposed southern phase of the development (DLRCC Reg. Ref: LRD25A/0984/WEB). For completeness and to ensure a robust analysis, this southern phase was included in the baseline model as part of the surrounding context, representing a most-constrained scenario.

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 definition of model states, including a visual representation of the model states, please refer section "2.2 Preparing the analytical model" on page 8.

Following the BRE screening criteria, an initial assessment confirmed that the proposed development is not likely to cause any adverse effects on these properties. Therefore, no further detailed quantitative assessment is required in this report. A more detailed explanation of the criterion applied can be found in section "2.1 Impact Assessment, Window Selection Criteria" on page 7.

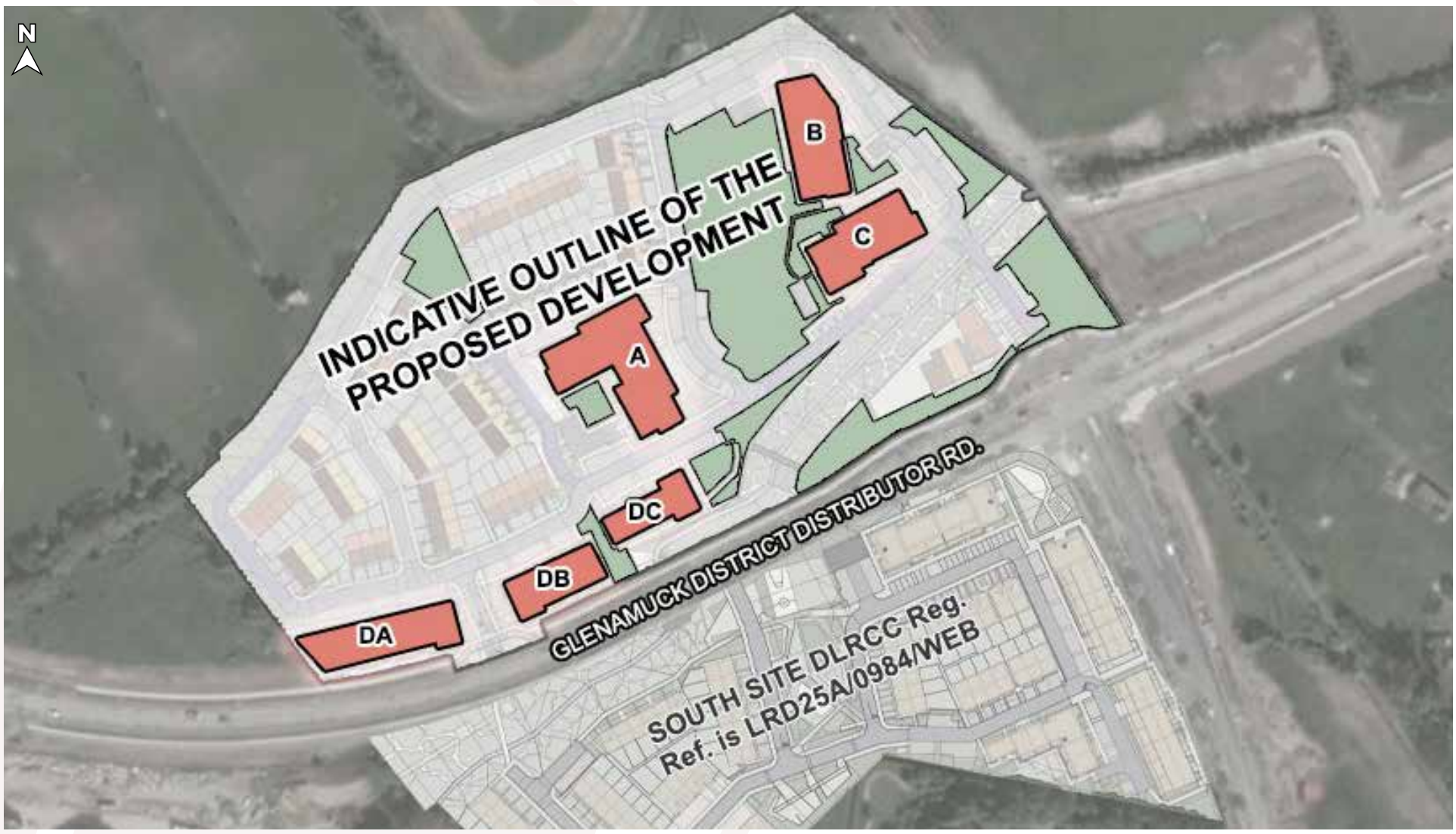


Figure 1.1: Indication of the proposed apartment blocks A, B, and C and duplex units DA, DB, and DC (highlighted in red) and amenity spaces (highlighted in green) assessed for scheme performance.

Scheme Performance

- **Daylight access:** Assessed for the habitable rooms of proposed apartment blocks A, B, and C and duplex units DA, DB, and DC (highlighted in red in Figure 1.1 on page 3) through a Spatial Daylight Autonomy (SDA) study. (Note: creche's habitable rooms were assessed but are excluded from the final compliance rates).
- **Sunlight access:** Quantified through a Sunlight Exposure (SE) assessment for the same habitable rooms.
- **A Sun On Ground (SOG):** This assessment is used to indicate the level of sunlight on March 21st in the proposed external amenity spaces (highlighted in green in Figure 1.1 on page 3). 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 the false color plan diagrams for this date, areas capable of receiving 2 hours of sunlight are shown in white.

The results of these scheme performance assessments, which are in accordance with the BRE Guidelines, can be found in section F.0 on page 33. These results are summarised in section 1.2 and explained in section "3.0 Analysis of Scheme Performance Results" on page 17

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 G.0 on page 87.

Figure 1.2: Model view of the proposed model state

1.2 Scheme Performance Results Overview:

Spatial Daylight Autonomy (SDA):

Spatial Daylight Autonomy (SDA) BRE 209 Criteria	
Unit Count	150
Rooms Assessed	476
Without Trees	
Compliant	467
Non-compliant	9
Compliance Rate*	c. 98%
With Trees (Proposed and Existing Trees)	
Compliant	462
Non-compliant	14
Compliance Rate*	c. 97%
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 proposed apartment blocks and duplex units. Units which contain non-compliant rooms have had Compensatory Design Solutions provided by the project architects.

Sunlight Exposure (SE):

Sunlight Exposure (SE)	
Units Assessed	150
SE without deciduous trees	
Non-Compliant	8
Minimum	28
Medium	13
High	101
Compliance Rate*	c. 95%
SE with trees as opaque objects	
Non-Compliant	21
Minimum	30
Medium	14
High	85
Compliance Rate*	c. 86%

For the interpretation of levels of Sunlight Exposure please refer to “H.3 Definition of Levels of Sunlight Exposure” on page 124.

* Compliance rates stated for the SE analysis are based on the units that have been assessed within the proposed apartment blocks and duplex units.

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

Sun On Ground (SOG)	
Areas Assessed	11
Areas meeting the guidelines	11
Areas not meeting the guidelines	0
Compliance Rate*	100%

* Compliance rates stated for the SOG assessment are based on the public and communal open space only.

1.3 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	150
Rooms Assessed	476
Without Trees	
Compliant	416
Non-compliant	60
Compliance Rate*	c. 87%
With Trees (Proposed and Existing Trees)	
Compliant	369
Non-compliant	107
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 rooms that have been assessed within the proposed apartment blocks and duplex units.

No Sky Line (NSL):

No Sky Line (NSL):	
Unit Count	150
Rooms Assessed	476
Yes	458
No	18
Compliance Rate*	c. 96%
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 rooms that have been assessed within the proposed apartment blocks and duplex units.

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 2.2.

Accordingly, all properties within a distance of three times the height of the proposed development, as illustrated in Figure 2.1, have been considered for impact assessment.

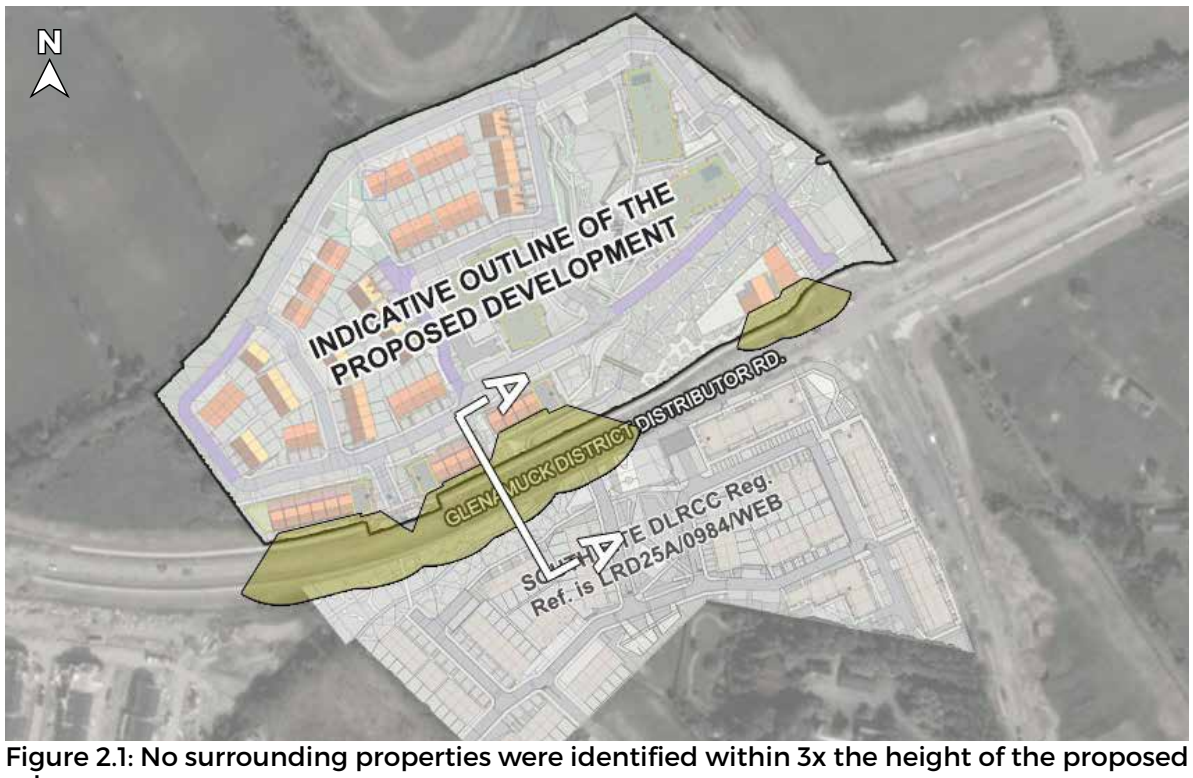


Figure 2.1: No surrounding properties were identified within 3x the height of the proposed scheme.

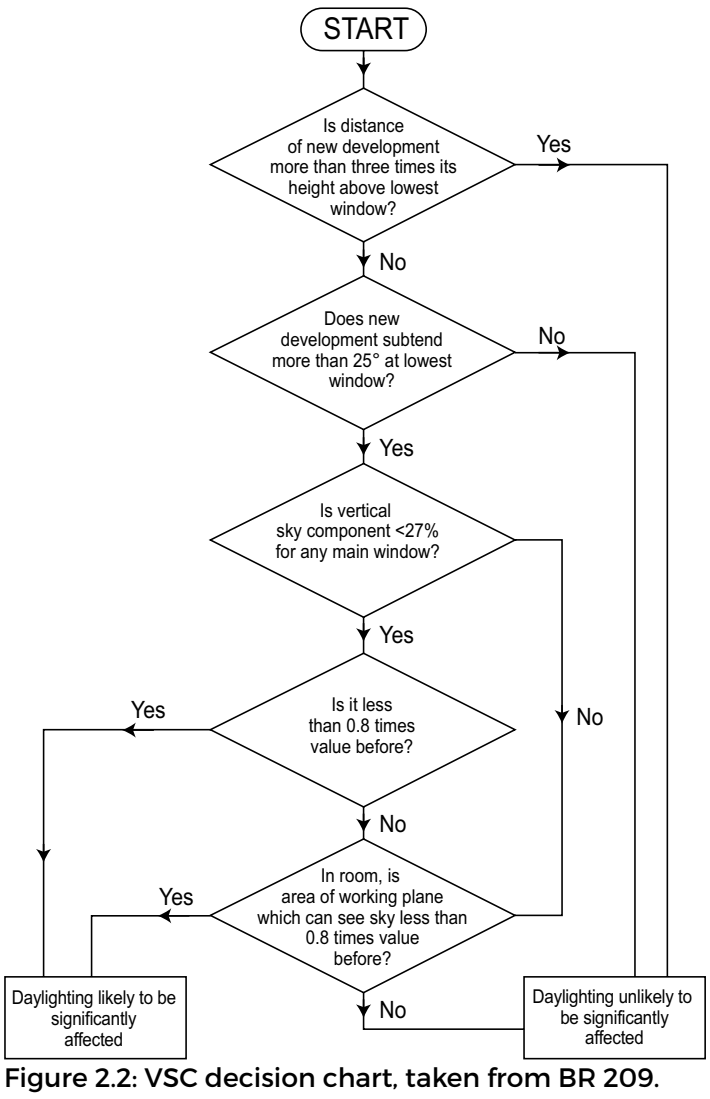


Figure 2.2: VSC decision chart, taken from BR 209.

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 property to determine if the proposed development subtends an angle of more than 25˚ at the lowest window.

If the proposed development subtends 25˚ in this section, then a VSC assessment should be conducted. However, if the proposed development does not subtend 25˚ in a perpendicular section, daylight is unlikely to be significantly affected and no further assessment is needed.

Furthermore, 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'.

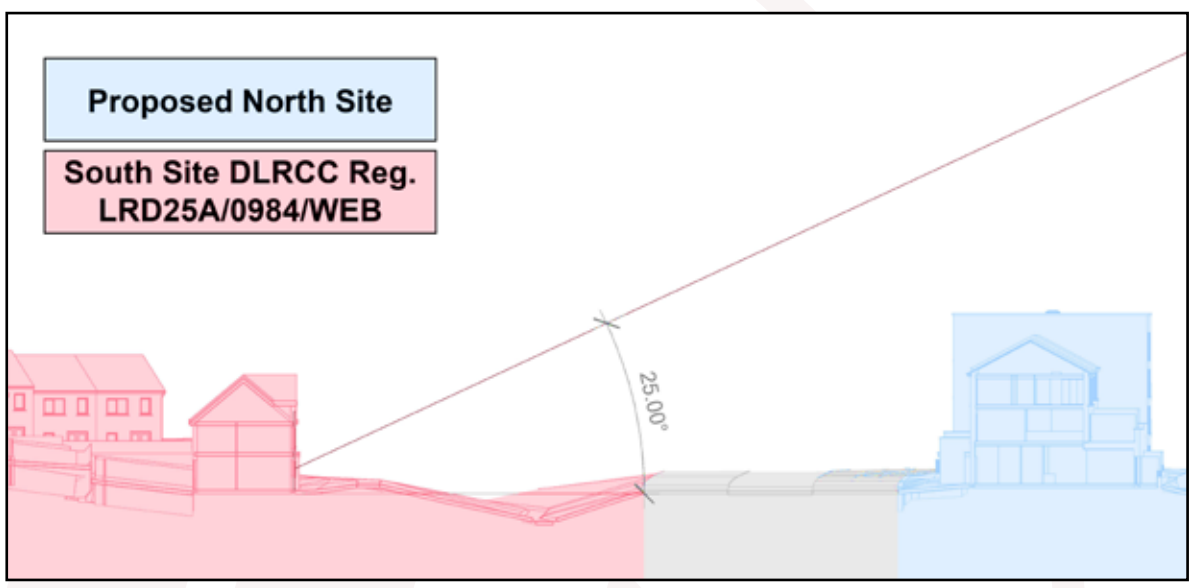


Figure 2.3: Section A-A taken through Glenamuck Rd (South Site, DLRCC Reg. Ref. LRD25A/0984/WEB).

However, if the proposed development does not subtend 25˚ in a perpendicular section, daylight is unlikely to be significantly affected and no further assessment will be carried out. Figure 2.3, shows a perpendicular section taken through Glenamuck District Distributor Rd. (South Site, DLRCC Reg. Ref. LRD25A/0984/WEB). It illustrates the nearest window, which is located beyond three times the height of the proposed development and, consequently, does not subtend 25˚ when measured in section.

Since no property in the surrounding context has the proposed development subtending 25˚ in a perpendicular section, or 45˚ when measured both in a plan and elevation view, no further quantitative assessment was conducted.

2.2 Preparing the analytical model

2.2.1 Building the Model States

The project architect, MCORM, supplied 3DDB with AutoCAD drawings and 3D models of the proposed development from which a 3D analytical model was created. Landscape drawings were provided by NMP Landscape Architects.

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 2.4, the baseline model state reflects the existing environment. It includes the surrounding context and the subject site in their current standing. This includes any structures that are to be demolished as part of this application. As previously stated, for completeness and robustness purposes, the south phase DLRCC Reg. Ref. is LRD25A/0984/WEB was included in the baseline model state to present a most-constrained scenario. Existing trees were placed using a combination of survey data and photogrammetry information.

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 APSH/WPSH assessments. Since no property in the surrounding context meets this criterion, no impact assessment was carried out, and this model state was therefore not utilised for any quantitative assessments.

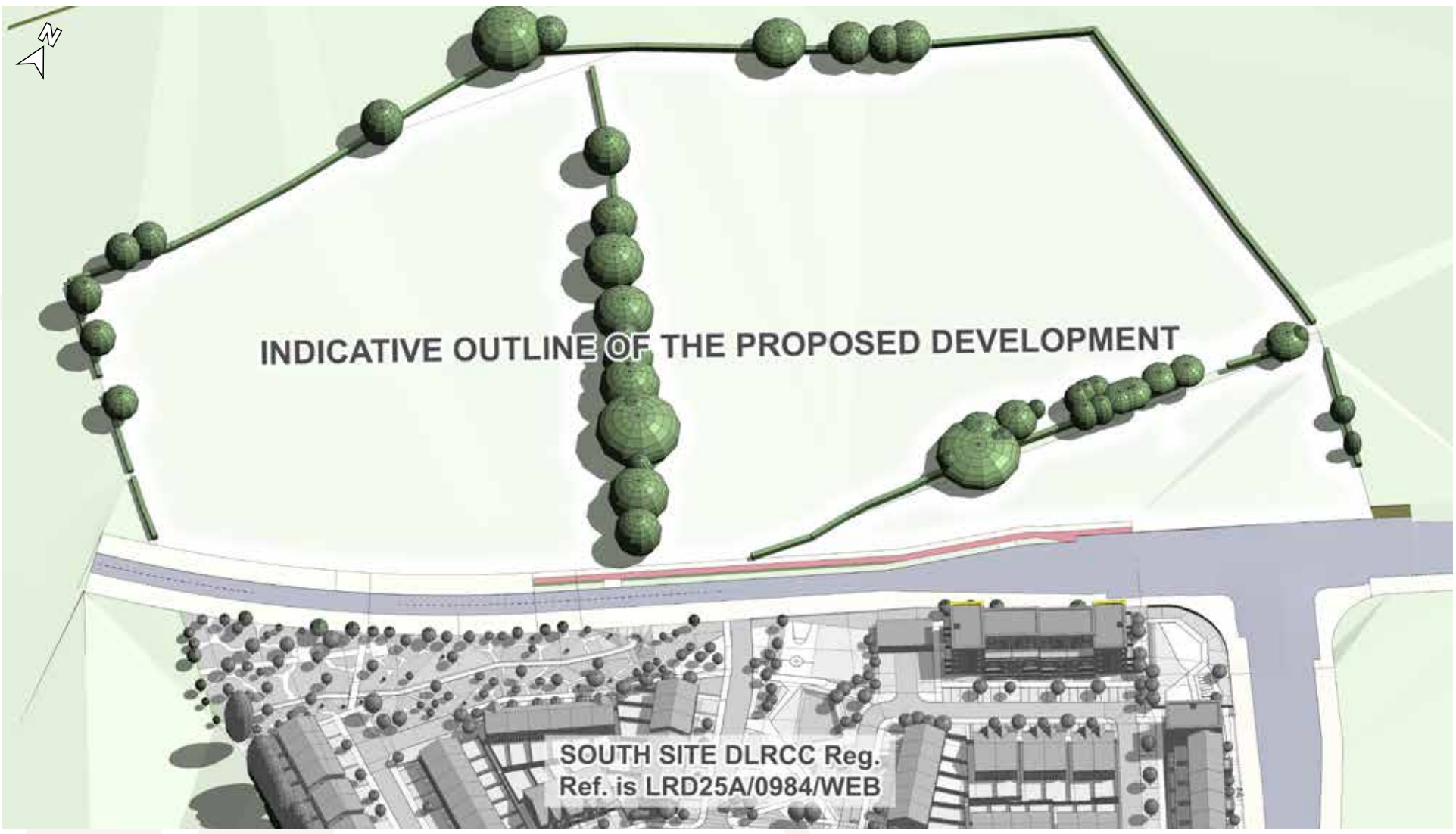


Figure 2.4: Model view of the baseline model state

Proposed model state

As illustrated in Figure 1.2, the proposed model state reflects the subject site if the development is built as proposed. This includes proposed landscaping on the subject site. Proposed buildings have been accurately positioned in their location on the subject site with relevant surrounding context included. Proposed trees were placed according to the information provided by the landscape architect.

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).

Figure 2.5: Model view of the proposed model state

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 have 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. First, 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 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 8. 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 2.2 on page 7, 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.

Following the BRE decision chart, as illustrated in Figure 2.2 on page 7, no VSC 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.

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

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

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

A proposed development could potentially have a negative effect on the level of sunlight that a neighbouring property receives, if the obstructing building is located to the south and is large in relation to 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 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 suggests that windows with an orientation within 90 degrees of due south should be assessed.

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

The APSH/WPSH for each of the assessed windows should be calculated in the relevant model states, as outlined in section 2.2 on page 8. A comparison between the results generated using these model states can be used to determine the level of effect.

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.

In some circumstances, the available sunlight during the winter period (WPSH) may both drop below the recommended minimum of 5% with a proposed value of less than 0.8 times the baseline value, but the reduction to annual probable sunlight (APSH) is less than 4%. Such occurrences are considered compliant with the BRE Guidelines (Section 3.2.6), and the impact to WPSH will be stated as '*n.a.*' on that basis.

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

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.

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

Project Assessment

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

Following the BRE decision chart, as illustrated in Figure 2.2 on page 7, 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.

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

2.3.3 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 8. 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 to the 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

The SOG impact assessment has been carried out on the neighbouring gardens/amenity areas that could be affected by the proposed development as outlined above.

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 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 of the proposed SOG assessment section F.4 on page 84 and the hourly renderings of the shadow study in section E.0 on page 24, allow for a qualitative sunlight assessment of the surrounding areas.

2.4 Qualitative Assessment - Shadow Study

A shadow study has been carried out to allow a qualitative comparison between the relevant model states, as outlined in section 2.2 on page 8. This visual representation of the shadows cast by the proposed development can be found in the hourly shadow diagrams in the appendix results section E.0 on page 24.

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

- Spring equinox: March 21st Sunrise 6:31 | Sunset 18:33. (GMT)
- Summer solstice: June 21st Sunrise 5:05 | Sunset 21:48. (BST) (Daylight savings)
- Winter solstice: December 21st Sunrise 8:45 | Sunset 16:01. (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 the case of the proposed development the proposed creche was assessed but is not part of the compliance rates.

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

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

Defining Rooms

Definition of rooms 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 and Duplexes Floor Plans” on page 33.

Working Plane

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

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

Material Palette

Following consultation with the 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	0.68
Ground cover	Paving	0.4		Maintenance factor	0.91
	Tarmac	0.2		Glass adjusted for maintenance	0.62
	Grass	0.2		Frosted glass	0.5

Project Assessment

The results for the study on SDA can be found in the appendix results section F.2 on page 48.

Analysis of the results can be found in section 3.1 on page 17.

The results of the supplementary SDA study under the I.S. EN 17037 criterion can be found in section G.0 on page 87.

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 carried out on habitable rooms within a proposed development. The assessment point for windows is 1.2m above the finished floor level, or 0.3m above the sill level (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, which remains limited to residential rooms. In the case of the proposed development the proposed creche was assessed but is not part of the compliance rates.

Project Assessment

The results for the study on sunlight exposure can be found in the appendix results section F.3 on page 66, with analysis of the results in section 3.2 on page 19.

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 sunlighting 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 on sun on ground in the proposed outdoor amenity areas (including a visual representation in the form of 2-hour false colour plans (area capable of receiving 2 hours of sunlight on March 21st shown in white) can be found in the appendix results section F.4 on page 84, with analysis of the results in section 3.3 on page 20.

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.

As the BRE Guidelines does not give advice on target NSL values for proposed rooms, no compliance rate has been stated. However a no sky line of 80% could be considered an appropriate figure given that section 2.2.10 of the BRE Guidelines state that supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.

The results of the supplementary NSL study can be found in section G.0 on page 87.

3.0 Analysis of Scheme Performance Results

3.1 Spatial Daylight Autonomy (SDA)

This study has assessed the Spatial Daylight Autonomy (SDA) for all habitable rooms within the apartment blocks A, B, and C and duplex units DA, DB, and DC of the proposed development both with and without trees. This has ensured that a clear understanding has been obtained regarding the daylight potential of the proposed development.

This proposed development consists of 150 no. units, which makes up approximately 476 no. habitable rooms.

Under the criteria as set out in the BR 209 considering trees, the SDA value in 462 no. habitable rooms meets or exceeds the appropriate target values with 14 no. rooms not meeting the recommended minimum. This gives a circa compliance rate of c.97%. For a scheme of this size, this could be considered a very good level of compliance.

The additional SDA assessment that does not include trees has shown a compliance rate of c.98%, with 9 no. rooms not meeting the recommended minimum. These 9 no. non-compliant rooms are north-facing, single-aspect LKD rooms with the same layout and they are concentrated in the ground floor of Duplexes A and B (see Figure 3.1 and Figure 3.2). In this 'no-trees' state, their results ranged from 38% to 43%, falling below the 50% target threshold; this is attributed to the configuration and depth of the spaces.

Notably, a comparison between the two studies (with and without trees) indicates that when existing and proposed trees are included in the calculations, only 5 no. additional rooms become non-compliant. This outcome is a direct result of the close collaboration between 3DDB and the landscape architect to maximize daylight provision for future occupants. These 5 no. rooms consist of 3 no. LKD spaces and 2 no. bedrooms. 4 no. are located on the ground floor of Apartment Block A (see Figure 3.3), with the fifth being the LKD of Unit A-21 on the first floor.

This brings the final number of non-compliant rooms in the 'with-trees' scenario to 14 no. as stated above.

It is the opinion of 3DDB that while the impact of trees on SDA is expected, their removal is not an appropriate mitigation measure and this outcome should not be a major cause for concern. Whilst trees can reduce daylight in some units, they also offer benefits, including mitigating heat gain, enhancing privacy, and providing a favourable outlook for occupants.

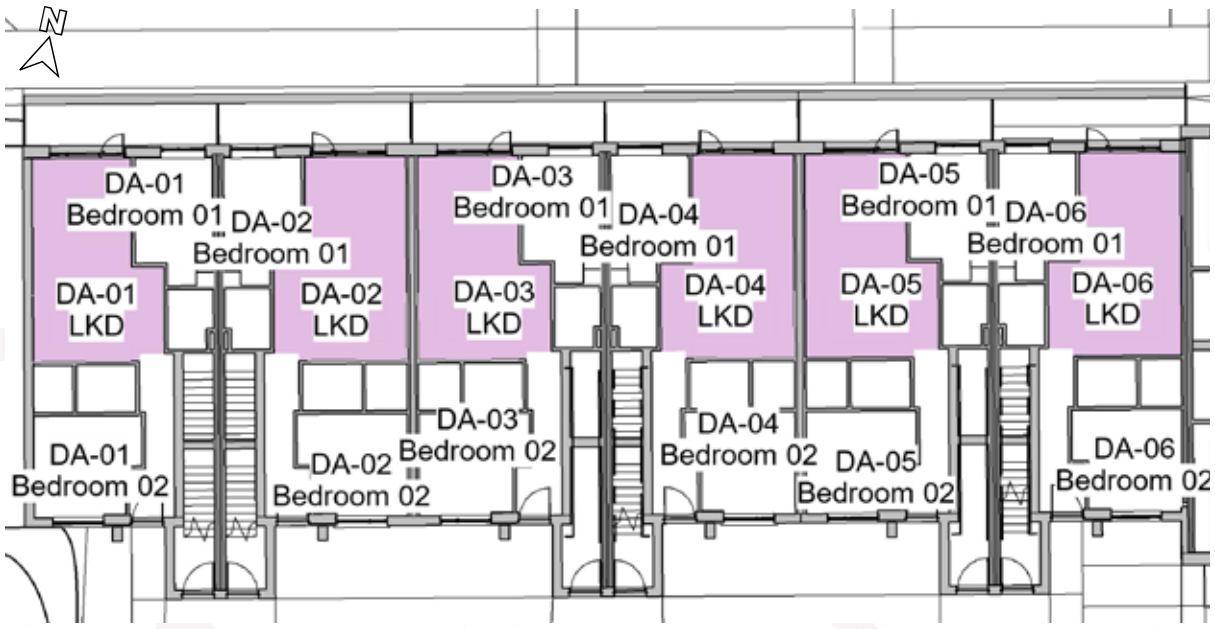


Figure 3.1: Duplex A Ground Floor: highlighted rooms below the minimum recommendations for SDA.

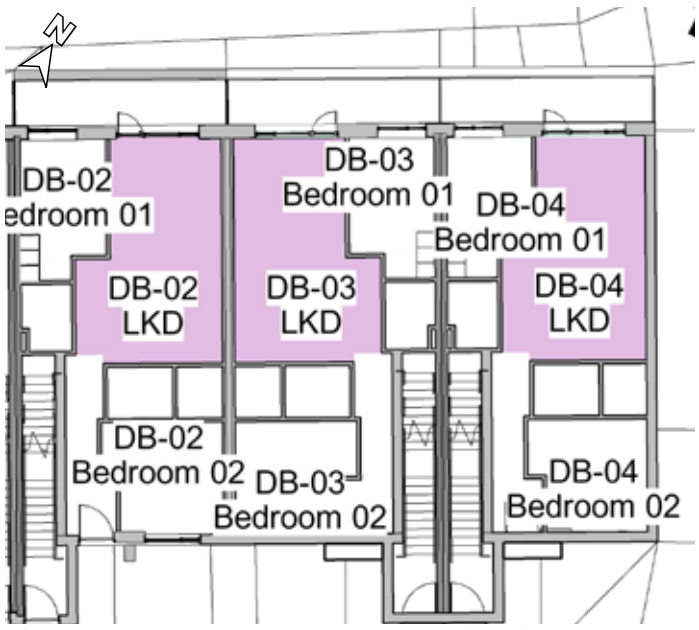


Figure 3.2: Duplex B Ground Floor: highlighted rooms below the minimum recommendations for SDA.

Figure 3.3: Apartment Block A Ground Floor: highlighted rooms where trees affect SDA compliance

I.S. EN 17037 sets out more onerous recommendations for SDA. As such, the number of residential habitable rooms achieving compliance under this standard is 369 in the assessment that includes trees. This gives a reduced circa compliance rate of c. 78%. The additional SDA assessment, under this standard, that does not include trees has shown a compliance rate of c. 87%.

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.

This report identifies where assessed rooms do not meet the daylight targets set in section 2.1 of the BRE Guidelines. It is intended to inform the planning authority's discretionary review, which is based on an assessment of the project's specific circumstances.

The following list details each unit and room that does not achieve the recommended daylight levels in BR 209. For each instance, the project architect has provided a rationale and/or a compensatory design solution:

"• Unit A-04: This unit has a total area of 79.71 m², exceeding the 76 m² minimum. It also features floor-to-ceiling windows, and access to a public open space that is larger than the minimum requirement.

• Unit A-09: With a total area of 85.7 m² (above the 76 m² minimum), this unit benefits from floor-to-ceiling windows and a public open space for the proposal that is above the minimum size.

• Unit A-21: This unit's total area is 82.08 m², which is over the 76 m² minimum. Compensatory features include floor-to-ceiling windows and access to a larger-than-required public open space.

• Unit DA-01: This unit has a total sq.m area of 80.7 m2, which is over and above the 76 m2 minimum required. It enjoys an oversized private amenity space of 10.4 sq.m, has floor to ceiling windows, and the communal open space provided for this block is above the minimum required.

• Unit DA-02: With a total area of 80.7 m2 (above the 76 m2 minimum), this unit benefits from an oversized 10.4 m2 private amenity space, floor-to-ceiling windows, and a communal open space for the block that is above the minimum size.

• Unit DA-03: This unit's total area is 80.7 m2, which is over the 76 m2 minimum. Compensatory features include an oversized private amenity space (10.4 m2), floor-to-ceiling windows, and access to a larger-than-required communal open space.

• Unit DA-04: Exceeding the minimum area at 80.7 m2, this unit is compensated with a 10.4 m2 private amenity space, floor-to-ceiling windows, and access to a communal open space that is above the minimum required size.

• Unit DA-05: The unit has a total area of 80.7 m2, surpassing the 76 m2 minimum. It includes an oversized private amenity space of 10.4 m2, floor-to-ceiling windows, and access to a communal open space larger than the minimum requirement.

• Unit DA-06: The unit has a total area of 80.7 m2, which is over and above the 76 m2 minimum required. It enjoys an oversized private amenity space of 10.4 sq.m, has floor to ceiling windows, and the communal open space provided for this block is above the minimum required.

• Unit DB-02: With a total area of 80.7 m2 (above the 76 m2 minimum), this unit includes a 10.4 m2 private amenity space, floor-to-ceiling windows, and access to a communal open space that is larger than the minimum size.

• Unit DB-03: This unit has a total area of 80.7 m2, exceeding the 76 m2 minimum. It benefits from an oversized 10.4 m2 private amenity space, floor-to-ceiling windows, and a larger-than-required communal open space.

• Unit DB-04: With a total area of 80.7 m2 (above the 76 m2 minimum), this unit includes a 10.4 m2 private amenity space, floor-to-ceiling windows, and access to a communal open space that is larger than the minimum size."

Floor plans indicating unit numbers can be found in section F.1 on page 33. The results for the study on SDA can be seen in section F.2 on page 48.

3.2 Sunlight Exposure (SE)

A sunlight exposure assessment has been carried out on all habitable rooms within the apartment blocks A, B, and C and duplex units DA, DB, and DC of the proposed development. For these assessments, trees have been included in the analytical model as opaque objects. The assessments have been carried out in two states:

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

This approach is in accordance with section 3.1 of the BRE Guidelines.

In total, 150 no. units have been assessed. Using the rationale explained in section H.3 on page 124, the level of sunlight exposure for the assessed units is as follows:

In the assessment carried out with all trees considered (existing and proposed, deciduous and evergreen) as opaque objects:

- high: 85 no. (at least 4 hours)
- medium: 14 no. (at least 3 hours)
- minimum: 30 no. (at least 1.5 hours)
- below minimum recommendation: 21 no. (less than 1.5 hours)

When only evergreen trees included in the assessment model:

- high: 101 no. (at least 4 hours)
- medium: 13 no. (at least 3 hours)
- minimum: 28 no. (at least 1.5 hours)
- below minimum recommendation: 8 no. (less than 1.5 hours)

The SE assessment has shown that, depending on the effect of trees, the circa compliance rate for the assessed units, in accordance with section G3.4 of the BRE Guidelines, is between 86% & 95%

Note: For a unit to be compliant under BR 209, only 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 like this one.

With only evergreen trees included in the analysis, 8 no. units fail to meet recommended minimum sunlight hours. These units, located in apartment blocks A, B, C and Duplexes B and C, are primarily affected by their northern-facing orientation, self obstruction, adjacent blocks, balconies, and recessed windows (see examples in Figure 3.4 and Figure 3.5).

With all trees included, 21 no. of units experience a reduction in sunlight. These units are distributed across all blocks, apartment block A, B and C and in the duplexes A, B and C.

Many of these units achieve “high” levels of sunlight exposure when trees are treated as invisible, highlighting the impact of existing and proposed vegetation.

As mentioned in the SDA results, trees represent an important environmental and landscape component of the proposal. The removal of trees is not considered an appropriate mitigation measure due to their importance for landscape character, privacy, biodiversity, and the overall environmental strategy.

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.

The results for the study on SE in the habitable rooms of the proposed units can be seen in section F.3 on page 66.

Figure 3.4: Below minimum recommendations for SE units in Apartment Block A (First Floor), highlighting a north-facing unit and a unit obstructed by balconies.

Figure 3.5: Below minimum recommendations for SE unit in Apartment Block B (Ground Floor), highlighting a recessed, self-obstructing design.

3.3 Sun On Ground in Proposed Outdoor Amenity Areas

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

In total 11 no. spaces have been assessed (see Figure 3.6), all of which would meet the criteria as set out in section 3.3 of the BRE Guidelines.

All assessed areas exceed the recommended target as set out in section 3.3 of the BRE Guidelines. Even the lowest-performing area, Communal Open Space 1, registered a strong result, with 80% of its area receiving at least two hours of sunlight on March 21st.

These positive results are a direct consequence of the surrounding context, which consists largely of open fields and low-rise development such as the proposed south phase (DLRCC Reg. Ref: LRD25A/0984/WEB). As a result, all proposed amenity areas are generally unobstructed and receive excellent levels of sunlight.

Figure 3.6: Indication of the proposed public and communal amenity spaces included in the SOG analysis..

The results for the study on sunlighting in the proposed outdoor amenity spaces can be found in section F.4 on page 84.

A visual representation of these readings can be seen in the false colour plan in section F.4 and in the hourly shadow diagrams for March 21st in section E.1 on page 24 of the appendix section of this report.

4.0 Conclusion

3D Design Bureau (3DDB) were commissioned to carry out a daylight assessment, sunlight assessment and shadow study for the proposed large-scale residential development at Glenamuck North (Northern site), Kilternan, Dublin 18.

The BRE decision chart, as outlined in section "2.1 Impact Assessment, Window Selection Criteria" on page 7, was used to screen neighbouring properties and amenity spaces for potential daylight and sunlight impacts. As no surrounding properties, including those within the proposed south phase (DLRCC Reg. Ref: LRD25A/0984/WEB) were identified as being at risk of experiencing adverse effects, the BRE guidance indicates that no further quantitative analysis is required.

Figure 4.1: Scope of surrounding properties and environment assessed.

The development demonstrates a high standard of internal daylighting, with approximately 97% of habitable rooms satisfying the recommended SDA targets when trees are factored in. This figure improves to 98% in a 'no-tree' model, confirming a robust design for daylight access. For sunlight exposure (SE), the scheme's compliance rate is between 86% (in the all-tree scenario) and 95% (in the evergreen-only model), with any deficiencies being a direct result of shading from existing and planned landscaping.

Regarding Sun on Ground performance, every proposed outdoor amenity space is fully compliant with the BRE criteria. The development features an extensive network of public and communal open areas that are positioned to receive ample sunlight, thereby ensuring a superior outdoor environment for all future residents.

The results indicate that the design decisions such as dual-aspect units, separation distances and the positioning of the assessed blocks appear to have been designed to take into account the availability and access to daylight and sunlight.

In summary, 3DDB concludes that the scheme performs favourably in both internal daylight and sunlight access and in the provision of well-lit outdoor amenity areas.

Appendix - Results

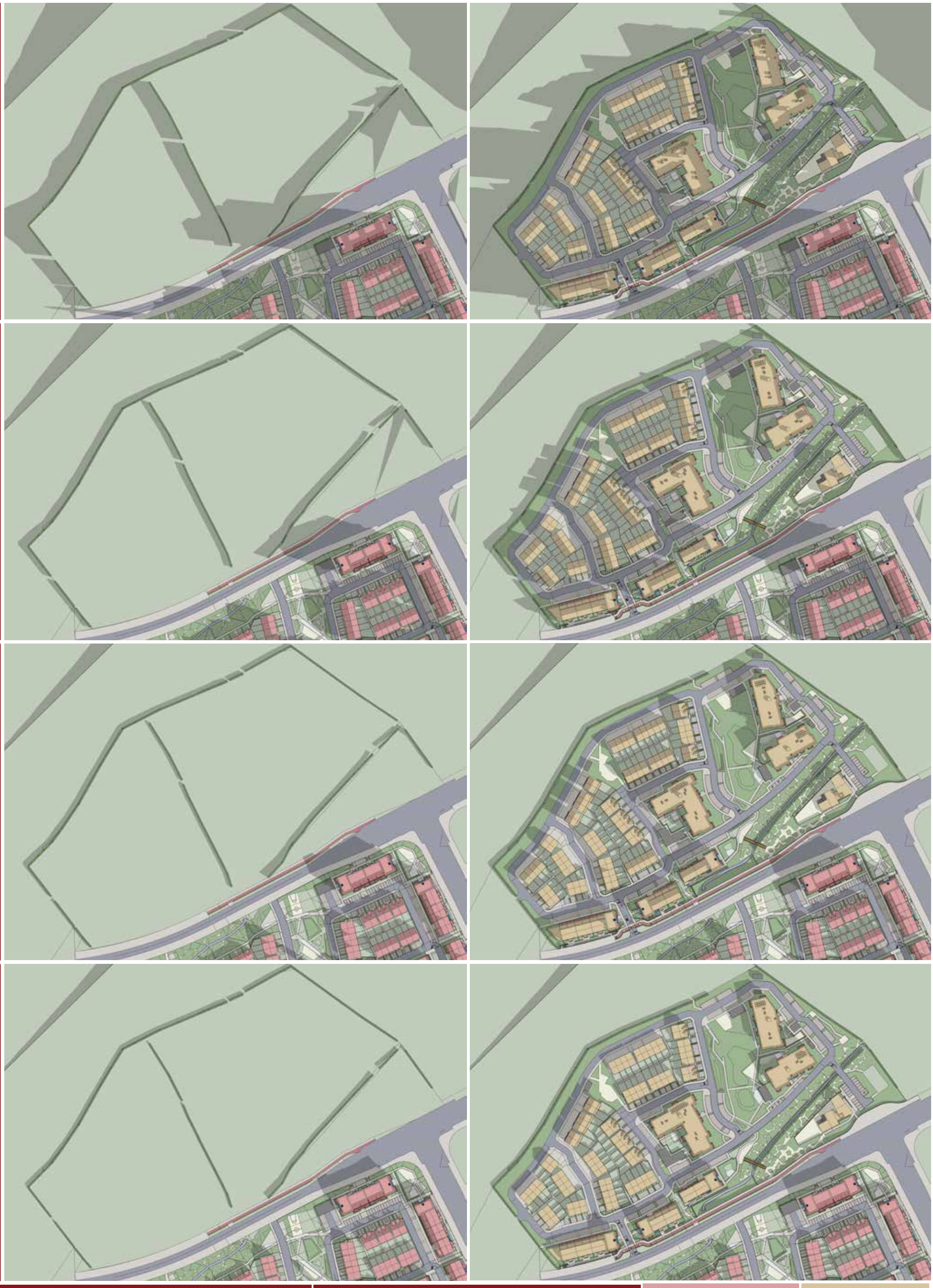
+353 (0) 1 288 0186
info@3ddesignbureau.com
www.3ddesignbureau.com

Appendix Contents

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

N

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



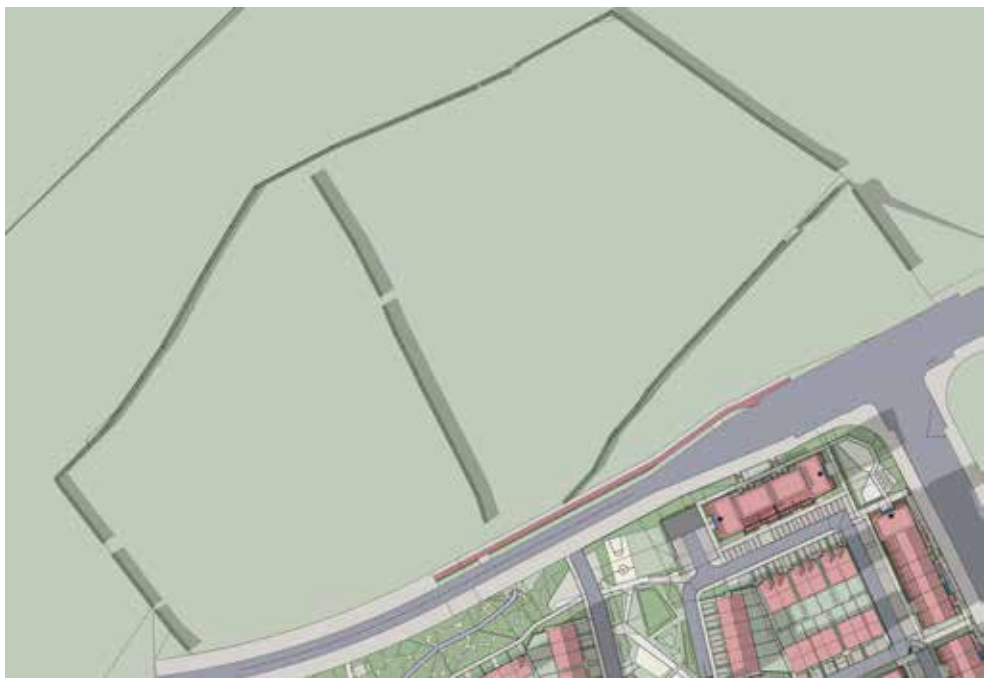
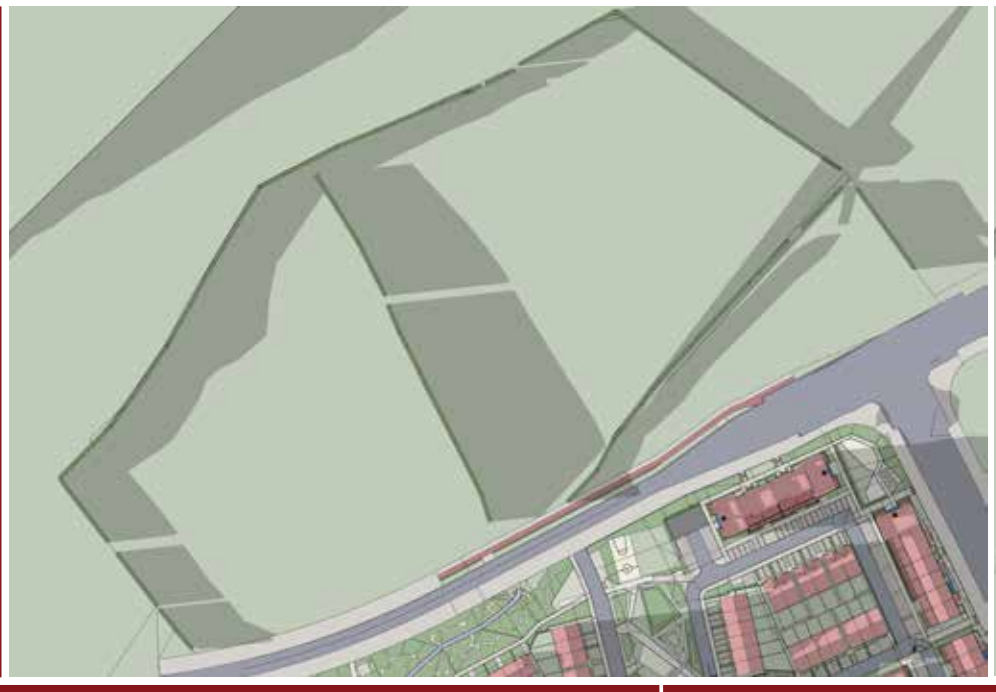
E.0 E.1	Shadow Studies Shadow Study 21 March	Project: Glenamuck North – Northern Site	South Site DLRCC Reg. Ref. is LRD25A/0984/WEB	Proposed
	March 21st Sunrise 6:33 | Sunset 18:31	Applicant: Durkan Carrickmines Developments Limited		3D DESIGN BUREAU

N

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

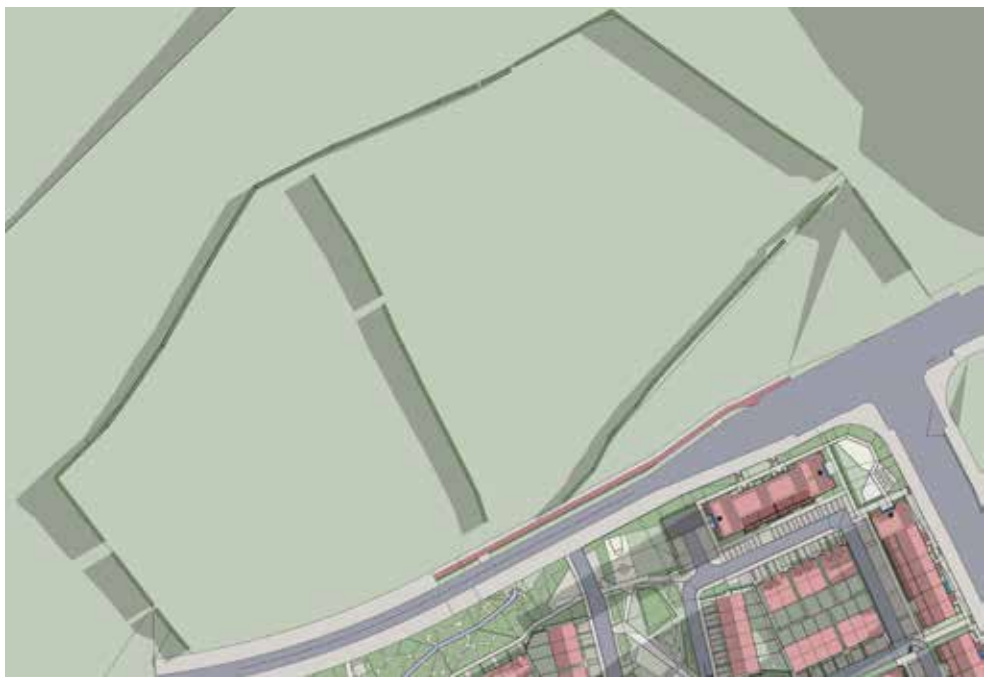
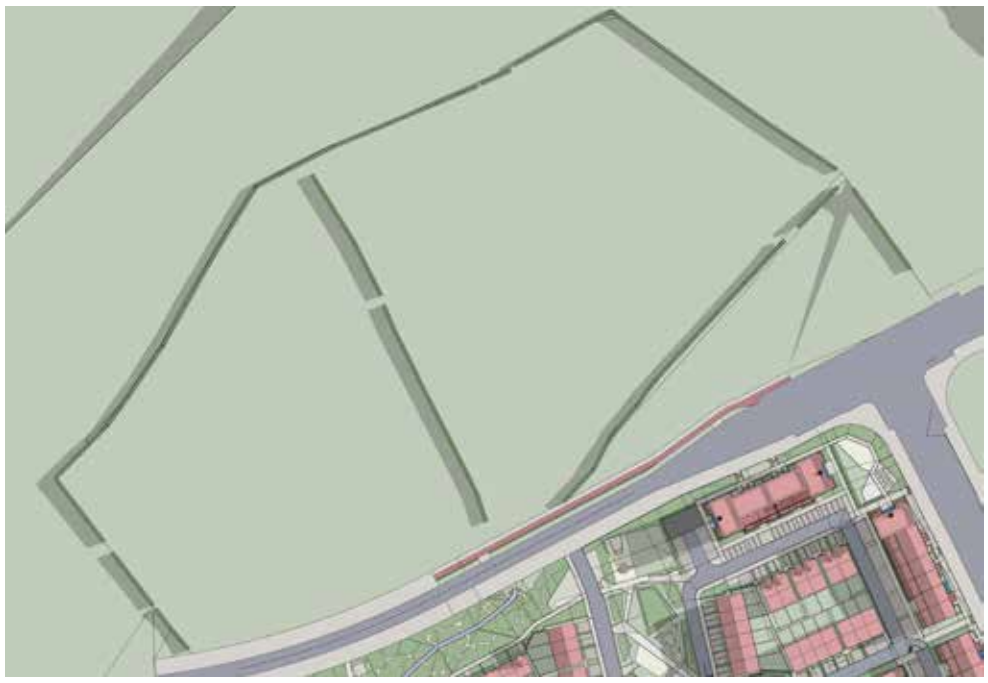
	Project: Glenamuck North – Northern Site	**South Site DLRCC Reg. Ref. is LRD25A/0984/WEB**	**Proposed**
March 21st Sunrise 6:33 | Sunset 18:31	**Applicant: Durkan Carrickmines Developments Limited**		3D DESIGN BUREAU

N

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

	Project: Glenamuck North – Northern Site	**South Site DLRCC Reg. Ref. is LRD25A/0984/WEB**	**Proposed**
March 21st Sunrise 6:33 | Sunset 18:31	**Applicant: Durkan Carrickmines Developments Limited**		3D DESIGN BUREAU

N

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

E.2 Shadow Study 21 June	**Project: Glenamuck North – Northern Site**	**South Site DLRCC Reg. Ref. is LRD25A/0984/WEB**	**Proposed**
June 21st Sunrise 5:05 | Sunset 21:48	**Applicant: Durkan Carrickmines Developments Limited**		3D DESIGN BUREAU

N

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

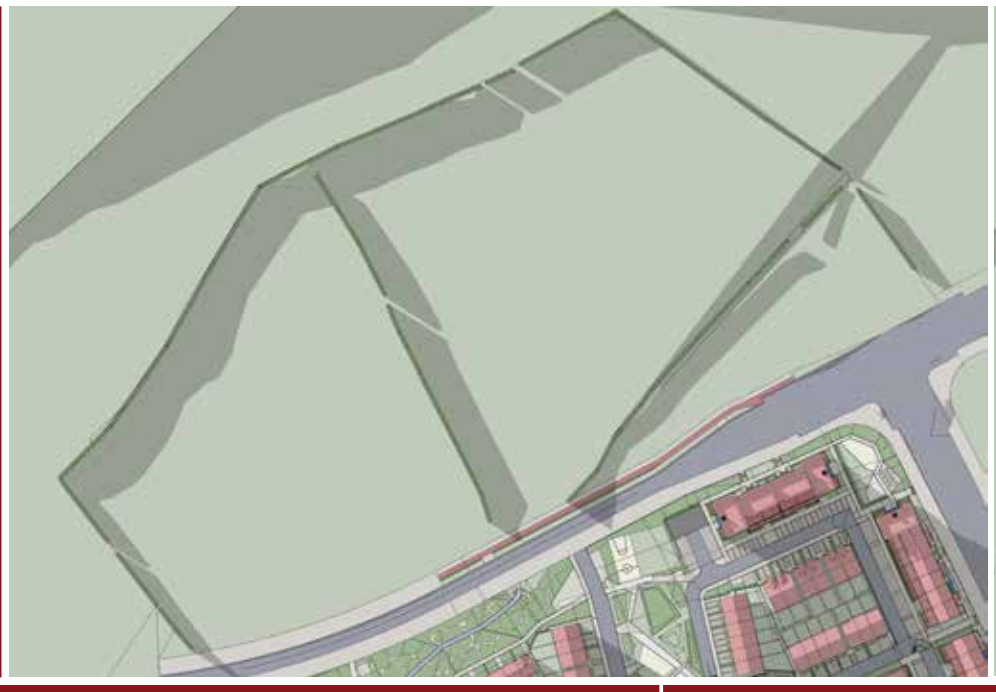
	Project: Glenamuck North – Northern Site	South Site DLRCC Reg. Ref. is LRD25A/0984/WEB	Proposed
June 21st Sunrise 5:05 | Sunset 21:48	Applicant: Durkan Carrickmines Developments Limited		3D DESIGN BUREAU

N

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

	Project: Glenamuck North – Northern Site	South Site DLRCC Reg. Ref. is LRD25A/0984/WEB	Proposed
June 21st Sunrise 5:05 | Sunset 21:48	Applicant: Durkan Carrickmines Developments Limited		3D DESIGN BUREAU

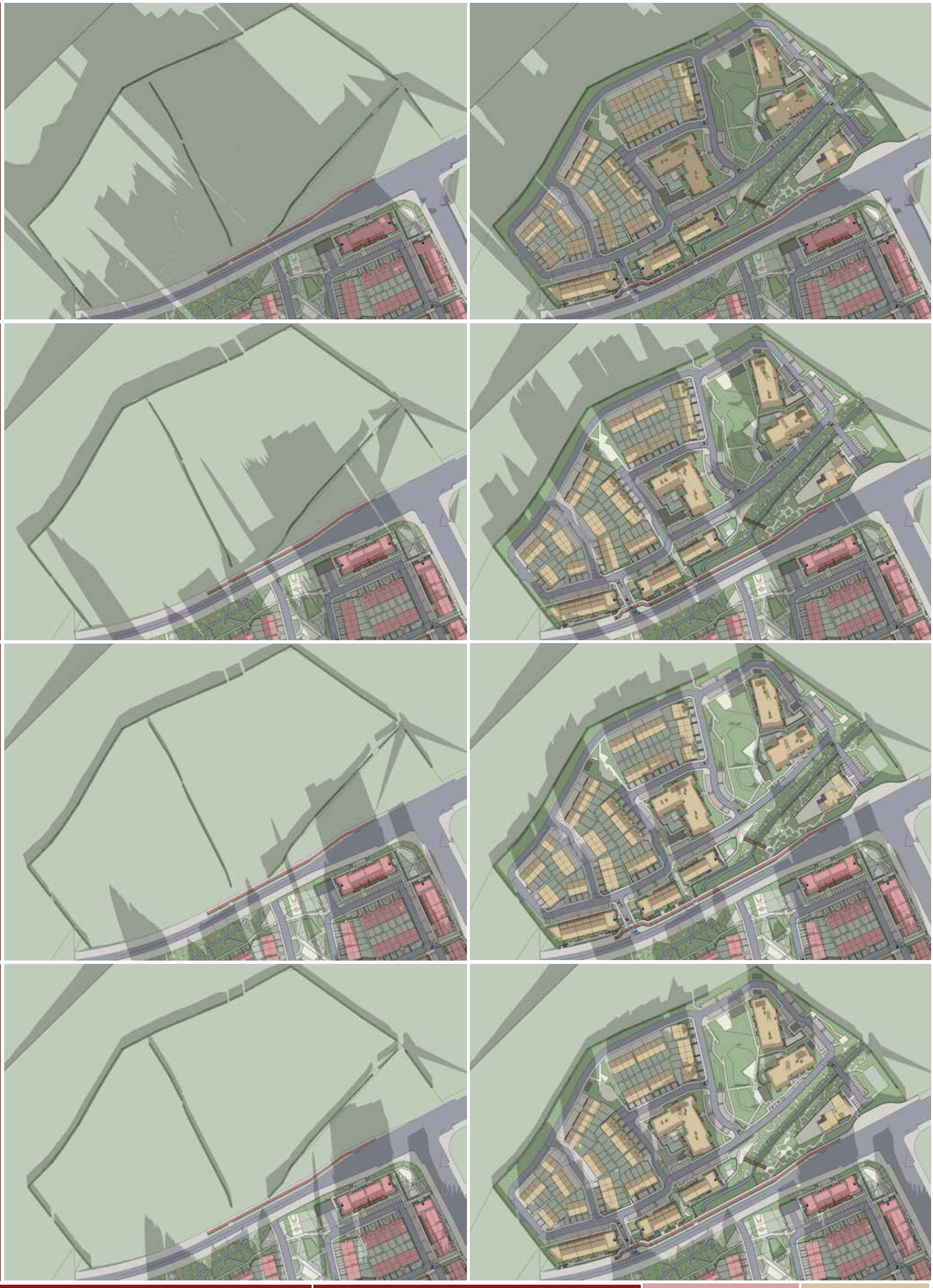
N

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

	Project: Glenamuck North – Northern Site	**South Site DLRCC Reg. Ref. is LRD25A/0984/WEB**	**Proposed**
June 21st Sunrise 5:05 | Sunset 21:48	**Applicant: Durkan Carrickmines Developments Limited**		3D DESIGN BUREAU

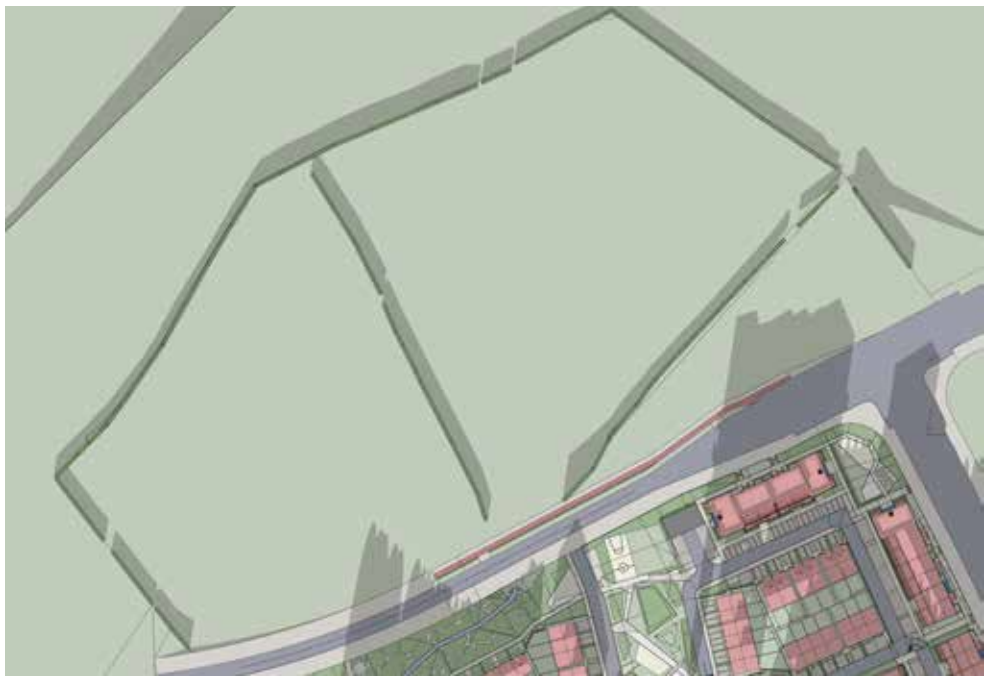
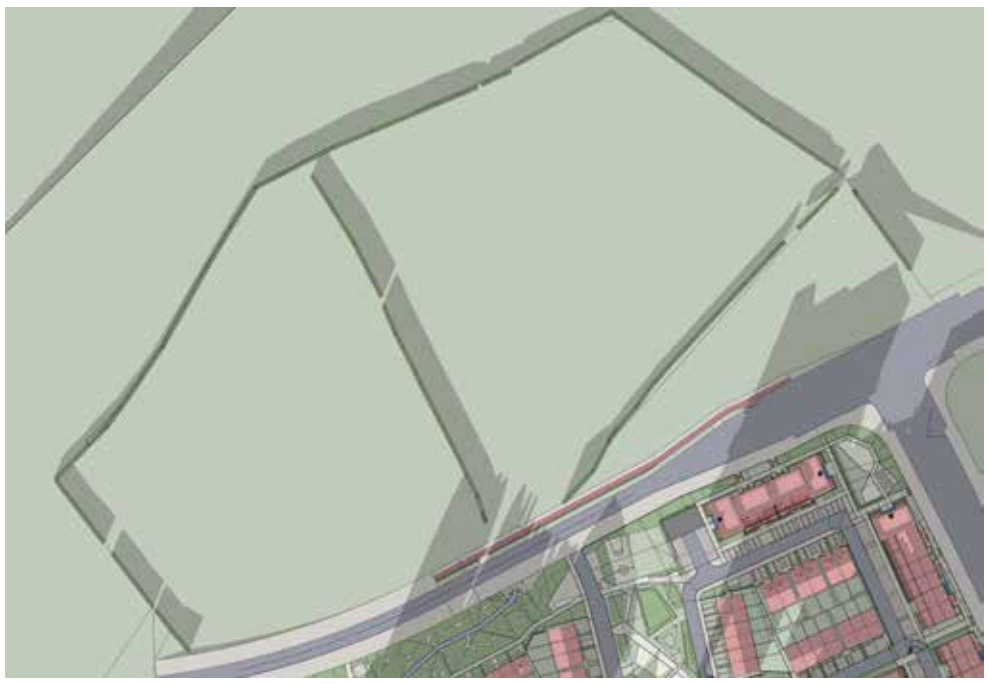
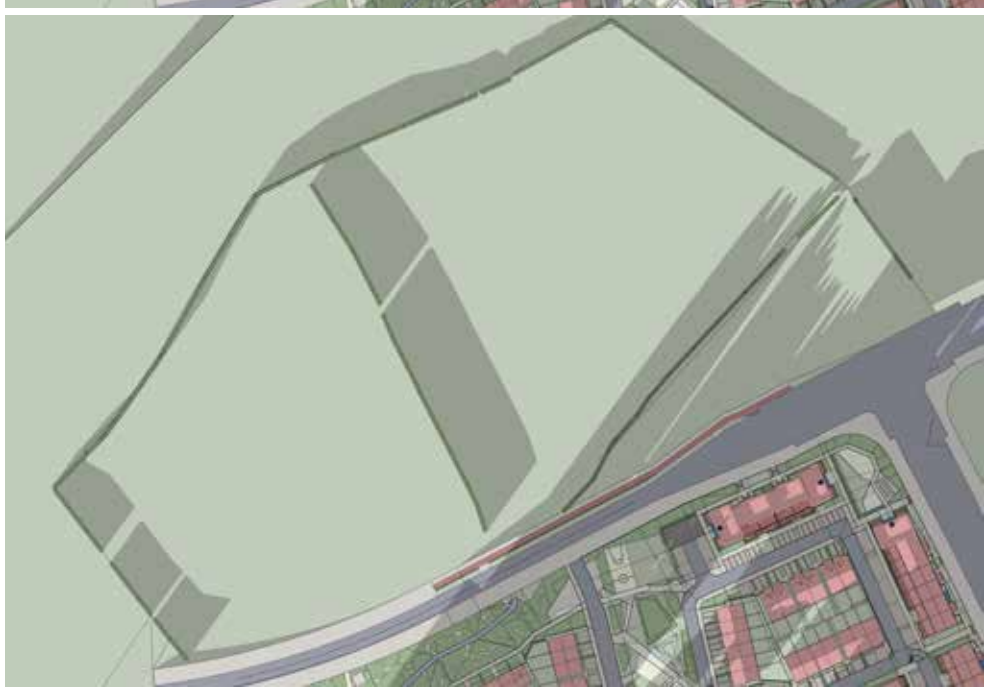
N

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



E.3 Shadow Study 21 December	Project: Glenamuck North – Northern Site	South Site DLRCC Reg. Ref. is LRD25A/0984/WEB	Proposed
December 21st Sunrise 8:45 | Sunset 16:01	Applicant: Durkan Carrickmines Developments Limited		3D DESIGN BUREAU

N

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

	Project: Glenamuck North – Northern Site	**South Site DLRCC Reg. Ref. is LRD25A/0984/WEB**	**Proposed**
December 21st Sunrise 8:45 | Sunset 16:01	**Applicant: Durkan Carrickmines Developments Limited**		3D DESIGN BUREAU

F.0 Scheme Performance

F.1 Proposed Apartment and Duplexes Floor Plans

F.1.1 Proposed Apartment and Duplexes Floor Plans - Apartment Block A

Figure F.1: Apartment Block A - Site Location

Figure F.2: Apartment Block A - Ground Floor

Figure F.3: Apartment Block A - First Floor

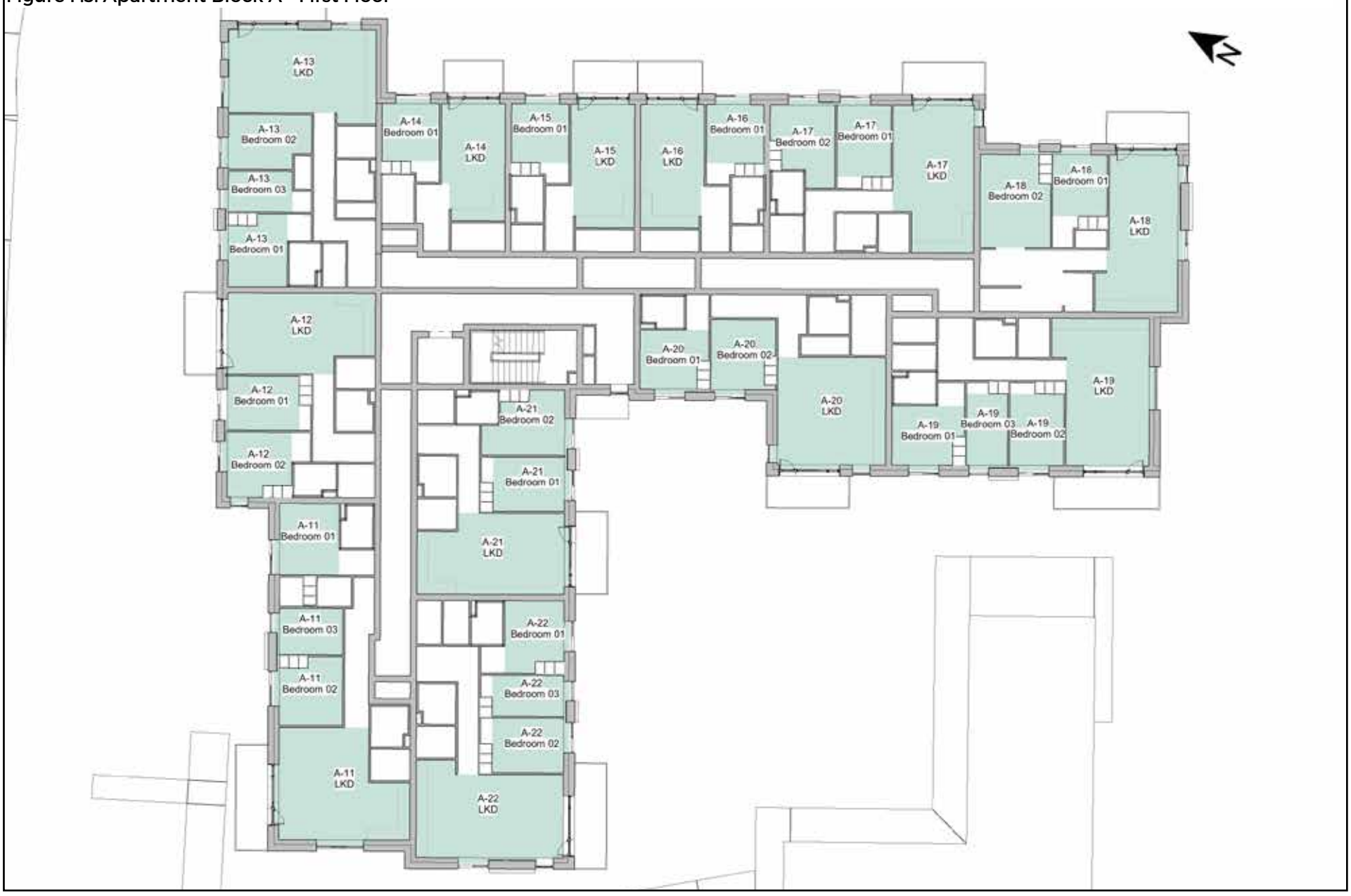


Figure F.4: Apartment Block A - Second Floor

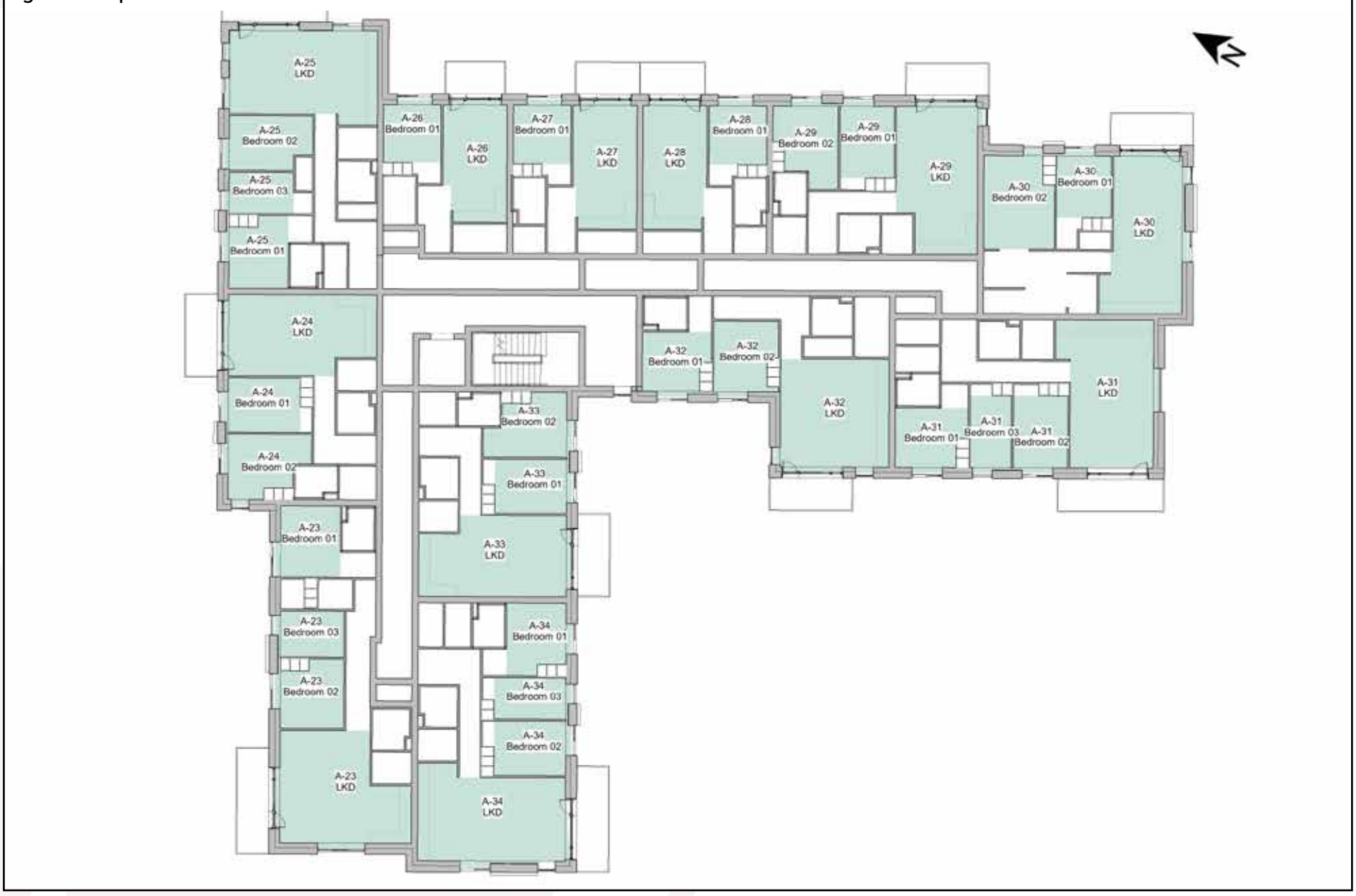


Figure F.5: Apartment Block A - Third Floor

F.1.2 Proposed Apartment and Duplexes Floor Plans - Apartment Block B

Figure F.6: Apartment Block B - Site Location

Figure F.7: Apartment Block B - Ground Floor

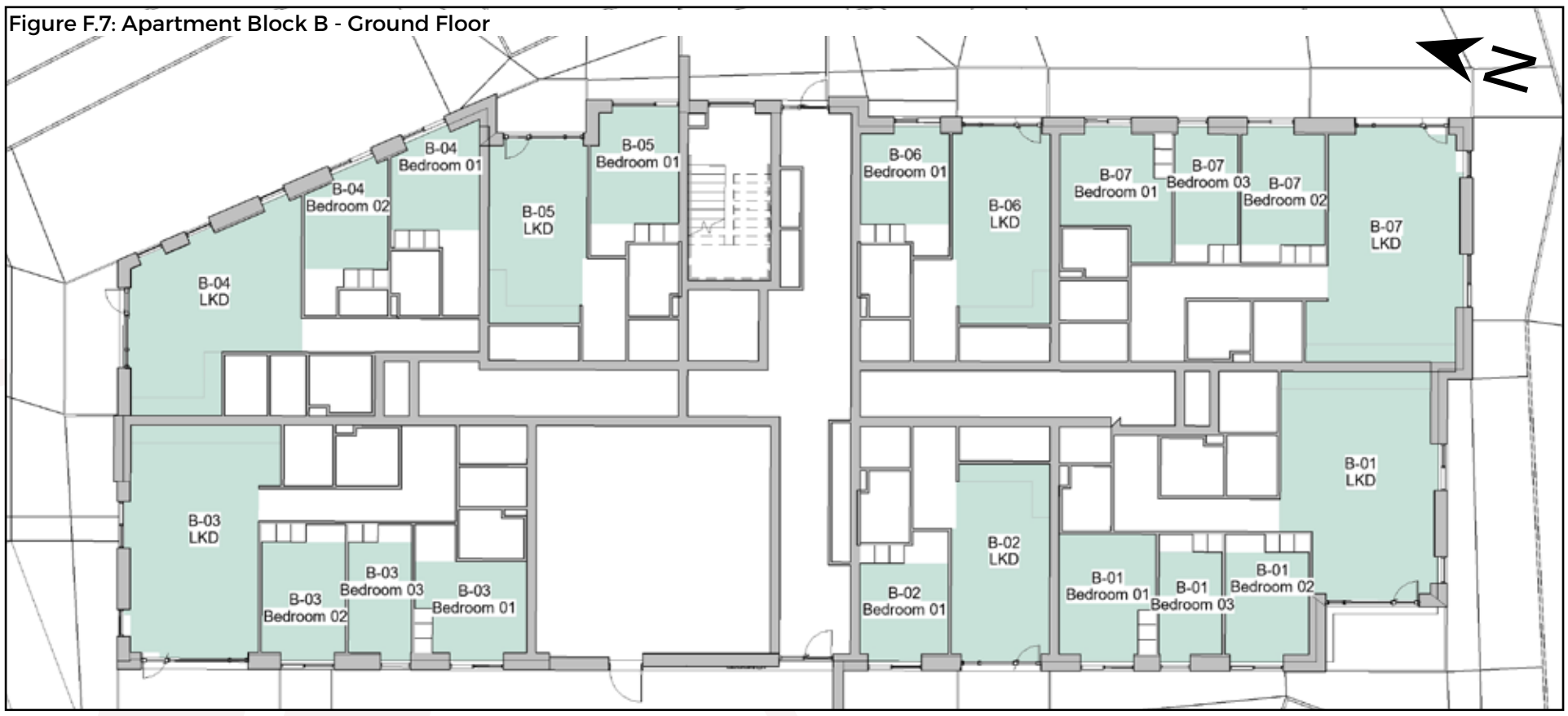


Figure F.8: Apartment Block B - First Floor

Figure F.9: Apartment Block B - Second Floor

Figure F.10: Apartment Block B - Third Floor

F.1.3 Proposed Apartment and Duplexes Floor Plans - Apartment Block C

Figure F.11: Apartment Block B - Site Location

Figure F.12: Apartment Block C - Ground Floor

Figure F.13: Apartment Block C - First Floor

Figure F.14: Apartment Block C - Second Floor

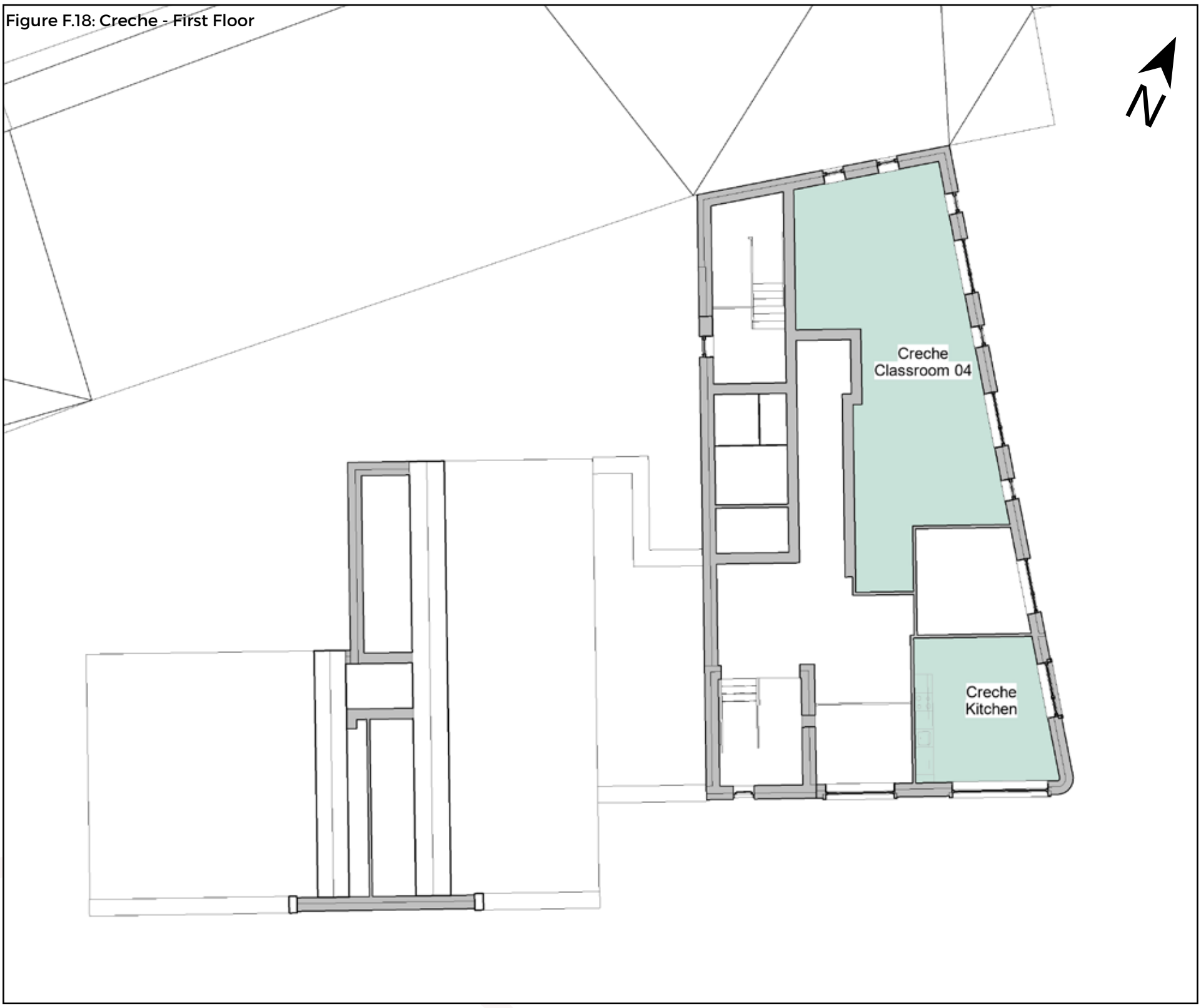
Figure F.15: Apartment Block C - Third Floor

F.1.4 Proposed Apartment and Duplexes Floor Plans - Creche

Figure F.16: Creche - Site Location

Figure F.17: Creche - Ground Floor

Figure F.18: Creche - First Floor



F.1.5 Proposed Apartment and Duplexes Floor Plans - Duplexes A

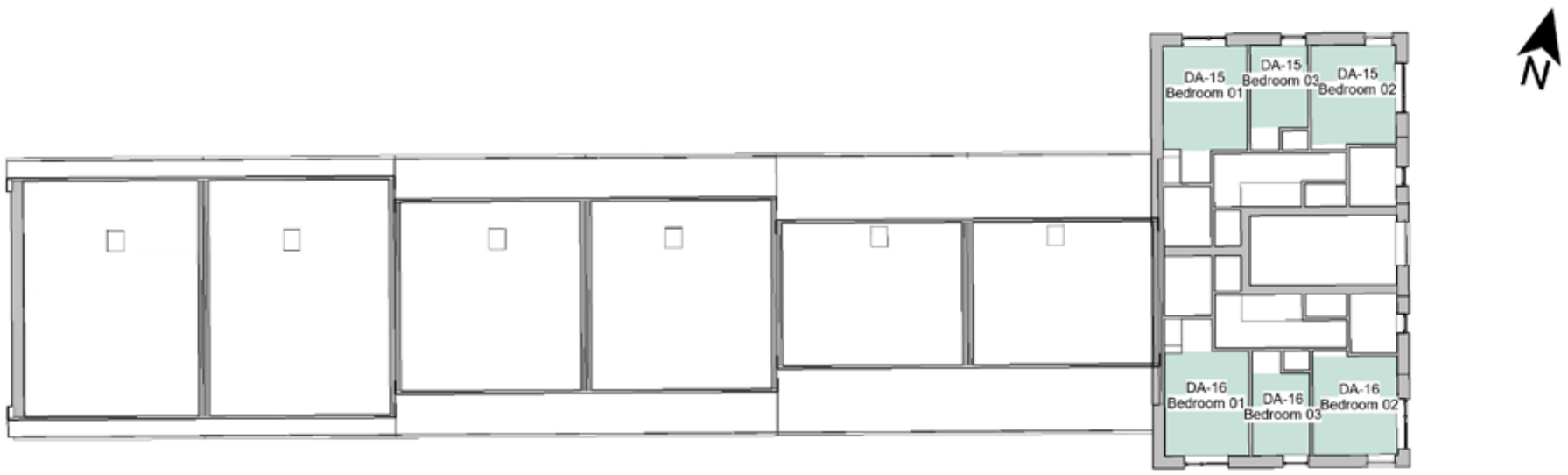
Figure F.19: Duplex A - Site Location

Figure F.20: Duplex A - Ground Floor

Figure F.21: Duplex A - First Floor

Figure F.22: Duplex A - Second Floor

Figure F.23: Duplex A - Third Floor



F.1.6 Proposed Apartment and Duplexes Floor Plans - Duplexes B

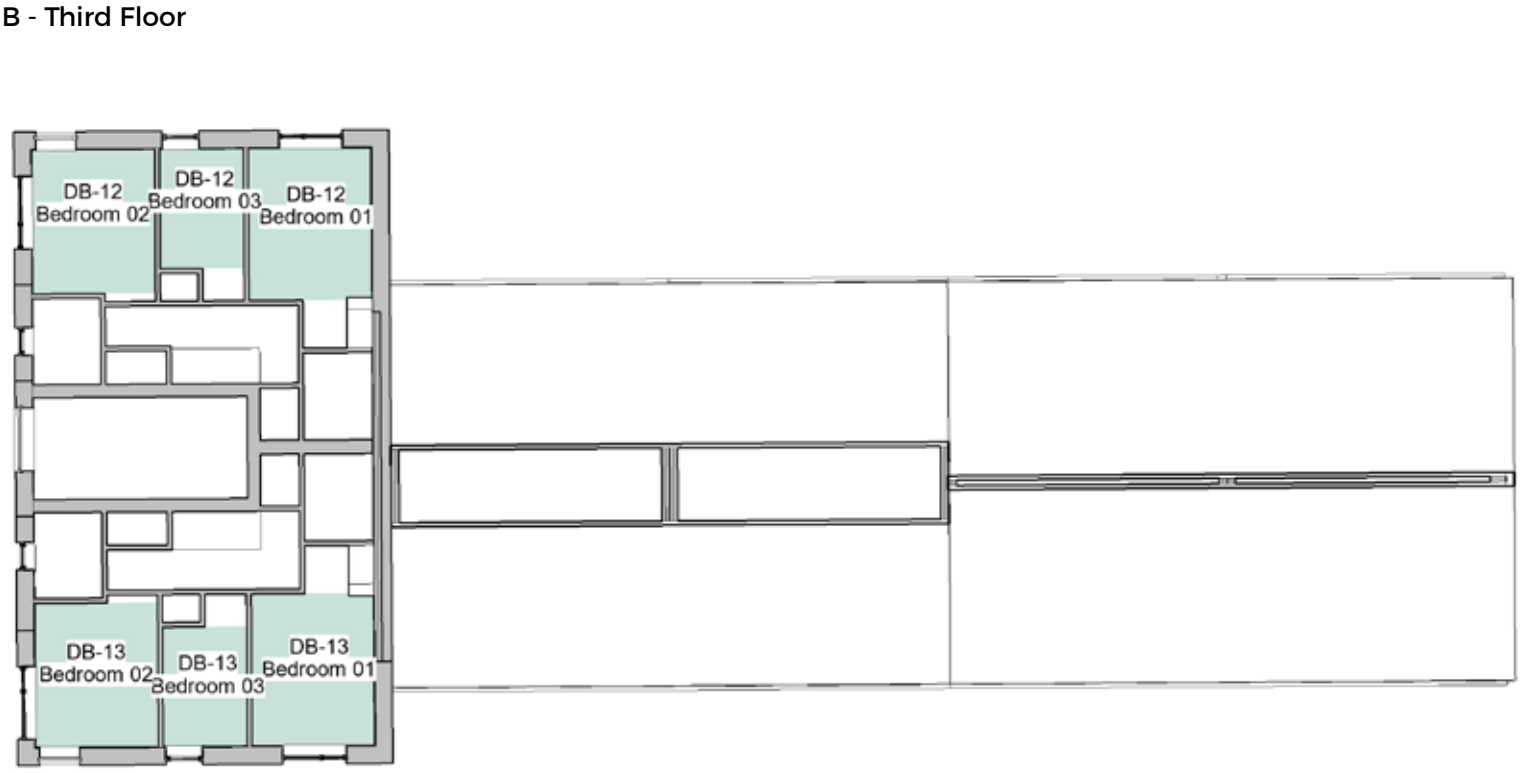
Figure F.24: Duplex B - Site Location

Figure F.25: Duplex B - Ground Floor

Figure F.26: Duplex B - First Floor

Figure F.27: Duplex B - Second Floor

Figure F.28: Duplex B - Third Floor



F.1.7 Proposed Apartment and Duplexes Floor Plans - Duplexes C

Figure F.29: Duplex C - Site Location

Figure F.30: Duplex C - Ground Floor

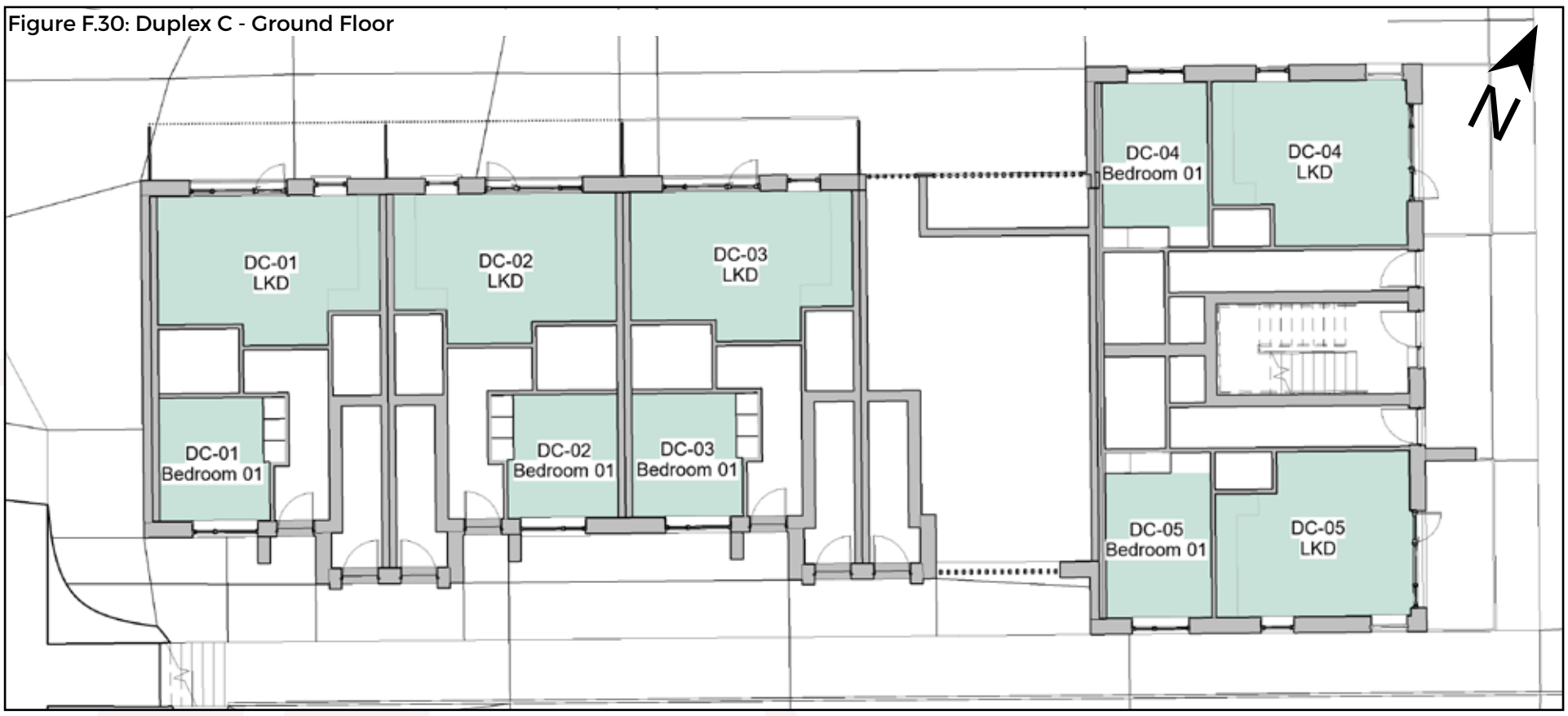


Figure F.31: Duplex C - First Floor

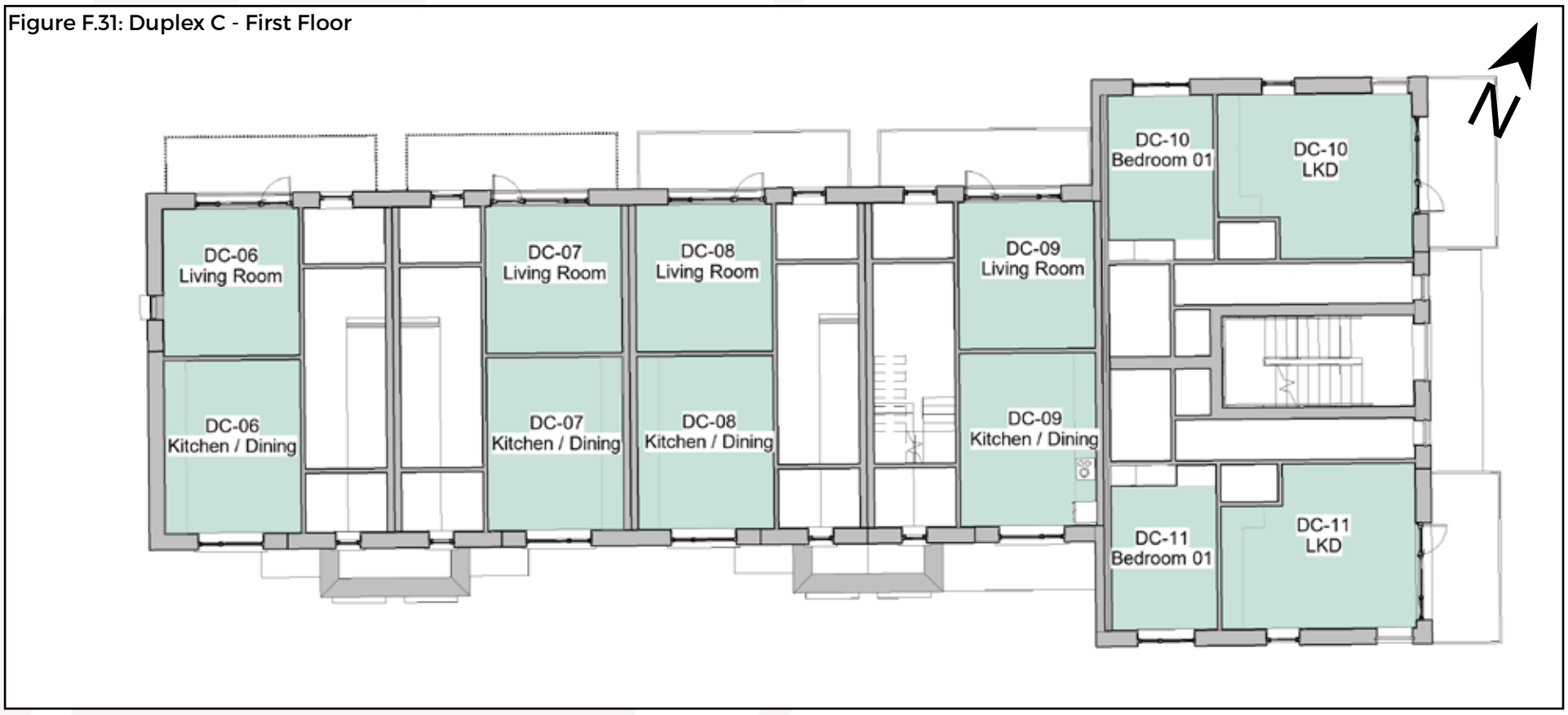
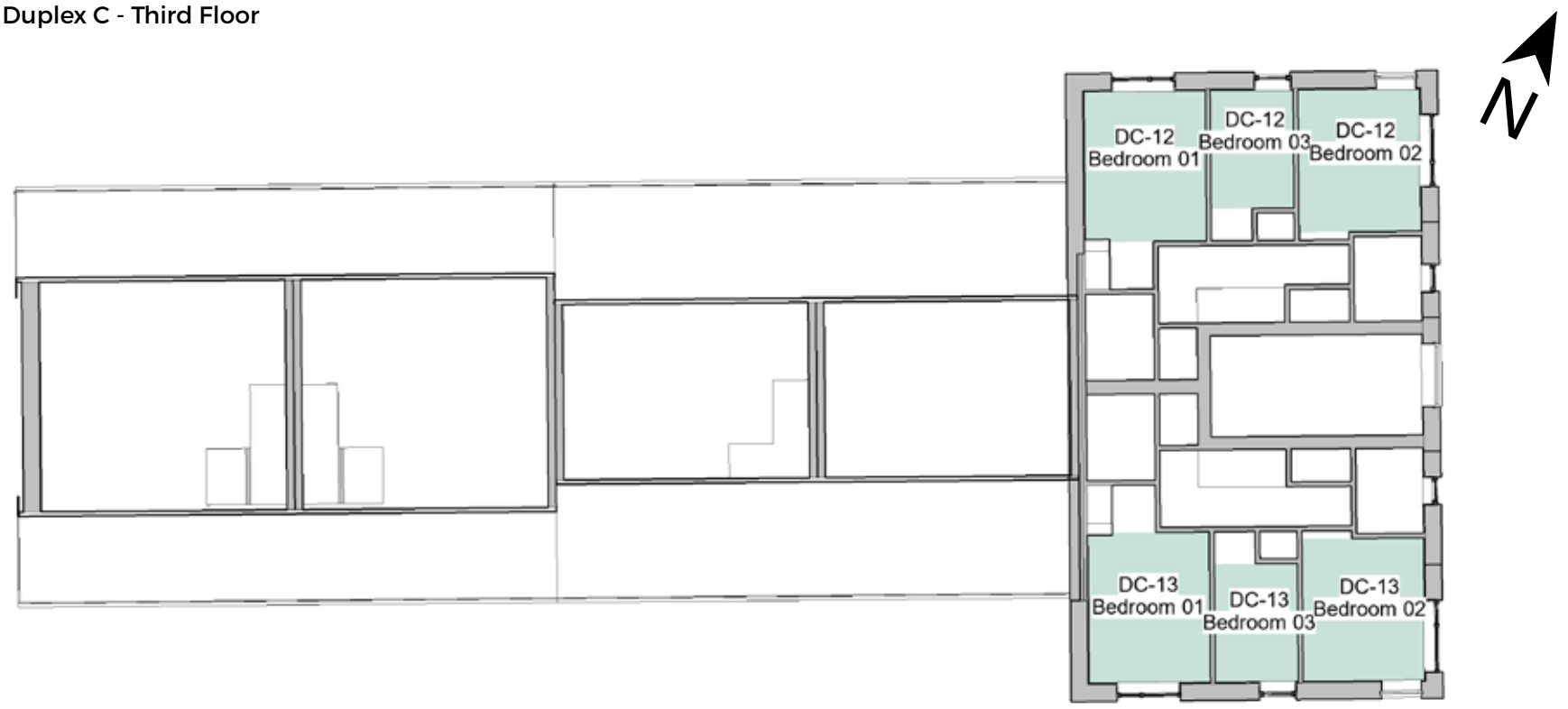


Figure F.32: Duplex C - Second Floor

Figure F.33: Duplex C - Third Floor



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

A: Unit Number

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

B: Room Description

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

C: Target Lux

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

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

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

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

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

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

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

F: Compliance with BR 209 Criteria

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

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

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

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

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

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

F.2.1 SDA Results: Apartment Block A

Table No. F.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**	
A-01	LKD	200	90%	82%	Compliant
A-01	Bedroom 01	100	100%	99%	Compliant
A-01	Bedroom 02	100	100%	100%	Compliant
A-01	Bedroom 03	100	100%	100%	Compliant
A-02	LKD	200	50%	50%	Compliant
A-02	Bedroom 01	100	100%	100%	Compliant
A-02	Bedroom 02	100	100%	100%	Compliant
A-03	LKD	200	100%	100%	Compliant
A-03	Bedroom 01	100	100%	100%	Compliant
A-03	Bedroom 02	100	100%	100%	Compliant
A-03	Bedroom 03	100	100%	100%	Compliant
A-04	LKD	200	54%	47%	Trees affecting compliance
A-04	Bedroom 01	100	100%	100%	Compliant
A-04	Bedroom 02	100	100%	100%	Compliant
A-05	LKD	200	74%	60%	Compliant
A-05	Bedroom 01	100	100%	100%	Compliant
A-06	LKD	200	73%	63%	Compliant
A-06	Bedroom 01	100	100%	100%	Compliant
A-06	Bedroom 02	100	100%	100%	Compliant
A-07	LKD	200	100%	100%	Compliant
A-07	Bedroom 01	100	100%	100%	Compliant
A-07	Bedroom 02	100	67%	52%	Compliant
A-08	LKD	200	100%	98%	Compliant
A-08	Bedroom 01	100	100%	85%	Compliant
A-08	Bedroom 02	100	100%	100%	Compliant
A-08	Bedroom 03	100	100%	52%	Compliant
A-09	LKD	200	97%	37%	Trees affecting compliance
A-09	Bedroom 01	100	100%	46%	Trees affecting compliance
A-09	Bedroom 02	100	100%	44%	Trees affecting compliance
A-10	LKD	200	99%	76%	Compliant
A-10	Bedroom 01	100	100%	100%	Compliant
A-10	Bedroom 02	100	100%	100%	Compliant
A-10	Bedroom 03	100	100%	82%	Compliant
A-11	LKD	200	100%	100%	Compliant
A-11	Bedroom 01	100	100%	100%	Compliant
A-11	Bedroom 02	100	100%	100%	Compliant
A-11	Bedroom 03	100	100%	100%	Compliant
A-12	LKD	200	63%	63%	Compliant
A-12	Bedroom 01	100	100%	100%	Compliant
A-12	Bedroom 02	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.2 SDA Results: Apartment Block A

Table No. F.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-13	LKD	200	100%	100%	Compliant
A-13	Bedroom 01	100	100%	100%	Compliant
A-13	Bedroom 02	100	100%	100%	Compliant
A-13	Bedroom 03	100	100%	100%	Compliant
A-14	LKD	200	83%	79%	Compliant
A-14	Bedroom 01	100	100%	100%	Compliant
A-15	LKD	200	72%	69%	Compliant
A-15	Bedroom 01	100	100%	100%	Compliant
A-16	LKD	200	76%	70%	Compliant
A-16	Bedroom 01	100	100%	100%	Compliant
A-17	LKD	200	79%	75%	Compliant
A-17	Bedroom 01	100	100%	100%	Compliant
A-17	Bedroom 02	100	100%	100%	Compliant
A-18	LKD	200	100%	100%	Compliant
A-18	Bedroom 01	100	100%	100%	Compliant
A-18	Bedroom 02	100	91%	83%	Compliant
A-19	LKD	200	100%	100%	Compliant
A-19	Bedroom 01	100	100%	100%	Compliant
A-19	Bedroom 02	100	100%	100%	Compliant
A-19	Bedroom 03	100	100%	100%	Compliant
A-20	LKD	200	100%	78%	Compliant
A-20	Bedroom 01	100	100%	100%	Compliant
A-20	Bedroom 02	100	100%	100%	Compliant
A-21	LKD	200	64%	47%	Trees affecting compliance
A-21	Bedroom 01	100	100%	100%	Compliant
A-21	Bedroom 02	100	100%	88%	Compliant
A-22	LKD	200	100%	99%	Compliant
A-22	Bedroom 01	100	100%	100%	Compliant
A-22	Bedroom 02	100	100%	100%	Compliant
A-22	Bedroom 03	100	100%	100%	Compliant
A-23	LKD	200	100%	100%	Compliant
A-23	Bedroom 01	100	100%	100%	Compliant
A-23	Bedroom 02	100	100%	100%	Compliant
A-23	Bedroom 03	100	100%	100%	Compliant
A-24	LKD	200	77%	77%	Compliant
A-24	Bedroom 01	100	100%	100%	Compliant
A-24	Bedroom 02	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.3 SDA Results: Apartment Block A

Table No. F.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-25	LKD	200	100%	100%	Compliant
A-25	Bedroom 01	100	100%	100%	Compliant
A-25	Bedroom 02	100	100%	100%	Compliant
A-25	Bedroom 03	100	100%	100%	Compliant
A-26	LKD	200	92%	86%	Compliant
A-26	Bedroom 01	100	100%	100%	Compliant
A-27	LKD	200	76%	73%	Compliant
A-27	Bedroom 01	100	100%	100%	Compliant
A-28	LKD	200	82%	77%	Compliant
A-28	Bedroom 01	100	100%	100%	Compliant
A-29	LKD	200	88%	84%	Compliant
A-29	Bedroom 01	100	100%	100%	Compliant
A-29	Bedroom 02	100	100%	100%	Compliant
A-30	LKD	200	100%	100%	Compliant
A-30	Bedroom 01	100	100%	100%	Compliant
A-30	Bedroom 02	100	98%	95%	Compliant
A-31	LKD	200	100%	100%	Compliant
A-31	Bedroom 01	100	100%	100%	Compliant
A-31	Bedroom 02	100	100%	100%	Compliant
A-31	Bedroom 03	100	100%	100%	Compliant
A-32	LKD	200	100%	100%	Compliant
A-32	Bedroom 01	100	100%	100%	Compliant
A-32	Bedroom 02	100	100%	100%	Compliant
A-33	LKD	200	78%	64%	Compliant
A-33	Bedroom 01	100	100%	100%	Compliant
A-33	Bedroom 02	100	100%	100%	Compliant
A-34	LKD	200	100%	100%	Compliant
A-34	Bedroom 01	100	100%	100%	Compliant
A-34	Bedroom 02	100	100%	100%	Compliant
A-34	Bedroom 03	100	100%	100%	Compliant
A-35	LKD	200	100%	100%	Compliant
A-35	Bedroom 01	100	100%	100%	Compliant
A-35	Bedroom 02	100	100%	100%	Compliant
A-35	Bedroom 03	100	100%	100%	Compliant
A-36	LKD	200	100%	100%	Compliant
A-36	Bedroom 01	100	100%	100%	Compliant
A-36	Bedroom 02	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.4 SDA Results: Apartment Block A

Table No. F.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-37	LKD	200	100%	100%	Compliant
A-37	Bedroom 01	100	100%	100%	Compliant
A-37	Bedroom 02	100	100%	100%	Compliant
A-37	Bedroom 03	100	100%	100%	Compliant
A-38	LKD	200	93%	93%	Compliant
A-38	Bedroom 01	100	100%	100%	Compliant
A-39	LKD	200	91%	89%	Compliant
A-39	Bedroom 01	100	100%	100%	Compliant
A-40	LKD	200	91%	90%	Compliant
A-40	Bedroom 01	100	100%	100%	Compliant
A-41	LKD	200	100%	99%	Compliant
A-41	Bedroom 01	100	100%	100%	Compliant
A-41	Bedroom 02	100	100%	100%	Compliant
A-42	LKD	200	100%	100%	Compliant
A-42	Bedroom 01	100	100%	100%	Compliant
A-42	Bedroom 02	100	100%	100%	Compliant
A-43	LKD	200	100%	100%	Compliant
A-43	Bedroom 01	100	100%	100%	Compliant
A-43	Bedroom 02	100	100%	100%	Compliant
A-43	Bedroom 03	100	100%	100%	Compliant
A-44	LKD	200	100%	100%	Compliant
A-44	Bedroom 01	100	100%	100%	Compliant
A-44	Bedroom 02	100	100%	100%	Compliant
A-45	LKD	200	100%	99%	Compliant
A-45	Bedroom 01	100	100%	100%	Compliant
A-45	Bedroom 02	100	100%	100%	Compliant
A-46	LKD	200	100%	100%	Compliant
A-46	Bedroom 01	100	100%	100%	Compliant
A-46	Bedroom 02	100	100%	100%	Compliant
A-46	Bedroom 03	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.5 SDA Results: Apartment Block B

Table No. F.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**	
B-01	LKD	200	99%	76%	Compliant
B-01	Bedroom 01	100	100%	100%	Compliant
B-01	Bedroom 02	100	100%	100%	Compliant
B-01	Bedroom 03	100	100%	100%	Compliant
B-02	LKD	200	78%	62%	Compliant
B-02	Bedroom 01	100	100%	100%	Compliant
B-03	LKD	200	94%	72%	Compliant
B-03	Bedroom 01	100	100%	100%	Compliant
B-03	Bedroom 02	100	100%	100%	Compliant
B-03	Bedroom 03	100	100%	100%	Compliant
B-04	LKD	200	100%	100%	Compliant
B-04	Bedroom 01	100	100%	100%	Compliant
B-04	Bedroom 02	100	100%	100%	Compliant
B-05	LKD	200	78%	66%	Compliant
B-05	Bedroom 01	100	100%	100%	Compliant
B-06	LKD	200	68%	59%	Compliant
B-06	Bedroom 01	100	100%	100%	Compliant
B-07	LKD	200	92%	69%	Compliant
B-07	Bedroom 01	100	100%	100%	Compliant
B-07	Bedroom 02	100	100%	100%	Compliant
B-07	Bedroom 03	100	100%	100%	Compliant
B-08	LKD	200	100%	100%	Compliant
B-08	Bedroom 01	100	100%	100%	Compliant
B-08	Bedroom 02	100	100%	100%	Compliant
B-08	Bedroom 03	100	100%	100%	Compliant
B-09	LKD	200	88%	80%	Compliant
B-09	Bedroom 01	100	100%	100%	Compliant
B-10	LKD	200	81%	66%	Compliant
B-10	Bedroom 01	100	100%	100%	Compliant
B-10	Bedroom 02	100	100%	100%	Compliant
B-11	LKD	200	100%	100%	Compliant
B-11	Bedroom 01	100	100%	100%	Compliant
B-11	Bedroom 02	100	100%	100%	Compliant
B-11	Bedroom 03	100	100%	100%	Compliant
B-12	LKD	200	100%	100%	Compliant
B-12	Bedroom 01	100	100%	100%	Compliant
B-12	Bedroom 02	100	100%	100%	Compliant
B-13	LKD	200	92%	79%	Compliant
B-13	Bedroom 01	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.6 SDA Results: Apartment Block B

Table No. F.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-14	LKD	200	88%	75%	Compliant
B-14	Bedroom 01	100	100%	100%	Compliant
B-15	LKD	200	99%	94%	Compliant
B-15	Bedroom 01	100	100%	100%	Compliant
B-15	Bedroom 02	100	100%	100%	Compliant
B-15	Bedroom 03	100	100%	100%	Compliant
B-16	LKD	200	100%	100%	Compliant
B-16	Bedroom 01	100	100%	100%	Compliant
B-16	Bedroom 02	100	100%	100%	Compliant
B-16	Bedroom 03	100	100%	100%	Compliant
B-17	LKD	200	93%	92%	Compliant
B-17	Bedroom 01	100	100%	100%	Compliant
B-18	LKD	200	96%	83%	Compliant
B-18	Bedroom 01	100	100%	100%	Compliant
B-18	Bedroom 02	100	100%	100%	Compliant
B-19	LKD	200	100%	100%	Compliant
B-19	Bedroom 01	100	100%	100%	Compliant
B-19	Bedroom 02	100	100%	100%	Compliant
B-19	Bedroom 03	100	100%	100%	Compliant
B-20	LKD	200	100%	100%	Compliant
B-20	Bedroom 01	100	100%	100%	Compliant
B-20	Bedroom 02	100	100%	100%	Compliant
B-21	LKD	200	92%	89%	Compliant
B-21	Bedroom 01	100	100%	100%	Compliant
B-22	LKD	200	92%	90%	Compliant
B-22	Bedroom 01	100	100%	100%	Compliant
B-23	LKD	200	100%	100%	Compliant
B-23	Bedroom 01	100	100%	100%	Compliant
B-23	Bedroom 02	100	100%	100%	Compliant
B-23	Bedroom 03	100	100%	100%	Compliant
B-24	LKD	200	100%	100%	Compliant
B-24	Bedroom 01	100	100%	100%	Compliant
B-24	Bedroom 02	100	100%	100%	Compliant
B-24	Bedroom 03	100	100%	100%	Compliant
B-25	LKD	200	93%	93%	Compliant
B-25	Bedroom 01	100	100%	100%	Compliant
B-26	LKD	200	100%	100%	Compliant
B-26	Bedroom 01	100	100%	100%	Compliant
B-26	Bedroom 02	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.7 SDA Results: Apartment Block B

Table No. F.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-27	LKD	200	100%	100%	Compliant
B-27	Bedroom 01	100	100%	100%	Compliant
B-27	Bedroom 02	100	100%	100%	Compliant
B-27	Bedroom 03	100	100%	100%	Compliant
B-28	LKD	200	100%	100%	Compliant
B-28	Bedroom 01	100	100%	100%	Compliant
B-28	Bedroom 02	100	100%	100%	Compliant
B-29	LKD	200	92%	85%	Compliant
B-29	Bedroom 01	100	100%	100%	Compliant
B-30	LKD	200	93%	92%	Compliant
B-30	Bedroom 01	100	100%	100%	Compliant
B-31	LKD	200	100%	100%	Compliant
B-31	Bedroom 01	100	100%	100%	Compliant
B-31	Bedroom 02	100	100%	100%	Compliant
B-31	Bedroom 03	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.8 SDA Results: Apartment Block C

Table No. F.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**	
C-01	LKD	200	100%	86%	Compliant
C-01	Bedroom 01	100	99%	95%	Compliant
C-01	Bedroom 02	100	100%	99%	Compliant
C-01	Bedroom 03	100	96%	66%	Compliant
C-02	LKD	200	90%	66%	Compliant
C-02	Bedroom 01	100	100%	77%	Compliant
C-02	Bedroom 02	100	100%	100%	Compliant
C-02	Bedroom 03	100	90%	56%	Compliant
C-03	LKD	200	100%	100%	Compliant
C-03	Bedroom 01	100	100%	100%	Compliant
C-03	Bedroom 02	100	100%	100%	Compliant
C-04	LKD	200	100%	81%	Compliant
C-04	Bedroom 01	100	100%	100%	Compliant
C-05	LKD	200	88%	69%	Compliant
C-05	Bedroom 01	100	100%	100%	Compliant
C-06	LKD	200	100%	87%	Compliant
C-06	Bedroom 01	100	100%	100%	Compliant
C-07	LKD	200	100%	100%	Compliant
C-07	Bedroom 01	100	100%	100%	Compliant
C-08	LKD	200	100%	100%	Compliant
C-08	Bedroom 01	100	100%	100%	Compliant
C-08	Bedroom 02	100	100%	100%	Compliant
C-08	Bedroom 03	100	100%	100%	Compliant
C-09	LKD	200	52%	50%	Compliant
C-09	Bedroom 01	100	100%	100%	Compliant
C-09	Bedroom 02	100	100%	100%	Compliant
C-09	Bedroom 03	100	100%	66%	Compliant
C-10	LKD	200	100%	98%	Compliant
C-10	Bedroom 01	100	100%	100%	Compliant
C-10	Bedroom 02	100	100%	100%	Compliant
C-10	Bedroom 03	100	100%	100%	Compliant
C-11	LKD	200	100%	100%	Compliant
C-11	Bedroom 01	100	100%	100%	Compliant
C-11	Bedroom 02	100	100%	100%	Compliant
C-12	LKD	200	100%	100%	Compliant
C-12	Bedroom 01	100	100%	100%	Compliant
C-13	LKD	200	99%	92%	Compliant
C-13	Bedroom 01	100	100%	100%	Compliant
C-14	LKD	200	100%	100%	Compliant
C-14	Bedroom 01	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.9 SDA Results: Apartment Block C

Table No. F.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**	
C-15	LKD	200	100%	100%	Compliant
C-15	Bedroom 01	100	100%	100%	Compliant
C-16	LKD	200	100%	100%	Compliant
C-16	Bedroom 01	100	100%	100%	Compliant
C-16	Bedroom 02	100	100%	100%	Compliant
C-16	Bedroom 03	100	100%	100%	Compliant
C-17	LKD	200	62%	61%	Compliant
C-17	Bedroom 01	100	100%	100%	Compliant
C-17	Bedroom 02	100	100%	100%	Compliant
C-17	Bedroom 03	100	100%	100%	Compliant
C-18	LKD	200	100%	100%	Compliant
C-18	Bedroom 01	100	100%	100%	Compliant
C-18	Bedroom 02	100	100%	100%	Compliant
C-18	Bedroom 03	100	100%	100%	Compliant
C-19	LKD	200	100%	100%	Compliant
C-19	Bedroom 01	100	100%	100%	Compliant
C-19	Bedroom 02	100	100%	100%	Compliant
C-20	LKD	200	100%	100%	Compliant
C-20	Bedroom 01	100	100%	100%	Compliant
C-21	LKD	200	100%	98%	Compliant
C-21	Bedroom 01	100	100%	100%	Compliant
C-22	LKD	200	100%	100%	Compliant
C-22	Bedroom 01	100	100%	100%	Compliant
C-23	LKD	200	100%	100%	Compliant
C-23	Bedroom 01	100	100%	100%	Compliant
C-24	LKD	200	100%	100%	Compliant
C-24	Bedroom 01	100	100%	100%	Compliant
C-24	Bedroom 02	100	100%	100%	Compliant
C-24	Bedroom 03	100	100%	100%	Compliant
C-25	LKD	200	90%	88%	Compliant
C-25	Bedroom 01	100	100%	100%	Compliant
C-25	Bedroom 02	100	100%	100%	Compliant
C-25	Bedroom 03	100	100%	100%	Compliant
C-26	LKD	200	100%	100%	Compliant
C-26	Bedroom 01	100	100%	100%	Compliant
C-26	Bedroom 02	100	100%	100%	Compliant
C-26	Bedroom 03	100	100%	100%	Compliant
C-27	LKD	200	100%	100%	Compliant
C-27	Bedroom 01	100	100%	100%	Compliant
C-27	Bedroom 02	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.10 SDA Results: Apartment Block C

Table No. F.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**	
C-28	LKD	200	100%	100%	Compliant
C-28	Bedroom 01	100	100%	100%	Compliant
C-29	LKD	200	100%	100%	Compliant
C-29	Bedroom 01	100	100%	100%	Compliant
C-30	LKD	200	100%	100%	Compliant
C-30	Bedroom 01	100	100%	100%	Compliant
C-31	LKD	200	100%	100%	Compliant
C-31	Bedroom 01	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.11 SDA Results: Creche

Table No. F.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**	
Creche	Kitchen	200	100%	100%	Compliant
Creche	Classroom 01	150	100%	100%	Compliant
Creche	Classroom 03	150	100%	100%	Compliant
Creche	Classroom 04	150	100%	96%	Compliant
Creche	Classrooom 02	150	100%	100%	Compliant
Creche	Function Room	150	100%	52%	Compliant
Creche	Sleep Room 1	100	100%	100%	Compliant
Creche	Sleep Room 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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.12 SDA Results: Duplex A

Table No. F.2.12 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
DA-01	LKD	200	38%	33%	Non-compliant
DA-01	Bedroom 01	100	100%	100%	Compliant
DA-01	Bedroom 02	100	100%	100%	Compliant
DA-02	LKD	200	43%	37%	Non-compliant
DA-02	Bedroom 01	100	100%	100%	Compliant
DA-02	Bedroom 02	100	100%	100%	Compliant
DA-03	LKD	200	41%	34%	Non-compliant
DA-03	Bedroom 01	100	100%	100%	Compliant
DA-03	Bedroom 02	100	100%	100%	Compliant
DA-04	LKD	200	41%	35%	Non-compliant
DA-04	Bedroom 01	100	100%	100%	Compliant
DA-04	Bedroom 02	100	100%	100%	Compliant
DA-05	LKD	200	39%	32%	Non-compliant
DA-05	Bedroom 01	100	100%	100%	Compliant
DA-05	Bedroom 02	100	100%	100%	Compliant
DA-06	LKD	200	40%	33%	Non-compliant
DA-06	Bedroom 01	100	100%	100%	Compliant
DA-06	Bedroom 02	100	100%	100%	Compliant
DA-07	LKD	200	100%	97%	Compliant
DA-07	Bedroom 01	100	100%	100%	Compliant
DA-07	Bedroom 02	100	100%	100%	Compliant
DA-07	Bedroom 03	100	100%	100%	Compliant
DA-08	LKD	200	100%	100%	Compliant
DA-08	Bedroom 01	100	100%	100%	Compliant
DA-08	Bedroom 02	100	100%	100%	Compliant
DA-08	Bedroom 03	100	100%	100%	Compliant
DA-09	Living Room	150	100%	100%	Compliant
DA-09	Bedroom 01	100	100%	100%	Compliant
DA-09	Bedroom 02	100	100%	100%	Compliant
DA-09	Bedroom 03	100	100%	100%	Compliant
DA-09	Kitchen/Dining	200	100%	100%	Compliant
DA-10	Living Room	150	100%	100%	Compliant
DA-10	Bedroom 01	100	100%	100%	Compliant
DA-10	Bedroom 02	100	100%	100%	Compliant
DA-10	Bedroom 03	100	100%	100%	Compliant
DA-10	Kitchen/Dining	200	100%	99%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.13 SDA Results: Duplex A

Table No. F.2.13 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
DA-11	Living Room	150	100%	100%	Compliant
DA-11	Bedroom 01	100	100%	100%	Compliant
DA-11	Bedroom 02	100	100%	100%	Compliant
DA-11	Bedroom 03	100	100%	100%	Compliant
DA-11	Kitchen/Dining	200	99%	98%	Compliant
DA-12	Living Room	150	100%	100%	Compliant
DA-12	Bedroom 01	100	100%	100%	Compliant
DA-12	Bedroom 02	100	100%	100%	Compliant
DA-12	Bedroom 03	100	100%	100%	Compliant
DA-12	Kitchen/Dining	200	99%	99%	Compliant
DA-13	Living Room	150	100%	100%	Compliant
DA-13	Bedroom 01	100	100%	100%	Compliant
DA-13	Bedroom 02	100	100%	100%	Compliant
DA-13	Bedroom 03	100	100%	100%	Compliant
DA-13	Kitchen/Dining	200	97%	95%	Compliant
DA-14	Living Room	150	100%	100%	Compliant
DA-14	Bedroom 01	100	100%	100%	Compliant
DA-14	Bedroom 02	100	100%	100%	Compliant
DA-14	Bedroom 03	100	100%	100%	Compliant
DA-14	Kitchen/Dining	200	94%	91%	Compliant
DA-15	LKD	200	100%	100%	Compliant
DA-15	Bedroom 01	100	100%	100%	Compliant
DA-15	Bedroom 02	100	100%	100%	Compliant
DA-15	Bedroom 03	100	100%	100%	Compliant
DA-16	LKD	200	100%	100%	Compliant
DA-16	Bedroom 01	100	100%	100%	Compliant
DA-16	Bedroom 02	100	100%	100%	Compliant
DA-16	Bedroom 03	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.14 SDA Results: Duplex B

Table No. F.2.14 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
DB-01	LKD	200	100%	100%	Compliant
DB-01	Bedroom 01	100	100%	100%	Compliant
DB-02	LKD	200	42%	36%	Non-compliant
DB-02	Bedroom 01	100	100%	100%	Compliant
DB-02	Bedroom 02	100	100%	100%	Compliant
DB-03	LKD	200	41%	38%	Non-compliant
DB-03	Bedroom 01	100	100%	100%	Compliant
DB-03	Bedroom 02	100	100%	100%	Compliant
DB-04	LKD	200	39%	38%	Non-compliant
DB-04	Bedroom 01	100	100%	100%	Compliant
DB-04	Bedroom 02	100	100%	100%	Compliant
DB-05	LKD	200	100%	100%	Compliant
DB-05	Bedroom 01	100	100%	100%	Compliant
DB-06	LKD	200	100%	100%	Compliant
DB-06	Bedroom 01	100	100%	100%	Compliant
DB-07	Living Room	150	100%	100%	Compliant
DB-07	Bedroom 01	100	100%	100%	Compliant
DB-07	Bedroom 02	100	100%	100%	Compliant
DB-07	Bedroom 03	100	100%	100%	Compliant
DB-07	Kitchen/Dining	200	95%	94%	Compliant
DB-08	Living Room	150	100%	100%	Compliant
DB-08	Bedroom 01	100	100%	100%	Compliant
DB-08	Bedroom 02	100	100%	100%	Compliant
DB-08	Bedroom 03	100	100%	100%	Compliant
DB-08	Kitchen/Dining	200	100%	99%	Compliant
DB-09	Living Room	150	100%	100%	Compliant
DB-09	Bedroom 01	100	100%	100%	Compliant
DB-09	Bedroom 02	100	100%	100%	Compliant
DB-09	Bedroom 03	100	100%	100%	Compliant
DB-09	Kitchen/Dining	200	99%	98%	Compliant
DB-10	Living Room	150	100%	100%	Compliant
DB-10	Bedroom 01	100	100%	100%	Compliant
DB-10	Bedroom 02	100	100%	100%	Compliant
DB-10	Bedroom 03	100	100%	100%	Compliant
DB-10	Kitchen/Dining	200	100%	100%	Compliant
DB-11	LKD	200	100%	100%	Compliant
DB-11	Bedroom 01	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.15 SDA Results: Duplex B

Table No. F.2.15 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
DB-12	LKD	200	100%	100%	Compliant
DB-12	Bedroom 01	100	100%	100%	Compliant
DB-12	Bedroom 02	100	100%	100%	Compliant
DB-12	Bedroom 03	100	100%	100%	Compliant
DB-13	LKD	200	100%	100%	Compliant
DB-13	Bedroom 01	100	100%	100%	Compliant
DB-13	Bedroom 02	100	100%	100%	Compliant
DB-13	Bedroom 03	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.16 SDA Results: Duplex C

Table No. F.2.16 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
DC-01	LKD	200	99%	99%	Compliant
DC-01	Bedroom 01	100	100%	100%	Compliant
DC-02	LKD	200	99%	89%	Compliant
DC-02	Bedroom 01	100	100%	100%	Compliant
DC-03	LKD	200	99%	83%	Compliant
DC-03	Bedroom 01	100	100%	100%	Compliant
DC-04	LKD	200	100%	100%	Compliant
DC-04	Bedroom 01	100	100%	100%	Compliant
DC-05	LKD	200	100%	100%	Compliant
DC-05	Bedroom 01	100	100%	100%	Compliant
DC-06	Living Room	150	100%	100%	Compliant
DC-06	Bedroom 01	100	100%	100%	Compliant
DC-06	Bedroom 02	100	100%	100%	Compliant
DC-06	Bedroom 03	100	100%	100%	Compliant
DC-06	Kitchen / Dining	200	100%	50%	Compliant
DC-07	Living Room	150	100%	100%	Compliant
DC-07	Bedroom 01	100	100%	100%	Compliant
DC-07	Bedroom 02	100	100%	100%	Compliant
DC-07	Bedroom 03	100	100%	100%	Compliant
DC-07	Kitchen / Dining	200	100%	100%	Compliant
DC-08	Living Room	150	100%	100%	Compliant
DC-08	Bedroom 01	100	100%	100%	Compliant
DC-08	Bedroom 02	100	100%	100%	Compliant
DC-08	Bedroom 03	100	100%	100%	Compliant
DC-08	Kitchen / Dining	200	100%	100%	Compliant
DC-09	Living Room	150	100%	100%	Compliant
DC-09	Bedroom 01	100	100%	100%	Compliant
DC-09	Bedroom 02	100	100%	100%	Compliant
DC-09	Bedroom 03	100	100%	100%	Compliant
DC-09	Kitchen / Dining	200	100%	100%	Compliant
DC-10	LKD	200	100%	100%	Compliant
DC-10	Bedroom 01	100	100%	100%	Compliant
DC-11	LKD	200	100%	100%	Compliant
DC-11	Bedroom 01	100	100%	100%	Compliant
DC-12	LKD	200	100%	100%	Compliant
DC-12	Bedroom 01	100	100%	100%	Compliant
DC-12	Bedroom 02	100	100%	100%	Compliant
DC-12	Bedroom 03	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.2.17 SDA Results: Duplex C

Table No. F.2.17 - SDA Results:					
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)		Compliance with BR 209 Criteria*
			Without Trees***	With Trees**	
DC-13	LKD	200	100%	100%	Compliant
DC-13	Bedroom 01	100	100%	100%	Compliant
DC-13	Bedroom 02	100	100%	100%	Compliant
DC-13	Bedroom 03	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 14.

** 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 3.1 on page 17.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.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. F.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. All unit numbers are determined by the architect's drawings, unless otherwise stated.

B: Room Description

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

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

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

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

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

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

E: Unit compliance 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.

F.3.1 SE Results: Apartment Block A

Table No. F.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**
A-01	LKD	4.40	High	Compliant	4.40	High	Compliant
A-01	Bedroom 01	0.00	Below Minimum	-	0.20	Below Minimum	-
A-01	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
A-01	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
A-02	LKD	0.30	Below Minimum	-	0.30	Below Minimum	-
A-02	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
A-02	Bedroom 02	1.10	Below Minimum	Non-Compliant	1.10	Below Minimum	Non-Compliant
A-03	LKD	2.50	Minimum	Compliant	2.50	Minimum	Compliant
A-03	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
A-03	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
A-03	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
A-04	LKD	1.30	Below Minimum	-	1.30	Below Minimum	-
A-04	Bedroom 01	1.90	Minimum	Compliant	1.90	Minimum	Compliant
A-04	Bedroom 02	1.40	Below Minimum	-	1.40	Below Minimum	-
A-05	LKD	0.50	Below Minimum	-	2.30	Minimum	-
A-05	Bedroom 01	1.80	Minimum	Compliant	2.40	Minimum	Compliant
A-06	LKD	3.00	Medium	Compliant	3.00	Medium	Compliant
A-06	Bedroom 01	1.40	Below Minimum	-	1.40	Below Minimum	-
A-06	Bedroom 02	1.80	Minimum	-	2.10	Minimum	-
A-07	LKD	7.40	High	Compliant	7.40	High	Compliant
A-07	Bedroom 01	1.40	Below Minimum	-	1.40	Below Minimum	-
A-07	Bedroom 02	1.60	Minimum	-	1.60	Minimum	-
A-08	LKD	8.60	High	Compliant	8.60	High	Compliant
A-08	Bedroom 01	2.00	Minimum	-	5.40	High	-
A-08	Bedroom 02	0.60	Below Minimum	-	2.80	Minimum	-
A-08	Bedroom 03	0.10	Below Minimum	-	4.90	High	-
A-09	LKD	1.70	Minimum	Compliant	5.50	High	Compliant
A-09	Bedroom 01	0.50	Below Minimum	-	3.40	Medium	-
A-09	Bedroom 02	0.00	Below Minimum	-	2.40	Minimum	-
A-10	LKD	4.70	High	Compliant	7.70	High	Compliant
A-10	Bedroom 01	1.90	Minimum	-	5.60	High	-
A-10	Bedroom 02	0.00	Below Minimum	-	4.00	High	-
A-10	Bedroom 03	1.30	Below Minimum	-	5.20	High	-
A-11	LKD	5.30	High	Compliant	5.30	High	Compliant
A-11	Bedroom 01	0.20	Below Minimum	-	0.20	Below Minimum	-
A-11	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
A-11	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
A-12	LKD	0.30	Below Minimum	-	0.30	Below Minimum	-
A-12	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
A-12	Bedroom 02	1.20	Below Minimum	Non-Compliant	1.20	Below Minimum	Non-Compliant

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

** 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 on page 19.

*** For the interpretation of levels of Sunlight Exposure please refer to “H.3 Definition of Levels of Sunlight Exposure” on page 124.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.2 SE Results: Apartment Block A

Table No. F.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-13	LKD	1.80	Minimum	Compliant	1.80	Minimum	Compliant
A-13	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
A-13	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
A-13	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
A-14	LKD	2.00	Minimum	Compliant	2.00	Minimum	Compliant
A-14	Bedroom 01	1.20	Below Minimum	-	1.20	Below Minimum	-
A-15	LKD	1.00	Below Minimum	-	1.00	Below Minimum	-
A-15	Bedroom 01	1.20	Below Minimum	Non-Compliant	1.20	Below Minimum	Non-Compliant
A-16	LKD	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A-16	Bedroom 01	2.40	Minimum	-	2.40	Minimum	-
A-17	LKD	2.90	Minimum	Compliant	2.90	Minimum	Compliant
A-17	Bedroom 01	1.20	Below Minimum	-	1.20	Below Minimum	-
A-17	Bedroom 02	2.10	Minimum	-	2.10	Minimum	-
A-18	LKD	7.40	High	Compliant	7.40	High	Compliant
A-18	Bedroom 01	1.20	Below Minimum	-	1.20	Below Minimum	-
A-18	Bedroom 02	1.70	Minimum	-	1.70	Minimum	-
A-19	LKD	8.80	High	Compliant	9.40	High	Compliant
A-19	Bedroom 01	4.00	High	-	5.50	High	-
A-19	Bedroom 02	2.70	Minimum	-	3.20	Medium	-
A-19	Bedroom 03	4.00	High	-	5.30	High	-
A-20	LKD	3.10	Medium	Compliant	5.30	High	Compliant
A-20	Bedroom 01	1.30	Below Minimum	-	3.60	Medium	-
A-20	Bedroom 02	0.10	Below Minimum	-	2.60	Minimum	-
A-21	LKD	1.70	Minimum	-	2.90	Minimum	-
A-21	Bedroom 01	2.10	Minimum	-	2.10	Minimum	-
A-21	Bedroom 02	3.00	Medium	Compliant	3.40	Medium	Compliant
A-22	LKD	5.30	High	Compliant	8.60	High	Compliant
A-22	Bedroom 01	2.20	Minimum	-	5.90	High	-
A-22	Bedroom 02	0.80	Below Minimum	-	4.20	High	-
A-22	Bedroom 03	1.60	Minimum	-	5.80	High	-
A-23	LKD	5.30	High	Compliant	5.30	High	Compliant
A-23	Bedroom 01	0.20	Below Minimum	-	0.20	Below Minimum	-
A-23	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
A-23	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
A-24	LKD	0.30	Below Minimum	-	0.30	Below Minimum	-
A-24	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
A-24	Bedroom 02	1.60	Minimum	Compliant	1.60	Minimum	Compliant

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

** 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 on page 19.

*** For the interpretation of levels of Sunlight Exposure please refer to "H.3 Definition of Levels of Sunlight Exposure" on page 124.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.3 SE Results: Apartment Block A

Table No. F.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-25	LKD	1.80	Minimum	Compliant	1.80	Minimum	Compliant
A-25	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
A-25	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
A-25	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
A-26	LKD	2.00	Minimum	Compliant	2.00	Minimum	Compliant
A-26	Bedroom 01	1.20	Below Minimum	-	1.20	Below Minimum	-
A-27	LKD	1.00	Below Minimum	-	1.00	Below Minimum	-
A-27	Bedroom 01	1.20	Below Minimum	Non-Compliant	1.20	Below Minimum	Non-Compliant
A-28	LKD	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A-28	Bedroom 01	2.40	Minimum	-	2.40	Minimum	-
A-29	LKD	3.70	Medium	Compliant	3.70	Medium	Compliant
A-29	Bedroom 01	1.20	Below Minimum	-	1.20	Below Minimum	-
A-29	Bedroom 02	2.10	Minimum	-	2.10	Minimum	-
A-30	LKD	7.40	High	Compliant	7.40	High	Compliant
A-30	Bedroom 01	1.20	Below Minimum	-	1.20	Below Minimum	-
A-30	Bedroom 02	1.70	Minimum	-	1.70	Minimum	-
A-31	LKD	9.40	High	Compliant	9.40	High	Compliant
A-31	Bedroom 01	4.40	High	-	5.50	High	-
A-31	Bedroom 02	3.20	Medium	-	3.20	Medium	-
A-31	Bedroom 03	4.80	High	-	5.40	High	-
A-32	LKD	3.50	Medium	Compliant	5.30	High	Compliant
A-32	Bedroom 01	3.40	Medium	-	4.00	High	-
A-32	Bedroom 02	1.30	Below Minimum	-	2.60	Minimum	-
A-33	LKD	2.80	Minimum	-	3.40	Medium	-
A-33	Bedroom 01	3.00	Medium	-	3.00	Medium	-
A-33	Bedroom 02	4.60	High	Compliant	4.60	High	Compliant
A-34	LKD	5.50	High	Compliant	9.30	High	Compliant
A-34	Bedroom 01	4.20	High	-	6.50	High	-
A-34	Bedroom 02	1.70	Minimum	-	4.70	High	-
A-34	Bedroom 03	3.00	Medium	-	6.30	High	-
A-35	LKD	5.20	High	Compliant	5.20	High	Compliant
A-35	Bedroom 01	0.20	Below Minimum	-	0.20	Below Minimum	-
A-35	Bedroom 02	0.20	Below Minimum	-	0.20	Below Minimum	-
A-35	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
A-36	LKD	0.30	Below Minimum	-	0.30	Below Minimum	-
A-36	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
A-36	Bedroom 02	2.40	Minimum	Compliant	2.40	Minimum	Compliant

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

** Section 3.1 of the BRE Guidelines recommend 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 on page 19.

*** For the interpretation of levels of Sunlight Exposure please refer to "H.3 Definition of Levels of Sunlight Exposure" on page 124.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.4 SE Results: Apartment Block A

Table No. F.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-37	LKD	2.50	Minimum	Compliant	2.50	Minimum	Compliant
A-37	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
A-37	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
A-37	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
A-38	LKD	2.30	Minimum	-	2.30	Minimum	-
A-38	Bedroom 01	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A-39	LKD	2.10	Minimum	-	2.10	Minimum	-
A-39	Bedroom 01	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A-40	LKD	2.40	Minimum	Compliant	2.40	Minimum	Compliant
A-40	Bedroom 01	2.40	Minimum	-	2.40	Minimum	-
A-41	LKD	4.40	High	Compliant	4.40	High	Compliant
A-41	Bedroom 01	2.30	Minimum	-	2.30	Minimum	-
A-41	Bedroom 02	2.30	Minimum	-	2.30	Minimum	-
A-42	LKD	7.40	High	Compliant	7.40	High	Compliant
A-42	Bedroom 01	2.30	Minimum	-	2.30	Minimum	-
A-42	Bedroom 02	2.10	Minimum	-	2.10	Minimum	-
A-43	LKD	9.40	High	Compliant	9.40	High	Compliant
A-43	Bedroom 01	4.90	High	-	5.50	High	-
A-43	Bedroom 02	5.50	High	-	5.50	High	-
A-43	Bedroom 03	5.20	High	-	5.40	High	-
A-44	LKD	4.50	High	-	5.60	High	Compliant
A-44	Bedroom 01	5.50	High	Compliant	5.50	High	-
A-44	Bedroom 02	2.70	Minimum	-	2.70	Minimum	-
A-45	LKD	7.50	High	Compliant	7.50	High	Compliant
A-45	Bedroom 01	6.60	High	-	6.60	High	-
A-45	Bedroom 02	5.50	High	-	5.50	High	-
A-46	LKD	6.00	High	-	9.40	High	Compliant
A-46	Bedroom 01	7.40	High	Compliant	7.40	High	-
A-46	Bedroom 02	4.80	High	-	7.40	High	-
A-46	Bedroom 03	7.20	High	-	7.20	High	-

* 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 of the BRE Guidelines recommend 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 on page 19.

*** For the interpretation of levels of Sunlight Exposure please refer to “H.3 Definition of Levels of Sunlight Exposure” on page 124.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.5 SE Results: Apartment Block B

Table No. F.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**
B-01	LKD	5.90	High	Compliant	6.40	High	Compliant
B-01	Bedroom 01	1.10	Below Minimum	-	4.80	High	-
B-01	Bedroom 02	3.90	Medium	-	4.80	High	-
B-01	Bedroom 03	1.10	Below Minimum	-	4.50	High	-
B-02	LKD	4.70	High	Compliant	4.70	High	Compliant
B-02	Bedroom 01	3.00	Medium	-	3.20	Medium	-
B-03	LKD	0.10	Below Minimum	-	1.90	Minimum	-
B-03	Bedroom 01	1.90	Minimum	-	3.10	Medium	-
B-03	Bedroom 02	4.10	High	Compliant	4.10	High	-
B-03	Bedroom 03	3.40	Medium	-	4.50	High	Compliant
B-04	LKD	1.50	Minimum	-	1.50	Minimum	-
B-04	Bedroom 01	1.80	Minimum	Compliant	1.80	Minimum	Compliant
B-04	Bedroom 02	1.80	Minimum	-	1.80	Minimum	-
B-05	LKD	1.40	Below Minimum	Non-Compliant	1.40	Below Minimum	Non-Compliant
B-05	Bedroom 01	0.40	Below Minimum	-	0.40	Below Minimum	-
B-06	LKD	2.80	Minimum	Compliant	3.20	Medium	Compliant
B-06	Bedroom 01	2.00	Minimum	-	2.10	Minimum	-
B-07	LKD	4.00	High	Compliant	4.00	High	Compliant
B-07	Bedroom 01	1.50	Minimum	-	1.90	Minimum	-
B-07	Bedroom 02	0.10	Below Minimum	-	0.10	Below Minimum	-
B-07	Bedroom 03	0.20	Below Minimum	-	0.70	Below Minimum	-
B-08	LKD	7.00	High	Compliant	7.00	High	Compliant
B-08	Bedroom 01	4.80	High	-	4.80	High	-
B-08	Bedroom 02	4.40	High	-	4.80	High	-
B-08	Bedroom 03	4.50	High	-	4.50	High	-
B-09	LKD	4.10	High	Compliant	4.10	High	Compliant
B-09	Bedroom 01	3.40	Medium	-	3.40	Medium	-
B-10	LKD	2.50	Minimum	-	2.50	Minimum	-
B-10	Bedroom 01	4.80	High	Compliant	4.80	High	Compliant
B-10	Bedroom 02	4.30	High	-	4.40	High	-
B-11	LKD	2.40	Minimum	-	2.50	Minimum	-
B-11	Bedroom 01	3.10	Medium	-	3.10	Medium	-
B-11	Bedroom 02	4.80	High	Compliant	4.80	High	Compliant
B-11	Bedroom 03	4.50	High	-	4.50	High	-
B-12	LKD	1.50	Minimum	-	1.50	Minimum	-
B-12	Bedroom 01	1.80	Minimum	Compliant	1.80	Minimum	Compliant
B-12	Bedroom 02	1.80	Minimum	-	1.80	Minimum	-
B-13	LKD	1.40	Below Minimum	-	1.40	Below Minimum	-
B-13	Bedroom 01	3.50	Medium	Compliant	3.50	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 of the BRE Guidelines recommend 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 on page 19.

*** For the interpretation of levels of Sunlight Exposure please refer to “H.3 Definition of Levels of Sunlight Exposure” on page 124.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.6 SE Results: Apartment Block B

Table No. F.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-14	LKD	3.30	Medium	Compliant	3.30	Medium	Compliant
B-14	Bedroom 01	1.80	Minimum	-	1.80	Minimum	-
B-15	LKD	4.60	High	Compliant	4.60	High	Compliant
B-15	Bedroom 01	3.20	Medium	-	3.20	Medium	-
B-15	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
B-15	Bedroom 03	2.20	Minimum	-	2.20	Minimum	-
B-16	LKD	8.80	High	Compliant	8.80	High	Compliant
B-16	Bedroom 01	4.80	High	-	4.80	High	-
B-16	Bedroom 02	4.80	High	-	4.80	High	-
B-16	Bedroom 03	4.50	High	-	4.50	High	-
B-17	LKD	4.10	High	Compliant	4.10	High	Compliant
B-17	Bedroom 01	3.40	Medium	-	3.40	Medium	-
B-18	LKD	2.50	Minimum	-	2.50	Minimum	-
B-18	Bedroom 01	4.80	High	Compliant	4.80	High	Compliant
B-18	Bedroom 02	4.80	High	-	4.80	High	-
B-19	LKD	2.50	Minimum	-	2.50	Minimum	-
B-19	Bedroom 01	3.10	Medium	-	3.10	Medium	-
B-19	Bedroom 02	4.80	High	Compliant	4.80	High	Compliant
B-19	Bedroom 03	4.50	High	-	4.50	High	-
B-20	LKD	1.50	Minimum	-	1.50	Minimum	-
B-20	Bedroom 01	1.80	Minimum	Compliant	1.80	Minimum	Compliant
B-20	Bedroom 02	1.80	Minimum	-	1.80	Minimum	-
B-21	LKD	1.40	Below Minimum	-	1.40	Below Minimum	-
B-21	Bedroom 01	3.50	Medium	Compliant	3.50	Medium	Compliant
B-22	LKD	3.30	Medium	Compliant	3.30	Medium	Compliant
B-22	Bedroom 01	1.80	Minimum	-	1.80	Minimum	-
B-23	LKD	7.30	High	Compliant	7.30	High	Compliant
B-23	Bedroom 01	3.30	Medium	-	3.30	Medium	-
B-23	Bedroom 02	1.60	Minimum	-	1.60	Minimum	-
B-23	Bedroom 03	2.90	Minimum	-	2.90	Minimum	-
B-24	LKD	9.40	High	Compliant	9.40	High	Compliant
B-24	Bedroom 01	4.80	High	-	4.80	High	-
B-24	Bedroom 02	4.80	High	-	4.80	High	-
B-24	Bedroom 03	4.50	High	-	4.50	High	-
B-25	LKD	4.70	High	-	4.70	High	-
B-25	Bedroom 01	4.80	High	Compliant	4.80	High	Compliant
B-26	LKD	4.70	High	-	4.70	High	-
B-26	Bedroom 01	4.80	High	Compliant	4.80	High	Compliant
B-26	Bedroom 02	4.80	High	-	4.80	High	-

* 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 of the BRE Guidelines recommend 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 on page 19.

*** For the interpretation of levels of Sunlight Exposure please refer to “H.3 Definition of Levels of Sunlight Exposure” on page 124.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.7 SE Results: Apartment Block B

Table No. F.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-27	LKD	4.60	High	-	4.60	High	-
B-27	Bedroom 01	4.80	High	Compliant	4.80	High	Compliant
B-27	Bedroom 02	4.80	High	-	4.80	High	-
B-27	Bedroom 03	4.50	High	-	4.50	High	-
B-28	LKD	1.50	Minimum	-	1.50	Minimum	-
B-28	Bedroom 01	1.80	Minimum	Compliant	1.80	Minimum	Compliant
B-28	Bedroom 02	1.80	Minimum	-	1.80	Minimum	-
B-29	LKD	1.40	Below Minimum	-	1.40	Below Minimum	-
B-29	Bedroom 01	3.40	Medium	Compliant	3.40	Medium	Compliant
B-30	LKD	3.30	Medium	Compliant	3.30	Medium	Compliant
B-30	Bedroom 01	3.30	Medium	-	3.30	Medium	-
B-31	LKD	8.70	High	Compliant	8.70	High	Compliant
B-31	Bedroom 01	3.30	Medium	-	3.30	Medium	-
B-31	Bedroom 02	3.30	Medium	-	3.30	Medium	-
B-31	Bedroom 03	3.10	Medium	-	3.10	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 of the BRE Guidelines recommend 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 on page 19.
*** For the interpretation of levels of Sunlight Exposure please refer to “H.3 Definition of Levels of Sunlight Exposure” on page 124.
For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.8 SE Results: Apartment Block C

Table No. F.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**
C-01	LKD	4.50	High	Compliant	5.30	High	Compliant
C-01	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
C-01	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-01	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
C-02	LKD	0.30	Below Minimum	Non-Compliant	2.30	Minimum	Compliant
C-02	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
C-02	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-02	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
C-03	LKD	6.90	High	Compliant	6.90	High	Compliant
C-03	Bedroom 01	2.20	Minimum	-	2.20	Minimum	-
C-03	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-04	LKD	6.30	High	Compliant	6.70	High	Compliant
C-04	Bedroom 01	5.00	High	-	5.50	High	-
C-05	LKD	4.50	High	Compliant	5.50	High	Compliant
C-05	Bedroom 01	4.20	High	-	5.30	High	-
C-06	LKD	6.70	High	-	7.10	High	Compliant
C-06	Bedroom 01	6.80	High	Compliant	7.10	High	-
C-07	LKD	3.40	Medium	Compliant	8.40	High	Compliant
C-07	Bedroom 01	2.50	Minimum	-	5.50	High	-
C-08	LKD	5.30	High	Compliant	5.30	High	Compliant
C-08	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
C-08	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-08	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
C-09	LKD	1.30	Below Minimum	Non-Compliant	1.30	Below Minimum	Non-Compliant
C-09	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
C-09	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-09	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
C-10	LKD	2.30	Minimum	Compliant	2.30	Minimum	Compliant
C-10	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
C-10	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-10	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
C-11	LKD	6.30	High	Compliant	6.30	High	Compliant
C-11	Bedroom 01	2.20	Minimum	-	2.20	Minimum	-
C-11	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-12	LKD	5.50	High	Compliant	5.50	High	Compliant
C-12	Bedroom 01	5.50	High	-	5.50	High	-
C-13	LKD	4.60	High	-	4.60	High	-
C-13	Bedroom 01	5.40	High	Compliant	5.40	High	Compliant
C-14	LKD	5.60	High	-	5.60	High	-
C-14	Bedroom 01	7.30	High	Compliant	7.30	High	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 of the BRE Guidelines recommend 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 on page 19.

*** For the interpretation of levels of Sunlight Exposure please refer to "H.3 Definition of Levels of Sunlight Exposure" on page 124.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.9 SE Results: Apartment Block C

Table No. F.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**
C-15	LKD	9.20	High	Compliant	9.20	High	Compliant
C-15	Bedroom 01	5.50	High	-	5.50	High	-
C-16	LKD	5.30	High	Compliant	5.30	High	Compliant
C-16	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
C-16	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-16	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
C-17	LKD	1.90	Minimum	Compliant	1.90	Minimum	Compliant
C-17	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
C-17	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-17	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
C-18	LKD	2.30	Minimum	Compliant	2.30	Minimum	Compliant
C-18	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
C-18	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-18	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
C-19	LKD	6.50	High	Compliant	6.50	High	Compliant
C-19	Bedroom 01	2.20	Minimum	-	2.20	Minimum	-
C-19	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-20	LKD	5.50	High	Compliant	5.50	High	Compliant
C-20	Bedroom 01	5.50	High	-	5.50	High	-
C-21	LKD	4.60	High	-	4.60	High	-
C-21	Bedroom 01	5.40	High	Compliant	5.40	High	Compliant
C-22	LKD	5.60	High	-	5.60	High	-
C-22	Bedroom 01	7.30	High	Compliant	7.30	High	Compliant
C-23	LKD	9.20	High	Compliant	9.20	High	Compliant
C-23	Bedroom 01	5.50	High	-	5.50	High	-
C-24	LKD	5.30	High	Compliant	5.30	High	Compliant
C-24	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
C-24	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-24	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
C-25	LKD	3.30	Medium	Compliant	3.30	Medium	Compliant
C-25	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
C-25	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-25	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
C-26	LKD	2.30	Minimum	Compliant	2.30	Minimum	Compliant
C-26	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
C-26	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
C-26	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
C-27	LKD	7.60	High	Compliant	7.60	High	Compliant
C-27	Bedroom 01	2.20	Minimum	-	2.20	Minimum	-
C-27	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-

* 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 of the BRE Guidelines recommend 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 on page 19.
*** For the interpretation of levels of Sunlight Exposure please refer to "H.3 Definition of Levels of Sunlight Exposure" on page 124.
For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.10 SE Results: Apartment Block C

Table No. F.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**
C-28	LKD	7.40	High	Compliant	7.40	High	Compliant
C-28	Bedroom 01	7.30	High	-	7.30	High	-
C-29	LKD	6.00	High	-	6.00	High	-
C-29	Bedroom 01	7.30	High	Compliant	7.30	High	Compliant
C-30	LKD	7.50	High	Compliant	7.50	High	Compliant
C-30	Bedroom 01	7.30	High	-	7.30	High	-
C-31	LKD	9.40	High	Compliant	9.40	High	Compliant
C-31	Bedroom 01	7.30	High	-	7.30	High	-

* 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 of the BRE Guidelines recommend 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 on page 19.

*** For the interpretation of levels of Sunlight Exposure please refer to “H.3 Definition of Levels of Sunlight Exposure” on page 124.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.11 SE Results: Creche

Table No. F.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**
Creche	Kitchen	7.50	High	-	7.50	High	-
Creche	Classroom 01	9.00	High	Compliant	9.40	High	Compliant
Creche	Classroom 03	2.30	Minimum	-	2.90	Minimum	-
Creche	Classroom 04	1.80	Minimum	-	1.80	Minimum	-
Creche	Classrooom 02	5.80	High	-	7.50	High	-
Creche	Function Room	0.30	Below Minimum	-	0.30	Below Minimum	-
Creche	Sleep Room 1	3.50	Medium	-	7.10	High	-
Creche	Sleep Room 2	0.00	Below Minimum	-	0.60	Below Minimum	-

* 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 of the BRE Guidelines recommend 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 on page 19.
*** For the interpretation of levels of Sunlight Exposure please refer to "H.3 Definition of Levels of Sunlight Exposure" on page 124.
For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.12 SE Results: Duplex A

Table No. F.3.12 - 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**
DA-01	LKD	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-01	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-01	Bedroom 02	0.60	Below Minimum	Non-Compliant	7.70	High	Compliant
DA-02	LKD	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	-
DA-02	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-02	Bedroom 02	0.00	Below Minimum	-	6.60	High	Compliant
DA-03	LKD	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-03	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-03	Bedroom 02	0.40	Below Minimum	Non-Compliant	7.10	High	Compliant
DA-04	LKD	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	-
DA-04	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-04	Bedroom 02	0.00	Below Minimum	-	6.60	High	Compliant
DA-05	LKD	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-05	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-05	Bedroom 02	0.40	Below Minimum	Non-Compliant	7.10	High	Compliant
DA-06	LKD	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-06	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-06	Bedroom 02	0.50	Below Minimum	Non-Compliant	5.20	High	Compliant
DA-07	LKD	1.10	Below Minimum	Non-Compliant	3.10	Medium	Compliant
DA-07	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-07	Bedroom 02	0.70	Below Minimum	-	1.50	Minimum	-
DA-07	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-08	LKD	7.90	High	-	8.40	High	Compliant
DA-08	Bedroom 01	8.40	High	Compliant	8.40	High	-
DA-08	Bedroom 02	7.90	High	-	7.90	High	-
DA-08	Bedroom 03	7.80	High	-	7.80	High	-
DA-09	Living Room	9.40	High	Compliant	9.40	High	Compliant
DA-09	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-09	Bedroom 02	9.40	High	-	9.40	High	-
DA-09	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-09	Kitchen/Dining	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-10	Living Room	8.60	High	Compliant	8.60	High	Compliant
DA-10	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-10	Bedroom 02	8.60	High	-	8.60	High	-
DA-10	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-10	Kitchen/Dining	0.00	Below Minimum	-	0.00	Below Minimum	-

* 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 of the BRE Guidelines recommend 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 on page 19.
*** For the interpretation of levels of Sunlight Exposure please refer to “H.3 Definition of Levels of Sunlight Exposure” on page 124.
For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.13 SE Results: Duplex A

Table No. F.3.13 - 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**
DA-11	Living Room	8.60	High	Compliant	8.60	High	Compliant
DA-11	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-11	Bedroom 02	8.60	High	-	8.60	High	-
DA-11	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-11	Kitchen/Dining	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-12	Living Room	8.60	High	Compliant	8.60	High	Compliant
DA-12	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-12	Bedroom 02	8.60	High	-	8.60	High	-
DA-12	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-12	Kitchen/Dining	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-13	Living Room	8.60	High	Compliant	8.60	High	Compliant
DA-13	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-13	Bedroom 02	8.60	High	-	8.60	High	-
DA-13	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-13	Kitchen/Dining	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-14	Living Room	7.30	High	Compliant	7.30	High	Compliant
DA-14	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-14	Bedroom 02	7.30	High	-	7.30	High	-
DA-14	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-14	Kitchen/Dining	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-15	LKD	3.10	Medium	-	3.10	Medium	-
DA-15	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-15	Bedroom 02	3.30	Medium	Compliant	3.30	Medium	Compliant
DA-15	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DA-16	LKD	8.40	High	Compliant	8.40	High	Compliant
DA-16	Bedroom 01	8.40	High	-	8.40	High	-
DA-16	Bedroom 02	7.90	High	-	7.90	High	-
DA-16	Bedroom 03	7.70	High	-	7.70	High	-

* 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 of the BRE Guidelines recommend 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 on page 19.

*** For the interpretation of levels of Sunlight Exposure please refer to “H.3 Definition of Levels of Sunlight Exposure” on page 124.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.14 SE Results: Duplex B

Table No. F.3.14 - 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**
DB-01	LKD	0.00	Below Minimum	Non-Compliant	1.20	Below Minimum	Non-Compliant
DB-01	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-02	LKD	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-02	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-02	Bedroom 02	1.20	Below Minimum	Non-Compliant	6.20	High	Compliant
DB-03	LKD	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-03	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-03	Bedroom 02	1.80	Minimum	Compliant	7.70	High	Compliant
DB-04	LKD	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-04	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-04	Bedroom 02	1.40	Below Minimum	Non-Compliant	6.20	High	Compliant
DB-05	LKD	6.00	High	-	8.70	High	Compliant
DB-05	Bedroom 01	6.90	High	Compliant	7.60	High	-
DB-06	LKD	1.50	Minimum	Compliant	1.50	Minimum	Compliant
DB-06	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-07	Living Room	5.40	High	Compliant	5.40	High	Compliant
DB-07	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-07	Bedroom 02	5.40	High	-	5.40	High	-
DB-07	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-07	Kitchen/Dining	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-08	Living Room	7.70	High	Compliant	7.70	High	Compliant
DB-08	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-08	Bedroom 02	7.70	High	-	7.70	High	-
DB-08	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-08	Kitchen/Dining	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-09	Living Room	7.70	High	Compliant	7.70	High	Compliant
DB-09	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-09	Bedroom 02	7.70	High	-	7.70	High	-
DB-09	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-09	Kitchen/Dining	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-10	Living Room	7.70	High	Compliant	7.70	High	Compliant
DB-10	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-10	Bedroom 02	7.70	High	-	7.70	High	-
DB-10	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-10	Kitchen/Dining	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-11	LKD	7.60	High	Compliant	8.60	High	Compliant
DB-11	Bedroom 01	7.60	High	-	7.60	High	-

* 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 of the BRE Guidelines recommend 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 on page 19.

*** For the interpretation of levels of Sunlight Exposure please refer to “H.3 Definition of Levels of Sunlight Exposure” on page 124.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.15 SE Results: Duplex B

Table No. F.3.15 - 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**
DB-12	LKD	5.00	High	-	5.00	High	-
DB-12	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-12	Bedroom 02	5.50	High	Compliant	5.50	High	Compliant
DB-12	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DB-13	LKD	9.20	High	-	9.20	High	-
DB-13	Bedroom 01	7.60	High	-	7.60	High	-
DB-13	Bedroom 02	9.40	High	Compliant	9.40	High	Compliant
DB-13	Bedroom 03	7.00	High	-	7.00	High	-

* 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 of the BRE Guidelines recommend 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 on page 19.

*** For the interpretation of levels of Sunlight Exposure please refer to “H.3 Definition of Levels of Sunlight Exposure” on page 124.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.16 SE Results: Duplex C

Table No. F.3.16 - 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**
DC-01	LKD	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	-
DC-01	Bedroom 01	0.00	Below Minimum	-	5.70	High	Compliant
DC-02	LKD	0.00	Below Minimum	Non-Compliant	0.00	Below Minimum	-
DC-02	Bedroom 01	0.00	Below Minimum	-	5.50	High	Compliant
DC-03	LKD	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-03	Bedroom 01	1.20	Below Minimum	Non-Compliant	7.40	High	Compliant
DC-04	LKD	0.80	Below Minimum	Non-Compliant	0.80	Below Minimum	Non-Compliant
DC-04	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-05	LKD	2.40	Minimum	-	7.00	High	-
DC-05	Bedroom 01	4.40	High	Compliant	7.40	High	Compliant
DC-06	Living Room	5.00	High	-	5.00	High	-
DC-06	Bedroom 01	7.60	High	Compliant	7.60	High	Compliant
DC-06	Bedroom 02	5.00	High	-	5.00	High	-
DC-06	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-06	Kitchen / Dining	0.00	Below Minimum	-	6.40	High	-
DC-07	Living Room	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-07	Bedroom 01	7.60	High	Compliant	7.60	High	Compliant
DC-07	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-07	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-07	Kitchen / Dining	7.60	High	-	7.60	High	-
DC-08	Living Room	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-08	Bedroom 01	7.60	High	Compliant	7.60	High	Compliant
DC-08	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-08	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-08	Kitchen / Dining	7.60	High	-	7.60	High	-
DC-09	Living Room	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-09	Bedroom 01	6.40	High	Compliant	6.40	High	Compliant
DC-09	Bedroom 02	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-09	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-09	Kitchen / Dining	6.40	High	-	6.40	High	-
DC-10	LKD	2.30	Minimum	Compliant	2.30	Minimum	Compliant
DC-10	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-11	LKD	6.40	High	Compliant	7.00	High	-
DC-11	Bedroom 01	4.70	High	-	7.40	High	Compliant
DC-12	LKD	2.30	Minimum	-	2.30	Minimum	-
DC-12	Bedroom 01	0.00	Below Minimum	-	0.00	Below Minimum	-
DC-12	Bedroom 02	2.40	Minimum	Compliant	2.40	Minimum	Compliant
DC-12	Bedroom 03	0.00	Below Minimum	-	0.00	Below Minimum	-

* 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 of the BRE Guidelines recommend 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 on page 19.

*** For the interpretation of levels of Sunlight Exposure please refer to “H.3 Definition of Levels of Sunlight Exposure” on page 124.

For floor plans of the assessed units please refer to section F.1 on page 33.

F.3.17 SE Results: Duplex C

Table No. F.3.17 - 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**
DC-13	LKD	7.40	High	Compliant	7.40	High	Compliant
DC-13	Bedroom 01	7.40	High	-	7.40	High	-
DC-13	Bedroom 02	7.00	High	-	7.00	High	-
DC-13	Bedroom 03	6.80	High	-	6.80	High	-

* 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 of the BRE Guidelines recommend 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 on page 19.
*** For the interpretation of levels of Sunlight Exposure please refer to "H.3 Definition of Levels of Sunlight Exposure" on page 124.
For floor plans of the assessed units please refer to section F.1 on page 33.

F.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. F.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.

F.4.1 Sun On Ground in Proposed Outdoor Amenity Areas

Table No. F.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 1	94.98%	50.00%	BRE Compliant	Yes
2	Public Open Space 2	94.45%	50.00%	BRE Compliant	Yes
3	Public Open Space 3	95.70%	50.00%	BRE Compliant	Yes
4	Public Open Space 4	97.02%	50.00%	BRE Compliant	Yes
5	Public Open Space 5	94.91%	50.00%	BRE Compliant	Yes
6	Public Open Space 6	93.10%	50.00%	BRE Compliant	Yes

* Section 2.2.23 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 F.34: Indication of the amenity areas that have been analysed (U), Area capable of receiving 2 hours of sunlight on March 21st shown in white (D)

F.4.2 Sun On Ground in Proposed Outdoor Amenity Areas

Table No. F.4.2 - 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*
7	Communal Open Space 1	80.03%	50.00%	BRE Compliant	Yes
8	Communal Open Space 2	89.20%	50.00%	BRE Compliant	Yes
9	Communal Open Space 3	93.66%	50.00%	BRE Compliant	Yes
10	Communal Open Space 4	87.84%	50.00%	BRE Compliant	Yes
11	Communal Open Space 5	91.73%	50.00%	BRE Compliant	Yes
* Section 2.2.23 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 F.35: Indication of the amenity areas that have been analysed (U), Area capable of receiving 2 hours of sunlight on March 21st shown in white (D)

G.0 Supplementary Study Results

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

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

Table Example. G.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. All unit numbers are determined by the architect's drawings, unless otherwise stated.

B: Room Description

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

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

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

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

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

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

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

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

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

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

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

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

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

G: Compliance with I.S. EN 17037 Criteria

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

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

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

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

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

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

G.1.1 Supplementary SDA Results (I.S. EN 17037 criteria): Apartment Block A

Table No. G.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*	
A-01	LKD	66%	100%	60%	100%	Compliant
A-01	Bedroom 01	33%	100%	33%	100%	Non-compliant
A-01	Bedroom 02	48%	100%	45%	100%	Non-compliant
A-01	Bedroom 03	20%	100%	18%	100%	Non-compliant
A-02	LKD	35%	85%	35%	83%	Non-compliant
A-02	Bedroom 01	44%	100%	44%	100%	Non-compliant
A-02	Bedroom 02	68%	100%	68%	100%	Compliant
A-03	LKD	100%	100%	88%	100%	Compliant
A-03	Bedroom 01	38%	100%	38%	100%	Non-compliant
A-03	Bedroom 02	46%	100%	25%	100%	Non-compliant
A-03	Bedroom 03	31%	100%	28%	100%	Non-compliant
A-04	LKD	35%	100%	31%	97%	Non-compliant
A-04	Bedroom 01	63%	100%	52%	100%	Compliant
A-04	Bedroom 02	52%	100%	41%	100%	Trees affecting compliance
A-05	LKD	48%	100%	39%	100%	Non-compliant
A-05	Bedroom 01	100%	100%	69%	100%	Compliant
A-06	LKD	52%	100%	44%	100%	Trees affecting compliance
A-06	Bedroom 01	74%	100%	46%	100%	Trees affecting compliance
A-06	Bedroom 02	78%	100%	35%	100%	Trees affecting compliance
A-07	LKD	94%	100%	84%	100%	Compliant
A-07	Bedroom 01	100%	100%	95%	100%	Compliant
A-07	Bedroom 02	7%	71%	5%	51%	Non-compliant
A-08	LKD	94%	100%	83%	100%	Compliant
A-08	Bedroom 01	79%	100%	9%	91%	Trees affecting compliance
A-08	Bedroom 02	63%	100%	9%	100%	Trees affecting compliance
A-08	Bedroom 03	36%	100%	0%	47%	Non-compliant
A-09	LKD	60%	100%	13%	98%	Trees affecting compliance
A-09	Bedroom 01	68%	100%	2%	45%	Trees affecting compliance
A-09	Bedroom 02	38%	100%	7%	45%	Non-compliant
A-10	LKD	85%	100%	64%	100%	Compliant
A-10	Bedroom 01	91%	100%	34%	100%	Trees affecting compliance
A-10	Bedroom 02	87%	100%	11%	100%	Trees affecting compliance
A-10	Bedroom 03	47%	100%	14%	83%	Non-compliant
A-11	LKD	100%	100%	100%	100%	Compliant
A-11	Bedroom 01	71%	100%	70%	100%	Compliant
A-11	Bedroom 02	100%	100%	100%	100%	Compliant
A-11	Bedroom 03	38%	100%	35%	100%	Non-compliant
A-12	LKD	44%	100%	44%	100%	Non-compliant
A-12	Bedroom 01	67%	100%	67%	100%	Compliant
A-12	Bedroom 02	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 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.2 Supplementary SDA Results (I.S. EN 17037 criteria): Apartment Block A

Table No. G.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-13	LKD	100%	100%	100%	100%	Compliant
A-13	Bedroom 01	79%	100%	74%	100%	Compliant
A-13	Bedroom 02	72%	100%	68%	100%	Compliant
A-13	Bedroom 03	44%	100%	44%	100%	Non-compliant
A-14	LKD	55%	100%	51%	100%	Compliant
A-14	Bedroom 01	100%	100%	98%	100%	Compliant
A-15	LKD	47%	100%	46%	100%	Non-compliant
A-15	Bedroom 01	100%	100%	100%	100%	Compliant
A-16	LKD	49%	97%	45%	97%	Non-compliant
A-16	Bedroom 01	100%	100%	100%	100%	Compliant
A-17	LKD	56%	100%	55%	100%	Compliant
A-17	Bedroom 01	100%	100%	93%	100%	Compliant
A-17	Bedroom 02	90%	100%	82%	100%	Compliant
A-18	LKD	100%	100%	98%	100%	Compliant
A-18	Bedroom 01	100%	100%	100%	100%	Compliant
A-18	Bedroom 02	7%	93%	7%	84%	Non-compliant
A-19	LKD	100%	100%	100%	100%	Compliant
A-19	Bedroom 01	100%	100%	85%	100%	Compliant
A-19	Bedroom 02	100%	100%	65%	100%	Compliant
A-19	Bedroom 03	72%	100%	33%	100%	Trees affecting compliance
A-20	LKD	97%	100%	44%	100%	Trees affecting compliance
A-20	Bedroom 01	91%	100%	36%	100%	Trees affecting compliance
A-20	Bedroom 02	72%	100%	25%	100%	Trees affecting compliance
A-21	LKD	47%	100%	28%	83%	Non-compliant
A-21	Bedroom 01	59%	100%	39%	100%	Trees affecting compliance
A-21	Bedroom 02	40%	100%	23%	92%	Non-compliant
A-22	LKD	100%	100%	88%	100%	Compliant
A-22	Bedroom 01	100%	100%	62%	100%	Compliant
A-22	Bedroom 02	100%	100%	31%	100%	Trees affecting compliance
A-22	Bedroom 03	75%	100%	31%	100%	Trees affecting compliance
A-23	LKD	100%	100%	100%	100%	Compliant
A-23	Bedroom 01	90%	100%	90%	100%	Compliant
A-23	Bedroom 02	100%	100%	100%	100%	Compliant
A-23	Bedroom 03	58%	100%	58%	100%	Compliant
A-24	LKD	55%	100%	55%	100%	Compliant
A-24	Bedroom 01	94%	100%	94%	100%	Compliant
A-24	Bedroom 02	100%	100%	100%	100%	Compliant
A-25	LKD	100%	100%	100%	100%	Compliant
A-25	Bedroom 01	98%	100%	96%	100%	Compliant
A-25	Bedroom 02	86%	100%	82%	100%	Compliant
A-25	Bedroom 03	59%	100%	56%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.3 Supplementary SDA Results (I.S. EN 17037 criteria): Apartment Block A

Table No. G.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-26	LKD	59%	100%	57%	100%	Compliant
A-26	Bedroom 01	100%	100%	100%	100%	Compliant
A-27	LKD	50%	100%	48%	100%	Trees affecting compliance
A-27	Bedroom 01	100%	100%	100%	100%	Compliant
A-28	LKD	53%	97%	51%	97%	Compliant
A-28	Bedroom 01	100%	100%	100%	100%	Compliant
A-29	LKD	59%	100%	57%	100%	Compliant
A-29	Bedroom 01	100%	100%	100%	100%	Compliant
A-29	Bedroom 02	93%	100%	92%	100%	Compliant
A-30	LKD	100%	100%	100%	100%	Compliant
A-30	Bedroom 01	100%	100%	100%	100%	Compliant
A-30	Bedroom 02	7%	99%	7%	96%	Non-compliant
A-31	LKD	100%	100%	100%	100%	Compliant
A-31	Bedroom 01	100%	100%	96%	100%	Compliant
A-31	Bedroom 02	100%	100%	100%	100%	Compliant
A-31	Bedroom 03	100%	100%	61%	100%	Compliant
A-32	LKD	100%	100%	74%	100%	Compliant
A-32	Bedroom 01	94%	100%	89%	100%	Compliant
A-32	Bedroom 02	95%	100%	50%	100%	Compliant
A-33	LKD	60%	100%	44%	100%	Trees affecting compliance
A-33	Bedroom 01	91%	100%	69%	100%	Compliant
A-33	Bedroom 02	63%	100%	50%	100%	Compliant
A-34	LKD	100%	100%	97%	100%	Compliant
A-34	Bedroom 01	100%	100%	96%	100%	Compliant
A-34	Bedroom 02	100%	100%	52%	100%	Compliant
A-34	Bedroom 03	94%	100%	42%	100%	Trees affecting compliance
A-35	LKD	100%	100%	100%	100%	Compliant
A-35	Bedroom 01	98%	100%	98%	100%	Compliant
A-35	Bedroom 02	100%	100%	100%	100%	Compliant
A-35	Bedroom 03	98%	100%	98%	100%	Compliant
A-36	LKD	70%	100%	70%	100%	Compliant
A-36	Bedroom 01	100%	100%	100%	100%	Compliant
A-36	Bedroom 02	100%	100%	100%	100%	Compliant
A-37	LKD	100%	100%	100%	100%	Compliant
A-37	Bedroom 01	100%	100%	100%	100%	Compliant
A-37	Bedroom 02	100%	100%	100%	100%	Compliant
A-37	Bedroom 03	75%	100%	75%	100%	Compliant
A-38	LKD	72%	100%	72%	100%	Compliant
A-38	Bedroom 01	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 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.4 Supplementary SDA Results (I.S. EN 17037 criteria): Apartment Block A

Table No. G.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-39	LKD	64%	100%	64%	100%	Compliant
A-39	Bedroom 01	100%	100%	100%	100%	Compliant
A-40	LKD	64%	97%	64%	97%	Compliant
A-40	Bedroom 01	100%	100%	100%	100%	Compliant
A-41	LKD	69%	100%	68%	100%	Compliant
A-41	Bedroom 01	100%	100%	100%	100%	Compliant
A-41	Bedroom 02	100%	100%	100%	100%	Compliant
A-42	LKD	100%	100%	100%	100%	Compliant
A-42	Bedroom 01	100%	100%	100%	100%	Compliant
A-42	Bedroom 02	9%	100%	9%	100%	Non-compliant
A-43	LKD	100%	100%	100%	100%	Compliant
A-43	Bedroom 01	100%	100%	100%	100%	Compliant
A-43	Bedroom 02	100%	100%	100%	100%	Compliant
A-43	Bedroom 03	100%	100%	100%	100%	Compliant
A-44	LKD	100%	100%	100%	100%	Compliant
A-44	Bedroom 01	100%	100%	100%	100%	Compliant
A-44	Bedroom 02	100%	100%	95%	100%	Compliant
A-45	LKD	80%	100%	74%	100%	Compliant
A-45	Bedroom 01	100%	100%	100%	100%	Compliant
A-45	Bedroom 02	100%	100%	95%	100%	Compliant
A-46	LKD	100%	100%	100%	100%	Compliant
A-46	Bedroom 01	100%	100%	100%	100%	Compliant
A-46	Bedroom 02	100%	100%	96%	100%	Compliant
A-46	Bedroom 03	100%	100%	72%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.5 Supplementary SDA Results (I.S. EN 17037 criteria): Apartment Block B

Table No. G.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*	
B-01	LKD	64%	100%	45%	100%	Trees affecting compliance
B-01	Bedroom 01	99%	100%	49%	100%	Trees affecting compliance
B-01	Bedroom 02	100%	100%	67%	100%	Compliant
B-01	Bedroom 03	56%	100%	25%	100%	Trees affecting compliance
B-02	LKD	58%	97%	40%	97%	Trees affecting compliance
B-02	Bedroom 01	100%	100%	88%	100%	Compliant
B-03	LKD	73%	100%	54%	100%	Compliant
B-03	Bedroom 01	94%	100%	64%	100%	Compliant
B-03	Bedroom 02	76%	100%	44%	100%	Trees affecting compliance
B-03	Bedroom 03	42%	100%	19%	100%	Non-compliant
B-04	LKD	100%	100%	83%	100%	Compliant
B-04	Bedroom 01	98%	100%	84%	100%	Compliant
B-04	Bedroom 02	79%	100%	60%	100%	Compliant
B-05	LKD	49%	91%	42%	91%	Non-compliant
B-05	Bedroom 01	100%	100%	100%	100%	Compliant
B-06	LKD	46%	100%	40%	100%	Non-compliant
B-06	Bedroom 01	88%	100%	65%	100%	Compliant
B-07	LKD	62%	100%	44%	100%	Trees affecting compliance
B-07	Bedroom 01	77%	100%	54%	100%	Compliant
B-07	Bedroom 02	59%	100%	13%	100%	Trees affecting compliance
B-07	Bedroom 03	28%	100%	17%	100%	Non-compliant
B-08	LKD	100%	100%	94%	100%	Compliant
B-08	Bedroom 01	100%	100%	100%	100%	Compliant
B-08	Bedroom 02	100%	100%	100%	100%	Compliant
B-08	Bedroom 03	84%	100%	63%	100%	Compliant
B-09	LKD	64%	97%	58%	97%	Compliant
B-09	Bedroom 01	100%	100%	100%	100%	Compliant
B-10	LKD	62%	100%	49%	100%	Trees affecting compliance
B-10	Bedroom 01	100%	100%	100%	100%	Compliant
B-10	Bedroom 02	100%	100%	97%	100%	Compliant
B-11	LKD	97%	100%	80%	100%	Compliant
B-11	Bedroom 01	100%	100%	100%	100%	Compliant
B-11	Bedroom 02	100%	100%	100%	100%	Compliant
B-11	Bedroom 03	67%	100%	56%	100%	Compliant
B-12	LKD	100%	100%	100%	100%	Compliant
B-12	Bedroom 01	100%	100%	100%	100%	Compliant
B-12	Bedroom 02	100%	100%	98%	100%	Compliant
B-13	LKD	52%	91%	50%	91%	Non-compliant
B-13	Bedroom 01	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 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.6 Supplementary SDA Results (I.S. EN 17037 criteria): Apartment Block B

Table No. G.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-14	LKD	54%	100%	52%	100%	Compliant
B-14	Bedroom 01	100%	100%	98%	100%	Compliant
B-15	LKD	80%	100%	69%	100%	Compliant
B-15	Bedroom 01	94%	100%	94%	100%	Compliant
B-15	Bedroom 02	100%	100%	72%	100%	Compliant
B-15	Bedroom 03	47%	100%	42%	100%	Non-compliant
B-16	LKD	100%	100%	100%	100%	Compliant
B-16	Bedroom 01	100%	100%	100%	100%	Compliant
B-16	Bedroom 02	100%	100%	100%	100%	Compliant
B-16	Bedroom 03	94%	100%	84%	100%	Compliant
B-17	LKD	67%	97%	66%	97%	Compliant
B-17	Bedroom 01	100%	100%	100%	100%	Compliant
B-18	LKD	67%	100%	63%	100%	Compliant
B-18	Bedroom 01	100%	100%	100%	100%	Compliant
B-18	Bedroom 02	100%	100%	100%	100%	Compliant
B-19	LKD	100%	100%	100%	100%	Compliant
B-19	Bedroom 01	100%	100%	100%	100%	Compliant
B-19	Bedroom 02	100%	100%	100%	100%	Compliant
B-19	Bedroom 03	83%	100%	75%	100%	Compliant
B-20	LKD	100%	100%	100%	100%	Compliant
B-20	Bedroom 01	100%	100%	100%	100%	Compliant
B-20	Bedroom 02	100%	100%	100%	100%	Compliant
B-21	LKD	55%	91%	55%	91%	Non-compliant
B-21	Bedroom 01	100%	100%	100%	100%	Compliant
B-22	LKD	61%	100%	58%	100%	Compliant
B-22	Bedroom 01	100%	100%	100%	100%	Compliant
B-23	LKD	94%	100%	93%	100%	Compliant
B-23	Bedroom 01	93%	100%	91%	100%	Compliant
B-23	Bedroom 02	100%	100%	100%	100%	Compliant
B-23	Bedroom 03	56%	100%	53%	100%	Compliant
B-24	LKD	100%	100%	100%	100%	Compliant
B-24	Bedroom 01	100%	100%	100%	100%	Compliant
B-24	Bedroom 02	100%	100%	100%	100%	Compliant
B-24	Bedroom 03	100%	100%	100%	100%	Compliant
B-25	LKD	77%	97%	75%	97%	Compliant
B-25	Bedroom 01	100%	100%	100%	100%	Compliant
B-26	LKD	77%	100%	77%	100%	Compliant
B-26	Bedroom 01	100%	100%	100%	100%	Compliant
B-26	Bedroom 02	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 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.7 Supplementary SDA Results (I.S. EN 17037 criteria): Apartment Block B

Table No. G.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-27	LKD	100%	100%	100%	100%	Compliant
B-27	Bedroom 01	100%	100%	100%	100%	Compliant
B-27	Bedroom 02	100%	100%	100%	100%	Compliant
B-27	Bedroom 03	97%	100%	92%	100%	Compliant
B-28	LKD	100%	100%	100%	100%	Compliant
B-28	Bedroom 01	100%	100%	100%	100%	Compliant
B-28	Bedroom 02	100%	100%	100%	100%	Compliant
B-29	LKD	51%	91%	50%	91%	Non-compliant
B-29	Bedroom 01	100%	100%	100%	100%	Compliant
B-30	LKD	69%	100%	69%	100%	Compliant
B-30	Bedroom 01	100%	100%	100%	100%	Compliant
B-31	LKD	100%	100%	100%	100%	Compliant
B-31	Bedroom 01	100%	100%	100%	100%	Compliant
B-31	Bedroom 02	100%	100%	100%	100%	Compliant
B-31	Bedroom 03	72%	100%	67%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.8 Supplementary SDA Results (I.S. EN 17037 criteria): Apartment Block C

Table No. G.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*	
C-01	LKD	95%	100%	66%	100%	Compliant
C-01	Bedroom 01	32%	100%	26%	100%	Non-compliant
C-01	Bedroom 02	37%	100%	13%	100%	Non-compliant
C-01	Bedroom 03	14%	100%	8%	69%	Non-compliant
C-02	LKD	71%	100%	47%	100%	Trees affecting compliance
C-02	Bedroom 01	34%	100%	0%	75%	Non-compliant
C-02	Bedroom 02	33%	100%	22%	100%	Non-compliant
C-02	Bedroom 03	14%	92%	8%	56%	Non-compliant
C-03	LKD	100%	100%	100%	100%	Compliant
C-03	Bedroom 01	100%	100%	100%	100%	Compliant
C-03	Bedroom 02	89%	100%	13%	100%	Trees affecting compliance
C-04	LKD	81%	100%	60%	100%	Compliant
C-04	Bedroom 01	100%	100%	100%	100%	Compliant
C-05	LKD	58%	100%	49%	100%	Trees affecting compliance
C-05	Bedroom 01	100%	100%	100%	100%	Compliant
C-06	LKD	74%	100%	63%	100%	Compliant
C-06	Bedroom 01	100%	100%	100%	100%	Compliant
C-07	LKD	100%	100%	86%	100%	Compliant
C-07	Bedroom 01	100%	100%	100%	100%	Compliant
C-08	LKD	100%	100%	99%	100%	Compliant
C-08	Bedroom 01	72%	100%	58%	100%	Compliant
C-08	Bedroom 02	50%	100%	37%	100%	Trees affecting compliance
C-08	Bedroom 03	22%	100%	19%	100%	Non-compliant
C-09	LKD	38%	99%	35%	96%	Non-compliant
C-09	Bedroom 01	51%	100%	30%	100%	Trees affecting compliance
C-09	Bedroom 02	43%	100%	26%	100%	Non-compliant
C-09	Bedroom 03	17%	100%	11%	69%	Non-compliant
C-10	LKD	92%	100%	76%	100%	Compliant
C-10	Bedroom 01	64%	100%	36%	100%	Trees affecting compliance
C-10	Bedroom 02	54%	100%	44%	100%	Trees affecting compliance
C-10	Bedroom 03	22%	100%	19%	100%	Non-compliant
C-11	LKD	100%	100%	100%	100%	Compliant
C-11	Bedroom 01	100%	100%	100%	100%	Compliant
C-11	Bedroom 02	100%	100%	26%	100%	Trees affecting compliance
C-12	LKD	86%	100%	77%	100%	Compliant
C-12	Bedroom 01	100%	100%	100%	100%	Compliant
C-13	LKD	72%	100%	64%	100%	Compliant
C-13	Bedroom 01	100%	100%	100%	100%	Compliant
C-14	LKD	85%	100%	80%	100%	Compliant
C-14	Bedroom 01	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 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.9 Supplementary SDA Results (I.S. EN 17037 criteria): Apartment Block C

Table No. G.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*	
C-15	LKD	100%	100%	100%	100%	Compliant
C-15	Bedroom 01	100%	100%	100%	100%	Compliant
C-16	LKD	100%	100%	100%	100%	Compliant
C-16	Bedroom 01	87%	100%	83%	100%	Compliant
C-16	Bedroom 02	69%	100%	65%	100%	Compliant
C-16	Bedroom 03	33%	100%	28%	100%	Non-compliant
C-17	LKD	47%	100%	47%	100%	Non-compliant
C-17	Bedroom 01	83%	100%	75%	100%	Compliant
C-17	Bedroom 02	61%	100%	54%	100%	Compliant
C-17	Bedroom 03	31%	100%	25%	100%	Non-compliant
C-18	LKD	98%	100%	97%	100%	Compliant
C-18	Bedroom 01	81%	100%	81%	100%	Compliant
C-18	Bedroom 02	69%	100%	65%	100%	Compliant
C-18	Bedroom 03	36%	100%	36%	100%	Non-compliant
C-19	LKD	100%	100%	100%	100%	Compliant
C-19	Bedroom 01	100%	100%	100%	100%	Compliant
C-19	Bedroom 02	100%	100%	100%	100%	Compliant
C-20	LKD	95%	100%	85%	100%	Compliant
C-20	Bedroom 01	100%	100%	100%	100%	Compliant
C-21	LKD	73%	100%	69%	100%	Compliant
C-21	Bedroom 01	100%	100%	100%	100%	Compliant
C-22	LKD	89%	100%	84%	100%	Compliant
C-22	Bedroom 01	100%	100%	100%	100%	Compliant
C-23	LKD	100%	100%	100%	100%	Compliant
C-23	Bedroom 01	100%	100%	100%	100%	Compliant
C-24	LKD	100%	100%	100%	100%	Compliant
C-24	Bedroom 01	98%	100%	94%	100%	Compliant
C-24	Bedroom 02	100%	100%	100%	100%	Compliant
C-24	Bedroom 03	50%	100%	50%	100%	Compliant
C-25	LKD	62%	100%	62%	100%	Compliant
C-25	Bedroom 01	98%	100%	98%	100%	Compliant
C-25	Bedroom 02	100%	100%	100%	100%	Compliant
C-25	Bedroom 03	53%	100%	50%	100%	Compliant
C-26	LKD	100%	100%	100%	100%	Compliant
C-26	Bedroom 01	96%	100%	96%	100%	Compliant
C-26	Bedroom 02	98%	100%	96%	100%	Compliant
C-26	Bedroom 03	56%	100%	53%	100%	Compliant
C-27	LKD	100%	100%	100%	100%	Compliant
C-27	Bedroom 01	100%	100%	100%	100%	Compliant
C-27	Bedroom 02	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 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.10 Supplementary SDA Results (I.S. EN 17037 criteria): Apartment Block C

Table No. G.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*	
C-28	LKD	100%	100%	100%	100%	Compliant
C-28	Bedroom 01	100%	100%	100%	100%	Compliant
C-29	LKD	84%	100%	81%	100%	Compliant
C-29	Bedroom 01	100%	100%	100%	100%	Compliant
C-30	LKD	100%	100%	100%	100%	Compliant
C-30	Bedroom 01	100%	100%	100%	100%	Compliant
C-31	LKD	100%	100%	100%	100%	Compliant
C-31	Bedroom 01	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 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.11 Supplementary SDA Results (I.S. EN 17037 criteria): Creche

Table No. G.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*	
Creche	Kitchen	100%	100%	100%	100%	Compliant
Creche	Classroom 01	100%	100%	100%	100%	Compliant
Creche	Classroom 03	100%	100%	100%	100%	Compliant
Creche	Classroom 04	95%	100%	95%	100%	Compliant
Creche	Classrooom 02	100%	100%	87%	100%	Compliant
Creche	Function Room	43%	100%	31%	100%	Non-compliant
Creche	Sleep Room 1	100%	100%	40%	100%	Trees affecting compliance
Creche	Sleep Room 2	18%	100%	12%	100%	Non-compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.12 Supplementary SDA Results (I.S. EN 17037 criteria): Duplex A

Table No. G.1.12 - 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*	
DA-01	LKD	27%	61%	22%	52%	Non-compliant
DA-01	Bedroom 01	62%	100%	36%	100%	Trees affecting compliance
DA-01	Bedroom 02	100%	100%	67%	100%	Compliant
DA-02	LKD	30%	82%	23%	61%	Non-compliant
DA-02	Bedroom 01	56%	100%	34%	100%	Trees affecting compliance
DA-02	Bedroom 02	100%	100%	62%	100%	Compliant
DA-03	LKD	28%	71%	20%	57%	Non-compliant
DA-03	Bedroom 01	56%	100%	32%	100%	Trees affecting compliance
DA-03	Bedroom 02	100%	100%	69%	100%	Compliant
DA-04	LKD	28%	67%	23%	59%	Non-compliant
DA-04	Bedroom 01	54%	100%	34%	100%	Trees affecting compliance
DA-04	Bedroom 02	100%	100%	53%	100%	Compliant
DA-05	LKD	28%	67%	19%	54%	Non-compliant
DA-05	Bedroom 01	38%	100%	30%	100%	Non-compliant
DA-05	Bedroom 02	100%	100%	58%	100%	Compliant
DA-06	LKD	28%	69%	21%	57%	Non-compliant
DA-06	Bedroom 01	36%	100%	32%	100%	Non-compliant
DA-06	Bedroom 02	100%	100%	55%	100%	Compliant
DA-07	LKD	96%	100%	79%	100%	Compliant
DA-07	Bedroom 01	90%	100%	68%	100%	Compliant
DA-07	Bedroom 02	100%	100%	100%	100%	Compliant
DA-07	Bedroom 03	43%	100%	32%	100%	Non-compliant
DA-08	LKD	100%	100%	100%	100%	Compliant
DA-08	Bedroom 01	100%	100%	100%	100%	Compliant
DA-08	Bedroom 02	100%	100%	100%	100%	Compliant
DA-08	Bedroom 03	100%	100%	100%	100%	Compliant
DA-09	Living Room	100%	100%	100%	100%	Compliant
DA-09	Bedroom 01	100%	100%	100%	100%	Compliant
DA-09	Bedroom 02	100%	100%	100%	100%	Compliant
DA-09	Bedroom 03	100%	100%	100%	100%	Compliant
DA-09	Kitchen/Dining	93%	100%	83%	100%	Compliant
DA-10	Living Room	100%	100%	100%	100%	Compliant
DA-10	Bedroom 01	100%	100%	100%	100%	Compliant
DA-10	Bedroom 02	100%	100%	100%	100%	Compliant
DA-10	Bedroom 03	100%	100%	100%	100%	Compliant
DA-10	Kitchen/Dining	75%	100%	68%	100%	Compliant
DA-11	Living Room	100%	100%	100%	100%	Compliant
DA-11	Bedroom 01	100%	100%	100%	100%	Compliant
DA-11	Bedroom 02	100%	100%	100%	100%	Compliant
DA-11	Bedroom 03	100%	100%	100%	100%	Compliant
DA-11	Kitchen/Dining	68%	100%	63%	100%	Compliant

* For information regarding the criteria under the various guidelines including target Lux please refer to section 2.5.1 on page 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.13 Supplementary SDA Results (I.S. EN 17037 criteria): Duplex A

Table No. G.1.13 - 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*	
DA-12	Living Room	100%	100%	100%	100%	Compliant
DA-12	Bedroom 01	100%	100%	100%	100%	Compliant
DA-12	Bedroom 02	100%	100%	100%	100%	Compliant
DA-12	Bedroom 03	100%	100%	100%	100%	Compliant
DA-12	Kitchen/Dining	73%	100%	68%	100%	Compliant
DA-13	Living Room	100%	100%	100%	100%	Compliant
DA-13	Bedroom 01	100%	100%	100%	100%	Compliant
DA-13	Bedroom 02	100%	100%	100%	100%	Compliant
DA-13	Bedroom 03	100%	100%	100%	100%	Compliant
DA-13	Kitchen/Dining	63%	100%	60%	100%	Compliant
DA-14	Living Room	100%	100%	100%	100%	Compliant
DA-14	Bedroom 01	100%	100%	100%	100%	Compliant
DA-14	Bedroom 02	100%	100%	100%	100%	Compliant
DA-14	Bedroom 03	100%	100%	100%	100%	Compliant
DA-14	Kitchen/Dining	61%	100%	57%	100%	Compliant
DA-15	LKD	100%	100%	100%	100%	Compliant
DA-15	Bedroom 01	100%	100%	100%	100%	Compliant
DA-15	Bedroom 02	100%	100%	100%	100%	Compliant
DA-15	Bedroom 03	68%	100%	68%	100%	Compliant
DA-16	LKD	100%	100%	100%	100%	Compliant
DA-16	Bedroom 01	100%	100%	100%	100%	Compliant
DA-16	Bedroom 02	100%	100%	100%	100%	Compliant
DA-16	Bedroom 03	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 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.14 Supplementary SDA Results (I.S. EN 17037 criteria): Duplex B

Table No. G.1.14 - 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*	
DB-01	LKD	100%	100%	93%	100%	Compliant
DB-01	Bedroom 01	63%	100%	25%	100%	Trees affecting compliance
DB-02	LKD	29%	68%	25%	60%	Non-compliant
DB-02	Bedroom 01	56%	100%	50%	100%	Compliant
DB-02	Bedroom 02	100%	100%	55%	100%	Compliant
DB-03	LKD	28%	67%	24%	62%	Non-compliant
DB-03	Bedroom 01	60%	100%	56%	100%	Compliant
DB-03	Bedroom 02	100%	100%	60%	100%	Compliant
DB-04	LKD	29%	66%	27%	64%	Non-compliant
DB-04	Bedroom 01	58%	100%	56%	100%	Compliant
DB-04	Bedroom 02	100%	100%	55%	100%	Compliant
DB-05	LKD	100%	100%	100%	100%	Compliant
DB-05	Bedroom 01	100%	100%	100%	100%	Compliant
DB-06	LKD	100%	100%	100%	100%	Compliant
DB-06	Bedroom 01	90%	100%	75%	100%	Compliant
DB-07	Living Room	100%	100%	99%	100%	Compliant
DB-07	Bedroom 01	100%	100%	100%	100%	Compliant
DB-07	Bedroom 02	100%	100%	100%	100%	Compliant
DB-07	Bedroom 03	100%	100%	100%	100%	Compliant
DB-07	Kitchen/Dining	59%	100%	58%	100%	Compliant
DB-08	Living Room	100%	100%	100%	100%	Compliant
DB-08	Bedroom 01	100%	100%	100%	100%	Compliant
DB-08	Bedroom 02	100%	100%	100%	100%	Compliant
DB-08	Bedroom 03	100%	100%	100%	100%	Compliant
DB-08	Kitchen/Dining	71%	100%	69%	100%	Compliant
DB-09	Living Room	100%	100%	100%	100%	Compliant
DB-09	Bedroom 01	100%	100%	100%	100%	Compliant
DB-09	Bedroom 02	100%	100%	100%	100%	Compliant
DB-09	Bedroom 03	100%	100%	100%	100%	Compliant
DB-09	Kitchen/Dining	67%	100%	65%	100%	Compliant
DB-10	Living Room	100%	100%	100%	100%	Compliant
DB-10	Bedroom 01	100%	100%	100%	100%	Compliant
DB-10	Bedroom 02	100%	100%	100%	100%	Compliant
DB-10	Bedroom 03	100%	100%	100%	100%	Compliant
DB-10	Kitchen/Dining	91%	100%	91%	100%	Compliant
DB-11	LKD	100%	100%	100%	100%	Compliant
DB-11	Bedroom 01	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 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.15 Supplementary SDA Results (I.S. EN 17037 criteria): Duplex B

Table No. G.1.15 - 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*	
DB-12	LKD	100%	100%	100%	100%	Compliant
DB-12	Bedroom 01	100%	100%	100%	100%	Compliant
DB-12	Bedroom 02	100%	100%	100%	100%	Compliant
DB-12	Bedroom 03	82%	100%	79%	100%	Compliant
DB-13	LKD	100%	100%	100%	100%	Compliant
DB-13	Bedroom 01	100%	100%	100%	100%	Compliant
DB-13	Bedroom 02	100%	100%	100%	100%	Compliant
DB-13	Bedroom 03	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 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.1.16 Supplementary SDA Results (I.S. EN 17037 criteria): Duplex C

Table No. G.1.16 - 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*	
DC-01	LKD	79%	100%	70%	100%	Compliant
DC-01	Bedroom 01	100%	100%	38%	100%	Trees affecting compliance
DC-02	LKD	82%	100%	36%	100%	Trees affecting compliance
DC-02	Bedroom 01	100%	100%	28%	100%	Trees affecting compliance
DC-03	LKD	80%	100%	36%	100%	Trees affecting compliance
DC-03	Bedroom 01	100%	100%	48%	100%	Trees affecting compliance
DC-04	LKD	100%	100%	99%	100%	Compliant
DC-04	Bedroom 01	67%	100%	58%	100%	Compliant
DC-05	LKD	100%	100%	100%	100%	Compliant
DC-05	Bedroom 01	100%	100%	100%	100%	Compliant
DC-06	Living Room	100%	100%	100%	100%	Compliant
DC-06	Bedroom 01	100%	100%	100%	100%	Compliant
DC-06	Bedroom 02	100%	100%	100%	100%	Compliant
DC-06	Bedroom 03	57%	100%	54%	100%	Compliant
DC-06	Kitchen / Dining	100%	100%	29%	100%	Trees affecting compliance
DC-07	Living Room	100%	100%	100%	100%	Compliant
DC-07	Bedroom 01	100%	100%	100%	100%	Compliant
DC-07	Bedroom 02	100%	100%	100%	100%	Compliant
DC-07	Bedroom 03	54%	100%	50%	100%	Compliant
DC-07	Kitchen / Dining	100%	100%	97%	100%	Compliant
DC-08	Living Room	100%	100%	100%	100%	Compliant
DC-08	Bedroom 01	100%	100%	100%	100%	Compliant
DC-08	Bedroom 02	100%	100%	100%	100%	Compliant
DC-08	Bedroom 03	50%	100%	50%	100%	Compliant
DC-08	Kitchen / Dining	100%	100%	93%	100%	Compliant
DC-09	Living Room	100%	100%	100%	100%	Compliant
DC-09	Bedroom 01	100%	100%	100%	100%	Compliant
DC-09	Bedroom 02	93%	100%	90%	100%	Compliant
DC-09	Bedroom 03	39%	100%	39%	100%	Non-compliant
DC-09	Kitchen / Dining	100%	100%	100%	100%	Compliant
DC-10	LKD	100%	100%	100%	100%	Compliant
DC-10	Bedroom 01	83%	100%	78%	100%	Compliant
DC-11	LKD	100%	100%	100%	100%	Compliant
DC-11	Bedroom 01	100%	100%	100%	100%	Compliant
DC-12	LKD	100%	100%	100%	100%	Compliant
DC-12	Bedroom 01	100%	100%	100%	100%	Compliant
DC-12	Bedroom 02	100%	100%	100%	100%	Compliant
DC-12	Bedroom 03	75%	100%	71%	100%	Compliant
DC-13	LKD	100%	100%	100%	100%	Compliant
DC-13	Bedroom 01	100%	100%	100%	100%	Compliant
DC-13	Bedroom 02	100%	100%	100%	100%	Compliant
DC-13	Bedroom 03	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 14.
For floor plans of the assessed units please refer to section F.1 on page 33.

G.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. G.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. All unit numbers are determined by the architect's drawings, unless otherwise stated.

B: Room Description

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

C: % of room where the sky is visible from the working plane

This column states the percentage of the room from which there is a direct line of sight to the sky when assessed at the working plane height, which is 850mm above the finished floor level in residential rooms or 700mm above the finished floor level in offices or classrooms.

D: Above 80%

Whilst the BRE Guidelines only provide recommendations for NSL in the context of an impact analysis, 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.

G.2.1 Supplementary NSL Results: Apartment Block A

Table No. G.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%*
A-01	LKD	97%	Yes
A-01	Bedroom 01	95%	Yes
A-01	Bedroom 02	97%	Yes
A-01	Bedroom 03	98%	Yes
A-02	LKD	68%	No
A-02	Bedroom 01	100%	Yes
A-02	Bedroom 02	85%	Yes
A-03	LKD	100%	Yes
A-03	Bedroom 01	95%	Yes
A-03	Bedroom 02	98%	Yes
A-03	Bedroom 03	99%	Yes
A-04	LKD	99%	Yes
A-04	Bedroom 01	98%	Yes
A-04	Bedroom 02	95%	Yes
A-05	LKD	100%	Yes
A-05	Bedroom 01	99%	Yes
A-06	LKD	100%	Yes
A-06	Bedroom 01	100%	Yes
A-06	Bedroom 02	98%	Yes
A-07	LKD	100%	Yes
A-07	Bedroom 01	99%	Yes
A-07	Bedroom 02	91%	Yes
A-08	LKD	96%	Yes
A-08	Bedroom 01	97%	Yes
A-08	Bedroom 02	100%	Yes
A-08	Bedroom 03	99%	Yes
A-09	LKD	99%	Yes
A-09	Bedroom 01	69%	No
A-09	Bedroom 02	80%	Yes
A-10	LKD	91%	Yes
A-10	Bedroom 01	92%	Yes
A-10	Bedroom 02	99%	Yes
A-10	Bedroom 03	99%	Yes
A-11	LKD	100%	Yes
A-11	Bedroom 01	95%	Yes
A-11	Bedroom 02	97%	Yes
A-11	Bedroom 03	98%	Yes
A-12	LKD	100%	Yes
A-12	Bedroom 01	99%	Yes
A-12	Bedroom 02	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 F.1 on page 33.

G.2.2 Supplementary NSL Results: Apartment Block A

Table No. G.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-13	LKD	100%	Yes
A-13	Bedroom 01	95%	Yes
A-13	Bedroom 02	98%	Yes
A-13	Bedroom 03	97%	Yes
A-14	LKD	89%	Yes
A-14	Bedroom 01	97%	Yes
A-15	LKD	89%	Yes
A-15	Bedroom 01	99%	Yes
A-16	LKD	88%	Yes
A-16	Bedroom 01	99%	Yes
A-17	LKD	100%	Yes
A-17	Bedroom 01	98%	Yes
A-17	Bedroom 02	99%	Yes
A-18	LKD	100%	Yes
A-18	Bedroom 01	98%	Yes
A-18	Bedroom 02	91%	Yes
A-19	LKD	98%	Yes
A-19	Bedroom 01	97%	Yes
A-19	Bedroom 02	99%	Yes
A-19	Bedroom 03	99%	Yes
A-20	LKD	99%	Yes
A-20	Bedroom 01	89%	Yes
A-20	Bedroom 02	87%	Yes
A-21	LKD	98%	Yes
A-21	Bedroom 01	85%	Yes
A-21	Bedroom 02	68%	No
A-22	LKD	100%	Yes
A-22	Bedroom 01	94%	Yes
A-22	Bedroom 02	98%	Yes
A-22	Bedroom 03	99%	Yes
A-23	LKD	100%	Yes
A-23	Bedroom 01	95%	Yes
A-23	Bedroom 02	97%	Yes
A-23	Bedroom 03	98%	Yes
A-24	LKD	100%	Yes
A-24	Bedroom 01	99%	Yes
A-24	Bedroom 02	100%	Yes
A-25	LKD	100%	Yes
A-25	Bedroom 01	95%	Yes
A-25	Bedroom 02	98%	Yes
A-25	Bedroom 03	97%	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 F.1 on page 33.

G.2.3 Supplementary NSL Results: Apartment Block A

Table No. G.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-26	LKD	89%	Yes
A-26	Bedroom 01	97%	Yes
A-27	LKD	88%	Yes
A-27	Bedroom 01	99%	Yes
A-28	LKD	88%	Yes
A-28	Bedroom 01	99%	Yes
A-29	LKD	100%	Yes
A-29	Bedroom 01	98%	Yes
A-29	Bedroom 02	99%	Yes
A-30	LKD	100%	Yes
A-30	Bedroom 01	98%	Yes
A-30	Bedroom 02	91%	Yes
A-31	LKD	100%	Yes
A-31	Bedroom 01	97%	Yes
A-31	Bedroom 02	99%	Yes
A-31	Bedroom 03	99%	Yes
A-32	LKD	99%	Yes
A-32	Bedroom 01	94%	Yes
A-32	Bedroom 02	95%	Yes
A-33	LKD	100%	Yes
A-33	Bedroom 01	93%	Yes
A-33	Bedroom 02	79%	No
A-34	LKD	100%	Yes
A-34	Bedroom 01	96%	Yes
A-34	Bedroom 02	98%	Yes
A-34	Bedroom 03	99%	Yes
A-35	LKD	100%	Yes
A-35	Bedroom 01	95%	Yes
A-35	Bedroom 02	97%	Yes
A-35	Bedroom 03	98%	Yes
A-36	LKD	100%	Yes
A-36	Bedroom 01	99%	Yes
A-36	Bedroom 02	100%	Yes
A-37	LKD	100%	Yes
A-37	Bedroom 01	95%	Yes
A-37	Bedroom 02	98%	Yes
A-37	Bedroom 03	97%	Yes
A-38	LKD	89%	Yes
A-38	Bedroom 01	98%	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 F.1 on page 33.

G.2.4 Supplementary NSL Results: Apartment Block A

Table No. G.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-39	LKD	88%	Yes
A-39	Bedroom 01	99%	Yes
A-40	LKD	88%	Yes
A-40	Bedroom 01	99%	Yes
A-41	LKD	100%	Yes
A-41	Bedroom 01	98%	Yes
A-41	Bedroom 02	99%	Yes
A-42	LKD	100%	Yes
A-42	Bedroom 01	99%	Yes
A-42	Bedroom 02	91%	Yes
A-43	LKD	100%	Yes
A-43	Bedroom 01	97%	Yes
A-43	Bedroom 02	99%	Yes
A-43	Bedroom 03	99%	Yes
A-44	LKD	100%	Yes
A-44	Bedroom 01	97%	Yes
A-44	Bedroom 02	96%	Yes
A-45	LKD	100%	Yes
A-45	Bedroom 01	100%	Yes
A-45	Bedroom 02	97%	Yes
A-46	LKD	100%	Yes
A-46	Bedroom 01	97%	Yes
A-46	Bedroom 02	98%	Yes
A-46	Bedroom 03	99%	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 F.1 on page 33.

G.2.5 Supplementary NSL Results: Apartment Block B

Table No. G.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%*
B-01	LKD	98%	Yes
B-01	Bedroom 01	98%	Yes
B-01	Bedroom 02	100%	Yes
B-01	Bedroom 03	96%	Yes
B-02	LKD	88%	Yes
B-02	Bedroom 01	99%	Yes
B-03	LKD	99%	Yes
B-03	Bedroom 01	98%	Yes
B-03	Bedroom 02	99%	Yes
B-03	Bedroom 03	91%	Yes
B-04	LKD	100%	Yes
B-04	Bedroom 01	97%	Yes
B-04	Bedroom 02	97%	Yes
B-05	LKD	87%	Yes
B-05	Bedroom 01	99%	Yes
B-06	LKD	89%	Yes
B-06	Bedroom 01	95%	Yes
B-07	LKD	98%	Yes
B-07	Bedroom 01	97%	Yes
B-07	Bedroom 02	98%	Yes
B-07	Bedroom 03	97%	Yes
B-08	LKD	99%	Yes
B-08	Bedroom 01	98%	Yes
B-08	Bedroom 02	100%	Yes
B-08	Bedroom 03	98%	Yes
B-09	LKD	88%	Yes
B-09	Bedroom 01	99%	Yes
B-10	LKD	100%	Yes
B-10	Bedroom 01	99%	Yes
B-10	Bedroom 02	100%	Yes
B-11	LKD	100%	Yes
B-11	Bedroom 01	98%	Yes
B-11	Bedroom 02	99%	Yes
B-11	Bedroom 03	98%	Yes
B-12	LKD	100%	Yes
B-12	Bedroom 01	98%	Yes
B-12	Bedroom 02	98%	Yes
B-13	LKD	87%	Yes
B-13	Bedroom 01	99%	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 F.1 on page 33.

G.2.6 Supplementary NSL Results: Apartment Block B

Table No. G.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-14	LKD	89%	Yes
B-14	Bedroom 01	95%	Yes
B-15	LKD	98%	Yes
B-15	Bedroom 01	98%	Yes
B-15	Bedroom 02	98%	Yes
B-15	Bedroom 03	97%	Yes
B-16	LKD	100%	Yes
B-16	Bedroom 01	98%	Yes
B-16	Bedroom 02	99%	Yes
B-16	Bedroom 03	98%	Yes
B-17	LKD	88%	Yes
B-17	Bedroom 01	99%	Yes
B-18	LKD	100%	Yes
B-18	Bedroom 01	99%	Yes
B-18	Bedroom 02	99%	Yes
B-19	LKD	100%	Yes
B-19	Bedroom 01	98%	Yes
B-19	Bedroom 02	99%	Yes
B-19	Bedroom 03	98%	Yes
B-20	LKD	100%	Yes
B-20	Bedroom 01	98%	Yes
B-20	Bedroom 02	98%	Yes
B-21	LKD	87%	Yes
B-21	Bedroom 01	99%	Yes
B-22	LKD	89%	Yes
B-22	Bedroom 01	97%	Yes
B-23	LKD	98%	Yes
B-23	Bedroom 01	98%	Yes
B-23	Bedroom 02	98%	Yes
B-23	Bedroom 03	97%	Yes
B-24	LKD	100%	Yes
B-24	Bedroom 01	98%	Yes
B-24	Bedroom 02	99%	Yes
B-24	Bedroom 03	98%	Yes
B-25	LKD	88%	Yes
B-25	Bedroom 01	99%	Yes
B-26	LKD	100%	Yes
B-26	Bedroom 01	99%	Yes
B-26	Bedroom 02	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 F.1 on page 33.

G.2.7 Supplementary NSL Results: Apartment Block B

Table No. G.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-27	LKD	100%	Yes
B-27	Bedroom 01	98%	Yes
B-27	Bedroom 02	99%	Yes
B-27	Bedroom 03	98%	Yes
B-28	LKD	100%	Yes
B-28	Bedroom 01	98%	Yes
B-28	Bedroom 02	98%	Yes
B-29	LKD	87%	Yes
B-29	Bedroom 01	99%	Yes
B-30	LKD	88%	Yes
B-30	Bedroom 01	98%	Yes
B-31	LKD	100%	Yes
B-31	Bedroom 01	98%	Yes
B-31	Bedroom 02	98%	Yes
B-31	Bedroom 03	97%	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 F.1 on page 33.

G.2.8 Supplementary NSL Results: Apartment Block C

Table No. G.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%*
C-01	LKD	100%	Yes
C-01	Bedroom 01	73%	No
C-01	Bedroom 02	80%	No
C-01	Bedroom 03	56%	No
C-02	LKD	100%	Yes
C-02	Bedroom 01	72%	No
C-02	Bedroom 02	83%	Yes
C-02	Bedroom 03	66%	No
C-03	LKD	100%	Yes
C-03	Bedroom 01	99%	Yes
C-03	Bedroom 02	99%	Yes
C-04	LKD	100%	Yes
C-04	Bedroom 01	99%	Yes
C-05	LKD	100%	Yes
C-05	Bedroom 01	99%	Yes
C-06	LKD	100%	Yes
C-06	Bedroom 01	99%	Yes
C-07	LKD	100%	Yes
C-07	Bedroom 01	99%	Yes
C-08	LKD	100%	Yes
C-08	Bedroom 01	83%	Yes
C-08	Bedroom 02	88%	Yes
C-08	Bedroom 03	72%	No
C-09	LKD	67%	No
C-09	Bedroom 01	79%	No
C-09	Bedroom 02	66%	No
C-09	Bedroom 03	67%	No
C-10	LKD	100%	Yes
C-10	Bedroom 01	80%	No
C-10	Bedroom 02	96%	Yes
C-10	Bedroom 03	83%	Yes
C-11	LKD	100%	Yes
C-11	Bedroom 01	99%	Yes
C-11	Bedroom 02	99%	Yes
C-12	LKD	100%	Yes
C-12	Bedroom 01	99%	Yes
C-13	LKD	100%	Yes
C-13	Bedroom 01	99%	Yes
C-14	LKD	100%	Yes
C-14	Bedroom 01	99%	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 F.1 on page 33.

G.2.9 Supplementary NSL Results: Apartment Block C

Table No. G.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%*
C-15	LKD	100%	Yes
C-15	Bedroom 01	99%	Yes
C-16	LKD	100%	Yes
C-16	Bedroom 01	93%	Yes
C-16	Bedroom 02	97%	Yes
C-16	Bedroom 03	94%	Yes
C-17	LKD	68%	No
C-17	Bedroom 01	92%	Yes
C-17	Bedroom 02	81%	Yes
C-17	Bedroom 03	80%	Yes
C-18	LKD	100%	Yes
C-18	Bedroom 01	93%	Yes
C-18	Bedroom 02	98%	Yes
C-18	Bedroom 03	97%	Yes
C-19	LKD	100%	Yes
C-19	Bedroom 01	99%	Yes
C-19	Bedroom 02	99%	Yes
C-20	LKD	100%	Yes
C-20	Bedroom 01	99%	Yes
C-21	LKD	100%	Yes
C-21	Bedroom 01	99%	Yes
C-22	LKD	100%	Yes
C-22	Bedroom 01	99%	Yes
C-23	LKD	100%	Yes
C-23	Bedroom 01	99%	Yes
C-24	LKD	100%	Yes
C-24	Bedroom 01	94%	Yes
C-24	Bedroom 02	98%	Yes
C-24	Bedroom 03	96%	Yes
C-25	LKD	99%	Yes
C-25	Bedroom 01	96%	Yes
C-25	Bedroom 02	98%	Yes
C-25	Bedroom 03	96%	Yes
C-26	LKD	100%	Yes
C-26	Bedroom 01	97%	Yes
C-26	Bedroom 02	98%	Yes
C-26	Bedroom 03	97%	Yes
C-27	LKD	100%	Yes
C-27	Bedroom 01	99%	Yes
C-27	Bedroom 02	99%	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 F.1 on page 33.

G.2.10 Supplementary NSL Results: Apartment Block C

Table No. G.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%*
C-28	LKD	100%	Yes
C-28	Bedroom 01	99%	Yes
C-29	LKD	100%	Yes
C-29	Bedroom 01	99%	Yes
C-30	LKD	100%	Yes
C-30	Bedroom 01	99%	Yes
C-31	LKD	100%	Yes
C-31	Bedroom 01	99%	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 F.1 on page 33.

G.2.11 Supplementary NSL Results: Creche

Table No. G.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%*
Creche	Kitchen	100%	Yes
Creche	Classroom 01	100%	Yes
Creche	Classroom 03	100%	Yes
Creche	Classroom 04	98%	Yes
Creche	Classrooom 02	99%	Yes
Creche	Function Room	96%	Yes
Creche	Sleep Room 1	99%	Yes
Creche	Sleep Room 2	93%	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 F.1 on page 33.

G.2.12 Supplementary NSL Results: Duplex A

Table No. G.2.12 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
DA-01	LKD	91%	Yes
DA-01	Bedroom 01	99%	Yes
DA-01	Bedroom 02	98%	Yes
DA-02	LKD	93%	Yes
DA-02	Bedroom 01	100%	Yes
DA-02	Bedroom 02	98%	Yes
DA-03	LKD	91%	Yes
DA-03	Bedroom 01	99%	Yes
DA-03	Bedroom 02	98%	Yes
DA-04	LKD	86%	Yes
DA-04	Bedroom 01	100%	Yes
DA-04	Bedroom 02	99%	Yes
DA-05	LKD	85%	Yes
DA-05	Bedroom 01	99%	Yes
DA-05	Bedroom 02	99%	Yes
DA-06	LKD	95%	Yes
DA-06	Bedroom 01	100%	Yes
DA-06	Bedroom 02	98%	Yes
DA-07	LKD	100%	Yes
DA-07	Bedroom 01	99%	Yes
DA-07	Bedroom 02	100%	Yes
DA-07	Bedroom 03	96%	Yes
DA-08	LKD	100%	Yes
DA-08	Bedroom 01	100%	Yes
DA-08	Bedroom 02	100%	Yes
DA-08	Bedroom 03	96%	Yes
DA-09	Living Room	100%	Yes
DA-09	Bedroom 01	100%	Yes
DA-09	Bedroom 02	100%	Yes
DA-09	Bedroom 03	99%	Yes
DA-09	Kitchen/Dining	100%	Yes
DA-10	Living Room	97%	Yes
DA-10	Bedroom 01	100%	Yes
DA-10	Bedroom 02	96%	Yes
DA-10	Bedroom 03	99%	Yes
DA-10	Kitchen/Dining	99%	Yes
DA-11	Living Room	97%	Yes
DA-11	Bedroom 01	100%	Yes
DA-11	Bedroom 02	96%	Yes
DA-11	Bedroom 03	99%	Yes
DA-11	Kitchen/Dining	98%	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 F.1 on page 33.

G.2.13 Supplementary NSL Results: Duplex A

Table No. G.2.13 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
DA-12	Living Room	98%	Yes
DA-12	Bedroom 01	99%	Yes
DA-12	Bedroom 02	96%	Yes
DA-12	Bedroom 03	99%	Yes
DA-12	Kitchen/Dining	99%	Yes
DA-13	Living Room	99%	Yes
DA-13	Bedroom 01	99%	Yes
DA-13	Bedroom 02	96%	Yes
DA-13	Bedroom 03	98%	Yes
DA-13	Kitchen/Dining	98%	Yes
DA-14	Living Room	94%	Yes
DA-14	Bedroom 01	98%	Yes
DA-14	Bedroom 02	90%	Yes
DA-14	Bedroom 03	99%	Yes
DA-14	Kitchen/Dining	98%	Yes
DA-15	LKD	100%	Yes
DA-15	Bedroom 01	99%	Yes
DA-15	Bedroom 02	100%	Yes
DA-15	Bedroom 03	96%	Yes
DA-16	LKD	100%	Yes
DA-16	Bedroom 01	99%	Yes
DA-16	Bedroom 02	100%	Yes
DA-16	Bedroom 03	95%	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 F.1 on page 33.

G.2.14 Supplementary NSL Results: Duplex B

Table No. G.2.14 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
DB-01	LKD	100%	Yes
DB-01	Bedroom 01	100%	Yes
DB-02	LKD	80%	No
DB-02	Bedroom 01	98%	Yes
DB-02	Bedroom 02	98%	Yes
DB-03	LKD	78%	No
DB-03	Bedroom 01	98%	Yes
DB-03	Bedroom 02	98%	Yes
DB-04	LKD	96%	Yes
DB-04	Bedroom 01	98%	Yes
DB-04	Bedroom 02	97%	Yes
DB-05	LKD	100%	Yes
DB-05	Bedroom 01	99%	Yes
DB-06	LKD	100%	Yes
DB-06	Bedroom 01	99%	Yes
DB-07	Living Room	93%	Yes
DB-07	Bedroom 01	97%	Yes
DB-07	Bedroom 02	89%	Yes
DB-07	Bedroom 03	98%	Yes
DB-07	Kitchen/Dining	98%	Yes
DB-08	Living Room	97%	Yes
DB-08	Bedroom 01	99%	Yes
DB-08	Bedroom 02	96%	Yes
DB-08	Bedroom 03	98%	Yes
DB-08	Kitchen/Dining	98%	Yes
DB-09	Living Room	97%	Yes
DB-09	Bedroom 01	99%	Yes
DB-09	Bedroom 02	96%	Yes
DB-09	Bedroom 03	98%	Yes
DB-09	Kitchen/Dining	98%	Yes
DB-10	Living Room	100%	Yes
DB-10	Bedroom 01	99%	Yes
DB-10	Bedroom 02	100%	Yes
DB-10	Bedroom 03	98%	Yes
DB-10	Kitchen/Dining	99%	Yes
DB-11	LKD	100%	Yes
DB-11	Bedroom 01	99%	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 F.1 on page 33.

G.2.15 Supplementary NSL Results: Duplex B

Table No. G.2.15 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
DB-12	LKD	100%	Yes
DB-12	Bedroom 01	99%	Yes
DB-12	Bedroom 02	100%	Yes
DB-12	Bedroom 03	96%	Yes
DB-13	LKD	100%	Yes
DB-13	Bedroom 01	99%	Yes
DB-13	Bedroom 02	100%	Yes
DB-13	Bedroom 03	96%	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 F.1 on page 33.

G.2.16 Supplementary NSL Results: Duplex C

Table No. G.2.16 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
DC-01	LKD	99%	Yes
DC-01	Bedroom 01	98%	Yes
DC-02	LKD	99%	Yes
DC-02	Bedroom 01	100%	Yes
DC-03	LKD	99%	Yes
DC-03	Bedroom 01	98%	Yes
DC-04	LKD	100%	Yes
DC-04	Bedroom 01	87%	Yes
DC-05	LKD	100%	Yes
DC-05	Bedroom 01	99%	Yes
DC-06	Living Room	99%	Yes
DC-06	Bedroom 01	98%	Yes
DC-06	Bedroom 02	99%	Yes
DC-06	Bedroom 03	97%	Yes
DC-06	Kitchen / Dining	98%	Yes
DC-07	Living Room	99%	Yes
DC-07	Bedroom 01	98%	Yes
DC-07	Bedroom 02	96%	Yes
DC-07	Bedroom 03	97%	Yes
DC-07	Kitchen / Dining	99%	Yes
DC-08	Living Room	99%	Yes
DC-08	Bedroom 01	98%	Yes
DC-08	Bedroom 02	96%	Yes
DC-08	Bedroom 03	97%	Yes
DC-08	Kitchen / Dining	99%	Yes
DC-09	Living Room	99%	Yes
DC-09	Bedroom 01	94%	Yes
DC-09	Bedroom 02	89%	Yes
DC-09	Bedroom 03	97%	Yes
DC-09	Kitchen / Dining	96%	Yes
DC-10	LKD	100%	Yes
DC-10	Bedroom 01	95%	Yes
DC-11	LKD	100%	Yes
DC-11	Bedroom 01	99%	Yes
DC-12	LKD	100%	Yes
DC-12	Bedroom 01	99%	Yes
DC-12	Bedroom 02	100%	Yes
DC-12	Bedroom 03	95%	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 F.1 on page 33.

G.2.17 Supplementary NSL Results: Duplex C

Table No. G.2.17 - Supplementary NSL Results:			
Unit Number	Room Description	No Sky Line (NSL)	
		% of room where the sky is visible from the working plane	Above 80%*
DC-13	LKD	100%	Yes
DC-13	Bedroom 01	99%	Yes
DC-13	Bedroom 02	100%	Yes
DC-13	Bedroom 03	96%	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 F.1 on page 33.

H.0 Glossary

H.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 8.

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.

H.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. (-)

H.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 "F.3 Sunlight Exposure (SE) in Proposed Units" on page 66. 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.

I.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 7 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 11 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 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 EN17037:2018, UK National Annex BS EN17037:2019 and the associated BRE Guide 209 2022 Edition (June 2022), or any relevant future standards or guidance specific to the Irish context.

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

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

Dun Laoghaire-Rathdown County Development Plan (2022-2028)

The guidance provided in the Dun Laoghaire-Rathdown County Development Plan 2022-2028 (DLR) references the 2nd Edition of the BRE guidelines (BR 209).

Section 12.3.4.2 of the DLR Development Plan states:

"Development shall be guided by the principles of Site Layout Planning for Daylight and Sunlight, A guide to good practice (Building Research Establishment Report, 2011) and/or any updated, or subsequent guidance, in this regard."

The DLR Development Plan allows for consideration of any updated or subsequent guidance and, therefore, the 3rd edition of the BRE guidelines (BR 209), which was released in 2022 after the publication of the DLR Development Plan, is considered as the primary document.

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 2.2 on page 7.

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) 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 14. 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.