

July 2023

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# Tinakilly Two, Rathnew, Co. Wicklow

Daylight and Sunlight Assessment Report  
Applicant: Keldrum Limited, Ardale Property Group

*"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." - BRE 209*

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The full set of results for each assessment and shadow study can be found in the appendix section of this report.

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## 1.0 Executive Summary

### 1.1 Summary of Assessment

3D Design Bureau (3DDB) were commissioned to carry out a daylight and sunlight assessment, along with an accompanying shadow study for the proposed Tinakilly Two, Rathnew, Co. Wicklow.

The primary assessments carried out for this report are all in accordance with the BRE Guidelines.

Following advice within the BRE Guidelines, the surrounding context was carefully considered to ensure all properties and amenity spaces that may potentially experience a level of effect would be included in the study. Following this appraisal, no 'Impact Assessment' was necessary for this project.

The 'Scheme Performance' assessments have been broken down into the following categories: 'Primary Assessment' in the proposed apartment blocks and duplex units, 'Feasibility Study' in the proposed house types, and 'Supplementary Assessments' for all the assessed rooms, rooms, all of which are further explained below.

#### Scheme Performance

Daylight access for the habitable rooms with the apartment blocks and duplex units of the proposed development have been assessed through a Spatial Daylight Autonomy (SDA) study. Sunlight access for the same rooms has been quantified through a Sunlight Exposure (SE) assessment. The results of the primary scheme performance assessments can be found in section H.0 on page 26. A Sun On Ground (SOG) study has also been carried out to indicate the level of sunlight on March 21st in the proposed external amenity spaces. These results are summarised in section 1.2 and explained in section "5.1 Analysis of the Scheme Performance Results" on page 14.

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 the same rooms. The results of the supplementary scheme performance assessments can be found in section J.0 on page 78.

Finally, a feasibility assessment has been carried out to determine the capability of daylight access in the proposed house types under the BRE 209 and I.S. EN 17037 criterion. The results of the feasibility assessment can be found in section I.1 on page 68. These results are summarised in section 1.3 and explained in section "1.0 Feasibility Study Results" on page 68.

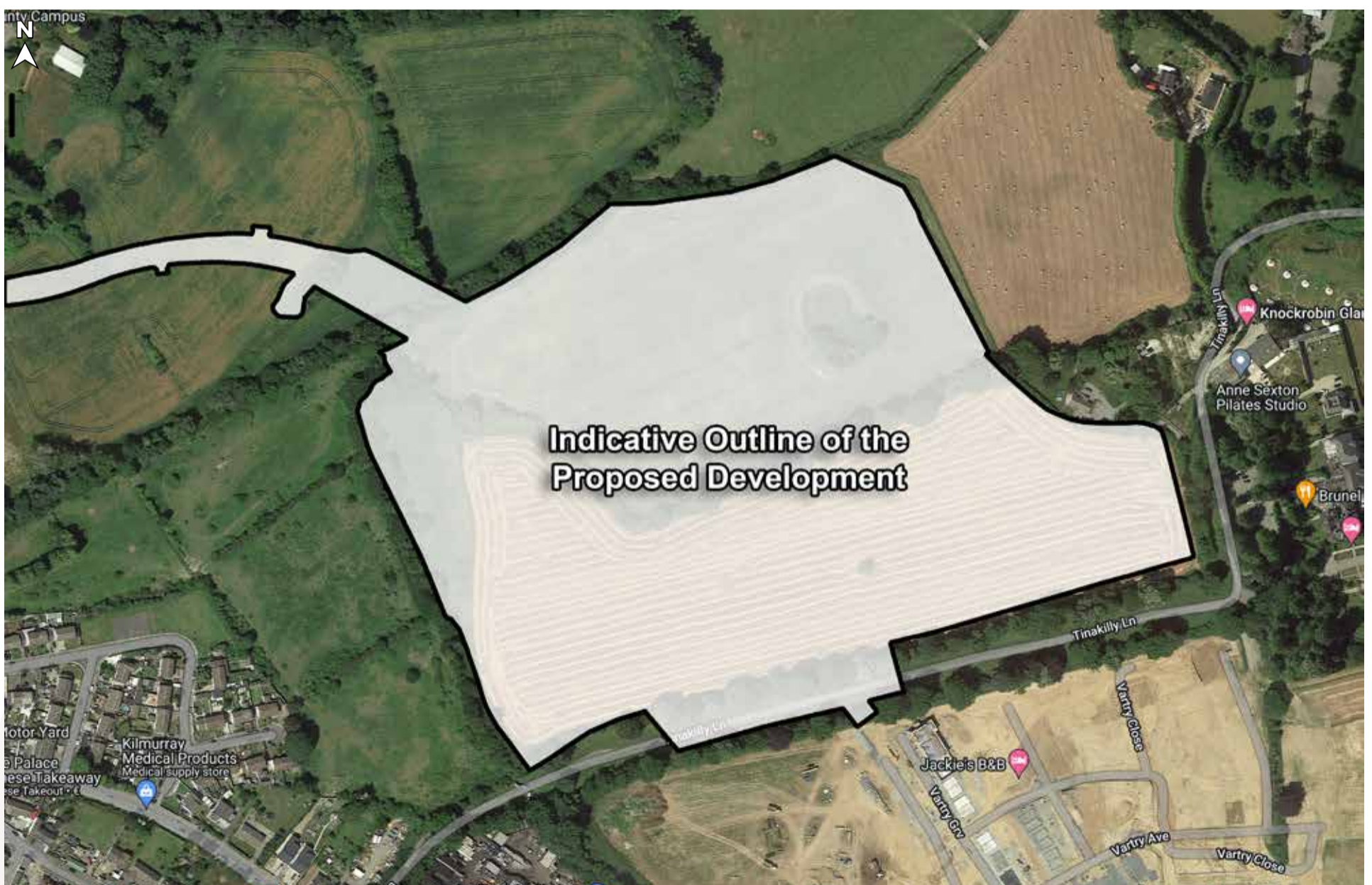


Figure 1.1: Scope of surrounding properties and environment assessed.

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## 1.2 Scheme Performance Results Overview: Spatial Daylight Autonomy (SDA):

Spatial Daylight Autonomy (SDA)	
Unit Count	124
Rooms Assessed	352
Without Trees	
Compliant	352
Non-compliant	0
Compliance Rate	100%
Trees in Winter State (Proposed and Existing Trees)	
Compliant	328
Non-compliant	24
Compliance Rate	c. 93%
Trees in Summer State (Proposed and Existing Trees)	
Compliant	327
Non-compliant	25
Compliance Rate	c. 93%

### Sunlight Exposure (SE):

Sunlight Exposure (SE)	
Units Assessed	124
SE with trees as opaque objects	
Non-Compliant	22
Minimum	13
Medium	4
High	85
Compliance Rate	c. 82%
SE without deciduous trees	
Non-Compliant	19
Minimum	16
Medium	3
High	86
Compliance Rate	c. 85%

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

Sun On Ground (SOG) in proposed gardens / amenity areas	
Areas Assessed	7
Areas meeting the guidelines	7
Areas not meeting the guidelines	0
Compliance Rate	100%

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### 1.3 Feasibility Study Results Overview:

#### SDA Feasibility Study under BRE 209 Criterion:

House Type Feasibility Study, SDA (BRE 209 Criterion)	
Unit Count	9
Rooms Assessed	49
Compliant	49
Non-compliant	0
Compliance Rate	100%

#### SDA Feasibility Study under I.S. EN 17037 Criterion:

House Type Feasibility Study, SDA (I.S. EN 17037 Criterion)	
Unit Count	9
Rooms Assessed	49
Compliant	40
Non-compliant	9
Compliance Rate	c. 82%



## 2.0 Guidelines / Standards

### Summary

It is the expert opinion of 3D Design Bureau, that the BRE Guidelines (*BRE 209*) are the most appropriate guiding document for daylight and sunlight assessment, as such BRE 209 will be the primary reference document for all primary studies carried out for this report. For daylight within proposed developments, a supplementary study has been carried out under the criteria of *I.S. EN 17037*.

Neither the British Standard, European Standard, British Annex to the European Standard nor the BRE Guide 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 Guide 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.

### **Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities. (2022)**

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

Paragraph 6.7 of the 2022 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 specifics. This may arise due to design constraints associated with the site or location and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

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

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

### **BRE - Site Layout Planning for Daylight and Sunlight: a Guide to Good Practice (2022)**

This document will be referred to as *the BRE Guidelines* in this report.

At the time of writing this report, the BRE Guidelines are in the third edition (BRE 209). The BRE Guidelines sets 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.

The BRE Guidelines have been used as the primary guiding document in the assessments that have been carried out for the purpose of this report, as they are referenced in Irish guidance documents:

- *Sustainable Urban Housing: Design Standards for New Apartments*, as published in December of 2022 by the Department of Housing, Planning and Local Government and Heritage.
- *Urban Development and Building Heights*, as published in December of 2018 by the Government of Ireland.

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

A detailed description of the various recommendations for scheme performance is contained in section "4.3 Quantitative Scheme Performance Assessment Overview" on page 11 of this report.

### **EN 17037:2018: Daylight in Buildings (2018)**

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

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

The target values given within EN 17037 are particularly onerous, especially where increased density is desired in a residential setting. 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 the primary assessment for sunlight within habitable rooms of the proposed development.

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

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

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

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

Regardless, a supplementary SDA study has been carried out using the same rooms as assessed under the primary study (BRE 209) using the criterion of *I.S. EN 17037*, with compliance rates stated. However, this should be considered a supplementary study. Compensatory design measures may not be put forward for non-compliant rooms under this standard as the rationale for non-compliance may be that targeting compliance with the I.S. EN 17037 daylight recommendations is not conducive to a well-balanced proposal.

### **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 could prove to be a difficult task. 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.

## 3.0 Glossary

### 3.1 Terms and Definitions

**Skylight**

Non directional ambient light cast from the sky and environment.

**Sunlight**

Direct parallel rays of light emitted from the sun.

**Daylight**

Combined skylight and sunlight.

**Overcast sky model**

A completely overcast sky model, used for daylight calculation.

**Cloudless sky model**

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

**Model State**

The model state is a term used to describe the configuration of the digital model used to run analysis. Model states will typically reflect a baseline state and a proposed or cumulative state. For a definition of the model states used in the analysis carried out in this report, please refer to "Preparing the analytical model" on page 10.

**Vertical Sky Component (VSC)**

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

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

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

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

**Sun On Ground (SOG)**

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

**Sunlight Exposure (SE)**

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

**Spatial Daylight Autonomy (SDA)**

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

**No Sky Line (NSL)**

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

**Working plane**

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

**LKD**

Living / Kitchen / Dining room.

**BRE Target Value**

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

**Alternative Target Value**

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

**Level of BRE Compliance**

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

**LUX**

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



## 3.2 Definition of Levels of Sunlight Exposure

For interiors, access to sunlight can be quantified. BRE 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 "H.2 Sunlight Exposure (SE) in Proposed Units" on page 46. Below is a list of the terms used to categorise the levels of sunlight exposure:

#### Below Minimum

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

#### Minimum

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

#### Medium

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

#### High

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

### 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 rooms 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 row related to each room.

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## 4.0 Methodology

### 4.1 Preparing the analytical model

#### 4.1.1 Building the Model States

Scott Tallon Walker Architects supplied 3DDB with a 3D model and AutoCAD drawings of the proposed development from which a 3D analytical model was created. Landscape drawings were issued by MURPHY + SHEANON Landscape Architecture. As standard practice, a combination of survey information, aerial photography, available online photography and/or ordnance survey information were used to model the surrounding context and assessed buildings. **Note:** as the information gathered from online sources is not as accurate as surveyed information, some tolerance should be allowed to the placement of windows, boundary treatments and the results generated.

##### Proposed model state

The proposed model state reflects the subject site if the development is built as proposed. This includes all the proposed blocks, proposed landscaping on the subject site and their materials, the demolition of existing structures, etc. Proposed trees have been included in the model.

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

##### Feasibility study model state

For the feasibility study, house types have been assessed with a hypothetical context. The model of the assessed unit is as per the architectural drawings.

When one house type has variations, 3DDB has assessed the variation that is more likely to underperform, as a worst-case scenario. This is to ensure that if a house type is compliant, their variations are likely to perform favourably.

The context model in the feasibility assessment is determined by the house type being assessed. The constraints of which represents a layout where the assessed house type is surrounded by house types of similar dimensions, with separation distances taken from the proposed site plan. No trees are included in this study as the inclusion of trees would greatly vary across different locations of the proposed site.

#### 4.1.2 Trees

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

For the purpose of the analysis carried out in this report, the position and size of trees have been estimated using the landscape information. The shape of the trees have been simplified and the species of each tree has been assumed. Simplified models of proposed trees within the development have also been included according to the information provided by the landscape architect.

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

##### Sun On Ground (SOG)

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

*"...trees and shrubs are not normally included in the calculation unless a dense belt or group of evergreens is specifically planned as a windbreak or for privacy purposes. This is partly because the dappled shade of a tree is more pleasant than the deep shadow of a building (this applies especially to deciduous trees)."*

As such, deciduous trees have not been included in the calculation of SOG in either the impact or scheme performance assessments. Evergreen trees should be included, particularly where a dense belt or group of evergreens is specifically planned as a windbreak or for privacy purposes.

##### Sunlight Exposure (SE)

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

##### Spatial Daylight Autonomy (SDA)

BRE 209 recommends when assessing daylight in a proposed building, it is appropriate to run the assessment with trees represented in both winter and summer conditions. Light transmittance values of 60% and 20% have been applied to deciduous tree canopies for winter and summer assessments respectively. A light transmittance value of 20% has been applied to evergreen trees throughout the year.

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 deciduous trees in summertime foliage to represent the worst case scenario.

##### SDA feasibility study

Trees are not included in feasibility study as the inclusion of trees would greatly vary across all proposed developments.

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### No Sky Line (NSL)

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

### Shadow Study

The hourly renderings of the shadow study have been generated without trees to allow for a better understanding of potential shadows cast by the proposed development itself.

## 4.2 Qualitative Assessment - Shadow Study

A shadow study has been carried out as a visual aid for the proposed model state, as outlined in section 4.1 on page 10. In certain cases, assumptions or estimations may have been made when modelling elements of the surrounding context and/or proposed site details. Therefore, it is advisable to apply some tolerance when interpreting shadows in this qualitative assessment. This visual representation of the shadows cast by the proposed development can be found in the hourly shadow diagrams in the appendix results section on page 25.

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

- Spring equinox:                      March 21st                      Sunrise 6:25 | Sunset 18:40. (GMT)
- Summer solstice:                      June 21st.                      Sunrise 4:57 | Sunset 21:57. (BST)
- Winter solstice:                      December 21st                      Sunrise 8:38 | Sunset 16:08. (GMT)

The hourly renderings of the shadow study will be generated without trees to allow for a better understanding of potential shadows cast by the proposed development itself.

**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 affect. Only the spring equinox was included in the shadow study images in accordance with the BRE Guidelines.

## 4.3 Quantitative Scheme Performance Assessment Overview

### 4.3.1 Spatial Daylight Autonomy in Proposed Habitable Rooms (SDA)

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

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

There are two methods for calculating SDA:

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

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

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

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

Where rooms serve more than one function, the higher SDA target value should be taken. In new developments, some internal spaces (e.g. studio apartments, shared communal areas etc.) can possibly be of a nature that do not have a predefined target value in BRE 209. In such instances, 3DDB have applied a target value they deem to be appropriate. In the scope of this project, no such spaces existed.

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

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### Defining Rooms

Definition of rooms has been taken directly from the architectural drawings supplied by the project architect. Areas defined as storage in rooms, as per the architectural plans, have been excluded from the assessment area.

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

Indication of the assessed space in each room is provided in the floor plans that correspond to the SDA results in the appendix section "H.O Scheme Performance Results" on page 26.

### 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 BRE 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:

Object	Material	Reflectance	Object	Material	Reflectance
					Transmittance
Exterior walls	Standard Brick	0.3	Interior Walls	Pastel paint	0.70
	Light Brick	0.4	Interior Ceiling	White paint	0.8
	Dark Brick	0.15	Interior Floor	Light timber	0.4
	Render	0.6	Miscellaneous	Miscellaneous	0.5
	Concrete	0.4	Glass	Double glazing	0.68
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

### Trees

The primary SDA results have been generated with trees represented in both summer and winter states of foliage as per the BRE Guidelines. The study has also been carried out without trees included in the analytical model. The assessment without trees should be considered a supplementary study. Its purpose is to demonstrate that in some instances the inclusion of trees will cause a reduction to daylight levels. However, this is a necessary consequence of a balanced built environment that includes trees and the benefits they bring.

I.S. EN 17037 does not give any advice on how to include trees in the assessment. The supplementary SDA study, under the I.S. EN 17037 criterion, has been carried out with trees in summer foliage to represent the worst case scenario.

### Project Assessment

The results for the study on SDA can be found in the appendix results section H.O on page 26.

Analysis of the results can be found in section 5.1.1 on page 14.

The results of the supplementary SDA study under the I.S. EN 17037 criterion can be found in section J.1 on page 78.

## 4.3.2 Sunlight Exposure in Proposed Habitable Rooms (SE)

Since the publication of the 3rd edition of the BRE Guidelines (BRE 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 (BRE 209 - 2011).

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

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

The level of sunlight exposure is categorised as follows:

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

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 (which ever is higher). If a room has multiple windows, the amount of sunlight received by each can be added together provided they occur at different times and sunlight hours are not double counted.

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

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### Project Assessment

The results for the study on sunlight exposure can be found in the appendix results section H.2 on page 46, with analysis of the results in section 5.1.2 on page 17.

### 4.3.3 Sun On Ground in Proposed Outdoor Amenity Areas (SOG)

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

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

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

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

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

### Project Assessment

The levels of sunlighting to proposed amenity areas, as indicated by the architect, have been assessed. However, it should be noted that the numbering 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) can be found in the appendix results section H.3 on page 66, with analysis of the results in section 5.1.3 on page 17.

### 4.3.4 Feasibility Study Proposed House Types

Housing developments typically contain a number of different house types that are repeated across the site. As such, it is impractical to run a daylight and sunlight assessment on each and every instance. Under these circumstances a feasibility assessment has been carried out to determine the potential for daylight access in each house type.

As surrounding context plays an important role in daylight assessment, it would be inappropriate to run any assessments without a reasonable context included. For the feasibility study a hypothetical assessment has been modelled for each house type. The constraints of the context model, in the feasibility assessment, represents a layout where the assessed house type is surrounded by house types of similar dimensions, with separation distances taken from the proposed site plan.

It is important to note that daylight values will vary for each house type when situated in the various locations across the site where constraints may differ due to obstructions caused by other buildings and/or trees.

Where a site contains slight variations to proposed house types, a representative house type will be assessed. In a terrace of houses, a central unit will be assessed as end of terrace units may contain additional windows on the gable which would lead to more favourable levels of daylight.

No Sunlight Exposure (SE) or Sun On Ground (SOG) assessments has been carried out as part of the feasibility study as sunlight access will vary greatly depending on the orientation of units within the site.

### 4.3.5 No Sky Line in Proposed Habitable Rooms (NSL)

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

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

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

All advice given for NSL in the BRE Guidelines are in relation to impact assessments. NSL is not mentioned in the BRE section regarding daylight in new developments. Regardless, a NSL assessment was carried out on the proposed development as a supplementary study as it is requested in the DCC development plan 2022-2028. Although the proposed development is not located within Dublin City, 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 skyline of 80% could be considered an appropriate figure given that the BRE Guidelines state that supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.

The results of the supplementary NSL study can be found in section J.2 on page 78.

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## 5.0 Analysis of Results

### 5.1 Analysis of the Scheme Performance Results

#### 5.1.1 Spatial Daylight Autonomy (SDA)

This study has assessed the Spatial Daylight Autonomy (SDA) received in all habitable rooms within the proposed apartment blocks and duplex units of the proposed development.

This assessment has been carried out in 124 no. units, which makes up approximately 352 no. habitable rooms.

Under the criteria as set out in the BRE 209, the SDA value in 327 & 328 no. habitable rooms meet or exceed their target values in the summer and winter time calculations respectively. This gives a circa compliance rate of 93% with summer trees & also c. 93% with the trees represented in the winter state. For a scheme of this size, this could be considered an very favourably level of compliance.

The additional SDA assessment that does not include trees has shown a compliance rate of 100%. This indicates that the design performs well in regard to daylight, but the trees are having an effect on the daylight performance of some rooms.

3DDB worked closely with the design and landscape team to ensure the best outcome for future occupants. Whilst trees can contribute towards a reduction of daylight in units they also reduce the risk of potential heat gain and are an integral part of any scheme with regard to environmental and planning grounds along with biodiversity. A conscious decision has been made to whether remove, retain or move a tree in the proposed site in order to achieve the compliance rate stated in this report.

I.S. EN 17037 sets out more onerous recommendations for SDA. As such, the number of rooms achieving compliance under this standard is 246, giving a reduced circa compliance rate of c. 70%.

With regards to internal daylighting, Section 6.7 of the Sustainable Urban Housing: Design Standards for New Apartments December 2022, states the following:

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

Where rooms are compliant with the criteria of BRE 209 and non-compliant with the I.S. EN 17037 criteria, it is the recommendation of 3D Design Bureau that these rooms will appear adequately daylit. The rationale for this opinion is that the criteria given in BRE 209 is room-specific, unlike I.S. EN 17037. BRE 209 takes into account the different daylight requirements of given room types, I.S. EN 17037 does not.

Based on the above statements, compensatory measures have been incorporated into the design of the proposed development where rooms do not achieve the daylight provision targets in accordance with the standards they were assessed against within the primary study (BRE 209).

All the rooms/units in the following list meet the recommended level of daylight when the assessment is carried out without the inclusion of trees. However, when trees are factored in, the level of daylight is reduced to below the recommended level. A conscious decision has been made to retain the trees affecting these rooms, as daylight is only one of many factors to be considered in achieving an appropriate urban design and streetscape solution for this sensitive site. Compensatory design solutions for these units are as follows:

##### **UNIT NUMBER AP.104 - LKD**

*Private Amenity Space of 10.5 sqm has been provided, which is in excess of the minimum 5 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2750mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.*

##### **UNIT NUMBER AP.105 - LKD**

*Private Amenity Space of 10.5 sqm has been provided, which is in excess of the minimum 5 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2750mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.*

##### **UNIT NUMBER AP.114 - LKD**

*Private Amenity Space of 8 sqm has been provided, which is in excess of the minimum 5 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2450mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.*

##### **UNIT NUMBER AP.115 - LKD**

*Private Amenity Space of 8 sqm has been provided, which is in excess of the minimum 5 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2450mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.*

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**UNIT NUMBER AP.204 - LKD**

Private Amenity Space of 10.5 sqm has been provided, which is in excess of the minimum 5 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2750mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.

**UNIT NUMBER AP.205 - LKD**

Private Amenity Space of 10.5 sqm has been provided, which is in excess of the minimum 5 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2750mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.

**UNIT NUMBER AP.214 - LKD**

Private Amenity Space of 8 sqm has been provided, which is in excess of the minimum 5 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2450mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.

**UNIT NUMBER AP.215 - LKD**

Private Amenity Space of 8 sqm has been provided, which is in excess of the minimum 5 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2450mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.

**UNIT NUMBER AP.301 - LKD**

Private Amenity Space of 10.5 sqm has been provided, which is in excess of the minimum 5 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2750mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.

**UNIT NUMBER AP.308 - LKD**

Private Amenity Space of 10.5 sqm has been provided, which is in excess of the minimum 5 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2750mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.

**UNIT NUMBER AP.311 - LKD**

Private Amenity Space of 8 sqm has been provided, which is in excess of the minimum 5 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2450mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.

**UNIT NUMBER G.185a - Bedroom 2**

This unit is dual aspect with views oriented toward adjacent open amenity space; Private Amenity Space of 20 sqm has been provided, which is in excess of the minimum 15 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2850mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.

**UNIT NUMBER G.188a - Bedroom 2**

This unit is dual aspect with views oriented toward adjacent open amenity space; Private Amenity Space of 20 sqm has been provided, which is in excess of the minimum 15 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2850mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.

**UNIT NUMBER G.189a - Bedroom 2**

This unit is dual aspect with views oriented toward adjacent open amenity space; Private Amenity Space of 20 sqm has been provided, which is in excess of the minimum 15 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2850mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.

**UNIT NUMBER G.190a - Bedroom 2**

This unit is dual aspect with views oriented toward adjacent open amenity space; Private Amenity Space of 20 sqm has been provided, which is in excess of the minimum 15 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2850mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.

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**UNIT NUMBER G.206a - LKD**

*This unit is dual aspect with views oriented toward adjacent open amenity space; Private Amenity Space of 20 sqm has been provided, which is in excess of the minimum 15 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2850mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.*

**UNIT NUMBER G.207a - LKD**

*This unit is dual aspect; Private Amenity Space of 20 sqm has been provided, which is in excess of the minimum 15 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2850mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.*

**UNIT NUMBER G.208a - LKD**

*This unit is dual aspect; Private Amenity Space of 20 sqm has been provided, which is in excess of the minimum 15 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2850mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.*

**UNIT NUMBER G.209a - LKD**

*This unit is dual aspect; Private Amenity Space of 20 sqm has been provided, which is in excess of the minimum 15 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2850mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.*

**UNIT NUMBER G.210a - LKD**

*This unit is dual aspect; Private Amenity Space of 20 sqm has been provided, which is in excess of the minimum 15 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2850mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.*

**UNIT NUMBER G.211a - LKD**

*This unit is dual aspect; Private Amenity Space of 20 sqm has been provided, which is in excess of the minimum 15 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2850mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.*

**UNIT NUMBER G.212a - LKD & Bedroom 2**

*This unit is dual aspect; Private Amenity Space of 20 sqm has been provided, which is in excess of the minimum 15 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2850mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.*

**UNIT NUMBER G.213a - LKD**

*This unit is dual aspect with views oriented toward adjacent open amenity space; Private Amenity Space of 20 sqm has been provided, which is in excess of the minimum 15 sqm required; This unit has access to dedicated Residential Amenity Space in excess of the minimum required as outlined in the accompanying Landscape Report; At 2850mm, the floor-to-ceiling height is in excess of the minimum required. The other habitable rooms in this unit are compliant with the daylight recommendations in BRE 209.*

**The results for the study on SDA can be seen in section H.0 on page 26.**



## 5.1.2 Sunlight Exposure (SE)

A sunlight exposure assessment has been carried out on all habitable rooms within the proposed apartment blocks and duplex units of the proposed development. The assessment has been carried out with deciduous trees represented both as opaque objects and removed from the model in accordance with the BRE Guidelines. Where a range of values is expressed in the following summary, this refers to the results generated with the deciduous trees as opaque objects and with deciduous trees not included. Evergreen trees, where no light can penetrate all year round, are included as opaque objects in both studies.

In total 124 no. units have been assessed, Using the rationale explained in section 3.2 on page 9, the level of sunlight exposure for 85-86 no. units is considered *high*, 3-4 no. *medium*, 13-16 no. have reached the *minimum* recommendation with 19-22 units below the *minimum* recommendation.

The SE assessment has shown that circa c. 82% - 85% of the proposed units meet the criteria for sunlight exposure as set out in the BRE Guidelines. Units that fall short of receiving a minimum of 1.5 hours of direct sunlight are oriented within 90 degrees of due north, therefore are not expected to receive higher levels due to their orientation.

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. **Note:** For a unit to be compliant under BRE 209, only one habitable room within the unit needs to meet the guideline values.

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 adequately in this regard.

The results for the study on SE in the habitable rooms of the proposed units can be seen in section H.2 on page 46.

## 5.1.3 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 7 no. spaces have been assessed, all no. of which would meet the criteria as set out in the BRE Guidelines.

The results for the study on sunlighting in the proposed outdoor amenity spaces can be found in section H.3 on page 66.

A visual representation of these readings can be seen in the false colour plan in section and in the hourly shadow diagrams for March 21st in section on page 25 of the appendix section of this report.

## 5.1.4 Feasibility Study - Spatial Daylight Autonomy (SDA)

An SDA feasibility study has been carried out on the following proposed house types within the proposed development:

House Type M (M1), House Type N (N1), House Type O (O1), House Type P (P2a), House Type Q (Q2a), House Type R (R2d), House Type W1b, House Type W2a and House Type Z (Z1).

In cases where a house type exhibits variations, 3DDB has evaluated the variant that is deemed to represent a worst-case scenario. This approach ensures that if a particular house type meets compliance standards, its variations are expected to perform even more favourably.

Daylight values will vary for each house type when situated in various locations across the site where constraints may differ due to obstructions caused by other buildings and/or trees. As all assessed house types have shown favourable daylight levels, the feasibility assessment has demonstrated that the house types within the proposed development have the potential for good daylight access.

## 6.0 Conclusion

3D Design Bureau (3DDB) were commissioned to carry out a daylight assessment, sunlight assessment and shadow study for the proposed development Tinakilly Two, Rathnew, Co. Wicklow.

This report includes a scheme performance assessment, which quantifies the level of daylight and sunlight within the proposed apartment blocks and duplex units.

The SDA assessment has shown 100% compliance when assessed without trees, indicating that the design team took the necessary steps to ensure access to daylight, and implemented design mitigation when needed to enhance the rooms' performance. When assessed with trees, a slight reduction in daylight results is observed, which is considered normal and not indicative of poor design, as trees are an integral part of any scheme with regard to environmental and planning grounds.

Additionally, the SE study demonstrated good levels of compliance for the units assessed. Units that fall short of receiving a minimum of 1.5 hours of direct sunlight are oriented within 90 degrees of due north, therefore are not expected to receive higher levels due to their orientation.

The SOG study carried out in the proposed shared amenity areas has shown full compliance with the BRE Guidelines

The feasibility study determined the capability of daylight access in the proposed house types. This assessment demonstrated that all proposed house types have potential to receive sufficient levels of daylight, as per BRE Guidelines.

In conclusion, it is the opinion of 3DDB that the proposed scheme performs favourably in regard to daylight and sunlight.

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# Appendix - Results

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



# Proposed

March 21st 7:00



March 21st 8:00



March 21st 9:00



March 21st 10:00



March 21st 11:00



March 21st 12:00



March 21st 13:00



March 21st 14:00



G.0  
G.1

Shadow Studies  
Shadow Study 21 March

Project: Tinakilly Two, Rathnew, Co. Wicklow



March 21st  
Sunrise 6:25 | Sunset 18:40

Applicant: Keldrum Limited,  
Ardale Property Group



# Proposed

March 21st 15:00



March 21st 16:00



March 21st 17:00



March 21st 18:00



Project: Tinakilly Two, Rathnew, Co. Wicklow



March 21st  
Sunrise 6:25 | Sunset 18:40

Applicant: Keldrum Limited,  
Ardale Property Group



# Proposed

June 21st 6:00



June 21st 7:00



June 21st 8:00



June 21st 9:00



June 21st 10:00



June 21st 11:00



June 21st 12:00



June 21st 13:00



G.2 Shadow Study 21 June

Project: Tinakilly Two, Rathnew, Co. Wicklow



June 21st  
Sunrise 4:57 | Sunset 21:57

Applicant: Keldrum Limited,  
Ardale Property Group



# Proposed

June 21st 14:00



June 21st 15:00



June 21st 16:00



June 21st 17:00



June 21st 18:00



June 21st 19:00



June 21st 20:00



June 21st 21:00



June 21st  
Sunrise 4:57 | Sunset 21:57

Project: Tinakilly Two, Rathnew, Co. Wicklow

Applicant: Keldrum Limited,  
Ardale Property Group







# Proposed

December 21st 9:00



December 21st 10:00



December 21st 11:00



December 21st 12:00



December 21st 13:00



December 21st 14:00



December 21st 15:00



December 21st 16:00



G.3 Shadow Study 21 December

Project: Tinakilly Two, Rathnew, Co. Wicklow



December 21st  
Sunrise 8:38 | Sunset 16:08

Applicant: Keldrum Limited,  
Ardale Property Group

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## H.0 Scheme Performance Results

### H.1 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. H.1 - Scheme Performance SDA						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria
			Without Trees	Winter	Summer	
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: Target Lux

Under BRE 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)

BRE 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 (Winter)

BRE 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 deciduous trees in the winter state, i.e. bare branch.

#### F: % of area above target Lux (Summer)

BRE 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 deciduous trees in full foliage.

#### G: Compliance with BRE 209 Criteria

This column states if the assessed room achieves the recommended level of daylight as per BRE 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'*.

If the target lux level is achieved across more than 50% of the working plane, for half the daylight hours, with the trees in the winter state but is not achieved with trees in the summer state, this column will state: *'Trees affecting compliance (summer only)'*.

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 on these figures may yield a negligible difference and should not be considered an error.

### H.1.1 Apartment Block 1 - Ground Floor

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Table No. H.1.1 - SDA Results: Apartment Block 1 - Ground Floor						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
AP.101	LKD	200	72%	72%	72%	Compliant
AP.101	Bedroom	100	100%	100%	100%	Compliant
AP.102	LKD	200	100%	100%	100%	Compliant
AP.102	Bedroom 1	100	100%	100%	100%	Compliant
AP.102	Bedroom 2	100	100%	100%	100%	Compliant
AP.103	LKD	200	83%	73%	68%	Compliant
AP.103	Bedroom 1	100	100%	86%	70%	Compliant
AP.103	Bedroom 2	100	100%	100%	100%	Compliant
AP.104	LKD	200	52%	41%	34%	Trees affecting compliance
AP.104	Bedroom	100	100%	99%	91%	Compliant
AP.105	LKD	200	50%	38%	33%	Trees affecting compliance
AP.105	Bedroom	100	100%	93%	83%	Compliant
AP.106	LKD	200	84%	78%	74%	Compliant
AP.106	Bedroom 1	100	100%	96%	83%	Compliant
AP.106	Bedroom 2	100	100%	100%	100%	Compliant
AP.107	LKD	200	100%	100%	100%	Compliant
AP.107	Bedroom 1	100	100%	100%	100%	Compliant
AP.107	Bedroom 2	100	100%	100%	100%	Compliant
AP.108	LKD	200	72%	72%	71%	Compliant
AP.108	Bedroom	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.



Figure H.1: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

## H.1.2 Apartment Block 1 - First Floor

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Table No. H.1.2 - SDA Results: Apartment Block 1 - First Floor						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
AP.111	LKD	200	72%	72%	71%	Compliant
AP.111	Bedroom	100	100%	100%	100%	Compliant
AP.112	LKD	200	100%	100%	100%	Compliant
AP.112	Bedroom 1	100	100%	100%	100%	Compliant
AP.112	Bedroom 2	100	100%	100%	100%	Compliant
AP.113	LKD	200	87%	82%	81%	Compliant
AP.113	Bedroom 1	100	100%	100%	99%	Compliant
AP.113	Bedroom 2	100	100%	100%	100%	Compliant
AP.114	LKD	200	56%	46%	43%	Trees affecting compliance
AP.114	Bedroom	100	100%	100%	100%	Compliant
AP.115	LKD	200	52%	43%	41%	Trees affecting compliance
AP.115	Bedroom	100	100%	100%	100%	Compliant
AP.116	LKD	200	88%	82%	80%	Compliant
AP.116	Bedroom 1	100	100%	100%	100%	Compliant
AP.116	Bedroom 2	100	100%	100%	100%	Compliant
AP.117	LKD	200	100%	100%	100%	Compliant
AP.117	Bedroom 1	100	100%	100%	100%	Compliant
AP.117	Bedroom 2	100	100%	100%	100%	Compliant
AP.118	LKD	200	72%	72%	72%	Compliant
AP.118	Bedroom	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

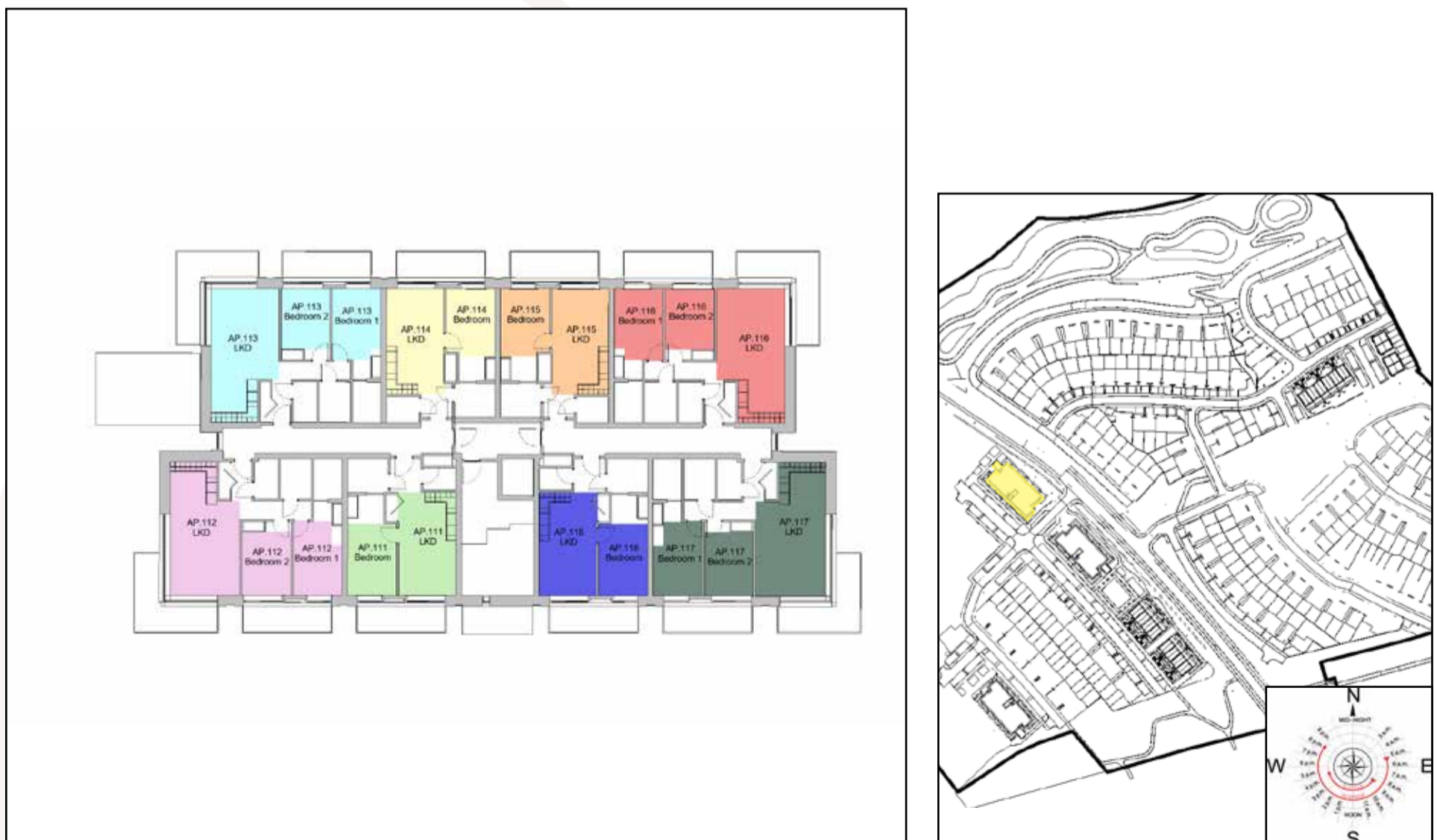


Figure H.2: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

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### H.1.3 Apartment Block 1 - Second Floor

Table No. H.1.3 - SDA Results: Apartment Block 1 - Second Floor

Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
AP.121	LKD	200	72%	72%	72%	Compliant
AP.121	Bedroom	100	100%	100%	100%	Compliant
AP.122	LKD	200	100%	100%	100%	Compliant
AP.122	Bedroom 1	100	100%	100%	100%	Compliant
AP.122	Bedroom 2	100	100%	100%	100%	Compliant
AP.123	LKD	200	90%	88%	87%	Compliant
AP.123	Bedroom 1	100	100%	100%	100%	Compliant
AP.123	Bedroom 2	100	100%	100%	100%	Compliant
AP.124	LKD	200	56%	52%	51%	Compliant
AP.124	Bedroom	100	100%	100%	100%	Compliant
AP.125	LKD	200	54%	52%	51%	Compliant
AP.125	Bedroom	100	100%	100%	100%	Compliant
AP.126	LKD	200	91%	88%	88%	Compliant
AP.126	Bedroom 1	100	100%	100%	100%	Compliant
AP.126	Bedroom 2	100	100%	100%	100%	Compliant
AP.127	LKD	200	100%	100%	100%	Compliant
AP.127	Bedroom 1	100	100%	100%	100%	Compliant
AP.127	Bedroom 2	100	100%	100%	100%	Compliant
AP.128	LKD	200	73%	72%	72%	Compliant
AP.128	Bedroom	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

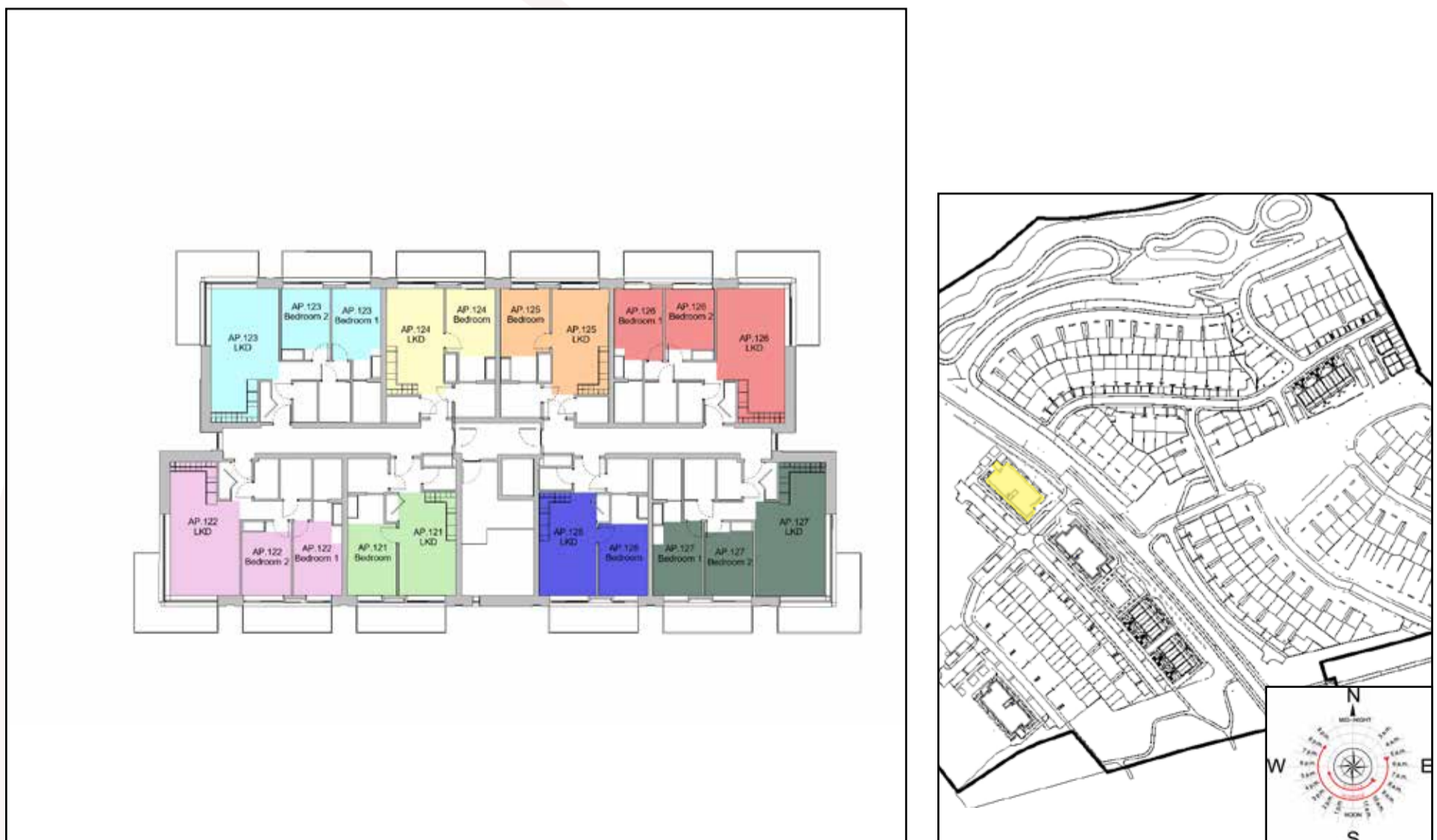


Figure H.3: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### H.1.4 Apartment Block 1 - Third Floor

RECEIVED: 14/08/2023

Table No. H.1.4 - SDA Results: Apartment Block 1 - Third Floor						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
AP.131	LKD	200	83%	83%	83%	Compliant
AP.131	Bedroom	100	100%	100%	100%	Compliant
AP.132	LKD	200	100%	100%	100%	Compliant
AP.132	Bedroom 1	100	100%	100%	100%	Compliant
AP.132	Bedroom 2	100	100%	100%	100%	Compliant
AP.133	LKD	200	99%	99%	98%	Compliant
AP.133	Bedroom 1	100	100%	100%	100%	Compliant
AP.133	Bedroom 2	100	100%	100%	100%	Compliant
AP.134	LKD	200	68%	67%	65%	Compliant
AP.134	Bedroom	100	100%	100%	100%	Compliant
AP.135	LKD	200	67%	65%	65%	Compliant
AP.135	Bedroom	100	100%	100%	100%	Compliant
AP.136	LKD	200	100%	100%	100%	Compliant
AP.136	Bedroom 1	100	100%	100%	100%	Compliant
AP.136	Bedroom 2	100	100%	100%	100%	Compliant
AP.137	LKD	200	100%	100%	100%	Compliant
AP.137	Bedroom 1	100	100%	100%	100%	Compliant
AP.137	Bedroom 2	100	100%	100%	100%	Compliant
AP.138	LKD	200	84%	84%	84%	Compliant
AP.138	Bedroom	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.



Figure H.4: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### H.1.5 Apartment Block 2 - Ground Floor

RECEIVED: 14/08/2023

Table No. H.1.5 - SDA Results: Apartment Block 2 - Ground Floor						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
AP.201	LKD	200	63%	56%	55%	Compliant
AP.201	Bedroom	100	100%	100%	100%	Compliant
AP.202	LKD	200	100%	99%	99%	Compliant
AP.202	Bedroom 1	100	100%	100%	100%	Compliant
AP.202	Bedroom 2	100	100%	100%	100%	Compliant
AP.203	LKD	200	85%	75%	70%	Compliant
AP.203	Bedroom 1	100	100%	90%	78%	Compliant
AP.203	Bedroom 2	100	100%	100%	100%	Compliant
AP.204	LKD	200	51%	37%	30%	Trees affecting compliance
AP.204	Bedroom	100	100%	95%	83%	Compliant
AP.205	LKD	200	52%	38%	31%	Trees affecting compliance
AP.205	Bedroom	100	100%	95%	80%	Compliant
AP.206	LKD	200	83%	76%	73%	Compliant
AP.206	Bedroom 1	100	100%	88%	80%	Compliant
AP.206	Bedroom 2	100	100%	100%	100%	Compliant
AP.207	LKD	200	100%	96%	94%	Compliant
AP.207	Bedroom 1	100	100%	100%	100%	Compliant
AP.207	Bedroom 2	100	100%	100%	100%	Compliant
AP.208	LKD	200	62%	59%	58%	Compliant
AP.208	Bedroom	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

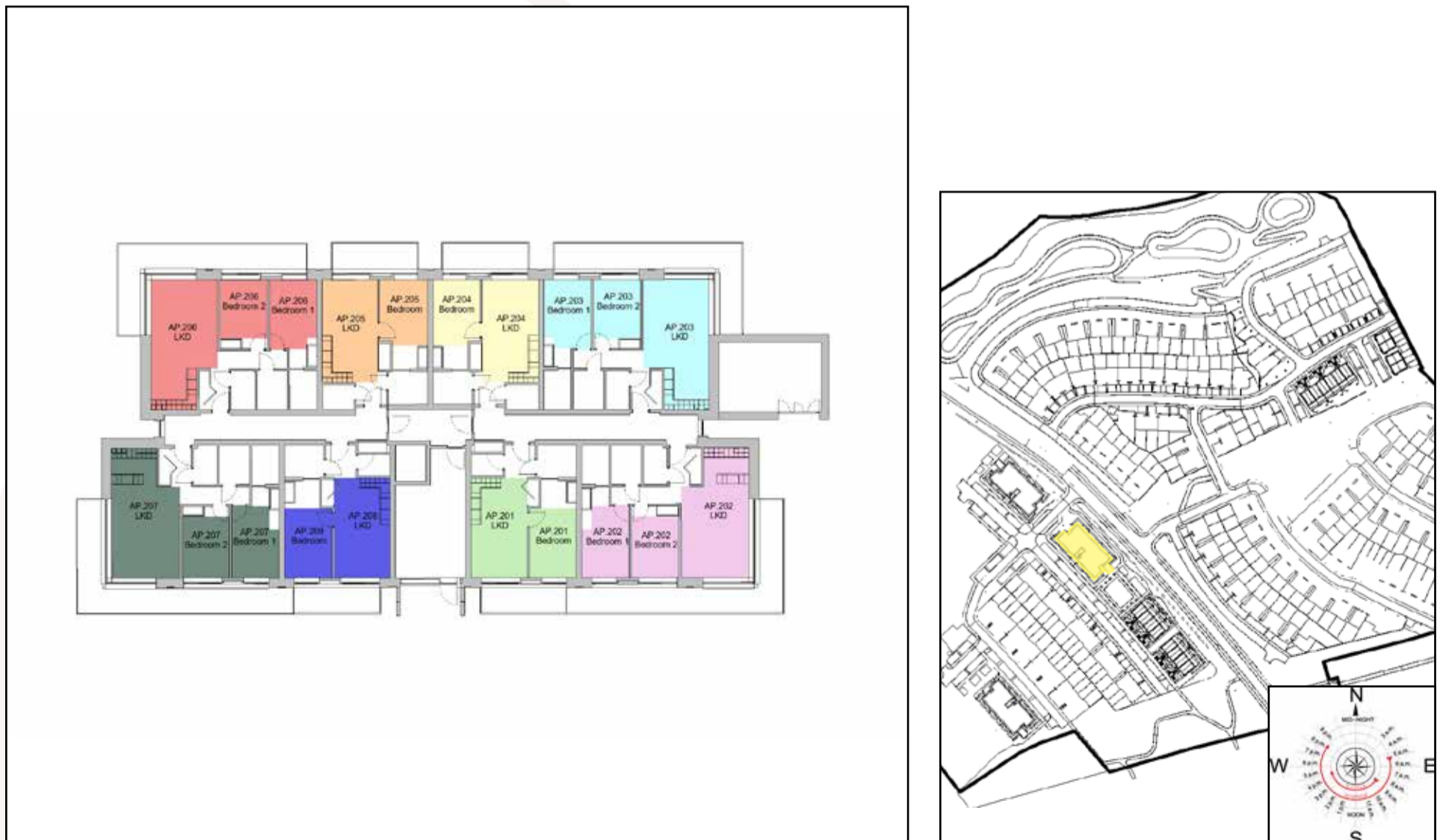


Figure H.5: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

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## H.1.6 Apartment Block 2 - First Floor

Table No. H.1.6 - SDA Results: Apartment Block 2 - First Floor						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
AP.211	LKD	200	69%	64%	61%	Compliant
AP.211	Bedroom	100	100%	100%	100%	Compliant
AP.212	LKD	200	100%	100%	100%	Compliant
AP.212	Bedroom 1	100	100%	100%	100%	Compliant
AP.212	Bedroom 2	100	100%	100%	100%	Compliant
AP.213	LKD	200	93%	86%	84%	Compliant
AP.213	Bedroom 1	100	100%	100%	100%	Compliant
AP.213	Bedroom 2	100	100%	100%	100%	Compliant
AP.214	LKD	200	53%	44%	40%	Trees affecting compliance
AP.214	Bedroom	100	100%	100%	97%	Compliant
AP.215	LKD	200	56%	46%	43%	Trees affecting compliance
AP.215	Bedroom	100	100%	100%	100%	Compliant
AP.216	LKD	200	86%	81%	79%	Compliant
AP.216	Bedroom 1	100	100%	100%	96%	Compliant
AP.216	Bedroom 2	100	100%	100%	100%	Compliant
AP.217	LKD	200	100%	99%	96%	Compliant
AP.217	Bedroom 1	100	100%	100%	100%	Compliant
AP.217	Bedroom 2	100	100%	100%	100%	Compliant
AP.218	LKD	200	68%	65%	64%	Compliant
AP.218	Bedroom	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

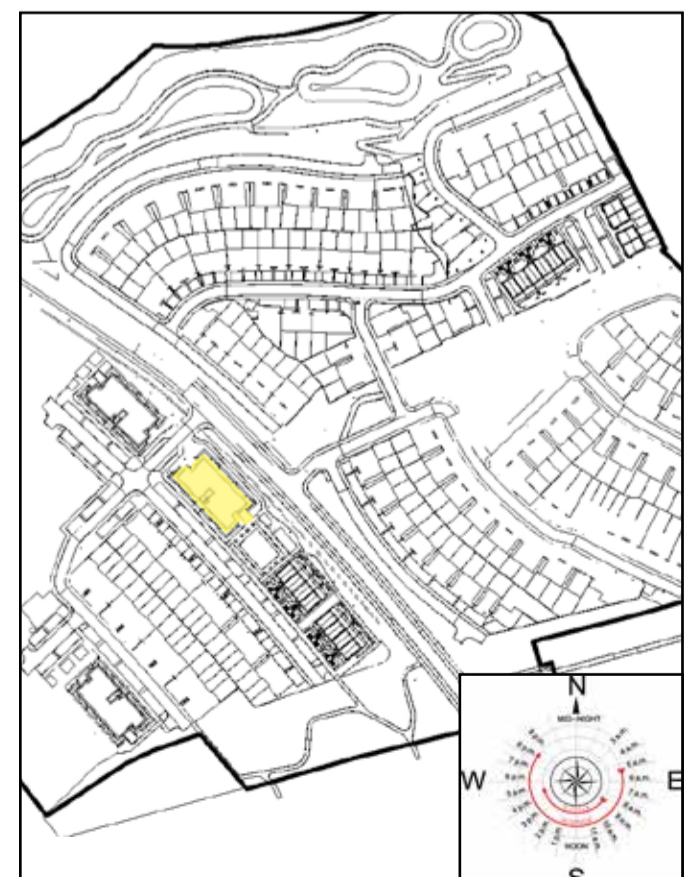
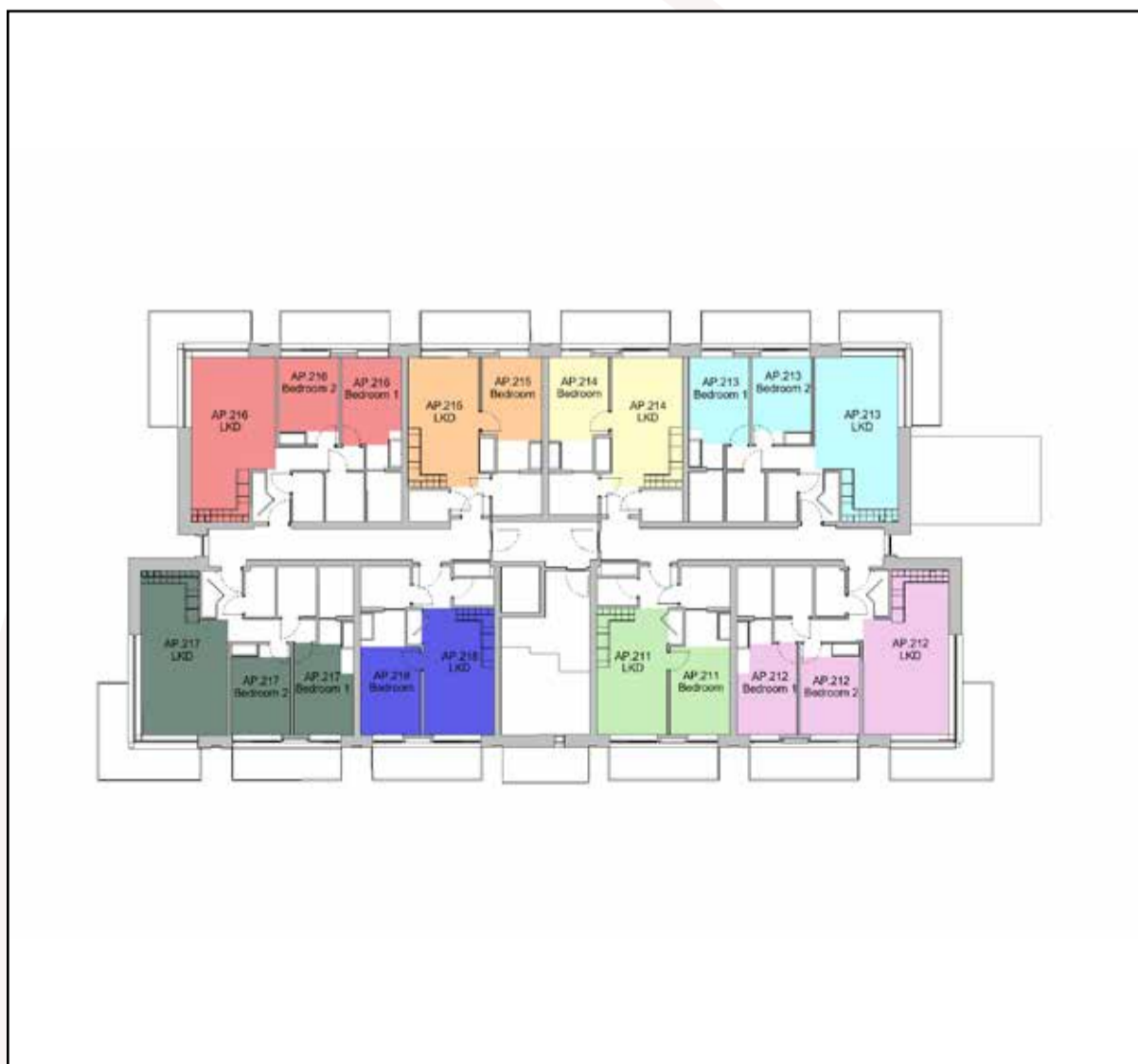


Figure H.6: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).



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### H.1.7 Apartment Block 2 - Second Floor

Table No. H.1.7 - SDA Results: Apartment Block 2 - Second Floor

Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
AP.221	LKD	200	76%	72%	69%	Compliant
AP.221	Bedroom	100	100%	100%	100%	Compliant
AP.222	LKD	200	100%	100%	100%	Compliant
AP.222	Bedroom 1	100	100%	100%	100%	Compliant
AP.222	Bedroom 2	100	100%	100%	100%	Compliant
AP.223	LKD	200	94%	91%	90%	Compliant
AP.223	Bedroom 1	100	100%	100%	100%	Compliant
AP.223	Bedroom 2	100	100%	100%	100%	Compliant
AP.224	LKD	200	54%	52%	51%	Compliant
AP.224	Bedroom	100	100%	100%	100%	Compliant
AP.225	LKD	200	56%	53%	51%	Compliant
AP.225	Bedroom	100	100%	100%	100%	Compliant
AP.226	LKD	200	88%	86%	85%	Compliant
AP.226	Bedroom 1	100	100%	100%	100%	Compliant
AP.226	Bedroom 2	100	100%	100%	100%	Compliant
AP.227	LKD	200	100%	100%	100%	Compliant
AP.227	Bedroom 1	100	100%	100%	100%	Compliant
AP.227	Bedroom 2	100	100%	100%	100%	Compliant
AP.228	LKD	200	74%	72%	71%	Compliant
AP.228	Bedroom	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

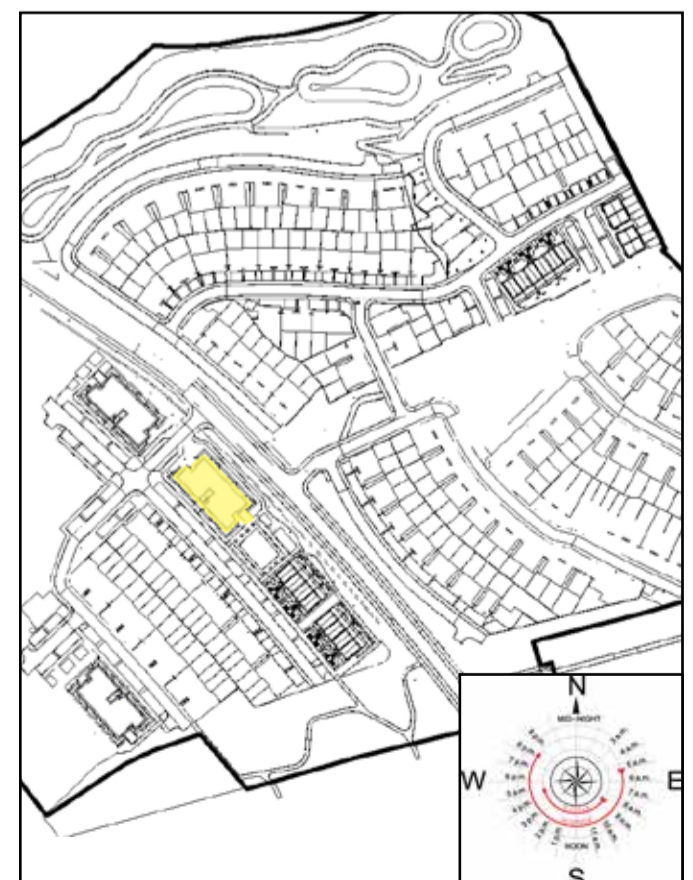
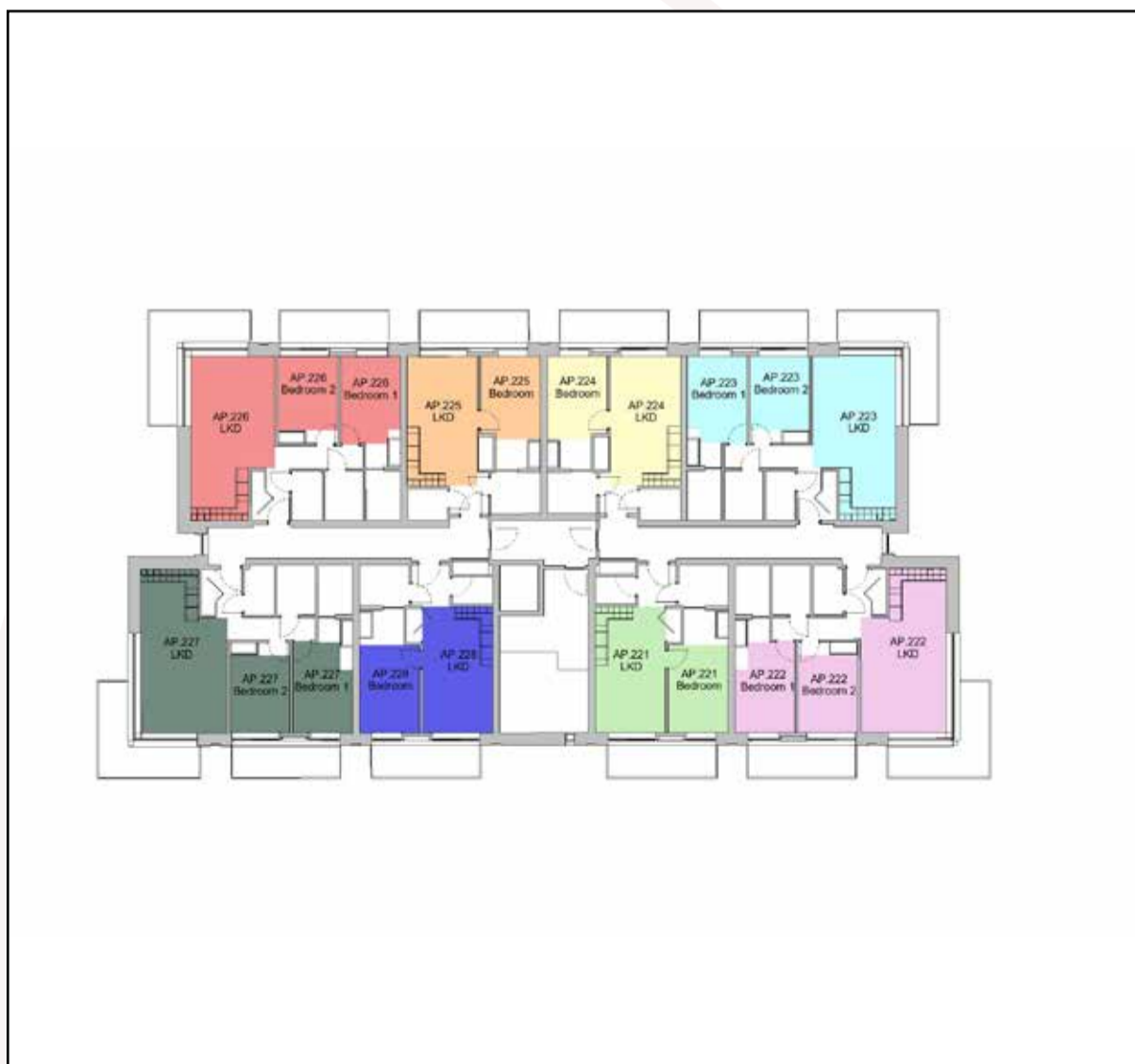


Figure H.7: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### H.1.8 Apartment Block 2 - Third Floor

RECEIVED: 14/08/2023

Table No. H.1.8 - SDA Results: Apartment Block 2 - Third Floor						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
AP.231	LKD	200	86%	85%	85%	Compliant
AP.231	Bedroom	100	100%	100%	100%	Compliant
AP.232	LKD	200	100%	100%	100%	Compliant
AP.232	Bedroom 1	100	100%	100%	100%	Compliant
AP.232	Bedroom 2	100	100%	100%	100%	Compliant
AP.233	LKD	200	100%	100%	100%	Compliant
AP.233	Bedroom 1	100	100%	100%	100%	Compliant
AP.233	Bedroom 2	100	100%	100%	100%	Compliant
AP.234	LKD	200	67%	64%	64%	Compliant
AP.234	Bedroom	100	100%	100%	100%	Compliant
AP.235	LKD	200	67%	65%	65%	Compliant
AP.235	Bedroom	100	100%	100%	100%	Compliant
AP.236	LKD	200	99%	98%	98%	Compliant
AP.236	Bedroom 1	100	100%	100%	100%	Compliant
AP.236	Bedroom 2	100	100%	100%	100%	Compliant
AP.237	LKD	200	100%	100%	100%	Compliant
AP.237	Bedroom 1	100	100%	100%	100%	Compliant
AP.237	Bedroom 2	100	100%	100%	100%	Compliant
AP.238	LKD	200	85%	84%	83%	Compliant
AP.238	Bedroom	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

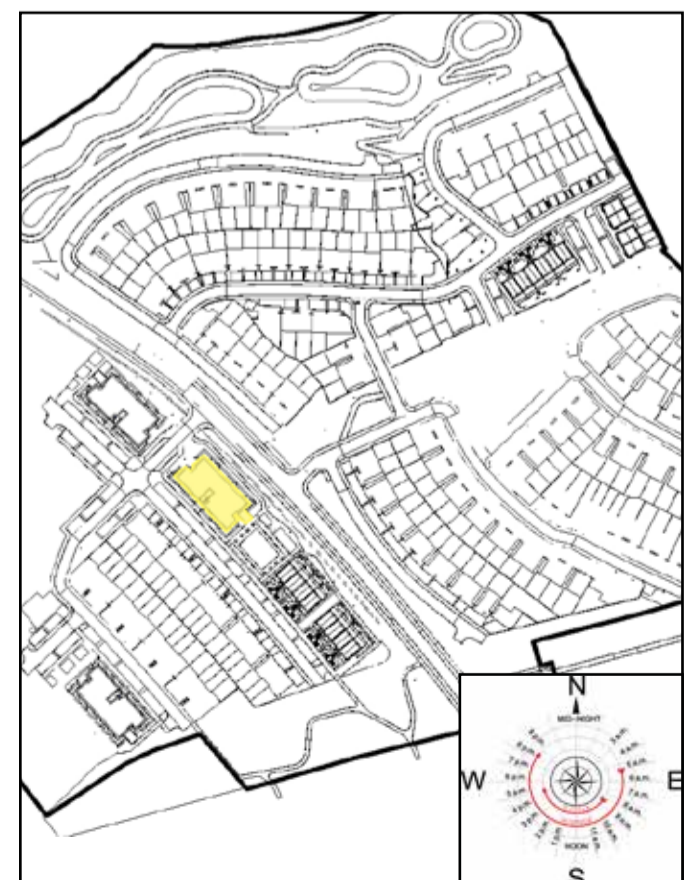
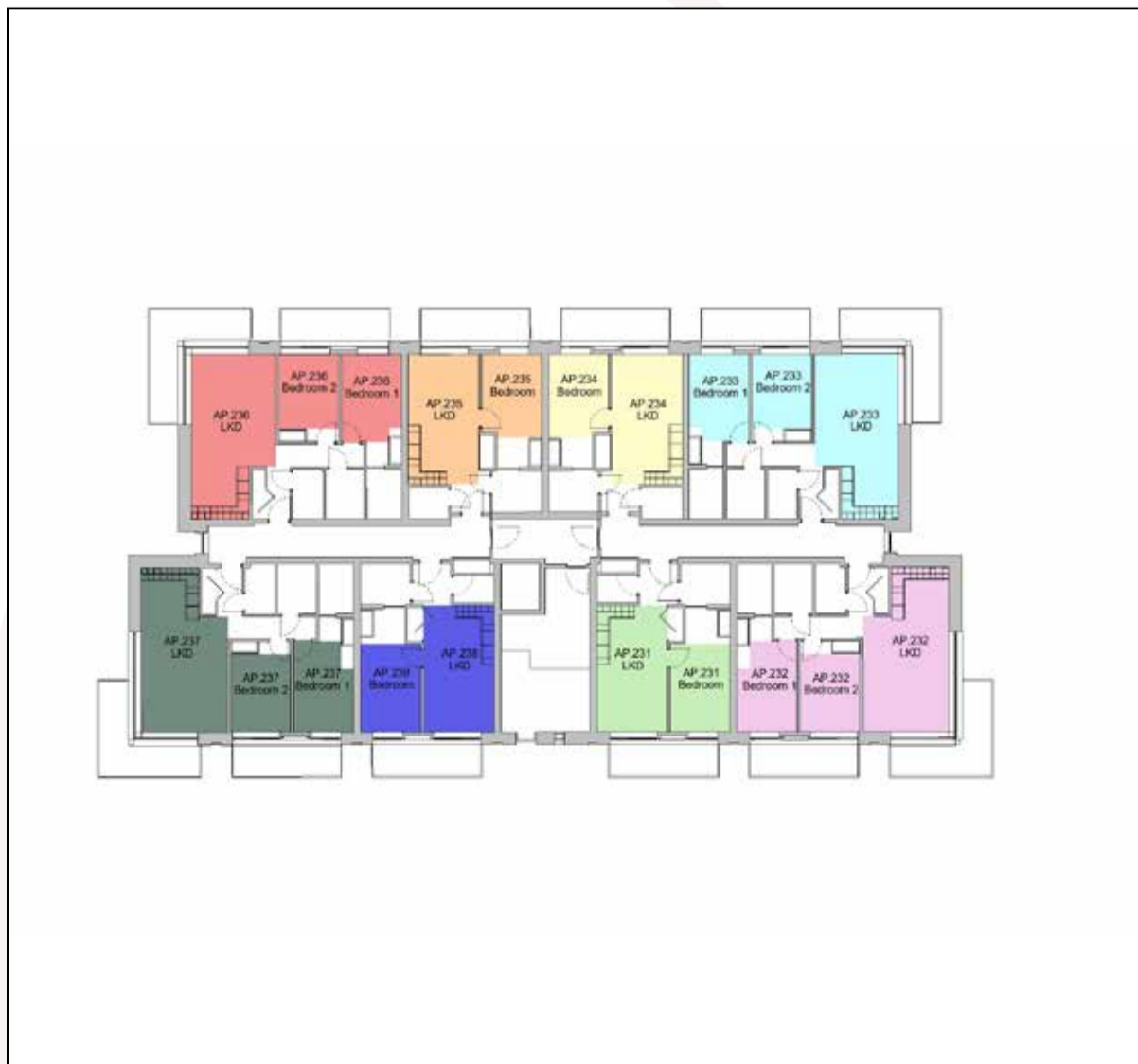


Figure H.8: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### H.1.9 Apartment Block 3 - Ground Floor

RECEIVED: 14/08/2023

Table No. H.1.9 - SDA Results: Apartment Block 3 - Ground Floor						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
AP.301	LKD	200	51%	47%	46%	Trees affecting compliance
AP.301	Bedroom	100	100%	94%	88%	Compliant
AP.302	LKD	200	100%	100%	100%	Compliant
AP.302	Bedroom 1	100	100%	99%	98%	Compliant
AP.302	Bedroom 2	100	100%	100%	100%	Compliant
AP.303	LKD	200	100%	100%	100%	Compliant
AP.303	Bedroom 1	100	100%	100%	100%	Compliant
AP.303	Bedroom 2	100	100%	100%	100%	Compliant
AP.304	LKD	200	68%	68%	68%	Compliant
AP.304	Bedroom	100	100%	100%	100%	Compliant
AP.305	LKD	200	72%	72%	72%	Compliant
AP.305	Bedroom	100	100%	100%	100%	Compliant
AP.306	LKD	200	99%	99%	99%	Compliant
AP.306	Bedroom 1	100	100%	100%	100%	Compliant
AP.306	Bedroom 2	100	100%	100%	100%	Compliant
AP.307	LKD	200	96%	94%	94%	Compliant
AP.307	Bedroom 1	100	100%	100%	98%	Compliant
AP.307	Bedroom 2	100	100%	100%	100%	Compliant
AP.308	LKD	200	50%	48%	47%	Trees affecting compliance
AP.308	Bedroom	100	100%	93%	90%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

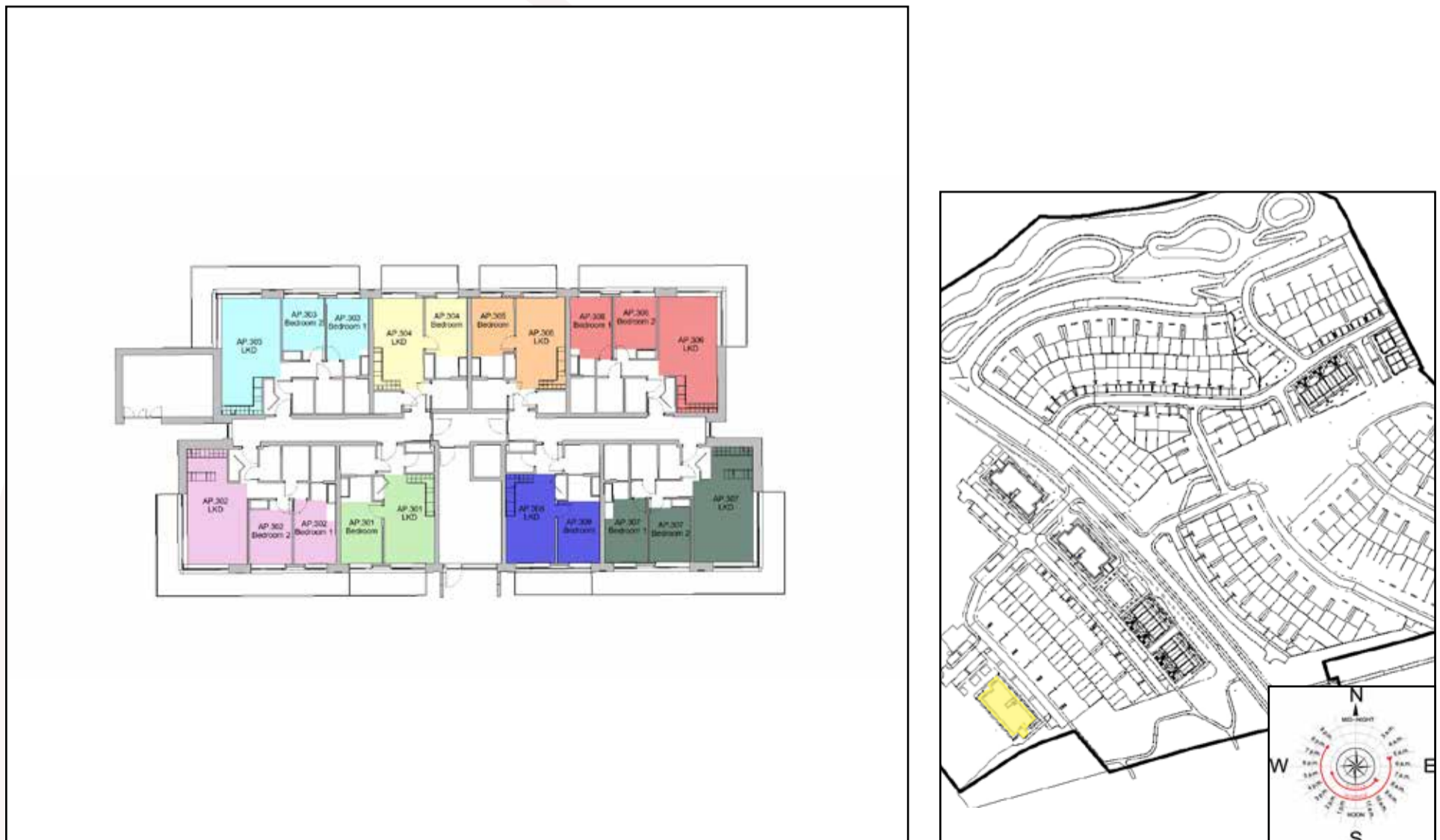


Figure H.9: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

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### H.1.10 Apartment Block 3 - First Floor

Table No. H.1.10 - SDA Results: Apartment Block 3 - First Floor						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
AP.311	LKD	200	56%	52%	51%	Compliant
AP.311	Bedroom	100	100%	100%	100%	Compliant
AP.312	LKD	200	100%	100%	100%	Compliant
AP.312	Bedroom 1	100	100%	100%	100%	Compliant
AP.312	Bedroom 2	100	100%	100%	100%	Compliant
AP.313	LKD	200	100%	100%	100%	Compliant
AP.313	Bedroom 1	100	100%	100%	100%	Compliant
AP.313	Bedroom 2	100	100%	100%	100%	Compliant
AP.314	LKD	200	68%	68%	68%	Compliant
AP.314	Bedroom	100	100%	100%	100%	Compliant
AP.315	LKD	200	68%	68%	68%	Compliant
AP.315	Bedroom	100	100%	100%	100%	Compliant
AP.316	LKD	200	96%	96%	96%	Compliant
AP.316	Bedroom 1	100	100%	100%	100%	Compliant
AP.316	Bedroom 2	100	100%	100%	100%	Compliant
AP.317	LKD	200	100%	99%	98%	Compliant
AP.317	Bedroom 1	100	100%	100%	100%	Compliant
AP.317	Bedroom 2	100	100%	100%	100%	Compliant
AP.318	LKD	200	56%	51%	48%	Trees affecting compliance (summer only)
AP.318	Bedroom	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.

\*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.

\*\*\* The SDA assessment without trees is a supplementary study which 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.

The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.



Figure H.10: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### H.1.11 Apartment Block 3 - Second Floor

RECEIVED: 14/08/2023

Table No. H.1.11 - SDA Results: Apartment Block 3 - Second Floor						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
AP.321	LKD	200	59%	57%	56%	Compliant
AP.321	Bedroom	100	100%	100%	100%	Compliant
AP.322	LKD	200	100%	100%	100%	Compliant
AP.322	Bedroom 1	100	100%	100%	100%	Compliant
AP.322	Bedroom 2	100	100%	100%	100%	Compliant
AP.323	LKD	200	100%	100%	100%	Compliant
AP.323	Bedroom 1	100	100%	100%	100%	Compliant
AP.323	Bedroom 2	100	100%	100%	100%	Compliant
AP.324	LKD	200	68%	68%	68%	Compliant
AP.324	Bedroom	100	100%	100%	100%	Compliant
AP.325	LKD	200	70%	70%	70%	Compliant
AP.325	Bedroom	100	100%	100%	100%	Compliant
AP.326	LKD	200	96%	96%	96%	Compliant
AP.326	Bedroom 1	100	100%	100%	100%	Compliant
AP.326	Bedroom 2	100	100%	100%	100%	Compliant
AP.327	LKD	200	100%	100%	100%	Compliant
AP.327	Bedroom 1	100	100%	100%	100%	Compliant
AP.327	Bedroom 2	100	100%	100%	100%	Compliant
AP.328	LKD	200	59%	57%	56%	Compliant
AP.328	Bedroom	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

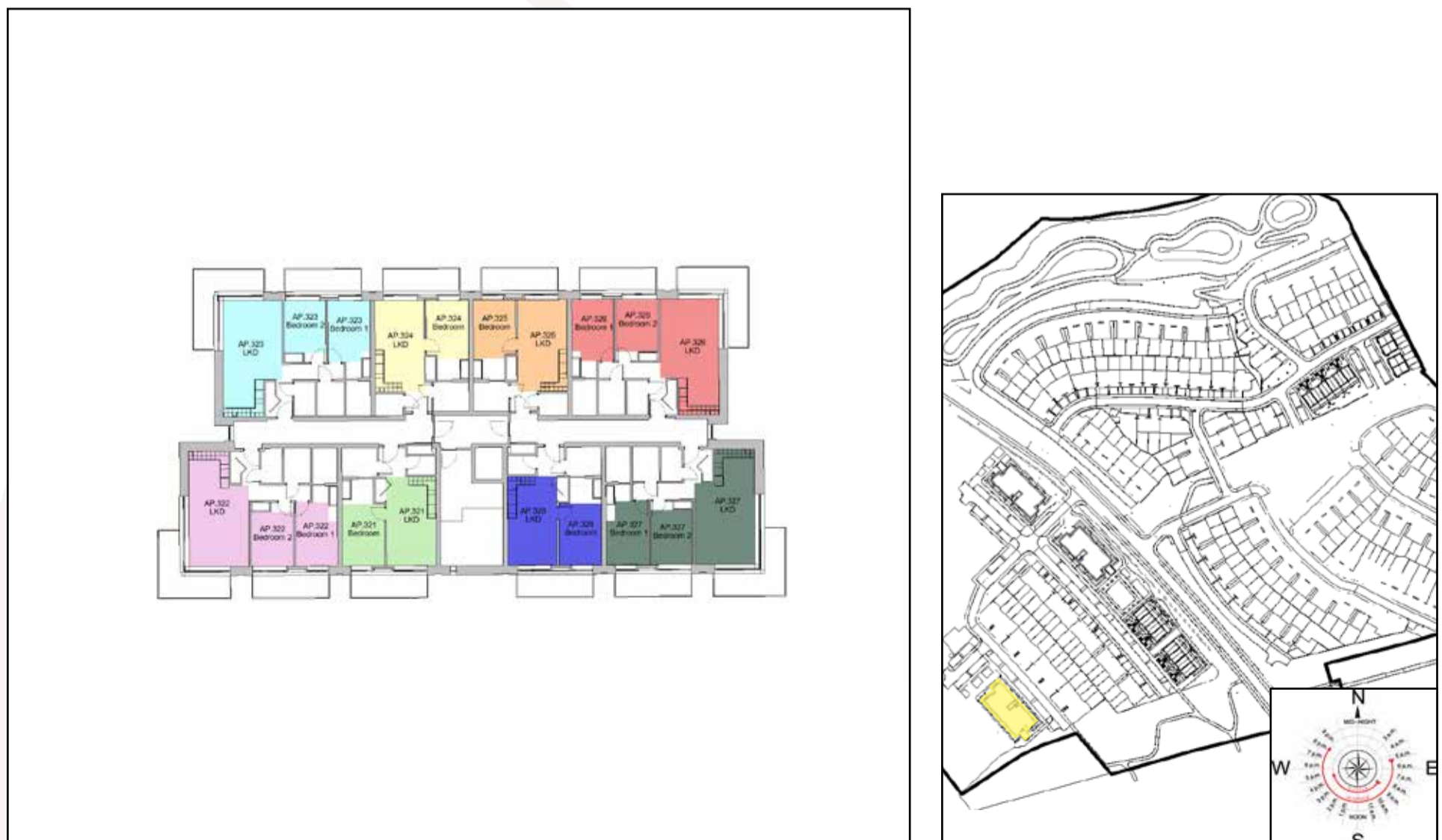


Figure H.11: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

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### H.1.12 Apartment Block 3 - Third Floor

Table No. H.1.12 - SDA Results: Apartment Block 3 - Third Floor						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
AP.331	LKD	200	71%	71%	71%	Compliant
AP.331	Bedroom	100	100%	100%	100%	Compliant
AP.332	LKD	200	100%	100%	100%	Compliant
AP.332	Bedroom 1	100	100%	100%	100%	Compliant
AP.332	Bedroom 2	100	100%	100%	100%	Compliant
AP.333	LKD	200	100%	100%	100%	Compliant
AP.333	Bedroom 1	100	100%	100%	100%	Compliant
AP.333	Bedroom 2	100	100%	100%	100%	Compliant
AP.334	LKD	200	79%	79%	79%	Compliant
AP.334	Bedroom	100	100%	100%	100%	Compliant
AP.335	LKD	200	80%	80%	80%	Compliant
AP.335	Bedroom	100	100%	100%	100%	Compliant
AP.336	LKD	200	100%	100%	100%	Compliant
AP.336	Bedroom 1	100	100%	100%	100%	Compliant
AP.336	Bedroom 2	100	100%	100%	100%	Compliant
AP.337	LKD	200	100%	100%	100%	Compliant
AP.337	Bedroom 1	100	100%	100%	100%	Compliant
AP.337	Bedroom 2	100	100%	100%	100%	Compliant
AP.338	LKD	200	70%	68%	68%	Compliant
AP.338	Bedroom	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

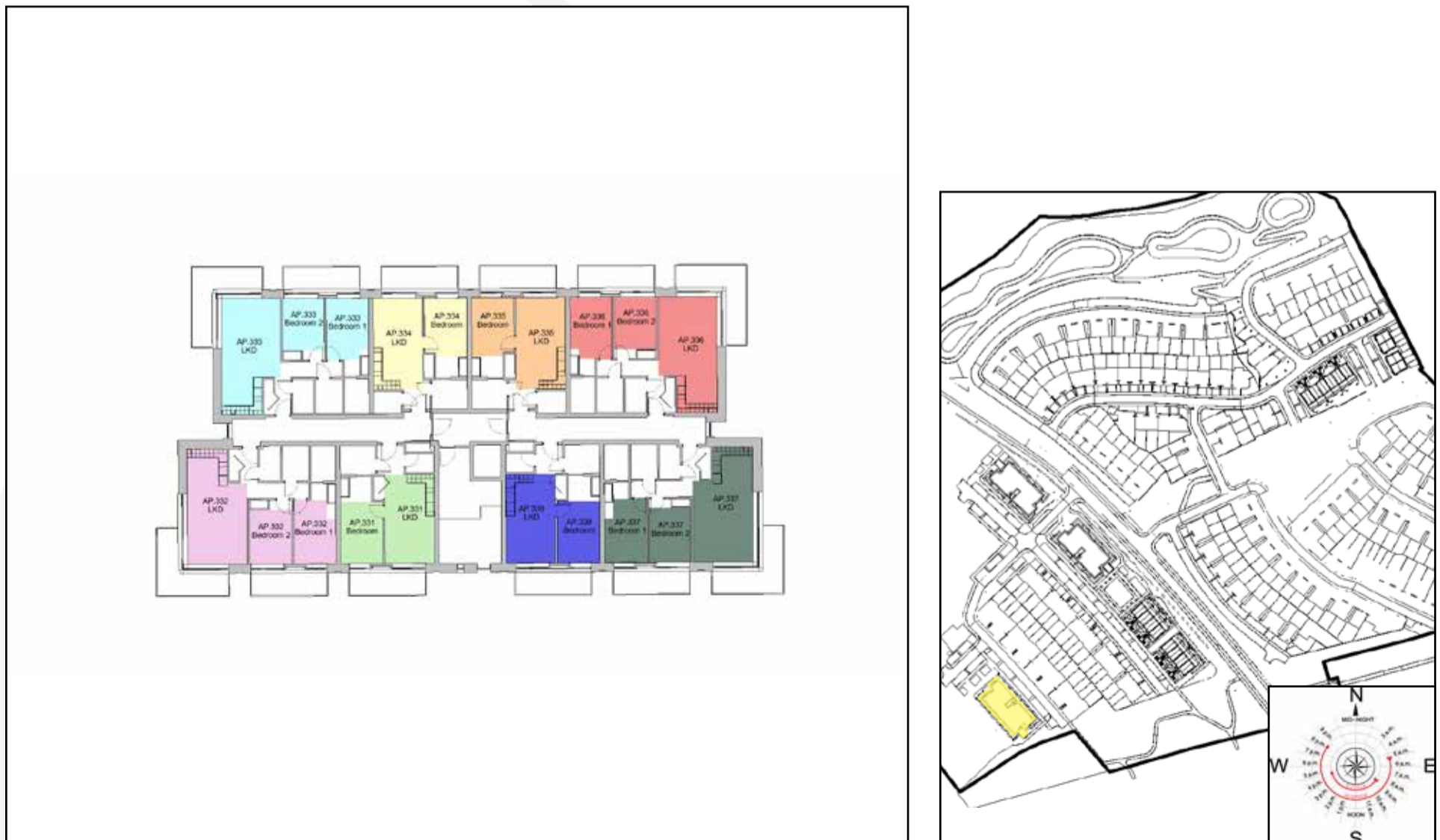


Figure H.12: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### H.1.13 Duplexes G. 185a - G. 190a - Ground Floor

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Table No. H.1.13 - SDA Results: Duplexes G. 185a - G. 190a - Ground Floor						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
G. 185a	K/L/D	200	87%	65%	61%	Compliant
G. 185a	Bedroom 1	100	100%	100%	100%	Compliant
G. 185a	Bedroom 2	100	53%	47%	47%	Trees affecting compliance
G. 186a	Bedroom 2	100	56%	53%	51%	Compliant
G. 186a	K/L/D	200	81%	59%	55%	Compliant
G. 186a	Bedroom 1	100	100%	100%	100%	Compliant
G. 187a	K/L/D	200	86%	62%	59%	Compliant
G. 187a	Bedroom 1	100	100%	100%	100%	Compliant
G. 187a	Bedroom 2	100	51%	50%	50%	Compliant
G. 188a	K/L/D	200	83%	60%	58%	Compliant
G. 188a	Bedroom 1	100	100%	100%	100%	Compliant
G. 188a	Bedroom 2	100	61%	47%	44%	Trees affecting compliance
G. 189a	K/L/D	200	91%	67%	65%	Compliant
G. 189a	Bedroom 1	100	100%	100%	100%	Compliant
G. 189a	Bedroom 2	100	57%	49%	47%	Trees affecting compliance
G. 190a	K/L/D	200	93%	68%	66%	Compliant
G. 190a	Bedroom 1	100	100%	100%	100%	Compliant
G. 190a	Bedroom 2	100	74%	38%	32%	Trees affecting compliance

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

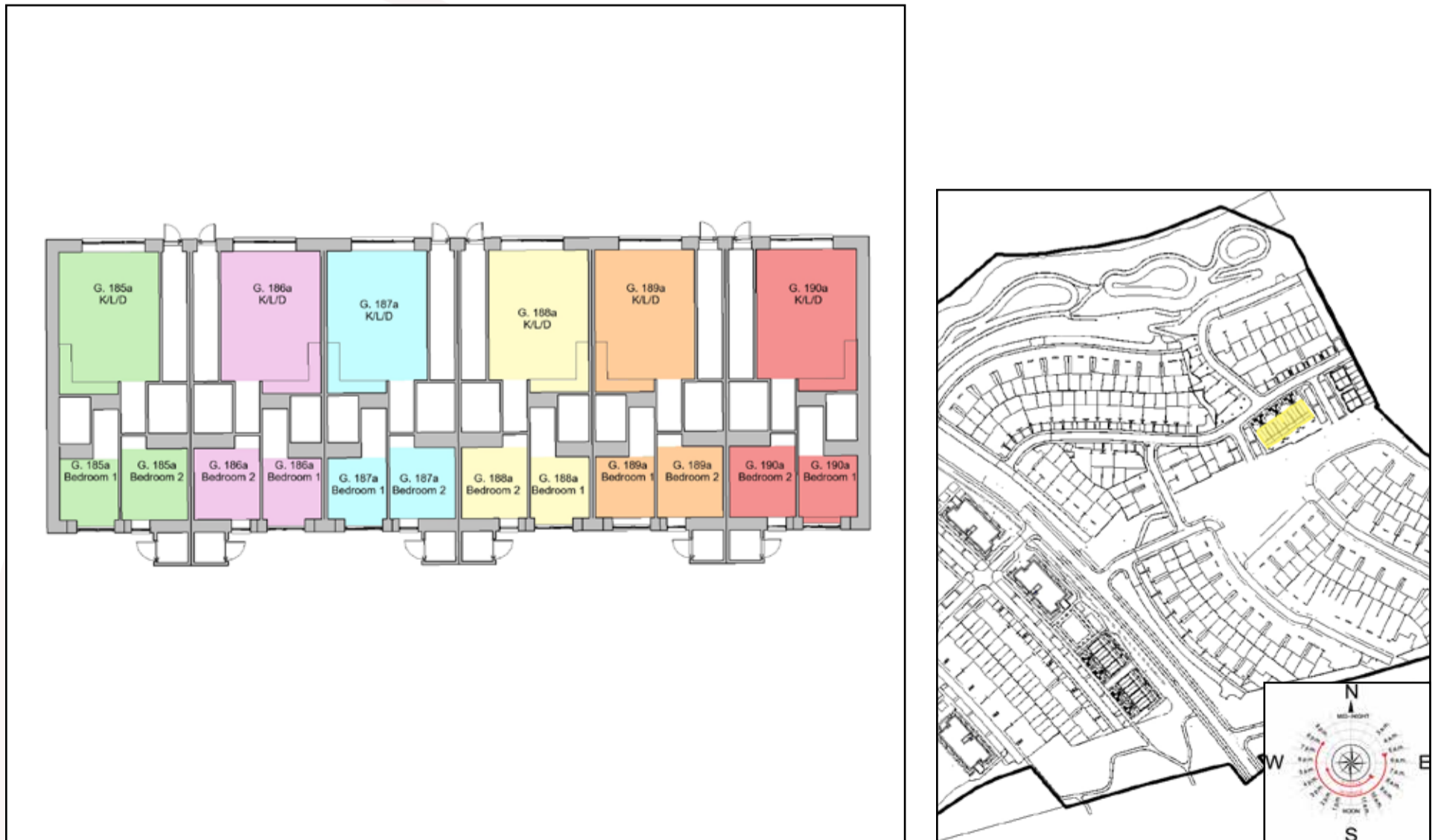


Figure H.13: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### H.1.14 Duplexes G. 185b - G. 187b - First and Second Floors

RECEIVED: 14/08/2023

Table No. H.1.14 - SDA Results: Duplexes G. 185b - G. 187b - First and Second Floors						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
G. 185b	Kitchen/Dining	200	100%	100%	100%	Compliant
G. 185b	Living Room	150	100%	100%	100%	Compliant
G. 185b	Master Bedroom	100	100%	100%	100%	Compliant
G. 185b	Bedroom 2	100	100%	100%	100%	Compliant
G. 185b	Bedroom 3	100	100%	100%	100%	Compliant
G. 186b	Kitchen/Dining	200	100%	100%	99%	Compliant
G. 186b	Living Room	150	100%	100%	100%	Compliant
G. 186b	Master Bedroom	100	100%	100%	100%	Compliant
G. 186b	Bedroom 2	100	100%	100%	100%	Compliant
G. 186b	Bedroom 3	100	100%	100%	100%	Compliant
G. 187b	Kitchen/Dining	200	100%	100%	99%	Compliant
G. 187b	Living Room	150	100%	100%	100%	Compliant
G. 187b	Master Bedroom	100	100%	100%	100%	Compliant
G. 187b	Bedroom 2	100	100%	100%	100%	Compliant
G. 187b	Bedroom 3	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.

\*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.

\*\*\* The SDA assessment without trees is a supplementary study which 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.

The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

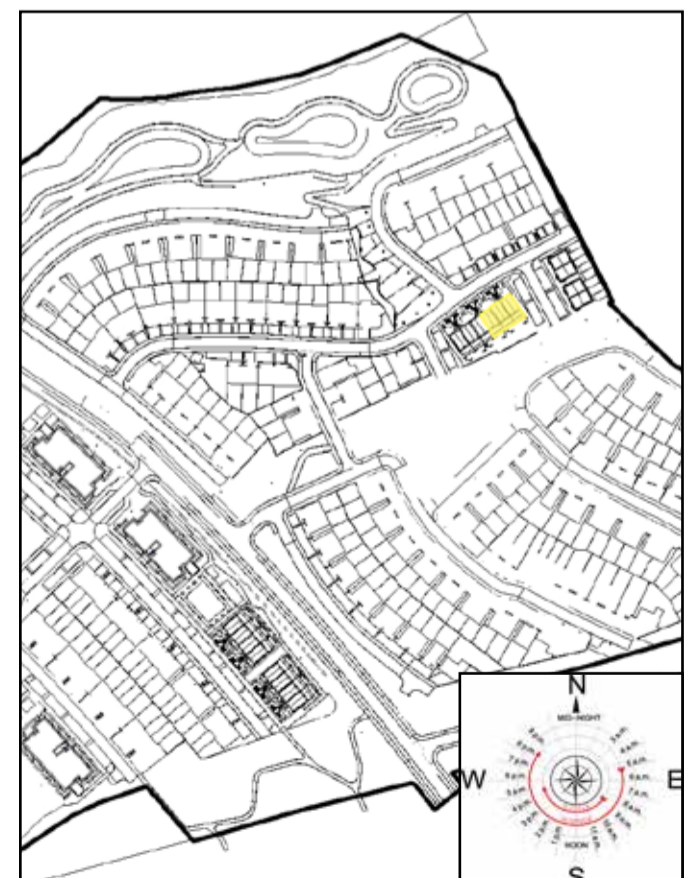
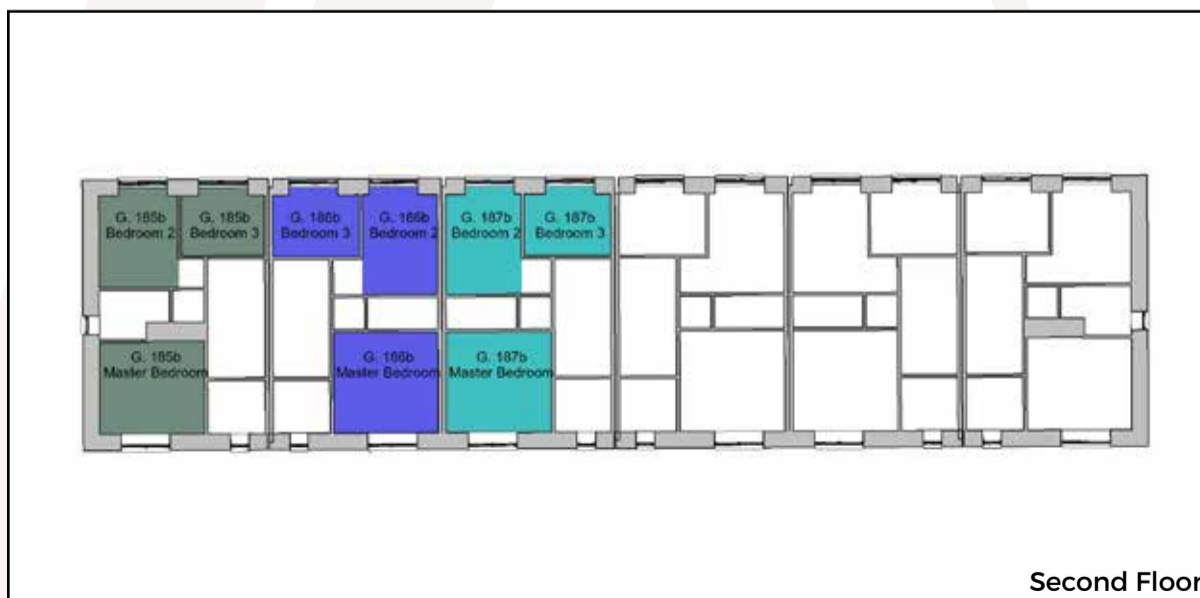


Figure H.14: Floor plans of assessed building (L), Keyplan highlighting the assessed building (R).



### H.1.15 Duplexes G. 188b - G. 190b - First and Second Floors

RECEIVED: 14/08/2023

Table No. H.1.15 - SDA Results: Duplexes G. 188b - G. 190b - First and Second Floors						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
G. 188b	Kitchen/Dining	200	100%	100%	100%	Compliant
G. 188b	Living Room	150	100%	100%	100%	Compliant
G. 188b	Master Bedroom	100	100%	100%	100%	Compliant
G. 188b	Bedroom 2	100	100%	100%	100%	Compliant
G. 188b	Bedroom 3	100	100%	100%	100%	Compliant
G. 189b	Kitchen/Dining	200	100%	100%	100%	Compliant
G. 189b	Living Room	150	100%	100%	100%	Compliant
G. 189b	Master Bedroom	100	100%	100%	100%	Compliant
G. 189b	Bedroom 2	100	100%	100%	100%	Compliant
G. 189b	Bedroom 3	100	100%	100%	100%	Compliant
G. 190b	Kitchen/Dining	200	100%	100%	100%	Compliant
G. 190b	Living Room	150	100%	100%	100%	Compliant
G. 190b	Master Bedroom	100	100%	100%	100%	Compliant
G. 190b	Bedroom 2	100	100%	100%	100%	Compliant
G. 190b	Bedroom 3	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

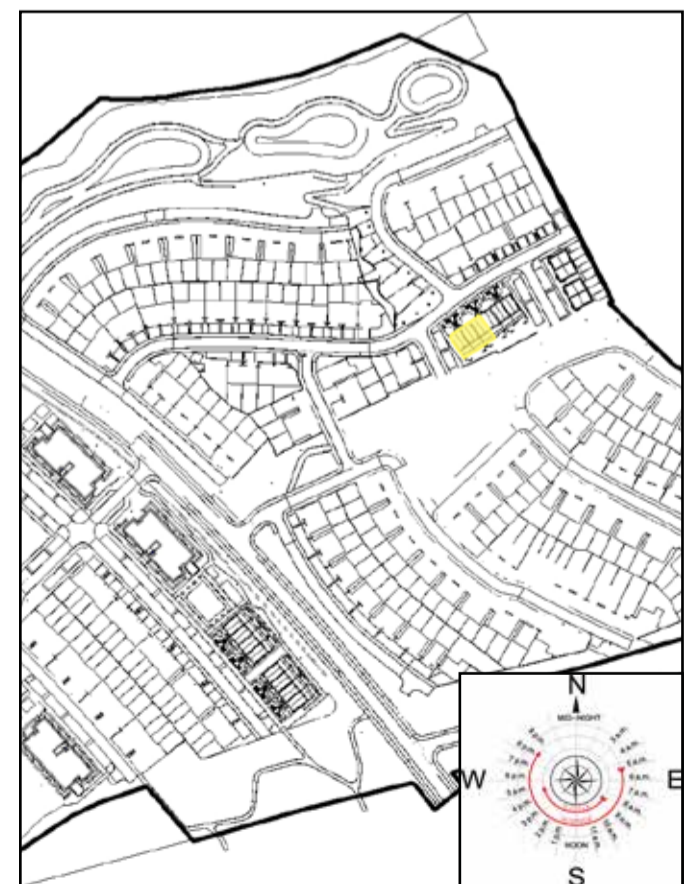


Figure H.15: Floor plans of assessed building (L), Keyplan highlighting the assessed building (R).

### H.1.16 Duplexes G. 206a - G. 209a - Ground Floor

RECEIVED: 14/08/2023

Table No. H.1.16 - SDA Results: Duplexes G. 206a - G. 209a - Ground Floor						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
G. 206a	K/L/D	200	62%	34%	29%	Trees affecting compliance
G. 206a	Bedroom 1	100	100%	100%	100%	Compliant
G. 206a	Bedroom 2	100	69%	56%	50%	Compliant
G. 207a	K/L/D	200	60%	43%	37%	Trees affecting compliance
G. 207a	Bedroom 1	100	100%	100%	100%	Compliant
G. 207a	Bedroom 2	100	81%	51%	50%	Compliant
G. 208a	K/L/D	200	61%	48%	42%	Trees affecting compliance
G. 208a	Bedroom 1	100	100%	100%	100%	Compliant
G. 208a	Bedroom 2	100	72%	40%	38%	Trees affecting compliance
G. 209a	K/L/D	200	62%	41%	36%	Trees affecting compliance
G. 209a	Bedroom 1	100	100%	100%	100%	Compliant
G. 209a	Bedroom 2	100	83%	68%	65%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

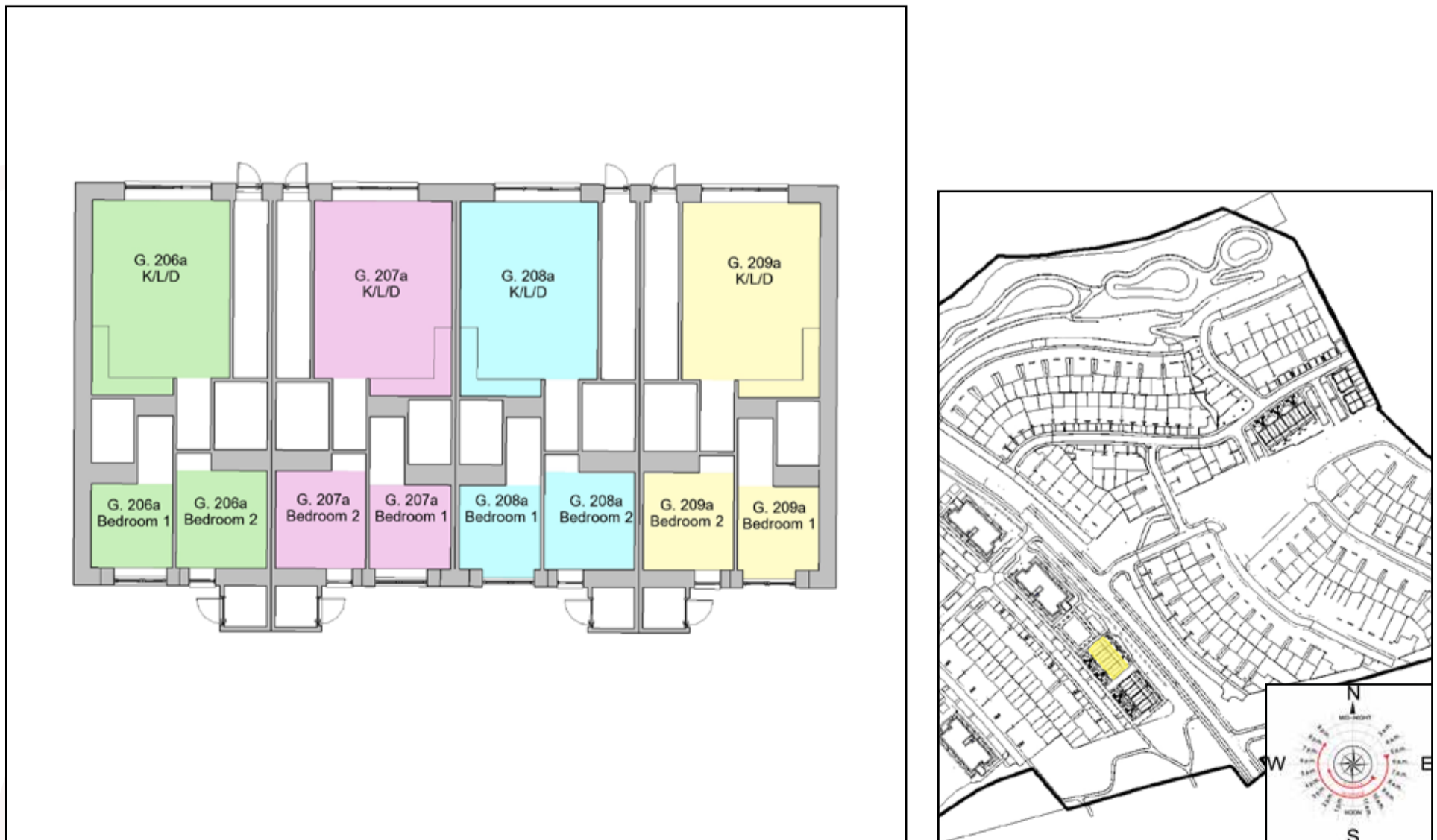


Figure H.16: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### H.1.17 Duplexes G. 206b - G. 209b - First and Second Floors

RECEIVED: 14/08/2023

Table No. H.1.17 - SDA Results: Duplexes G. 206b - G. 209b - First and Second Floors						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
G. 206b	Kitchen/Dining	200	100%	100%	100%	Compliant
G. 206b	Living Room	150	100%	100%	100%	Compliant
G. 206b	Master Bedroom	100	100%	100%	100%	Compliant
G. 206b	Bedroom 2	100	100%	100%	100%	Compliant
G. 206b	Bedroom 3	100	100%	100%	100%	Compliant
G. 207b	Kitchen/Dining	200	99%	95%	94%	Compliant
G. 207b	Living Room	150	100%	100%	100%	Compliant
G. 207b	Master Bedroom	100	100%	100%	100%	Compliant
G. 207b	Bedroom 2	100	100%	100%	100%	Compliant
G. 207b	Bedroom 3	100	100%	100%	100%	Compliant
G. 208b	Kitchen/Dining	200	98%	91%	88%	Compliant
G. 208b	Living Room	150	100%	100%	100%	Compliant
G. 208b	Master Bedroom	100	100%	100%	100%	Compliant
G. 208b	Bedroom 2	100	100%	100%	100%	Compliant
G. 208b	Bedroom 3	100	100%	100%	100%	Compliant
G. 209b	Kitchen/Dining	200	100%	100%	100%	Compliant
G. 209b	Living Room	150	100%	100%	100%	Compliant
G. 209b	Master Bedroom	100	100%	100%	100%	Compliant
G. 209b	Bedroom 2	100	100%	100%	100%	Compliant
G. 209b	Bedroom 3	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.



Figure H.17: Floor plans of assessed building (L), Keyplan highlighting the assessed building (R).

### H.1.18 Duplexes G. 210a - G. 213a - Ground Floor

RECEIVED: 14/08/2023

Table No. H.1.18 - SDA Results: Duplexes G. 210a - G. 213a - Ground Floor

Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
G. 210a	K/L/D	200	63%	25%	16%	Trees affecting compliance
G. 210a	Bedroom 1	100	100%	100%	100%	Compliant
G. 210a	Bedroom 2	100	71%	56%	53%	Compliant
G. 211a	K/L/D	200	63%	40%	32%	Trees affecting compliance
G. 211a	Bedroom 1	100	100%	100%	100%	Compliant
G. 211a	Bedroom 2	100	90%	58%	50%	Compliant
G. 212a	K/L/D	200	59%	44%	38%	Trees affecting compliance
G. 212a	Bedroom 1	100	100%	100%	100%	Compliant
G. 212a	Bedroom 2	100	74%	33%	33%	Trees affecting compliance
G. 213a	K/L/D	200	64%	40%	34%	Trees affecting compliance
G. 213a	Bedroom 1	100	100%	100%	100%	Compliant
G. 213a	Bedroom 2	100	92%	89%	81%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.

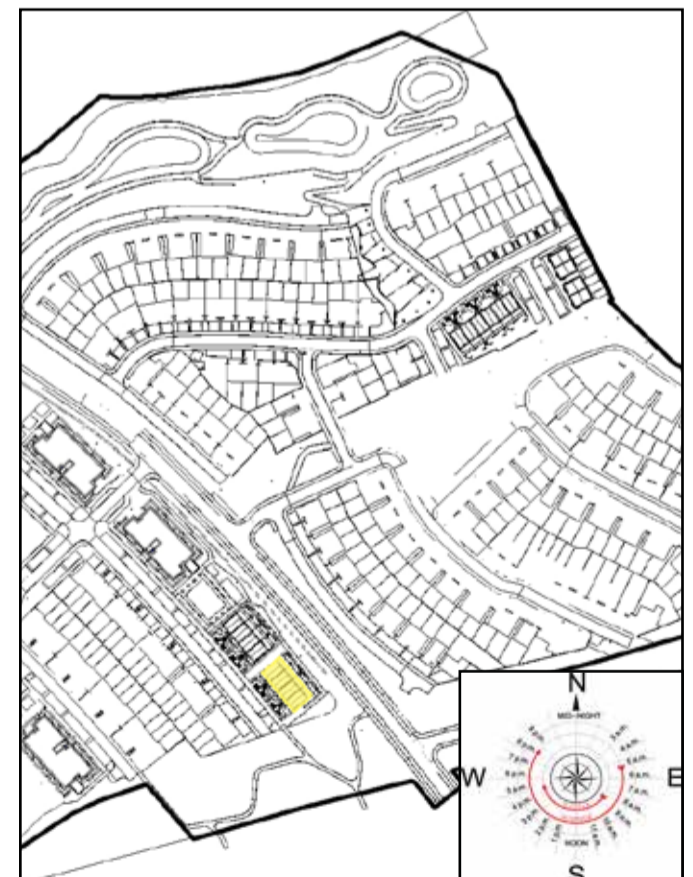
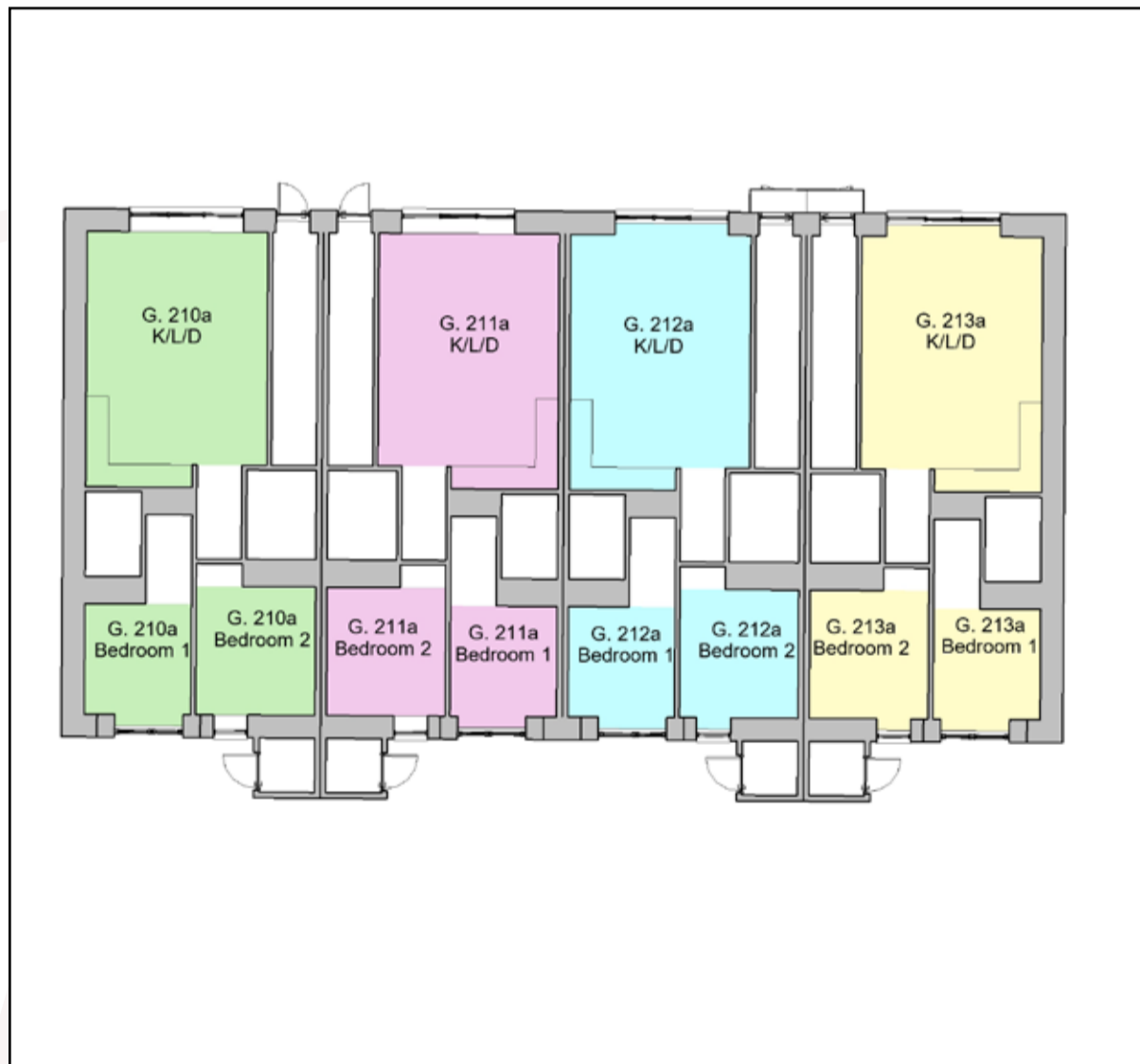


Figure H.18: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### H.1.19 Duplexes G. 210b - G. 213b - First and Second Floors

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Table No. H.1.19 - SDA Results: Duplexes G. 210b - G. 213b - First and Second Floors						
Unit Number	Room Description	Target Lux*	% of area above target Lux* (recommendation >50%)			Compliance with BRE 209 Criteria*
			Without Trees***	Winter**	Summer**	
G. 210b	Kitchen/Dining	200	100%	99%	94%	Compliant
G. 210b	Living Room	150	100%	100%	100%	Compliant
G. 210b	Master Bedroom	100	100%	100%	100%	Compliant
G. 210b	Bedroom 2	100	100%	100%	100%	Compliant
G. 210b	Bedroom 3	100	100%	100%	100%	Compliant
G. 211b	Kitchen/Dining	200	99%	84%	78%	Compliant
G. 211b	Living Room	150	100%	100%	100%	Compliant
G. 211b	Master Bedroom	100	100%	100%	100%	Compliant
G. 211b	Bedroom 2	100	100%	100%	100%	Compliant
G. 211b	Bedroom 3	100	100%	100%	100%	Compliant
G. 212b	Kitchen/Dining	200	98%	84%	79%	Compliant
G. 212b	Living Room	150	100%	100%	100%	Compliant
G. 212b	Master Bedroom	100	100%	100%	100%	Compliant
G. 212b	Bedroom 2	100	100%	100%	100%	Compliant
G. 212b	Bedroom 3	100	100%	100%	100%	Compliant
G. 213b	Kitchen/Dining	200	100%	100%	100%	Compliant
G. 213b	Living Room	150	100%	100%	100%	Compliant
G. 213b	Master Bedroom	100	100%	100%	100%	Compliant
G. 213b	Bedroom 2	100	100%	100%	100%	Compliant
G. 213b	Bedroom 3	100	100%	100%	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Under the BRE 209 study the SDA has been calculated with trees represented with both winter and summer foliage.  
 \*\*\* The SDA assessment without trees is a supplementary study which 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.  
 The SDA circa compliance rates across the entire scheme can be found in section 5.1.1 on page 14.



Figure H.19: Floor plans of assessed building (L), Keyplan highlighting the assessed building (R).

## H.2 Sunlight Exposure (SE) in Proposed Units

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

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)

BRE 209 recommends a minimum sunlight exposure of 1.5 hours for a proposed unit with preference given to main living rooms. BRE 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 (-). 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 row related to each room.

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

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

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

BRE 209 recommends a minimum sunlight exposure of 1.5 hours for a proposed unit with preference given to main living rooms. BRE 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 (-). 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 for each.

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

## H.2.1 Apartment Block 1 - Ground Floor

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Table No. H.2.1 - Sunlight Exposure Results: Apartment Block 1 - Ground Floor							
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**
AP.101	LKD	6.10	High	Compliant	6.10	High	Compliant
AP.101	Bedroom	4.70	High	-	4.70	High	-
AP.102	LKD	5.50	High	Compliant	5.50	High	Compliant
AP.102	Bedroom 1	5.10	High	-	5.10	High	-
AP.102	Bedroom 2	4.70	High	-	4.70	High	-
AP.103	LKD	0.40	Below Minimum	-	0.70	Below Minimum	Non-Compliant
AP.103	Bedroom 1	0.10	Below Minimum	-	0.30	Below Minimum	-
AP.103	Bedroom 2	0.50	Below Minimum	Non-Compliant	0.70	Below Minimum	Non-Compliant
AP.104	LKD	0.40	Below Minimum	Non-Compliant	0.70	Below Minimum	Non-Compliant
AP.104	Bedroom	0.10	Below Minimum	-	0.30	Below Minimum	-
AP.105	LKD	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.105	Bedroom	0.80	Below Minimum	Non-Compliant	0.80	Below Minimum	Non-Compliant
AP.106	LKD	5.80	High	Compliant	6.00	High	Compliant
AP.106	Bedroom 1	0.50	Below Minimum	-	0.80	Below Minimum	-
AP.106	Bedroom 2	0.30	Below Minimum	-	0.70	Below Minimum	-
AP.107	LKD	7.30	High	Compliant	7.30	High	Compliant
AP.107	Bedroom 1	4.70	High	-	4.70	High	-
AP.107	Bedroom 2	5.30	High	-	5.30	High	-
AP.108	LKD	4.70	High	-	4.70	High	-
AP.108	Bedroom	5.10	High	Compliant	5.10	High	Compliant

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.



Figure H.20: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

## H.2.2 Apartment Block 1 - First Floor

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Table No. H.2.2 - Sunlight Exposure Results: Apartment Block 1 - First Floor							
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**
AP.111	LKD	6.40	High	Compliant	6.40	High	Compliant
AP.111	Bedroom	4.10	High	-	4.10	High	-
AP.112	LKD	4.90	High	-	4.90	High	-
AP.112	Bedroom 1	5.10	High	Compliant	5.10	High	Compliant
AP.112	Bedroom 2	4.10	High	-	4.10	High	-
AP.113	LKD	1.60	Minimum	Compliant	1.60	Minimum	Compliant
AP.113	Bedroom 1	0.30	Below Minimum	-	0.30	Below Minimum	-
AP.113	Bedroom 2	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.114	LKD	0.70	Below Minimum	Non-Compliant	0.70	Below Minimum	Non-Compliant
AP.114	Bedroom	0.30	Below Minimum	-	0.30	Below Minimum	-
AP.115	LKD	0.60	Below Minimum	-	0.60	Below Minimum	-
AP.115	Bedroom	0.80	Below Minimum	Non-Compliant	0.80	Below Minimum	Non-Compliant
AP.116	LKD	5.10	High	Compliant	5.10	High	Compliant
AP.116	Bedroom 1	0.80	Below Minimum	-	0.80	Below Minimum	-
AP.116	Bedroom 2	0.60	Below Minimum	-	0.60	Below Minimum	-
AP.117	LKD	6.80	High	Compliant	6.90	High	Compliant
AP.117	Bedroom 1	4.10	High	-	4.10	High	-
AP.117	Bedroom 2	5.30	High	-	5.30	High	-
AP.118	LKD	4.10	High	-	4.10	High	-
AP.118	Bedroom	5.10	High	Compliant	5.10	High	Compliant

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.



Figure H.21: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).



### H.2.3 Apartment Block 1 - Second Floor

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Table No. H.2.3 - Sunlight Exposure Results: Apartment Block 1 - Second Floor							
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**
AP.121	LKD	6.40	High	Compliant	6.40	High	Compliant
AP.121	Bedroom	4.10	High	-	4.10	High	-
AP.122	LKD	4.90	High	-	4.90	High	-
AP.122	Bedroom 1	5.10	High	Compliant	5.10	High	Compliant
AP.122	Bedroom 2	4.10	High	-	4.10	High	-
AP.123	LKD	1.60	Minimum	Compliant	1.60	Minimum	Compliant
AP.123	Bedroom 1	0.30	Below Minimum	-	0.30	Below Minimum	-
AP.123	Bedroom 2	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.124	LKD	0.70	Below Minimum	Non-Compliant	0.70	Below Minimum	Non-Compliant
AP.124	Bedroom	0.30	Below Minimum	-	0.30	Below Minimum	-
AP.125	LKD	0.60	Below Minimum	-	0.60	Below Minimum	-
AP.125	Bedroom	0.80	Below Minimum	Non-Compliant	0.80	Below Minimum	Non-Compliant
AP.126	LKD	5.20	High	Compliant	5.20	High	Compliant
AP.126	Bedroom 1	0.80	Below Minimum	-	0.80	Below Minimum	-
AP.126	Bedroom 2	0.60	Below Minimum	-	0.60	Below Minimum	-
AP.127	LKD	8.10	High	Compliant	8.10	High	Compliant
AP.127	Bedroom 1	4.10	High	-	4.10	High	-
AP.127	Bedroom 2	5.30	High	-	5.30	High	-
AP.128	LKD	4.10	High	-	4.10	High	-
AP.128	Bedroom	5.10	High	Compliant	5.10	High	Compliant

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.

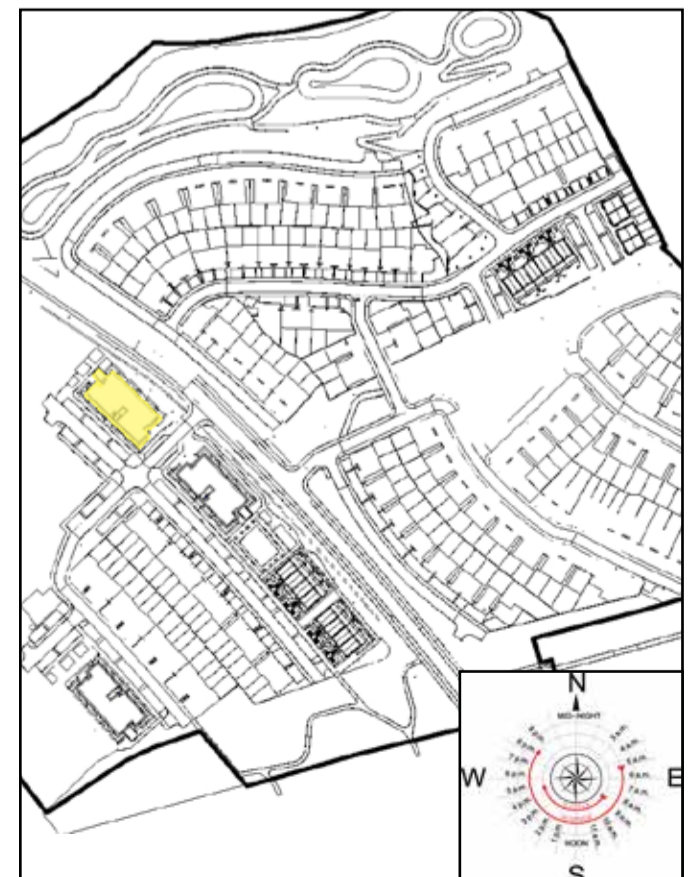


Figure H.22: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

## H.2.4 Apartment Block 1 - Third Floor

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Table No. H.2.4 - Sunlight Exposure Results: Apartment Block 1 - Third Floor							
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**
AP.131	LKD	6.40	High	-	6.40	High	-
AP.131	Bedroom	6.90	High	Compliant	6.90	High	Compliant
AP.132	LKD	6.70	High	-	6.70	High	-
AP.132	Bedroom 1	6.00	High	-	6.00	High	-
AP.132	Bedroom 2	6.90	High	Compliant	6.90	High	Compliant
AP.133	LKD	2.80	Minimum	Compliant	2.80	Minimum	Compliant
AP.133	Bedroom 1	0.30	Below Minimum	-	0.30	Below Minimum	-
AP.133	Bedroom 2	1.60	Minimum	-	1.60	Minimum	-
AP.134	LKD	1.60	Minimum	Compliant	1.60	Minimum	Compliant
AP.134	Bedroom	0.30	Below Minimum	-	0.30	Below Minimum	-
AP.135	LKD	0.90	Below Minimum	-	0.90	Below Minimum	-
AP.135	Bedroom	1.60	Minimum	Compliant	1.60	Minimum	Compliant
AP.136	LKD	6.60	High	Compliant	6.60	High	Compliant
AP.136	Bedroom 1	1.60	Minimum	-	1.60	Minimum	-
AP.136	Bedroom 2	0.90	Below Minimum	-	0.90	Below Minimum	-
AP.137	LKD	9.40	High	Compliant	9.40	High	Compliant
AP.137	Bedroom 1	6.90	High	-	6.90	High	-
AP.137	Bedroom 2	6.40	High	-	6.40	High	-
AP.138	LKD	6.90	High	Compliant	6.90	High	Compliant
AP.138	Bedroom	6.00	High	-	6.00	High	-

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.



Figure H.23: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

## H.2.5 Apartment Block 2 - Ground Floor

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Table No. H.2.5 - Sunlight Exposure Results: Apartment Block 2 - Ground Floor							
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**
AP.201	LKD	4.50	High	Compliant	4.50	High	-
AP.201	Bedroom	4.20	High	-	4.90	High	Compliant
AP.202	LKD	7.50	High	Compliant	8.90	High	Compliant
AP.202	Bedroom 1	3.50	Medium	-	4.50	High	-
AP.202	Bedroom 2	4.10	High	-	5.20	High	-
AP.203	LKD	4.20	High	Compliant	4.50	High	Compliant
AP.203	Bedroom 1	1.00	Below Minimum	-	1.00	Below Minimum	-
AP.203	Bedroom 2	0.30	Below Minimum	-	0.80	Below Minimum	-
AP.204	LKD	0.50	Below Minimum	Non-Compliant	0.80	Below Minimum	-
AP.204	Bedroom	0.50	Below Minimum	Non-Compliant	1.00	Below Minimum	Non-Compliant
AP.205	LKD	0.60	Below Minimum	Non-Compliant	1.00	Below Minimum	Non-Compliant
AP.205	Bedroom	0.40	Below Minimum	-	0.60	Below Minimum	-
AP.206	LKD	0.40	Below Minimum	-	1.60	Minimum	Compliant
AP.206	Bedroom 1	0.00	Below Minimum	-	0.60	Below Minimum	-
AP.206	Bedroom 2	0.90	Below Minimum	Non-Compliant	1.00	Below Minimum	-
AP.207	LKD	5.40	High	Compliant	5.40	High	Compliant
AP.207	Bedroom 1	4.70	High	-	4.90	High	-
AP.207	Bedroom 2	3.80	Medium	-	4.50	High	-
AP.208	LKD	6.00	High	Compliant	6.00	High	Compliant
AP.208	Bedroom	4.50	High	-	4.50	High	-

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.

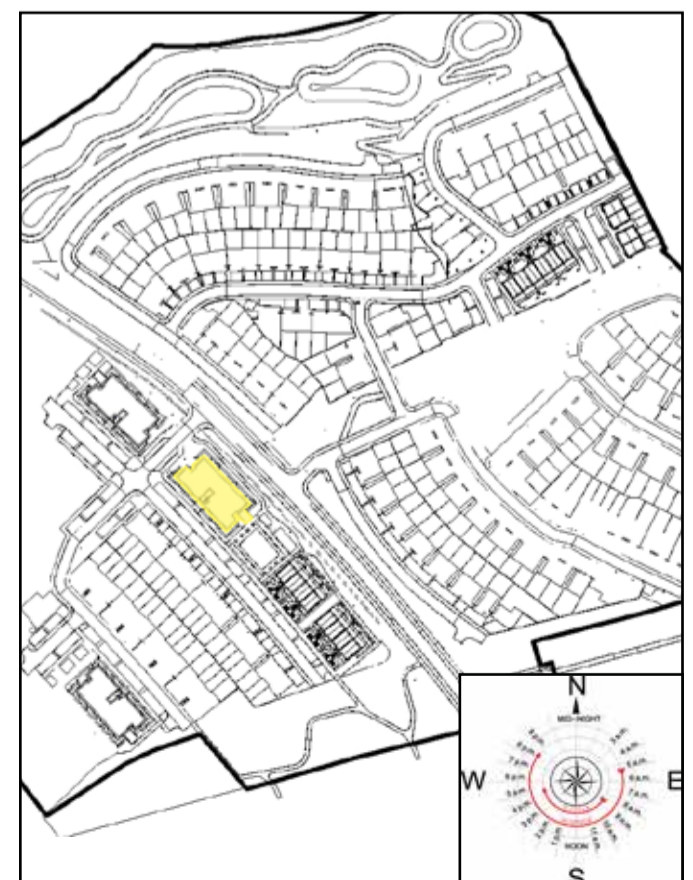


Figure H.24: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

## H.2.6 Apartment Block 2 - First Floor

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Table No. H.2.6 - Sunlight Exposure Results: Apartment Block 2 - First Floor							
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**
AP.211	LKD	4.00	High	-	4.00	High	-
AP.211	Bedroom	4.90	High	Compliant	4.90	High	Compliant
AP.212	LKD	8.10	High	Compliant	8.30	High	Compliant
AP.212	Bedroom 1	4.00	High	-	4.00	High	-
AP.212	Bedroom 2	4.40	High	-	5.20	High	-
AP.213	LKD	5.30	High	Compliant	5.30	High	Compliant
AP.213	Bedroom 1	0.90	Below Minimum	-	0.90	Below Minimum	-
AP.213	Bedroom 2	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.214	LKD	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.214	Bedroom	0.90	Below Minimum	Non-Compliant	0.90	Below Minimum	Non-Compliant
AP.215	LKD	0.90	Below Minimum	Non-Compliant	0.90	Below Minimum	Non-Compliant
AP.215	Bedroom	0.60	Below Minimum	-	0.60	Below Minimum	-
AP.216	LKD	0.70	Below Minimum	-	1.50	Minimum	Compliant
AP.216	Bedroom 1	0.60	Below Minimum	-	0.60	Below Minimum	-
AP.216	Bedroom 2	0.90	Below Minimum	Non-Compliant	0.90	Below Minimum	-
AP.217	LKD	4.60	High	-	4.60	High	-
AP.217	Bedroom 1	4.90	High	Compliant	4.90	High	Compliant
AP.217	Bedroom 2	3.90	Medium	-	4.00	High	-
AP.218	LKD	6.20	High	Compliant	6.20	High	Compliant
AP.218	Bedroom	4.00	High	-	4.00	High	-

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.



Figure H.25: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

## H.2.7 Apartment Block 2 - Second Floor

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Table No. H.2.7 - Sunlight Exposure Results: Apartment Block 2 - Second Floor							
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**
AP.221	LKD	4.00	High	-	4.00	High	-
AP.221	Bedroom	4.90	High	Compliant	4.90	High	Compliant
AP.222	LKD	8.30	High	Compliant	8.30	High	Compliant
AP.222	Bedroom 1	4.00	High	-	4.00	High	-
AP.222	Bedroom 2	5.20	High	-	5.20	High	-
AP.223	LKD	5.30	High	Compliant	5.30	High	Compliant
AP.223	Bedroom 1	0.90	Below Minimum	-	0.90	Below Minimum	-
AP.223	Bedroom 2	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.224	LKD	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.224	Bedroom	0.90	Below Minimum	Non-Compliant	0.90	Below Minimum	Non-Compliant
AP.225	LKD	0.90	Below Minimum	Non-Compliant	0.90	Below Minimum	Non-Compliant
AP.225	Bedroom	0.60	Below Minimum	-	0.60	Below Minimum	-
AP.226	LKD	1.20	Below Minimum	Non-Compliant	1.50	Minimum	Compliant
AP.226	Bedroom 1	0.60	Below Minimum	-	0.60	Below Minimum	-
AP.226	Bedroom 2	0.90	Below Minimum	-	0.90	Below Minimum	-
AP.227	LKD	4.60	High	-	4.60	High	-
AP.227	Bedroom 1	4.90	High	Compliant	4.90	High	Compliant
AP.227	Bedroom 2	4.00	High	-	4.00	High	-
AP.228	LKD	6.20	High	Compliant	6.20	High	Compliant
AP.228	Bedroom	4.00	High	-	4.00	High	-

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.



Figure H.26: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

## H.2.8 Apartment Block 2 - Third Floor

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Table No. H.2.8 - Sunlight Exposure Results: Apartment Block 2 - Third Floor							
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**
AP.231	LKD	6.70	High	Compliant	6.70	High	Compliant
AP.231	Bedroom	5.80	High	-	5.80	High	-
AP.232	LKD	9.40	High	Compliant	9.40	High	Compliant
AP.232	Bedroom 1	6.70	High	-	6.70	High	-
AP.232	Bedroom 2	6.20	High	-	6.20	High	-
AP.233	LKD	6.70	High	Compliant	6.70	High	Compliant
AP.233	Bedroom 1	1.80	Minimum	-	1.80	Minimum	-
AP.233	Bedroom 2	1.20	Below Minimum	-	1.20	Below Minimum	-
AP.234	LKD	1.20	Below Minimum	-	1.20	Below Minimum	-
AP.234	Bedroom	1.80	Minimum	Compliant	1.80	Minimum	Compliant
AP.235	LKD	1.80	Minimum	Compliant	1.80	Minimum	Compliant
AP.235	Bedroom	0.60	Below Minimum	-	0.60	Below Minimum	-
AP.236	LKD	2.80	Minimum	Compliant	2.80	Minimum	Compliant
AP.236	Bedroom 1	0.60	Below Minimum	-	0.60	Below Minimum	-
AP.236	Bedroom 2	1.80	Minimum	-	1.80	Minimum	-
AP.237	LKD	6.50	High	-	6.50	High	-
AP.237	Bedroom 1	5.80	High	-	5.80	High	-
AP.237	Bedroom 2	6.70	High	Compliant	6.70	High	Compliant
AP.238	LKD	6.20	High	-	6.20	High	-
AP.238	Bedroom	6.70	High	Compliant	6.70	High	Compliant

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.



Figure H.27: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

## H.2.9 Apartment Block 3 - Ground Floor

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Table No. H.2.9 - Sunlight Exposure Results: Apartment Block 3 - Ground Floor							
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**
AP.301	LKD	1.10	Below Minimum	Non-Compliant	1.10	Below Minimum	Non-Compliant
AP.301	Bedroom	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.302	LKD	7.00	High	Compliant	7.00	High	Compliant
AP.302	Bedroom 1	1.20	Below Minimum	-	1.20	Below Minimum	-
AP.302	Bedroom 2	0.90	Below Minimum	-	0.90	Below Minimum	-
AP.303	LKD	8.30	High	Compliant	8.30	High	Compliant
AP.303	Bedroom 1	4.40	High	-	4.40	High	-
AP.303	Bedroom 2	5.00	High	-	5.00	High	-
AP.304	LKD	5.10	High	Compliant	5.10	High	Compliant
AP.304	Bedroom	4.40	High	-	4.40	High	-
AP.305	LKD	4.40	High	-	4.40	High	-
AP.305	Bedroom	4.80	High	Compliant	4.80	High	Compliant
AP.306	LKD	5.30	High	Compliant	5.30	High	Compliant
AP.306	Bedroom 1	4.80	High	-	4.80	High	-
AP.306	Bedroom 2	4.40	High	-	4.40	High	-
AP.307	LKD	2.30	Minimum	Compliant	2.40	Minimum	Compliant
AP.307	Bedroom 1	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.307	Bedroom 2	1.10	Below Minimum	-	1.10	Below Minimum	-
AP.308	LKD	0.00	Below Minimum	-	0.00	Below Minimum	-
AP.308	Bedroom	1.30	Below Minimum	Non-Compliant	1.30	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.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.



Figure H.28: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

## H.2.10 Apartment Block 3 - First Floor

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Table No. H.2.10 - Sunlight Exposure Results: Apartment Block 3 - First Floor							
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**
AP.311	LKD	1.10	Below Minimum	Non-Compliant	1.10	Below Minimum	Non-Compliant
AP.311	Bedroom	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.312	LKD	7.00	High	Compliant	7.00	High	Compliant
AP.312	Bedroom 1	0.80	Below Minimum	-	0.80	Below Minimum	-
AP.312	Bedroom 2	0.80	Below Minimum	-	0.80	Below Minimum	-
AP.313	LKD	8.40	High	Compliant	8.40	High	Compliant
AP.313	Bedroom 1	3.90	Medium	-	3.90	Medium	-
AP.313	Bedroom 2	5.00	High	-	5.00	High	-
AP.314	LKD	5.10	High	Compliant	5.10	High	Compliant
AP.314	Bedroom	3.90	Medium	-	3.90	Medium	-
AP.315	LKD	3.90	Medium	-	3.90	Medium	-
AP.315	Bedroom	4.80	High	Compliant	4.80	High	Compliant
AP.316	LKD	4.40	High	-	4.40	High	-
AP.316	Bedroom 1	4.80	High	Compliant	4.80	High	Compliant
AP.316	Bedroom 2	3.90	Medium	-	3.90	Medium	-
AP.317	LKD	2.20	Minimum	Compliant	2.20	Minimum	Compliant
AP.317	Bedroom 1	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.317	Bedroom 2	1.10	Below Minimum	-	1.10	Below Minimum	-
AP.318	LKD	1.30	Below Minimum	Non-Compliant	1.30	Below Minimum	Non-Compliant
AP.318	Bedroom	0.80	Below Minimum	-	0.80	Below Minimum	-

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.



Figure H.29: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).



## H.2.11 Apartment Block 3 - Second Floor

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Table No. H.2.11 - Sunlight Exposure Results: Apartment Block 3 - Second Floor							
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**
AP.321	LKD	1.10	Below Minimum	Non-Compliant	1.10	Below Minimum	Non-Compliant
AP.321	Bedroom	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.322	LKD	7.00	High	Compliant	7.00	High	Compliant
AP.322	Bedroom 1	0.80	Below Minimum	-	0.80	Below Minimum	-
AP.322	Bedroom 2	0.80	Below Minimum	-	0.80	Below Minimum	-
AP.323	LKD	8.40	High	Compliant	8.40	High	Compliant
AP.323	Bedroom 1	3.90	Medium	-	3.90	Medium	-
AP.323	Bedroom 2	5.00	High	-	5.00	High	-
AP.324	LKD	5.10	High	Compliant	5.10	High	Compliant
AP.324	Bedroom	3.90	Medium	-	3.90	Medium	-
AP.325	LKD	3.90	Medium	-	3.90	Medium	-
AP.325	Bedroom	4.80	High	Compliant	4.80	High	Compliant
AP.326	LKD	4.40	High	-	4.40	High	-
AP.326	Bedroom 1	4.80	High	Compliant	4.80	High	Compliant
AP.326	Bedroom 2	3.90	Medium	-	3.90	Medium	-
AP.327	LKD	2.20	Minimum	Compliant	2.20	Minimum	Compliant
AP.327	Bedroom 1	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.327	Bedroom 2	1.10	Below Minimum	-	1.10	Below Minimum	-
AP.328	LKD	1.30	Below Minimum	Non-Compliant	1.30	Below Minimum	Non-Compliant
AP.328	Bedroom	0.80	Below Minimum	-	0.80	Below Minimum	-

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.



Figure H.30: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### H.2.12 Apartment Block 3 - Third Floor

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Table No. H.2.12 - Sunlight Exposure Results: Apartment Block 3 - Third Floor							
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**
AP.331	LKD	2.00	Minimum	Compliant	2.00	Minimum	Compliant
AP.331	Bedroom	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.332	LKD	7.00	High	Compliant	7.00	High	Compliant
AP.332	Bedroom 1	1.80	Minimum	-	1.80	Minimum	-
AP.332	Bedroom 2	1.30	Below Minimum	-	1.30	Below Minimum	-
AP.333	LKD	9.40	High	Compliant	9.40	High	Compliant
AP.333	Bedroom 1	6.60	High	-	6.60	High	-
AP.333	Bedroom 2	6.10	High	-	6.10	High	-
AP.334	LKD	6.10	High	-	6.10	High	-
AP.334	Bedroom	6.60	High	Compliant	6.60	High	Compliant
AP.335	LKD	6.60	High	Compliant	6.60	High	Compliant
AP.335	Bedroom	5.70	High	-	5.70	High	-
AP.336	LKD	6.40	High	-	6.40	High	-
AP.336	Bedroom 1	5.70	High	-	5.70	High	-
AP.336	Bedroom 2	6.60	High	Compliant	6.60	High	Compliant
AP.337	LKD	3.00	Medium	Compliant	3.00	Medium	Compliant
AP.337	Bedroom 1	0.70	Below Minimum	-	0.70	Below Minimum	-
AP.337	Bedroom 2	2.00	Minimum	-	2.00	Minimum	-
AP.338	LKD	1.30	Below Minimum	-	1.30	Below Minimum	-
AP.338	Bedroom	1.80	Minimum	Compliant	1.80	Minimum	Compliant

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.



Figure H.31: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### H.2.13 Duplexes G. 185a - G. 190a - Ground Floor

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Table No. H.2.13 - Sunlight Exposure Results: Duplexes G. 185a - G. 190a - Ground Floor							
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**
G. 185a	K/L/D	6.80	High	Compliant	6.80	High	Compliant
G. 185a	Bedroom 1	0.00	Below Minimum	-	0.00	Below Minimum	-
G. 185a	Bedroom 2	0.00	Below Minimum	-	0.00	Below Minimum	-
G. 186a	Bedroom 2	0.00	Below Minimum	-	0.00	Below Minimum	-
G. 186a	K/L/D	5.60	High	Compliant	7.20	High	Compliant
G. 186a	Bedroom 1	0.00	Below Minimum	-	0.00	Below Minimum	-
G. 187a	K/L/D	4.10	High	Compliant	6.20	High	Compliant
G. 187a	Bedroom 1	0.00	Below Minimum	-	0.00	Below Minimum	-
G. 187a	Bedroom 2	0.00	Below Minimum	-	0.00	Below Minimum	-
G. 188a	K/L/D	5.80	High	Compliant	7.10	High	Compliant
G. 188a	Bedroom 1	0.00	Below Minimum	-	0.00	Below Minimum	-
G. 188a	Bedroom 2	0.00	Below Minimum	-	0.00	Below Minimum	-
G. 189a	K/L/D	5.90	High	Compliant	6.10	High	Compliant
G. 189a	Bedroom 1	0.00	Below Minimum	-	0.00	Below Minimum	-
G. 189a	Bedroom 2	0.00	Below Minimum	-	0.00	Below Minimum	-
G. 190a	K/L/D	6.90	High	Compliant	6.90	High	Compliant
G. 190a	Bedroom 1	0.00	Below Minimum	-	0.60	Below Minimum	-
G. 190a	Bedroom 2	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.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.

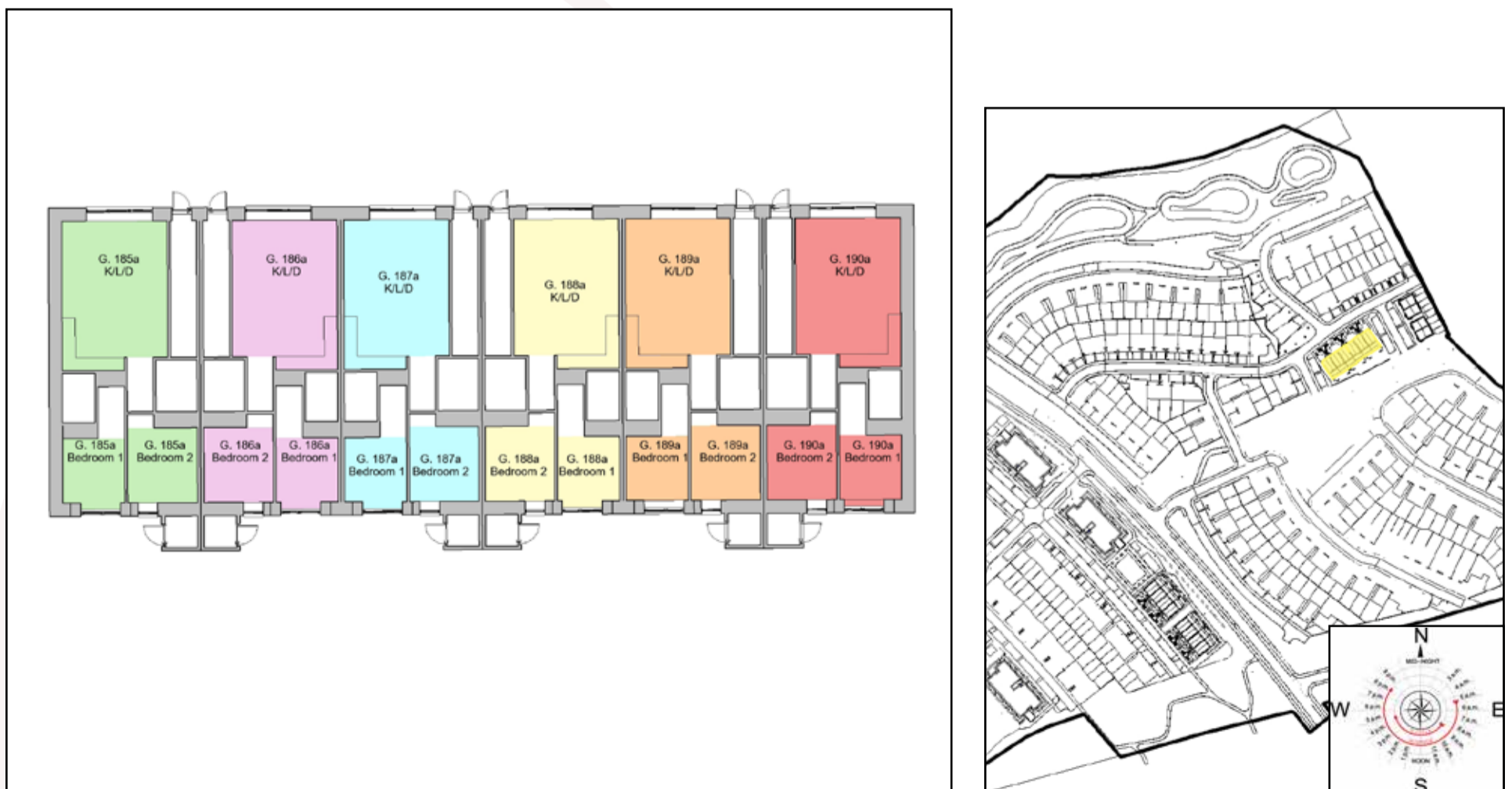


Figure H.32: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### H.2.14 Duplexes G. 185b - G. 187b - First and Second Floors

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Table No. H.2.14 - Sunlight Exposure Results: Duplexes G. 185b - G. 187b - First and Second Floors							
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**
G. 185b	Kitchen/Dining	7.10	High	Compliant	7.10	High	Compliant
G. 185b	Living Room	0.60	Below Minimum	-	0.60	Below Minimum	-
G. 185b	Master Bedroom	0.60	Below Minimum	-	0.60	Below Minimum	-
G. 185b	Bedroom 2	7.10	High	Compliant	7.10	High	Compliant
G. 185b	Bedroom 3	7.10	High	Compliant	7.10	High	Compliant
G. 186b	Kitchen/Dining	7.10	High	Compliant	7.10	High	Compliant
G. 186b	Living Room	0.60	Below Minimum	-	0.60	Below Minimum	-
G. 186b	Master Bedroom	0.50	Below Minimum	-	0.50	Below Minimum	-
G. 186b	Bedroom 2	7.10	High	Compliant	7.10	High	Compliant
G. 186b	Bedroom 3	7.10	High	Compliant	7.10	High	Compliant
G. 187b	Kitchen/Dining	7.10	High	Compliant	7.10	High	Compliant
G. 187b	Living Room	0.10	Below Minimum	-	0.60	Below Minimum	-
G. 187b	Master Bedroom	0.60	Below Minimum	-	0.60	Below Minimum	-
G. 187b	Bedroom 2	7.10	High	Compliant	7.10	High	Compliant
G. 187b	Bedroom 3	7.10	High	Compliant	7.10	High	Compliant

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.



Figure H.33: Floor plans of assessed building (L), Keyplan highlighting the assessed building (R).

## H.2.15 Duplexes G. 188b - G. 190b - First and Second Floors

RECEIVED 14/08/2023

Table No. H.2.15 - Sunlight Exposure Results: Duplexes G. 188b - G. 190b - First and Second Floors							
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**
G. 188b	Kitchen/Dining	6.50	High	-	7.10	High	Compliant
G. 188b	Living Room	0.00	Below Minimum	-	0.60	Below Minimum	-
G. 188b	Master Bedroom	0.50	Below Minimum	-	0.50	Below Minimum	-
G. 188b	Bedroom 2	7.10	High	Compliant	7.10	High	Compliant
G. 188b	Bedroom 3	7.10	High	Compliant	7.10	High	Compliant
G. 189b	Kitchen/Dining	6.80	High	-	7.10	High	Compliant
G. 189b	Living Room	0.20	Below Minimum	-	0.60	Below Minimum	-
G. 189b	Master Bedroom	0.60	Below Minimum	-	0.60	Below Minimum	-
G. 189b	Bedroom 2	7.10	High	Compliant	7.10	High	Compliant
G. 189b	Bedroom 3	7.10	High	Compliant	7.10	High	Compliant
G. 190b	Kitchen/Dining	9.40	High	Compliant	9.40	High	Compliant
G. 190b	Living Room	0.00	Below Minimum	-	0.60	Below Minimum	-
G. 190b	Master Bedroom	0.50	Below Minimum	-	0.50	Below Minimum	-
G. 190b	Bedroom 2	7.10	High	-	7.10	High	-
G. 190b	Bedroom 3	7.10	High	-	7.10	High	-

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.



Figure H.34: Floor plans of assessed building (L), Keyplan highlighting the assessed building (R).

## H.2.16 Duplexes G. 206a - G. 209a - Ground Floor

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Table No. H.2.16 - Sunlight Exposure Results: Duplexes G. 206a - G. 209a - Ground Floor							
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**
G. 206a	K/L/D	1.20	Below Minimum	-	1.30	Below Minimum	-
G. 206a	Bedroom 1	5.10	High	Compliant	5.10	High	Compliant
G. 206a	Bedroom 2	3.10	Medium	-	3.10	Medium	-
G. 207a	K/L/D	1.70	Minimum	-	2.00	Minimum	-
G. 207a	Bedroom 1	5.50	High	Compliant	6.30	High	Compliant
G. 207a	Bedroom 2	4.50	High	-	5.00	High	-
G. 208a	K/L/D	0.00	Below Minimum	-	0.00	Below Minimum	-
G. 208a	Bedroom 1	3.20	Medium	Compliant	3.90	Medium	Compliant
G. 208a	Bedroom 2	1.10	Below Minimum	-	1.40	Below Minimum	-
G. 209a	K/L/D	0.70	Below Minimum	-	1.30	Below Minimum	-
G. 209a	Bedroom 1	6.10	High	Compliant	6.10	High	Compliant
G. 209a	Bedroom 2	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.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.

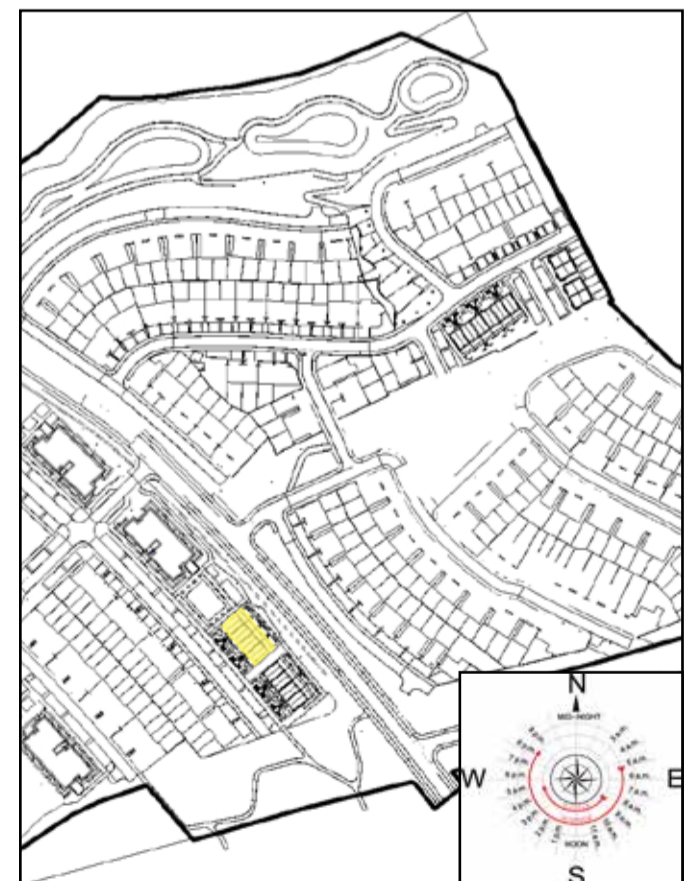


Figure H.35: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### H.2.17 Duplexes G. 206b - G. 209b - First and Second Floors

RECEIVED 14/08/2023

Table No. H.2.17 - Sunlight Exposure Results: Duplexes G. 206b - G. 209b - First and Second Floors							
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**
G. 206b	Kitchen/Dining	2.60	Minimum	-	2.60	Minimum	-
G. 206b	Living Room	6.30	High	Compliant	6.30	High	Compliant
G. 206b	Master Bedroom	6.30	High	Compliant	6.30	High	Compliant
G. 206b	Bedroom 2	1.60	Minimum	-	1.60	Minimum	-
G. 206b	Bedroom 3	1.60	Minimum	-	1.60	Minimum	-
G. 207b	Kitchen/Dining	1.60	Minimum	-	1.60	Minimum	-
G. 207b	Living Room	6.30	High	Compliant	6.30	High	Compliant
G. 207b	Master Bedroom	6.20	High	-	6.20	High	-
G. 207b	Bedroom 2	1.60	Minimum	-	1.60	Minimum	-
G. 207b	Bedroom 3	1.60	Minimum	-	1.60	Minimum	-
G. 208b	Kitchen/Dining	1.60	Minimum	-	1.60	Minimum	-
G. 208b	Living Room	5.90	High	-	6.30	High	Compliant
G. 208b	Master Bedroom	6.30	High	Compliant	6.30	High	Compliant
G. 208b	Bedroom 2	1.60	Minimum	-	1.60	Minimum	-
G. 208b	Bedroom 3	1.60	Minimum	-	1.60	Minimum	-
G. 209b	Kitchen/Dining	4.20	High	-	4.20	High	-
G. 209b	Living Room	6.30	High	Compliant	6.30	High	Compliant
G. 209b	Master Bedroom	6.20	High	-	6.20	High	-
G. 209b	Bedroom 2	1.60	Minimum	-	1.60	Minimum	-
G. 209b	Bedroom 3	1.60	Minimum	-	1.60	Minimum	-

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.



Figure H.36: Floor plans of assessed building (L), Keyplan highlighting the assessed building (R).

## H.2.18 Duplexes G. 210a - G. 213a - Ground Floor

RECEIVED 14/08/2023

Table No. H.2.18 - Sunlight Exposure Results: Duplexes G. 210a - G. 213a - Ground Floor							
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**
G. 210a	K/L/D	1.00	Below Minimum	-	1.40	Below Minimum	-
G. 210a	Bedroom 1	4.50	High	Compliant	5.00	High	Compliant
G. 210a	Bedroom 2	2.10	Minimum	-	2.90	Minimum	-
G. 211a	K/L/D	0.80	Below Minimum	-	1.20	Below Minimum	-
G. 211a	Bedroom 1	5.10	High	Compliant	6.20	High	Compliant
G. 211a	Bedroom 2	4.90	High	-	5.00	High	-
G. 212a	K/L/D	0.00	Below Minimum	-	0.70	Below Minimum	-
G. 212a	Bedroom 1	3.60	Medium	Compliant	3.80	Medium	Compliant
G. 212a	Bedroom 2	1.20	Below Minimum	-	1.20	Below Minimum	-
G. 213a	K/L/D	0.00	Below Minimum	-	2.00	Minimum	-
G. 213a	Bedroom 1	3.60	Medium	Compliant	5.70	High	Compliant
G. 213a	Bedroom 2	3.60	Medium	Compliant	4.40	High	-

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.

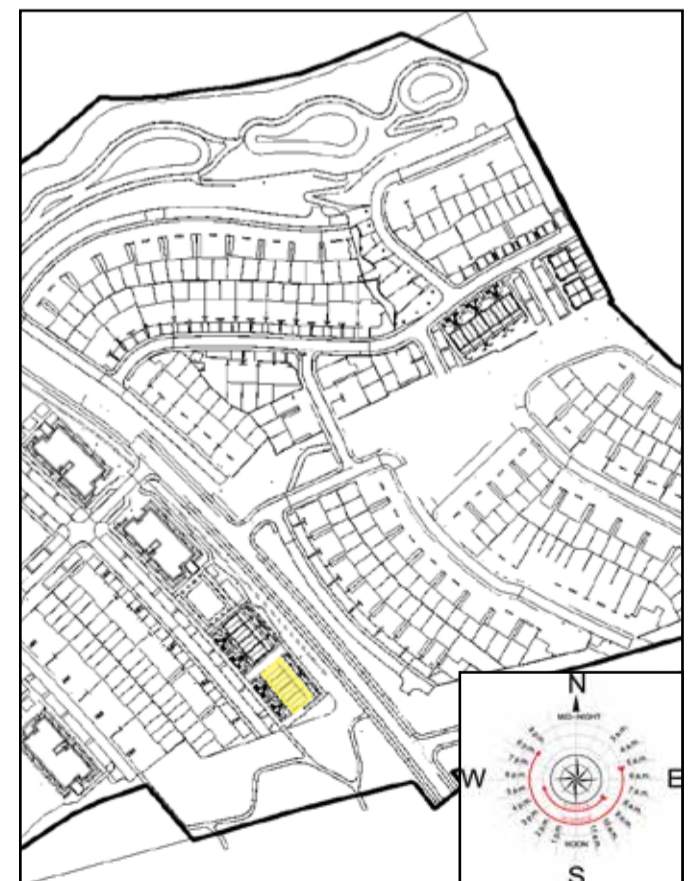
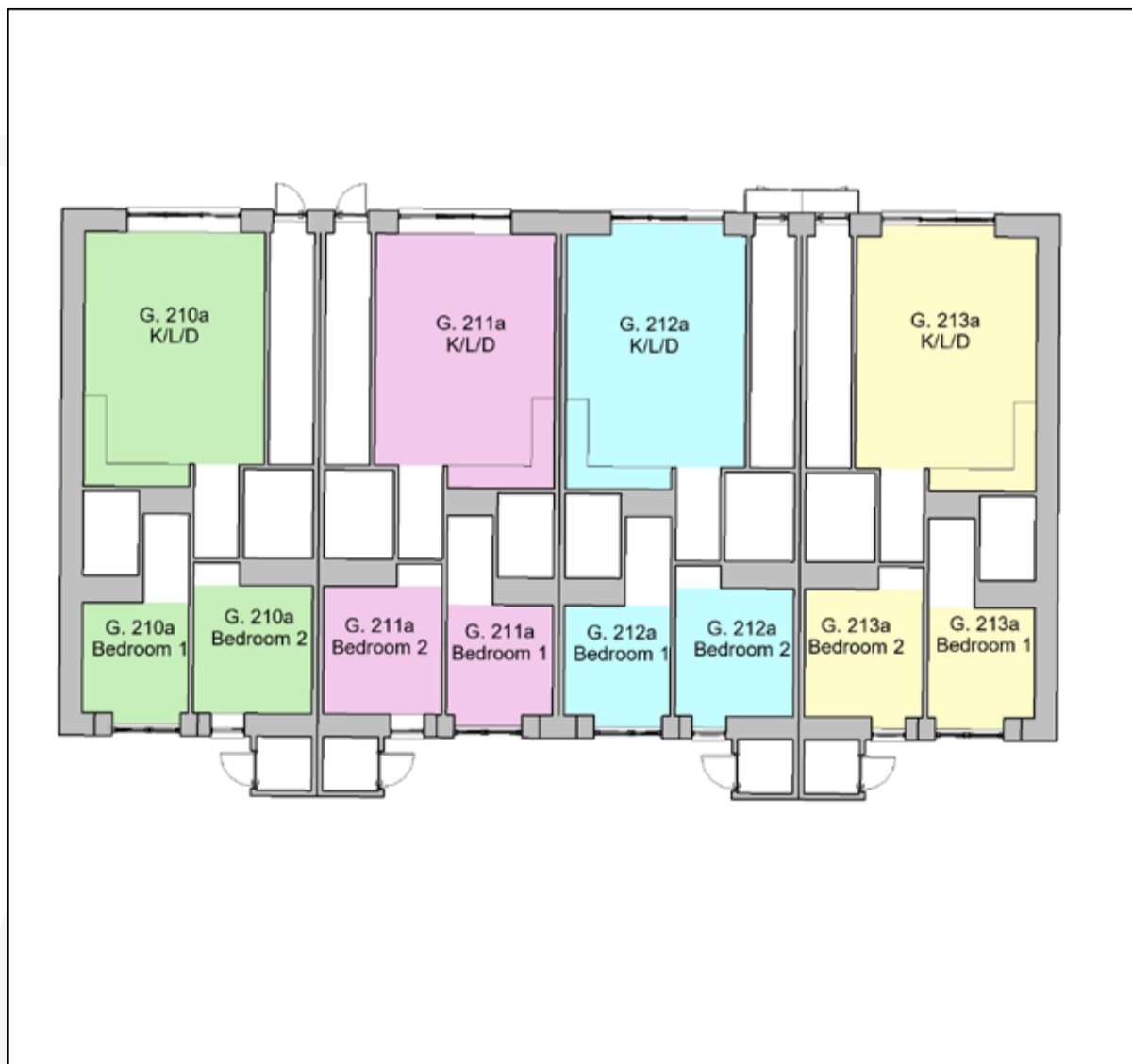


Figure H.37: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).



### H.2.19 Duplexes G. 210b - G. 213b - First and Second Floors

RECEIVED 14/08/2023

Table No. H.2.19 - Sunlight Exposure Results: Duplexes G. 210b - G. 213b - First and Second Floors							
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**
G. 210b	Kitchen/Dining	2.60	Minimum	-	2.60	Minimum	-
G. 210b	Living Room	6.20	High	Compliant	6.20	High	Compliant
G. 210b	Master Bedroom	6.20	High	Compliant	6.20	High	Compliant
G. 210b	Bedroom 2	1.70	Minimum	-	1.70	Minimum	-
G. 210b	Bedroom 3	1.70	Minimum	-	1.70	Minimum	-
G. 211b	Kitchen/Dining	1.70	Minimum	-	1.70	Minimum	-
G. 211b	Living Room	6.10	High	-	6.20	High	Compliant
G. 211b	Master Bedroom	6.20	High	Compliant	6.20	High	Compliant
G. 211b	Bedroom 2	1.70	Minimum	-	1.70	Minimum	-
G. 211b	Bedroom 3	1.70	Minimum	-	1.70	Minimum	-
G. 212b	Kitchen/Dining	1.20	Below Minimum	-	1.70	Minimum	-
G. 212b	Living Room	5.90	High	-	6.20	High	Compliant
G. 212b	Master Bedroom	6.20	High	Compliant	6.20	High	Compliant
G. 212b	Bedroom 2	1.70	Minimum	-	1.70	Minimum	-
G. 212b	Bedroom 3	1.70	Minimum	-	1.70	Minimum	-
G. 213b	Kitchen/Dining	6.40	High	Compliant	6.90	High	Compliant
G. 213b	Living Room	4.40	High	-	6.10	High	-
G. 213b	Master Bedroom	6.10	High	-	6.20	High	-
G. 213b	Bedroom 2	1.20	Below Minimum	-	1.70	Minimum	-
G. 213b	Bedroom 3	1.70	Minimum	-	1.70	Minimum	-

\* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.  
 \*\* 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 across the entire scheme can be found in section 5.1.2 on page 17.  
 \*\*\* For the interpretation of levels of Sunlight Exposure please refer to "3.2 Definition of Levels of Sunlight Exposure" on page 9 of the corresponding report.

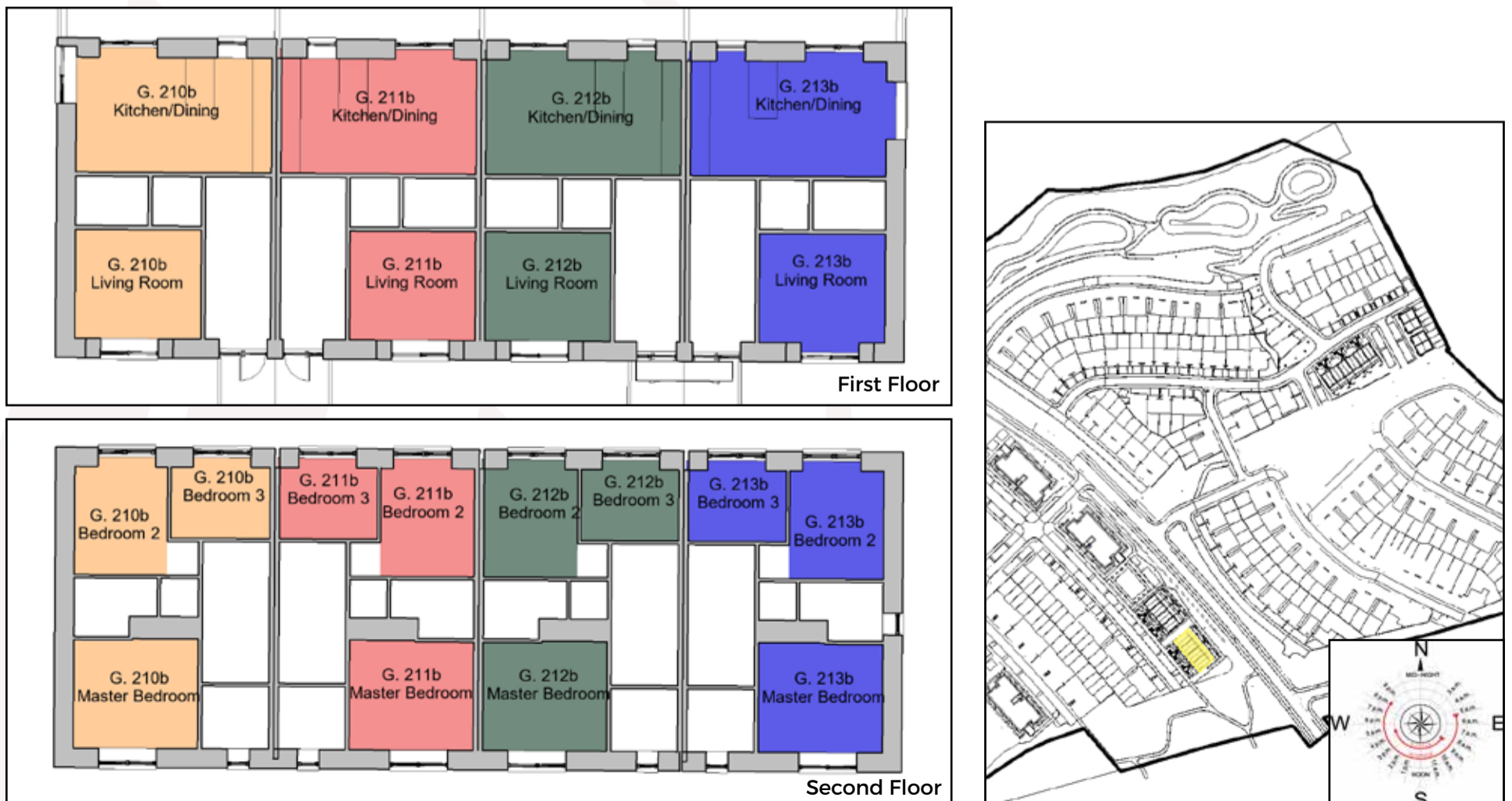


Figure H.38: Floor plans of assessed building (L), Keyplan highlighting the assessed building (R).

### H.3 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. H.3 - Scheme Performance SOG				
Assessed Area	Area Capable of Receiving 2 Hours of Sunlight on March 21st	Recommended Minimum	Level of Compliance with BRE Guidelines	Meets BRE 209 Criteria
A	B	C	D	E

**A: Assessed Area**

This column identifies the assessed garden/amenity area.

**B: 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.

**C: Recommended Minimum**

The BRE Guidelines state that the percentage of a garden/amenity area that can receive more than 2 hours of sunlight on March 21st should be 50%. The target value for all spaces is set to 50%.

**D: 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.

**E: Meets BRE 209 Criteria**

This column states if the assessed room achieves the recommended level of sunlight on March 21st as per BRE 209.

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

### H.3.1 Sun On Ground in Proposed Outdoor Amenity Areas

RECEIVED: 7/10/2023

Table No. H.3.1 - SOG in Proposed Outdoor Amenity Areas Results:				
Assessed Area	Area Capable of Receiving 2 Hours of Sunlight on March 21st	Recommended minimum	Level of Compliance with BRE Guidelines*	Meets BRE 209 Criteria*
Communal Open Space #1	99.99%	50.00%	BRE Compliant	Yes
Communal Open Space #2	91.70%	50.00%	BRE Compliant	Yes
Communal Open Space #3	99.25%	50.00%	BRE Compliant	Yes
Residential Public Open Space #1	93.38%	50.00%	BRE Compliant	Yes
Residential Public Open Space #2	98.17%	50.00%	BRE Compliant	Yes
Residential Public Open Space #3	99.74%	50.00%	BRE Compliant	Yes
Residential Public Open Space #4	99.69%	50.00%	BRE Compliant	Yes

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

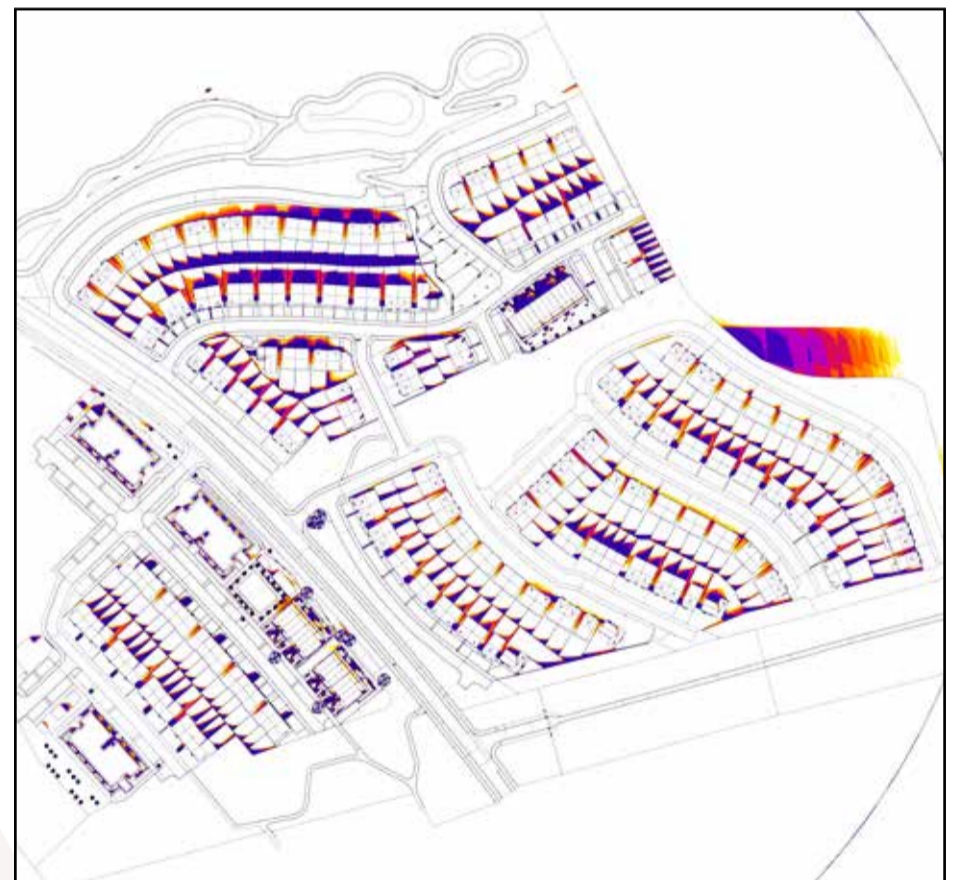


Figure H.39: Indication of the amenity areas that have been analysed (L), Area capable of receiving 2 hours of sunlight on March 21st shown in white (R)

RECEIVED: 14/08/2023

## I.0 Feasibility Study Results

### I.1 Spatial Daylight Autonomy (SDA) Feasibility Study

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

Table Example. I.1 - SDA Feasibility Study							
Unit Type	Room Description	SDA (I.S. EN 17037 Criterion)			SDA (BRE 209 Criterion)		
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Compliance I.S. EN 17037 Criteria	Target Lux	% of area above target Lux (recommendation >50%)	Compliance with BRE 209 Criteria
A	B	C	D	E	F	G	H

#### A: Unit Type

This column identifies the assessed unit type.

#### B: Room Description

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

#### C: Target Lux

Under BRE 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.

#### C: % of area above 300 Lux

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.

#### D: % of area above 100 Lux

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.

#### E: Meets I.S. EN 17037 Criteria

This column states if the assessed room achieves the recommended level of daylight as per I.S. EN 17037. (300 lux across more than 50% of the working plane and 100 lux across more than 95% of the working plane for half the daylight hours). The SDA study under the I.S. EN 17037 criterion is considered a supplementary assessment within this report.

#### D: % of area above target Lux

BRE 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.

#### G: Compliance with BRE 209 Criteria

This column states if the assessed room achieves the recommended level of daylight as per BRE 209.

If the target lux level is achieved across more than 50% of the working plane, for half the daylight hours, 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, this column will state: *'Non-compliant'*.

Note: All results stated in the feasibility study have been carried out using a hypothetical context. The constraints of which represents a layout where the assessed unit type is surrounded by units similar dimensions, with separation distances taken from the proposed site plan. Daylight values will vary for each unit type when situated in various locations across the site where constraints may differ due to obstructions caused by other buildings and/or trees.

### I.1.1 House Type M

**Table No. I.1.1 - SDA Feasibility Study Results: House Type M**

Unit Type	Room Description	SDA (I.S. EN 17037 Criterion)			SDA (BRE 209 Criterion)		
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Compliance I.S. EN 17037 Criteria**	Target Lux*	% of area above target Lux* (recommendation >50%)	Compliance with BRE 209 Criteria**
House Type M	Kitchen/Dining	37%	100%	Non-compliant	200	87%	Compliant
House Type M	Living Room	97%	100%	Compliant	150	100%	Compliant
House Type M	Master Bedroom	99%	100%	Compliant	100	100%	Compliant
House Type M	Bedroom 2	82%	100%	Compliant	100	100%	Compliant
House Type M	Bedroom 3	100%	100%	Compliant	100	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\*The study under the I.S. EN 17037 criterion should be considered a supplementary assessment. The primary assessment for this report focuses on compliance with the BRE Guidelines, BRE 209.

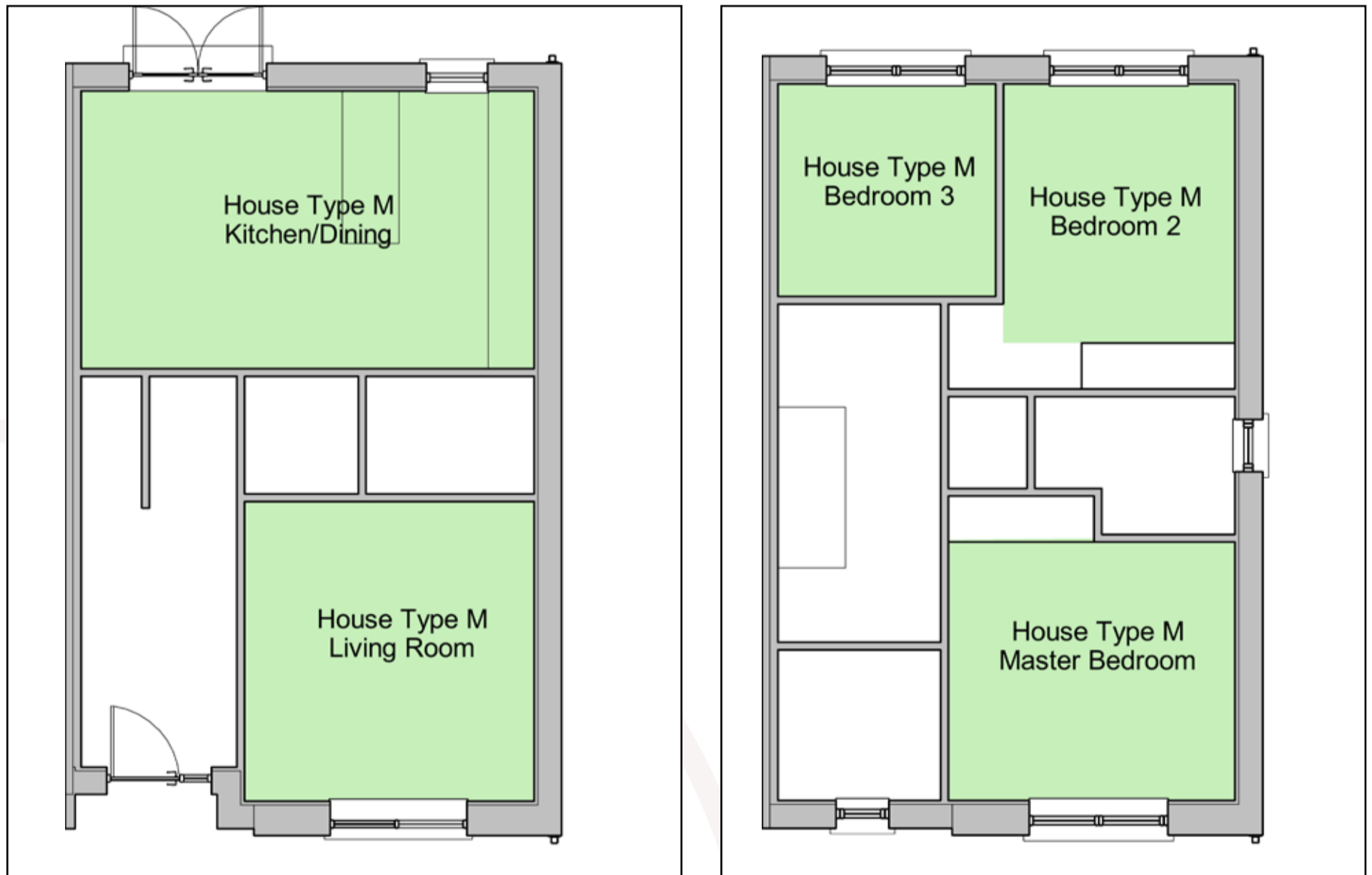


Figure I.1: Floor plans of the assessed house type. Ground Floor (L), 1st Floor (R).

## I.1.2 House Type N

**Table No. I.1.2 - SDA Feasibility Study Results: House Type N**

Unit Type	Room Description	SDA (I.S. EN 17037 Criterion)			SDA (BRE 209 Criterion)		
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Compliance I.S. EN 17037 Criteria**	Target Lux*	% of area above target Lux* (recommendation >50%)	Compliance with BRE 209 Criteria**
House Type N	Kitchen/Dining	59%	100%	Compliant	200	98%	Compliant
House Type N	Living Room	78%	100%	Compliant	150	100%	Compliant
House Type N	Master Bedroom	72%	100%	Compliant	100	100%	Compliant
House Type N	Bedroom 2	75%	100%	Compliant	100	100%	Compliant
House Type N	Bedroom 3	100%	100%	Compliant	100	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\*The study under the I.S. EN 17037 criterion should be considered a supplementary assessment. The primary assessment for this report focuses on compliance with the BRE Guidelines, BRE 209.

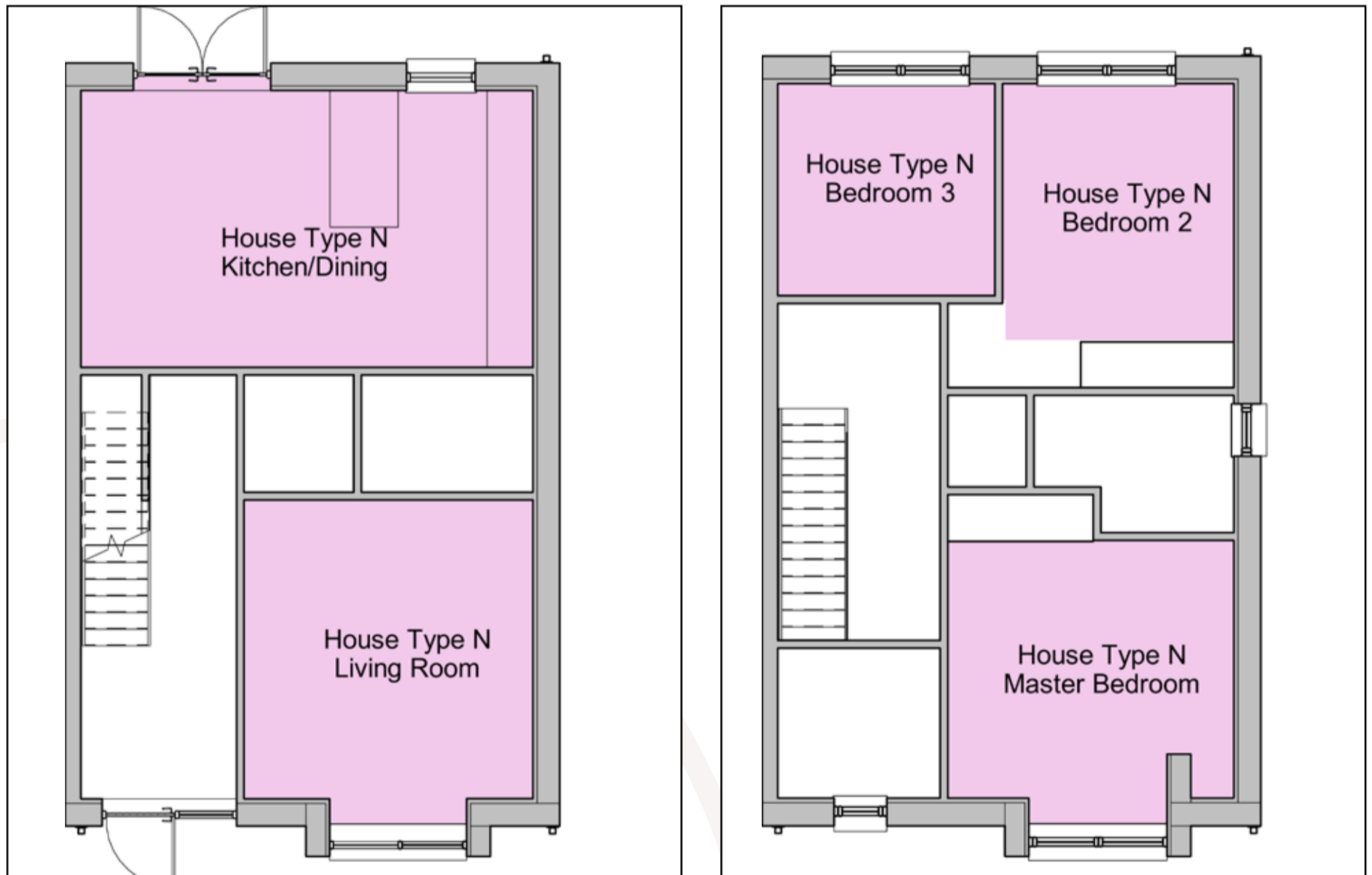


Figure I.2: Floor plans of the assessed house type. Ground Floor (L), 1st Floor (R).

### I.1.3 House Type O

**Table No. I.1.3 - SDA Feasibility Study Results: House Type O**

Unit Type	Room Description	SDA (I.S. EN 17037 Criterion)			SDA (BRE 209 Criterion)		
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Compliance I.S. EN 17037 Criteria**	Target Lux*	% of area above target Lux* (recommendation >50%)	Compliance with BRE 209 Criteria**
House Type O	Kitchen/Dining	42%	100%	Non-compliant	200	65%	Compliant
House Type O	Living Room	83%	100%	Compliant	150	100%	Compliant
House Type O	Master Bedroom	89%	100%	Compliant	100	100%	Compliant
House Type O	Bedroom 2	65%	100%	Compliant	100	100%	Compliant
House Type O	Bedroom 3	94%	100%	Compliant	100	100%	Compliant
House Type O	Bedroom 4	100%	100%	Compliant	100	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\*The study under the I.S. EN 17037 criterion should be considered a supplementary assessment. The primary assessment for this report focuses on compliance with the BRE Guidelines, BRE 209.

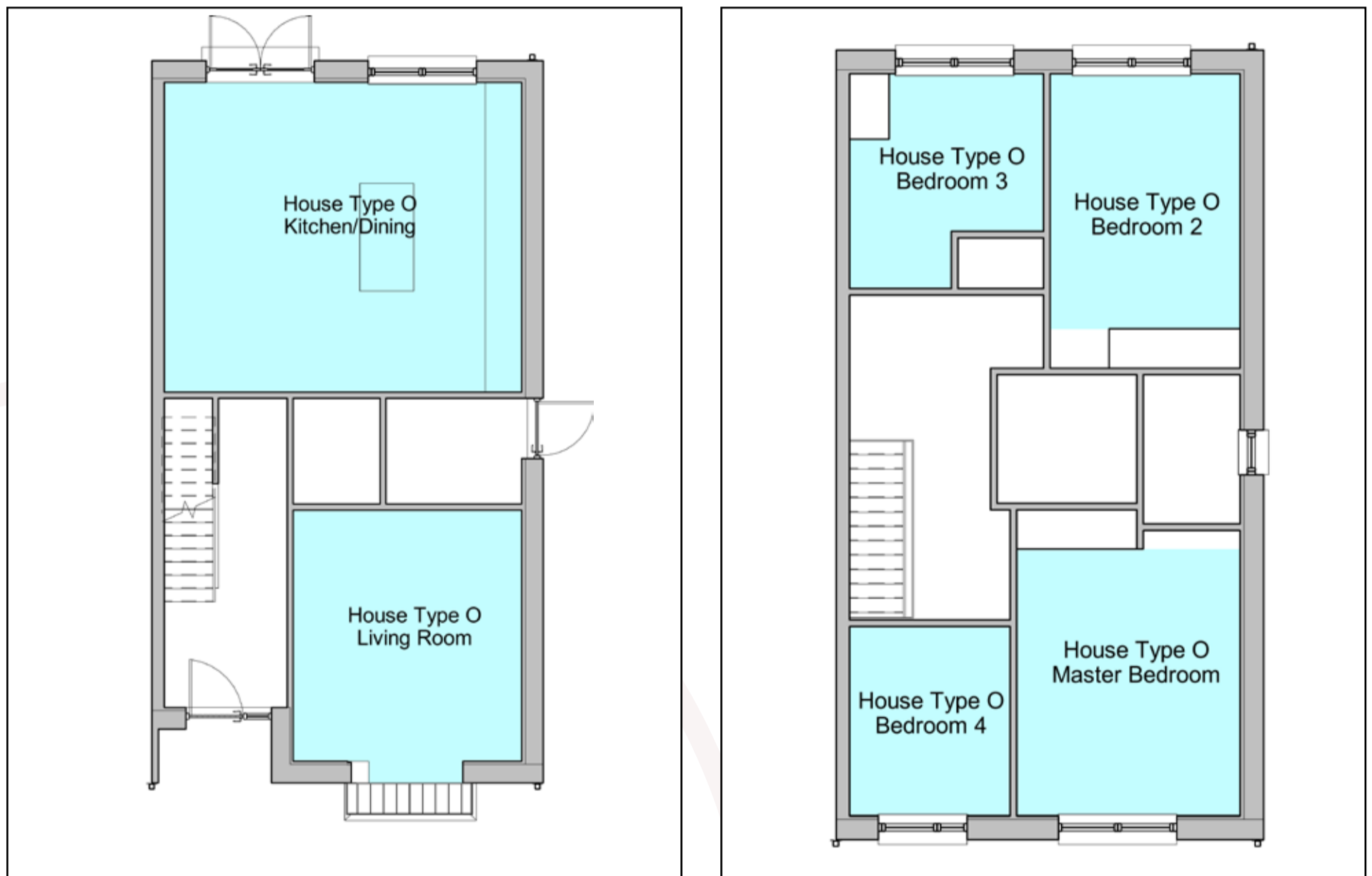


Figure I.3: Floor plans of the assessed house type. Ground Floor (L), 1st Floor (R).

### I.1.4 House Type P

**Table No. I.1.4 - SDA Feasibility Study Results: House Type P**

Unit Type	Room Description	SDA (I.S. EN 17037 Criterion)			SDA (BRE 209 Criterion)		
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Compliance I.S. EN 17037 Criteria**	Target Lux*	% of area above target Lux* (recommendation >50%)	Compliance with BRE 209 Criteria**
House Type P	Kitchen/Dining	70%	100%	Compliant	200	97%	Compliant
House Type P	Living Room	100%	100%	Compliant	150	100%	Compliant
House Type P	Master Bedroom	100%	100%	Compliant	100	100%	Compliant
House Type P	Bedroom 2	100%	100%	Compliant	100	100%	Compliant
House Type P	Bedroom 3	100%	100%	Compliant	100	100%	Compliant
House Type P	Bedroom 4	100%	100%	Compliant	100	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\*The study under the I.S. EN 17037 criterion should be considered a supplementary assessment. The primary assessment for this report focuses on compliance with the BRE Guidelines, BRE 209.



Figure I.4: Floor plans of the assessed house type. Ground Floor (L), 1st Floor (R).



### I.1.5 House Type Q

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**Table No. I.1.5 - SDA Feasibility Study Results: House Type Q**

Unit Type	Room Description	SDA (I.S. EN 17037 Criterion)			SDA (BRE 209 Criterion)		
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Compliance I.S. EN 17037 Criteria**	Target Lux*	% of area above target Lux* (recommendation >50%)	Compliance with BRE 209 Criteria**
House Type Q	Kitchen	58%	100%	Compliant	200	99%	Compliant
House Type Q	Living Room	80%	100%	Compliant	150	100%	Compliant
House Type Q	Bedroom 1	67%	100%	Compliant	100	100%	Compliant
House Type Q	Bedroom 2	53%	100%	Compliant	100	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\*The study under the I.S. EN 17037 criterion should be considered a supplementary assessment. The primary assessment for this report focuses on compliance with the BRE Guidelines, BRE 209.

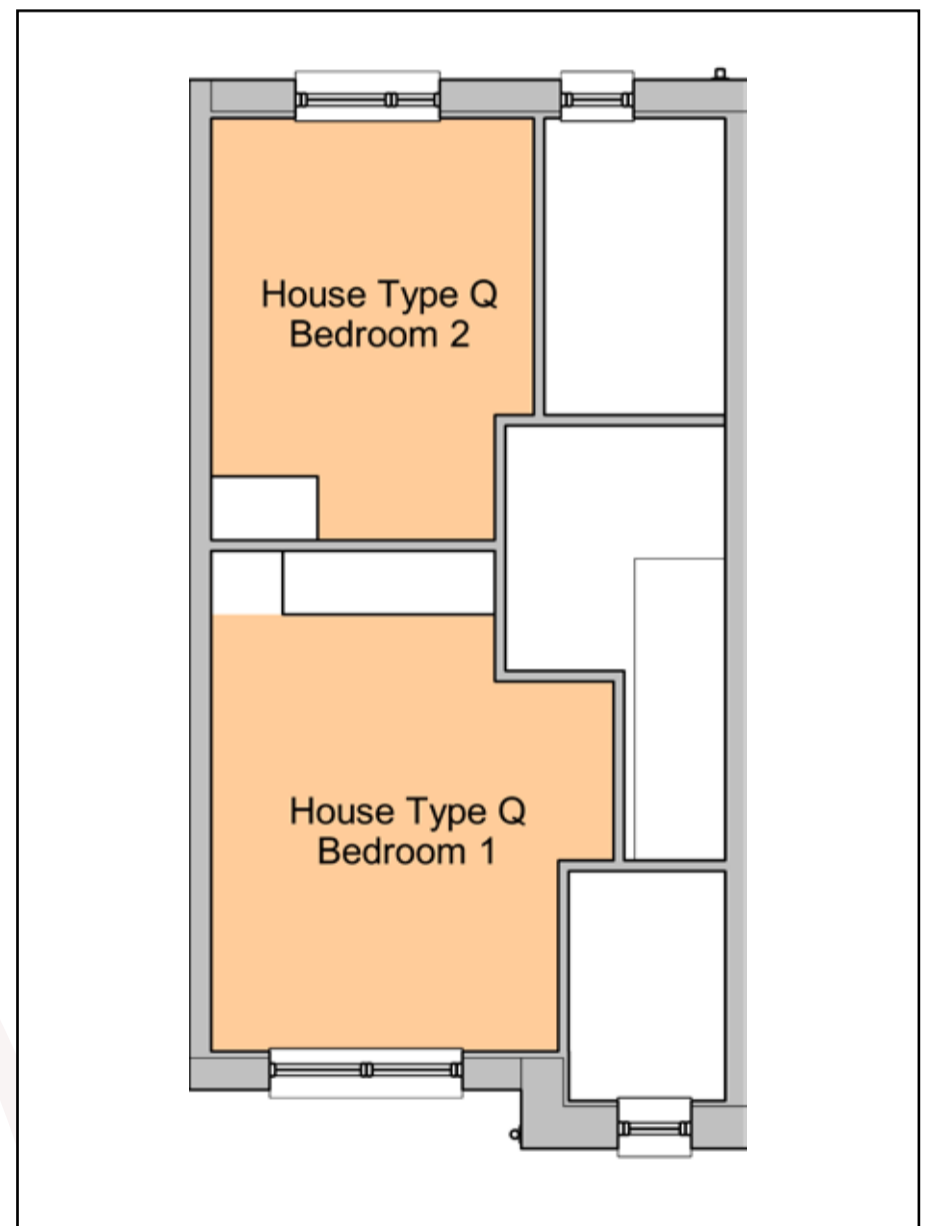
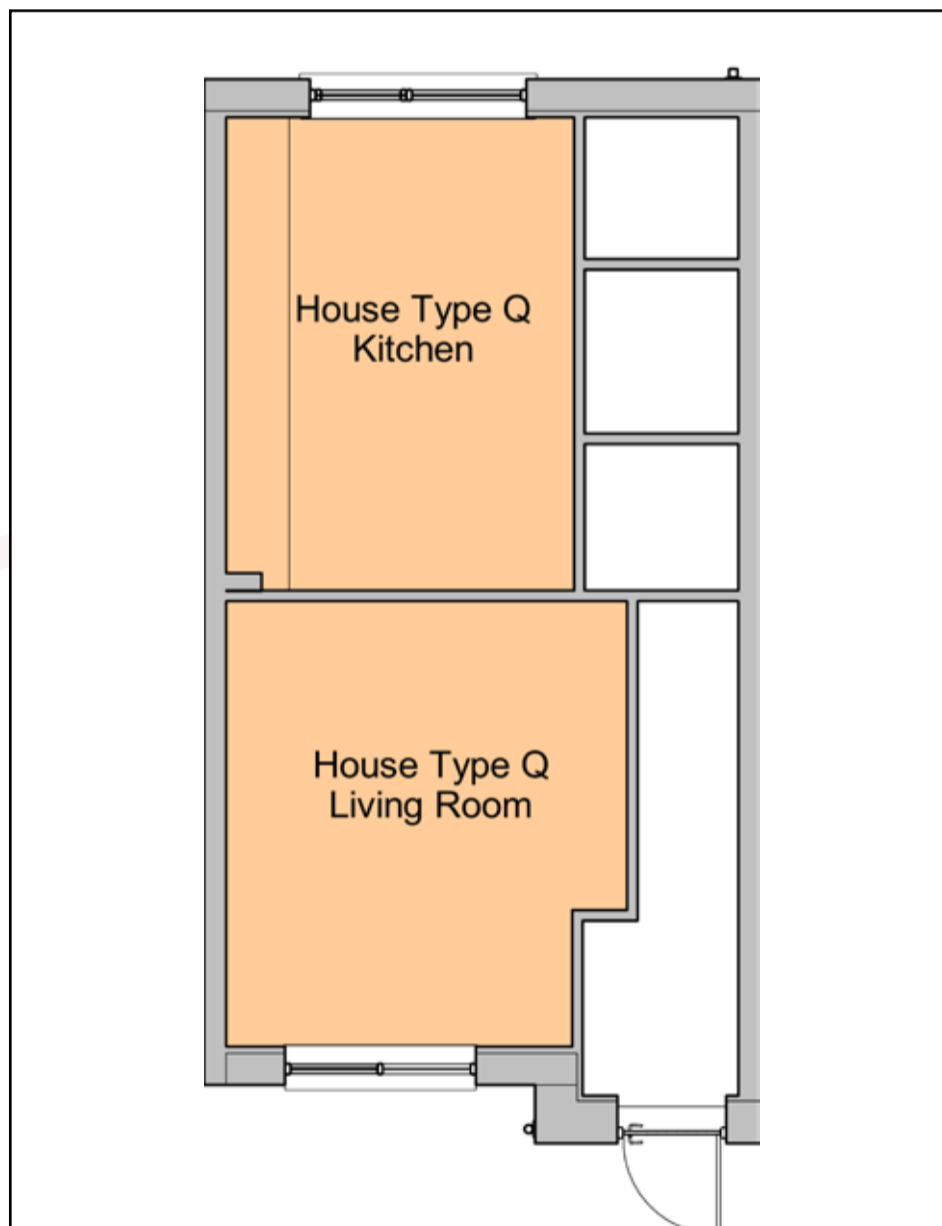


Figure I.5: Floor plans of the assessed house type. Ground Floor (L), 1st Floor (R).

## I.1.6 House Type R

Table No. I.1.6 - SDA Feasibility Study Results: House Type R

Unit Type	Room Description	SDA (I.S. EN 17037 Criterion)			SDA (BRE 209 Criterion)		
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Compliance I.S. EN 17037 Criteria**	Target Lux*	% of area above target Lux* (recommendation >50%)	Compliance with BRE 209 Criteria**
House Type R	Kitchen/Dining	46%	100%	Non-compliant	200	66%	Compliant
House Type R	Living Room	60%	100%	Compliant	150	100%	Compliant
House Type R	Master Bedroom	48%	100%	Non-compliant	100	100%	Compliant
House Type R	Bedroom 2	84%	100%	Compliant	100	100%	Compliant
House Type R	Bedroom 3	38%	100%	Non-compliant	100	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\*The study under the I.S. EN 17037 criterion should be considered a supplementary assessment. The primary assessment for this report focuses on compliance with the BRE Guidelines, BRE 209.

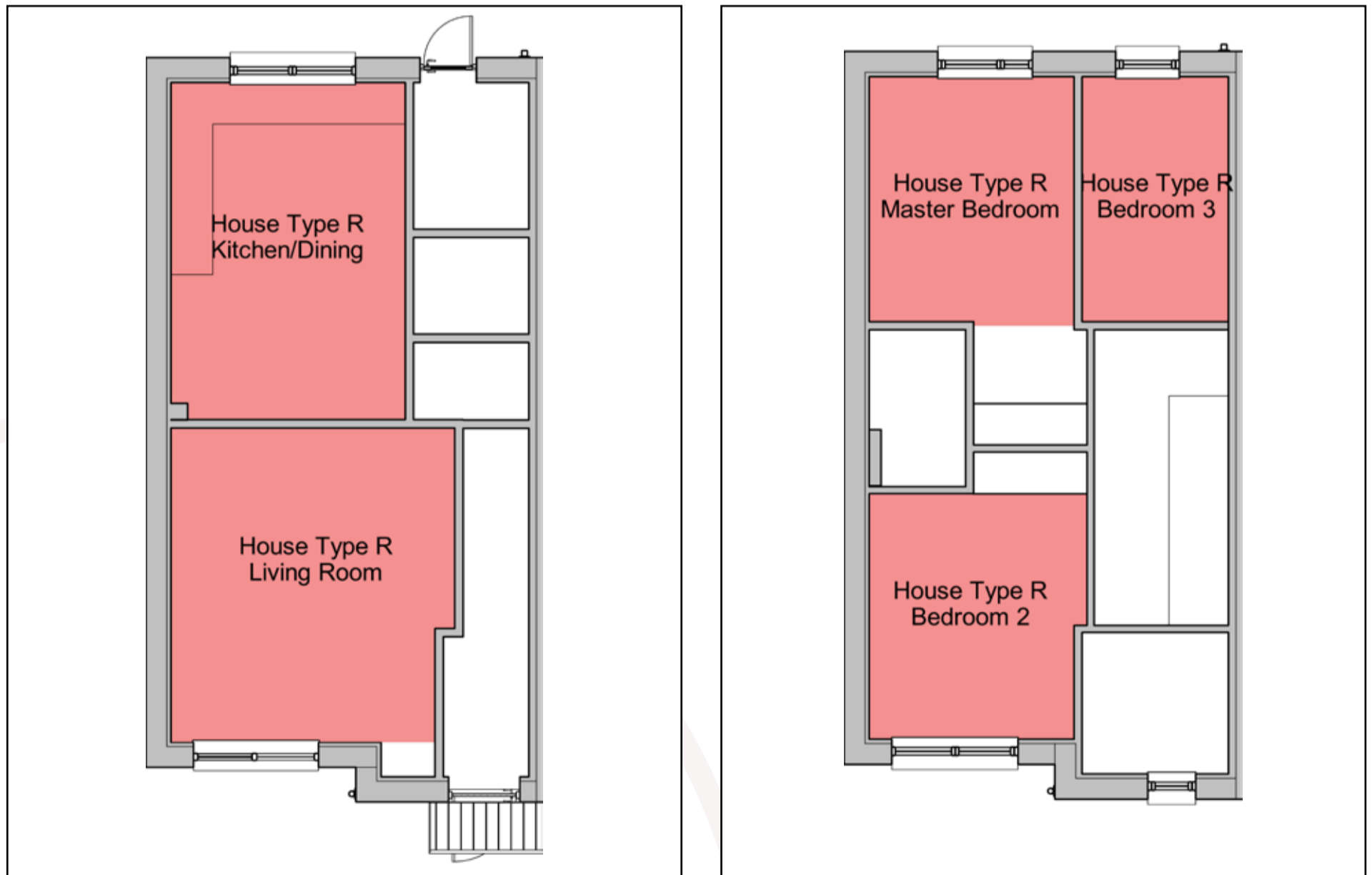


Figure I.6: Floor plans of the assessed house type. Ground Floor (L), 1st Floor (R).

### I.1.7 House Type W1b

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**Table No. I.1.7 - SDA Feasibility Study Results: House Type W1b**

Unit Type	Room Description	SDA (I.S. EN 17037 Criterion)			SDA (BRE 209 Criterion)		
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Compliance I.S. EN 17037 Criteria**	Target Lux*	% of area above target Lux* (recommendation >50%)	Compliance with BRE 209 Criteria**
House Type W1b	Kitchen/Dining	100%	100%	Compliant	200	100%	Compliant
House Type W1b	Living Room	100%	100%	Compliant	150	100%	Compliant
House Type W1b	Master Bedroom	97%	100%	Compliant	100	100%	Compliant
House Type W1b	Bedroom 2	76%	100%	Compliant	100	100%	Compliant
House Type W1b	Bedroom 3	100%	100%	Compliant	100	100%	Compliant
House Type W1b	Bedroom 4	97%	100%	Compliant	100	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\*The study under the I.S. EN 17037 criterion should be considered a supplementary assessment. The primary assessment for this report focuses on compliance with the BRE Guidelines, BRE 209.



Figure I.7: Floor plans of the assessed house type. Ground Floor (L), 1st Floor (R).

### I.1.8 House Type W2a

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**Table No. I.1.8 - SDA Feasibility Study Results: House Type W2a**

Unit Type	Room Description	SDA (I.S. EN 17037 Criterion)			SDA (BRE 209 Criterion)		
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Compliance I.S. EN 17037 Criteria**	Target Lux*	% of area above target Lux* (recommendation >50%)	Compliance with BRE 209 Criteria**
House Type W2a	Kitchen/Dining	100%	100%	Compliant	200	100%	Compliant
House Type W2a	Living Room	100%	100%	Compliant	150	100%	Compliant
House Type W2a	Bedroom 1	86%	100%	Compliant	100	100%	Compliant
House Type W2a	Bedroom 2	100%	100%	Compliant	100	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\*The study under the I.S. EN 17037 criterion should be considered a supplementary assessment. The primary assessment for this report focuses on compliance with the BRE Guidelines, BRE 209.



Figure I.8: Floor plan of the assessed house type.

### I.1.9 House Type Z

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**Table No. I.1.9 - SDA Feasibility Study Results: House Type Z**

Unit Type	Room Description	SDA (I.S. EN 17037 Criterion)			SDA (BRE 209 Criterion)		
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Compliance I.S. EN 17037 Criteria**	Target Lux*	% of area above target Lux* (recommendation >50%)	Compliance with BRE 209 Criteria**
House Type Z	Kitchen/Dining	31%	100%	Non-compliant	200	55%	Compliant
House Type Z	Living Room	43%	100%	Non-compliant	150	99%	Compliant
House Type Z	Master Bedroom	61%	100%	Compliant	100	100%	Compliant
House Type Z	Bedroom 2	13%	70%	Non-compliant	100	52%	Compliant
House Type Z	Bedroom 3	64%	100%	Compliant	100	100%	Compliant
House Type Z	Bedroom 4	51%	100%	Compliant	100	100%	Compliant
House Type Z	Bedroom 5	54%	100%	Compliant	100	100%	Compliant
House Type Z	Office	44%	100%	Non-compliant	150	100%	Compliant

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\*The study under the I.S. EN 17037 criterion should be considered a supplementary assessment. The primary assessment for this report focuses on compliance with the BRE Guidelines, BRE 209.



Figure I.9: Floor plans of the assessed house type. Ground Floor (L), 1st Floor (C), 2nd Floor (L).

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## J.0 Supplementary Study Results

### J.1 SDA study, under the I.S. EN 17037 criterion

### J.2 No Sky Line (NSL) assessment in proposed units.

Below is an example of the table used to describe the supplementary study results for proposed units

Table Example. J.2 - Scheme Performance SDA						
Unit Number	Room Description	I.S. EN 17037			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria	% of room where the sky is visible from the working plane	Above 80%
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

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.

#### D: % of area above 100 Lux

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.

#### E: Meets I.S. EN 17037 Criteria

This column states if the assessed room achieves the recommended level of daylight as per I.S. EN 17037. (300 lux across more than 50% of the working plane and 100 lux across more than 95% of the working plane for half the daylight hours)

#### F: % 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.

#### G: Above 80%

Whilst the BRE Guidelines only provide recommendations for NSL in the context of an impact analysis, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

If this column states: 'Yes', it signifies that the sky will be visible from more than 80% of the working plane.

If this column states: 'No', it signifies that the sky will be visible from less than 80% of the working plane and supplementary electric lighting may be required.

### J.2.1 Apartment Block 1 - Ground Floor

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Table No. J.2.1 - Supplementary Studies: Apartment Block 1 - Ground Floor						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux <small>(recommendation &gt;50%)</small>	% of area above 100 Lux <small>(recommendation &gt;95%)</small>	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
AP.101	LKD	51%	100%	Compliant	100%	Yes
AP.101	Bedroom	64%	100%	Compliant	99%	Yes
AP.102	LKD	96%	100%	Compliant	100%	Yes
AP.102	Bedroom 1	71%	100%	Compliant	99%	Yes
AP.102	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.103	LKD	55%	93%	Non-compliant	100%	Yes
AP.103	Bedroom 1	14%	80%	Non-compliant	99%	Yes
AP.103	Bedroom 2	44%	100%	Non-compliant	100%	Yes
AP.104	LKD	19%	63%	Non-compliant	100%	Yes
AP.104	Bedroom	17%	91%	Non-compliant	99%	Yes
AP.105	LKD	19%	60%	Non-compliant	100%	Yes
AP.105	Bedroom	17%	83%	Non-compliant	99%	Yes
AP.106	LKD	65%	99%	Compliant	100%	Yes
AP.106	Bedroom 1	16%	96%	Non-compliant	99%	Yes
AP.106	Bedroom 2	52%	100%	Compliant	100%	Yes
AP.107	LKD	95%	100%	Compliant	100%	Yes
AP.107	Bedroom 1	71%	100%	Compliant	99%	Yes
AP.107	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.108	LKD	53%	100%	Compliant	100%	Yes
AP.108	Bedroom	62%	100%	Compliant	99%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."



Figure J.1: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.2 Apartment Block 1 - First Floor

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**Table No. J.2.2 - Supplementary Studies: Apartment Block 1 - First Floor**

Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux <small>(recommendation &gt;50%)</small>	% of area above 100 Lux <small>(recommendation &gt;95%)</small>	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
AP.111	LKD	51%	100%	Compliant	100%	Yes
AP.111	Bedroom	56%	100%	Compliant	99%	Yes
AP.112	LKD	99%	100%	Compliant	100%	Yes
AP.112	Bedroom 1	66%	100%	Compliant	98%	Yes
AP.112	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.113	LKD	71%	100%	Compliant	100%	Yes
AP.113	Bedroom 1	30%	100%	Non-compliant	99%	Yes
AP.113	Bedroom 2	75%	100%	Compliant	100%	Yes
AP.114	LKD	26%	76%	Non-compliant	100%	Yes
AP.114	Bedroom	28%	100%	Non-compliant	99%	Yes
AP.115	LKD	26%	75%	Non-compliant	100%	Yes
AP.115	Bedroom	28%	100%	Non-compliant	99%	Yes
AP.116	LKD	73%	100%	Compliant	100%	Yes
AP.116	Bedroom 1	29%	100%	Non-compliant	99%	Yes
AP.116	Bedroom 2	73%	100%	Compliant	100%	Yes
AP.117	LKD	100%	100%	Compliant	100%	Yes
AP.117	Bedroom 1	66%	100%	Compliant	99%	Yes
AP.117	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.118	LKD	51%	100%	Compliant	100%	Yes
AP.118	Bedroom	55%	100%	Compliant	98%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."



Figure J.2: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).



### J.2.3 Apartment Block 1 - Second Floor

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Table No. J.2.3 - Supplementary Studies: Apartment Block 1 - Second Floor						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
AP.121	LKD	51%	100%	Compliant	100%	Yes
AP.121	Bedroom	59%	100%	Compliant	98%	Yes
AP.122	LKD	99%	100%	Compliant	100%	Yes
AP.122	Bedroom 1	67%	100%	Compliant	99%	Yes
AP.122	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.123	LKD	76%	100%	Compliant	100%	Yes
AP.123	Bedroom 1	43%	100%	Non-compliant	99%	Yes
AP.123	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.124	LKD	35%	97%	Non-compliant	100%	Yes
AP.124	Bedroom	40%	100%	Non-compliant	98%	Yes
AP.125	LKD	35%	94%	Non-compliant	100%	Yes
AP.125	Bedroom	40%	100%	Non-compliant	98%	Yes
AP.126	LKD	78%	100%	Compliant	100%	Yes
AP.126	Bedroom 1	41%	100%	Non-compliant	99%	Yes
AP.126	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.127	LKD	100%	100%	Compliant	100%	Yes
AP.127	Bedroom 1	67%	100%	Compliant	99%	Yes
AP.127	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.128	LKD	51%	100%	Compliant	100%	Yes
AP.128	Bedroom	55%	100%	Compliant	99%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.

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



Figure J.3: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.4 Apartment Block 1 - Third Floor

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**Table No. J.2.4 - Supplementary Studies: Apartment Block 1 - Third Floor**

Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
AP.131	LKD	62%	100%	Compliant	100%	Yes
AP.131	Bedroom	73%	100%	Compliant	99%	Yes
AP.132	LKD	100%	100%	Compliant	100%	Yes
AP.132	Bedroom 1	79%	100%	Compliant	98%	Yes
AP.132	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.133	LKD	85%	100%	Compliant	100%	Yes
AP.133	Bedroom 1	64%	100%	Compliant	99%	Yes
AP.133	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.134	LKD	49%	100%	Non-compliant	100%	Yes
AP.134	Bedroom	62%	100%	Compliant	98%	Yes
AP.135	LKD	47%	100%	Non-compliant	100%	Yes
AP.135	Bedroom	62%	100%	Compliant	98%	Yes
AP.136	LKD	88%	100%	Compliant	100%	Yes
AP.136	Bedroom 1	66%	100%	Compliant	99%	Yes
AP.136	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.137	LKD	100%	100%	Compliant	100%	Yes
AP.137	Bedroom 1	84%	100%	Compliant	99%	Yes
AP.137	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.138	LKD	63%	100%	Compliant	100%	Yes
AP.138	Bedroom	73%	100%	Compliant	99%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."



Figure J.4: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.5 Apartment Block 2 - Ground Floor

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Table No. J.2.5 - Supplementary Studies: Apartment Block 2 - Ground Floor						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
AP.201	LKD	39%	85%	Non-compliant	100%	Yes
AP.201	Bedroom	41%	100%	Non-compliant	99%	Yes
AP.202	LKD	90%	100%	Compliant	98%	Yes
AP.202	Bedroom 1	52%	100%	Compliant	99%	Yes
AP.202	Bedroom 2	98%	100%	Compliant	100%	Yes
AP.203	LKD	60%	95%	Compliant	100%	Yes
AP.203	Bedroom 1	16%	88%	Non-compliant	99%	Yes
AP.203	Bedroom 2	44%	100%	Non-compliant	100%	Yes
AP.204	LKD	16%	60%	Non-compliant	100%	Yes
AP.204	Bedroom	17%	86%	Non-compliant	99%	Yes
AP.205	LKD	16%	60%	Non-compliant	100%	Yes
AP.205	Bedroom	17%	84%	Non-compliant	98%	Yes
AP.206	LKD	61%	94%	Non-compliant	100%	Yes
AP.206	Bedroom 1	17%	80%	Non-compliant	99%	Yes
AP.206	Bedroom 2	44%	100%	Non-compliant	100%	Yes
AP.207	LKD	86%	100%	Compliant	100%	Yes
AP.207	Bedroom 1	63%	100%	Compliant	99%	Yes
AP.207	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.208	LKD	43%	90%	Non-compliant	100%	Yes
AP.208	Bedroom	50%	100%	Compliant	99%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

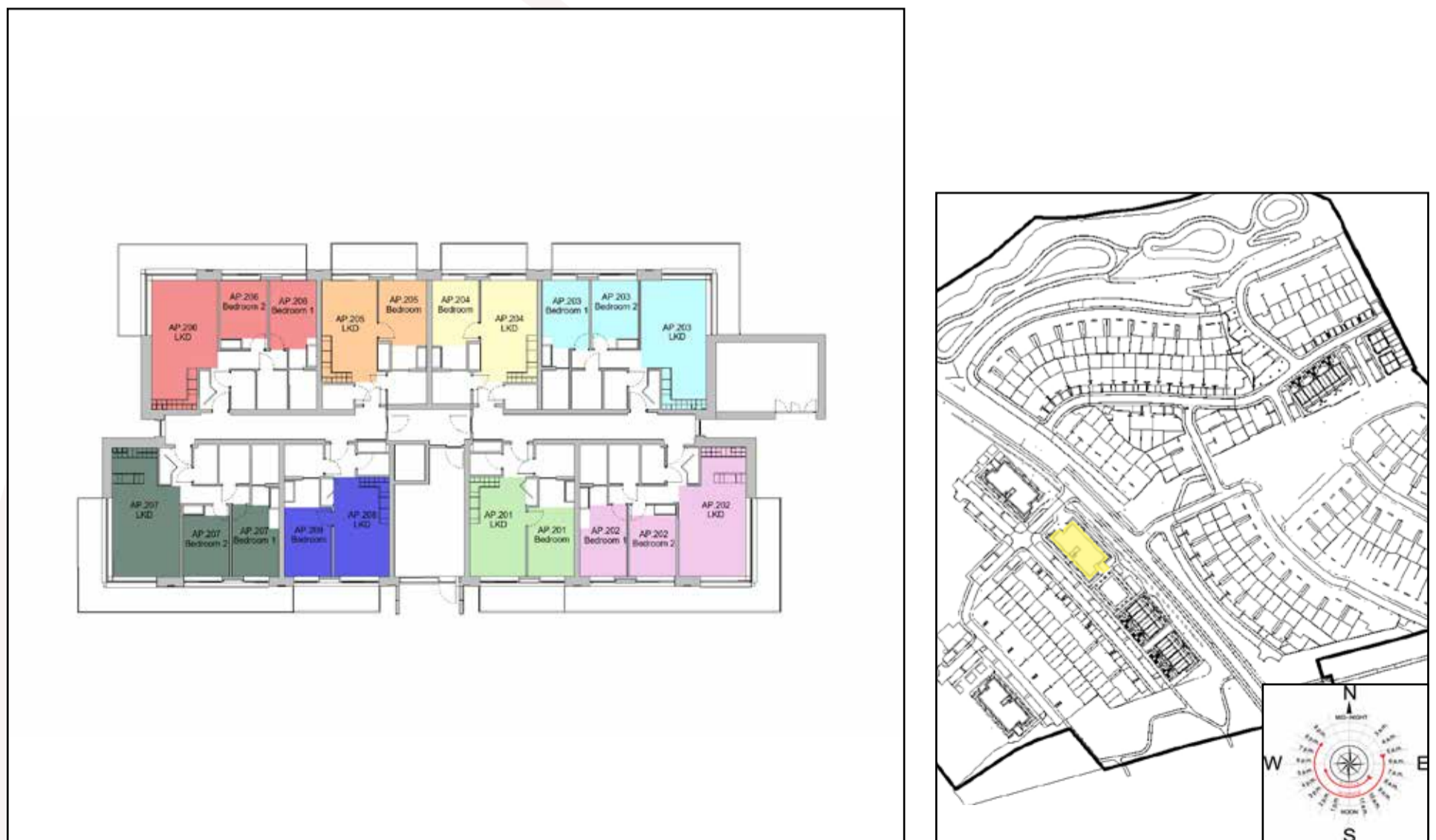


Figure J.5: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.6 Apartment Block 2 - First Floor

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Table No. J.2.6 - Supplementary Studies: Apartment Block 2 - First Floor						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
AP.211	LKD	43%	96%	Non-compliant	100%	Yes
AP.211	Bedroom	45%	100%	Non-compliant	98%	Yes
AP.212	LKD	97%	100%	Compliant	100%	Yes
AP.212	Bedroom 1	59%	100%	Compliant	98%	Yes
AP.212	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.213	LKD	78%	100%	Compliant	100%	Yes
AP.213	Bedroom 1	28%	100%	Non-compliant	99%	Yes
AP.213	Bedroom 2	70%	100%	Compliant	100%	Yes
AP.214	LKD	24%	71%	Non-compliant	100%	Yes
AP.214	Bedroom	23%	100%	Non-compliant	98%	Yes
AP.215	LKD	26%	72%	Non-compliant	100%	Yes
AP.215	Bedroom	29%	100%	Non-compliant	98%	Yes
AP.216	LKD	74%	100%	Compliant	100%	Yes
AP.216	Bedroom 1	31%	100%	Non-compliant	99%	Yes
AP.216	Bedroom 2	77%	100%	Compliant	100%	Yes
AP.217	LKD	86%	100%	Compliant	100%	Yes
AP.217	Bedroom 1	61%	100%	Compliant	99%	Yes
AP.217	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.218	LKD	45%	99%	Non-compliant	100%	Yes
AP.218	Bedroom	50%	100%	Compliant	98%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."



Figure J.6: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.7 Apartment Block 2 - Second Floor

RECEIVED 17/09/2023

Table No. J.2.7 - Supplementary Studies: Apartment Block 2 - Second Floor						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
AP.221	LKD	49%	100%	Non-compliant	100%	Yes
AP.221	Bedroom	53%	100%	Compliant	98%	Yes
AP.222	LKD	100%	100%	Compliant	100%	Yes
AP.222	Bedroom 1	64%	100%	Compliant	99%	Yes
AP.222	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.223	LKD	80%	100%	Compliant	100%	Yes
AP.223	Bedroom 1	41%	100%	Non-compliant	99%	Yes
AP.223	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.224	LKD	34%	92%	Non-compliant	100%	Yes
AP.224	Bedroom	40%	100%	Non-compliant	98%	Yes
AP.225	LKD	35%	93%	Non-compliant	100%	Yes
AP.225	Bedroom	40%	100%	Non-compliant	98%	Yes
AP.226	LKD	75%	100%	Compliant	100%	Yes
AP.226	Bedroom 1	41%	100%	Non-compliant	99%	Yes
AP.226	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.227	LKD	89%	100%	Compliant	100%	Yes
AP.227	Bedroom 1	62%	100%	Compliant	99%	Yes
AP.227	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.228	LKD	50%	100%	Compliant	100%	Yes
AP.228	Bedroom	55%	100%	Compliant	98%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

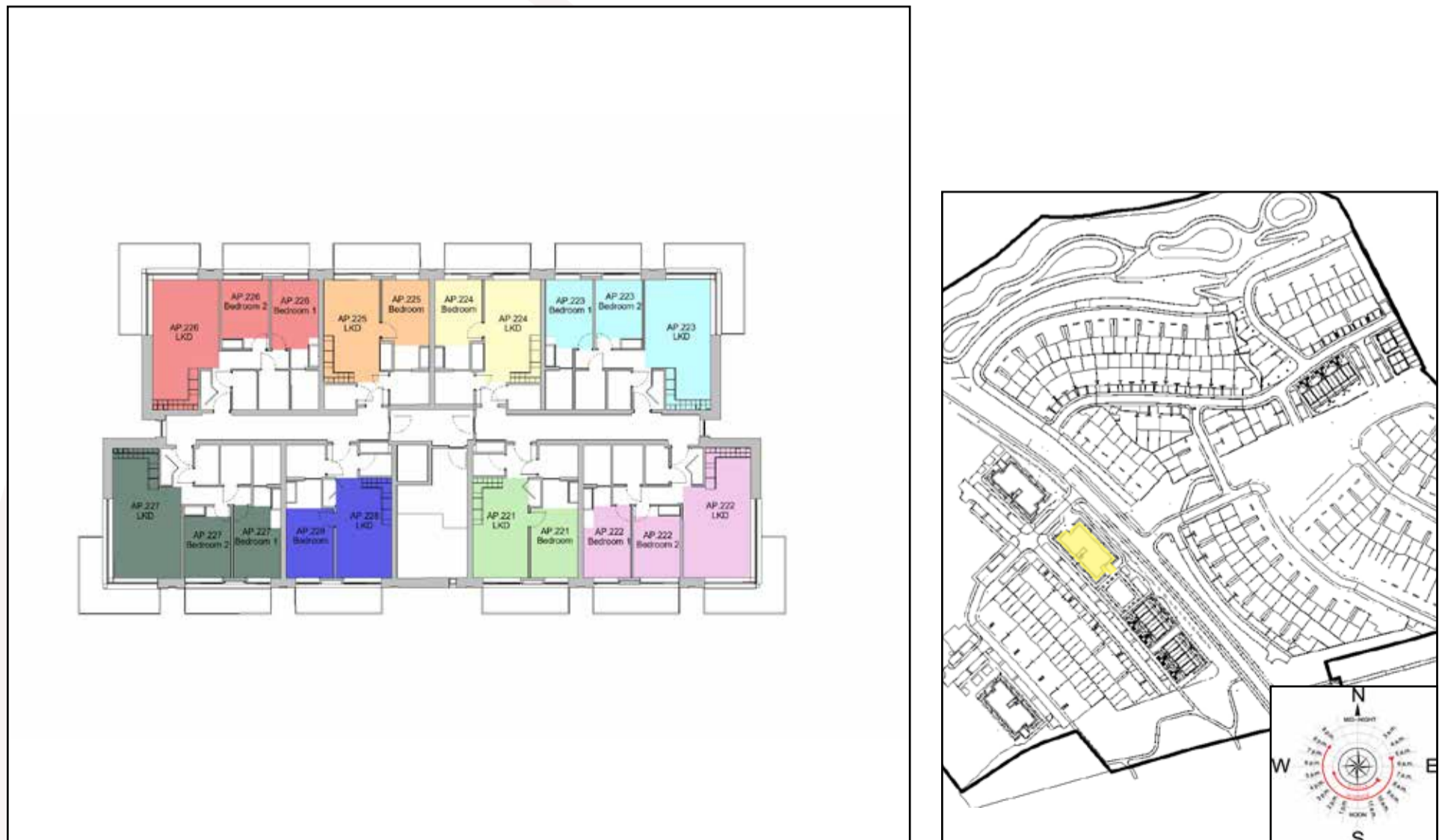


Figure J.7: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.8 Apartment Block 2 - Third Floor

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Table No. J.2.8 - Supplementary Studies: Apartment Block 2 - Third Floor						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux <small>(recommendation &gt;50%)</small>	% of area above 100 Lux <small>(recommendation &gt;95%)</small>	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
AP.231	LKD	64%	100%	Compliant	100%	Yes
AP.231	Bedroom	73%	100%	Compliant	99%	Yes
AP.232	LKD	100%	100%	Compliant	100%	Yes
AP.232	Bedroom 1	86%	100%	Compliant	99%	Yes
AP.232	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.233	LKD	89%	100%	Compliant	100%	Yes
AP.233	Bedroom 1	64%	100%	Compliant	99%	Yes
AP.233	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.234	LKD	47%	100%	Non-compliant	100%	Yes
AP.234	Bedroom	63%	100%	Compliant	99%	Yes
AP.235	LKD	48%	100%	Non-compliant	100%	Yes
AP.235	Bedroom	62%	100%	Compliant	98%	Yes
AP.236	LKD	84%	100%	Compliant	100%	Yes
AP.236	Bedroom 1	64%	100%	Compliant	99%	Yes
AP.236	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.237	LKD	100%	100%	Compliant	100%	Yes
AP.237	Bedroom 1	79%	100%	Compliant	99%	Yes
AP.237	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.238	LKD	62%	100%	Compliant	100%	Yes
AP.238	Bedroom	76%	100%	Compliant	99%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.

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

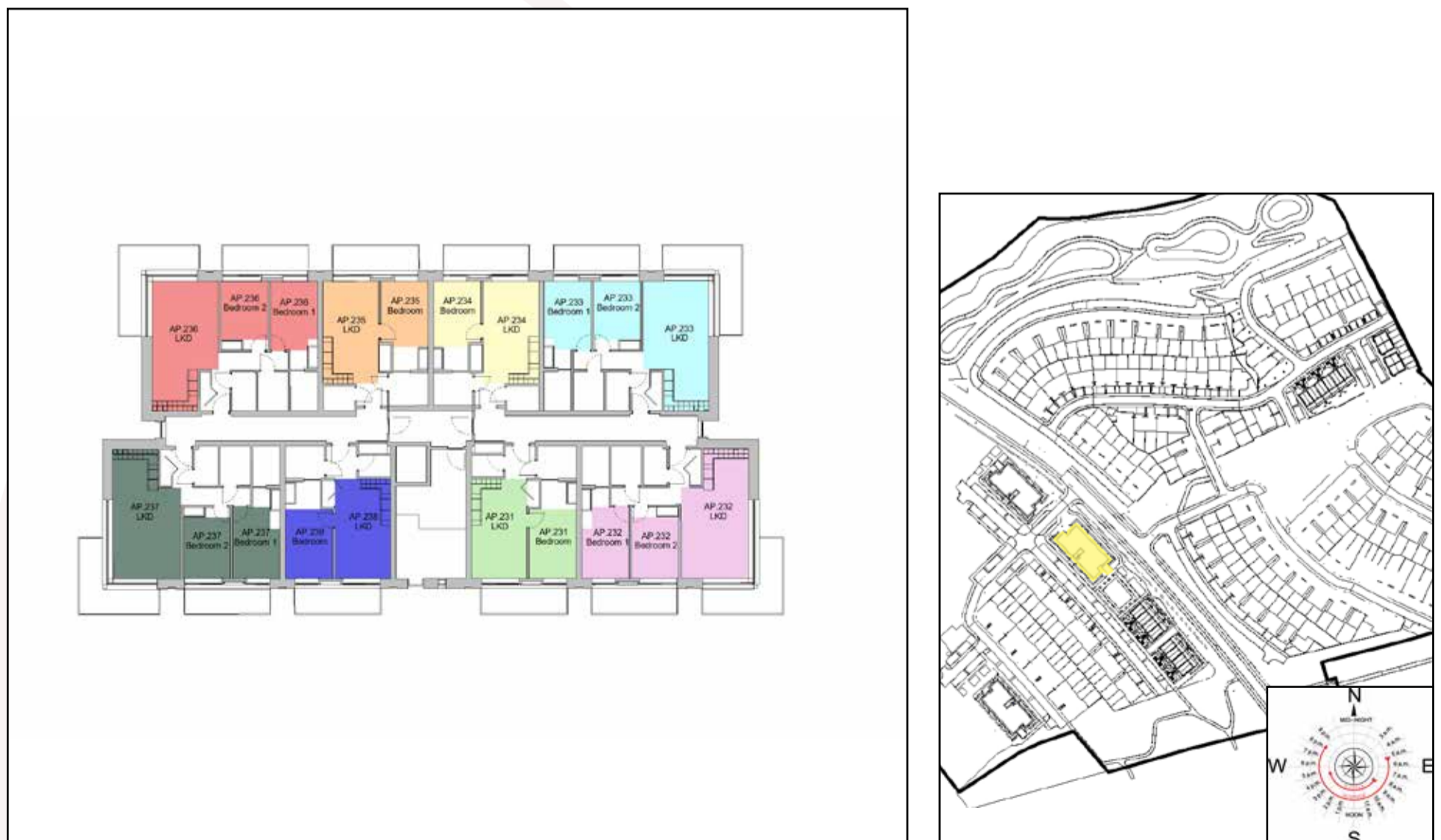


Figure J.8: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.9 Apartment Block 3 - Ground Floor

RECEIVED 17/09/2023

Table No. J.2.9 - Supplementary Studies: Apartment Block 3 - Ground Floor						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
AP.301	LKD	29%	74%	Non-compliant	95%	Yes
AP.301	Bedroom	27%	91%	Non-compliant	99%	Yes
AP.302	LKD	91%	100%	Compliant	98%	Yes
AP.302	Bedroom 1	32%	98%	Non-compliant	99%	Yes
AP.302	Bedroom 2	76%	100%	Compliant	100%	Yes
AP.303	LKD	89%	100%	Compliant	100%	Yes
AP.303	Bedroom 1	75%	100%	Compliant	99%	Yes
AP.303	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.304	LKD	53%	100%	Compliant	100%	Yes
AP.304	Bedroom	72%	100%	Compliant	98%	Yes
AP.305	LKD	54%	100%	Compliant	100%	Yes
AP.305	Bedroom	72%	100%	Compliant	98%	Yes
AP.306	LKD	84%	100%	Compliant	100%	Yes
AP.306	Bedroom 1	70%	100%	Compliant	99%	Yes
AP.306	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.307	LKD	87%	100%	Compliant	98%	Yes
AP.307	Bedroom 1	33%	97%	Non-compliant	99%	Yes
AP.307	Bedroom 2	67%	100%	Compliant	100%	Yes
AP.308	LKD	29%	74%	Non-compliant	95%	Yes
AP.308	Bedroom	26%	91%	Non-compliant	99%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

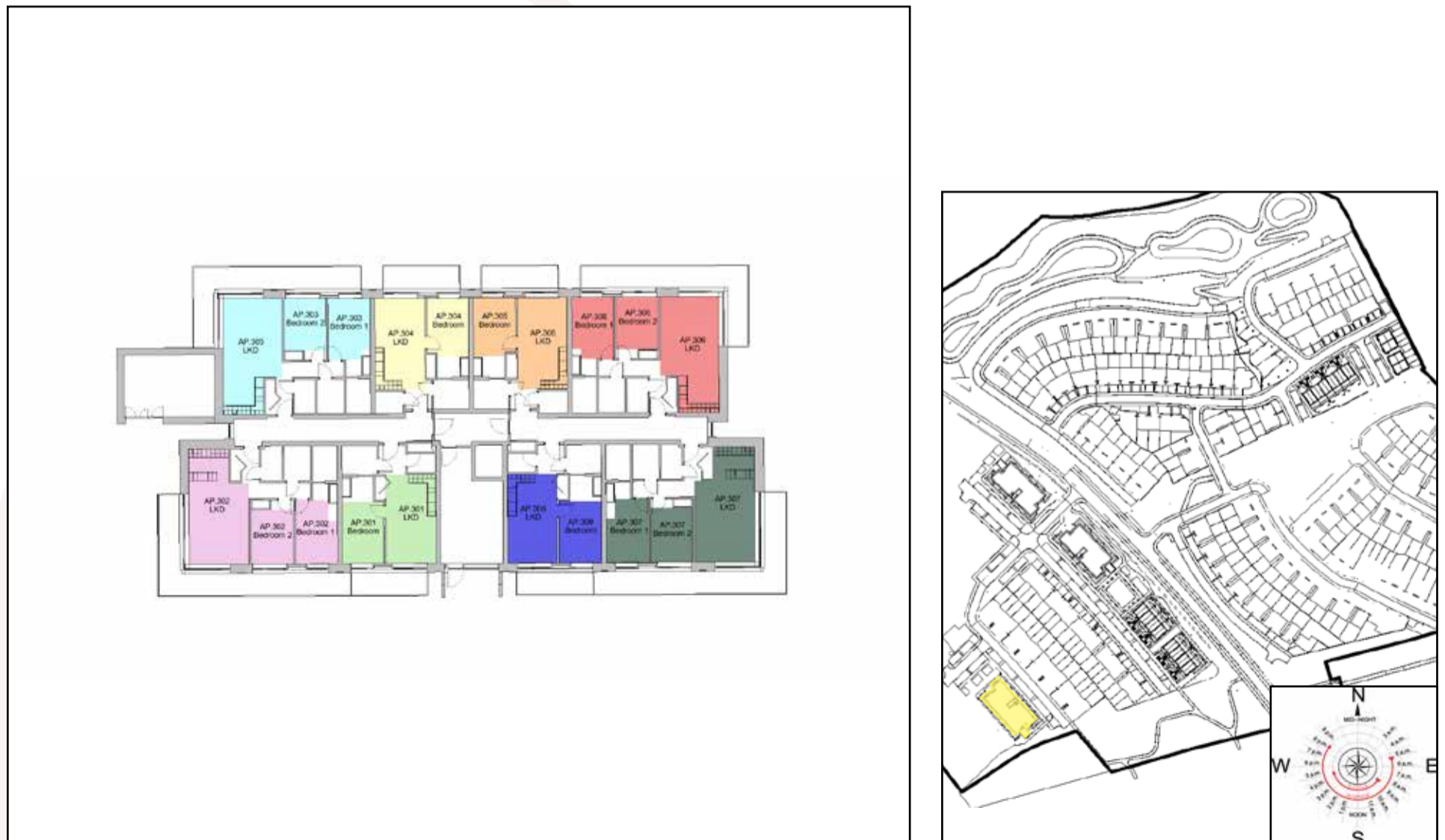


Figure J.9: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.10 Apartment Block 3 - First Floor

RECEIVED 17/09/2023

Table No. J.2.10 - Supplementary Studies: Apartment Block 3 - First Floor						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
AP.311	LKD	32%	87%	Non-compliant	100%	Yes
AP.311	Bedroom	30%	100%	Non-compliant	98%	Yes
AP.312	LKD	98%	100%	Compliant	100%	Yes
AP.312	Bedroom 1	39%	100%	Non-compliant	98%	Yes
AP.312	Bedroom 2	80%	100%	Compliant	100%	Yes
AP.313	LKD	90%	100%	Compliant	100%	Yes
AP.313	Bedroom 1	75%	100%	Compliant	99%	Yes
AP.313	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.314	LKD	51%	100%	Compliant	100%	Yes
AP.314	Bedroom	69%	100%	Compliant	98%	Yes
AP.315	LKD	52%	100%	Compliant	100%	Yes
AP.315	Bedroom	64%	100%	Compliant	98%	Yes
AP.316	LKD	83%	100%	Compliant	100%	Yes
AP.316	Bedroom 1	71%	100%	Compliant	99%	Yes
AP.316	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.317	LKD	89%	100%	Compliant	100%	Yes
AP.317	Bedroom 1	38%	100%	Non-compliant	99%	Yes
AP.317	Bedroom 2	78%	100%	Compliant	100%	Yes
AP.318	LKD	32%	85%	Non-compliant	100%	Yes
AP.318	Bedroom	30%	100%	Non-compliant	98%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.

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

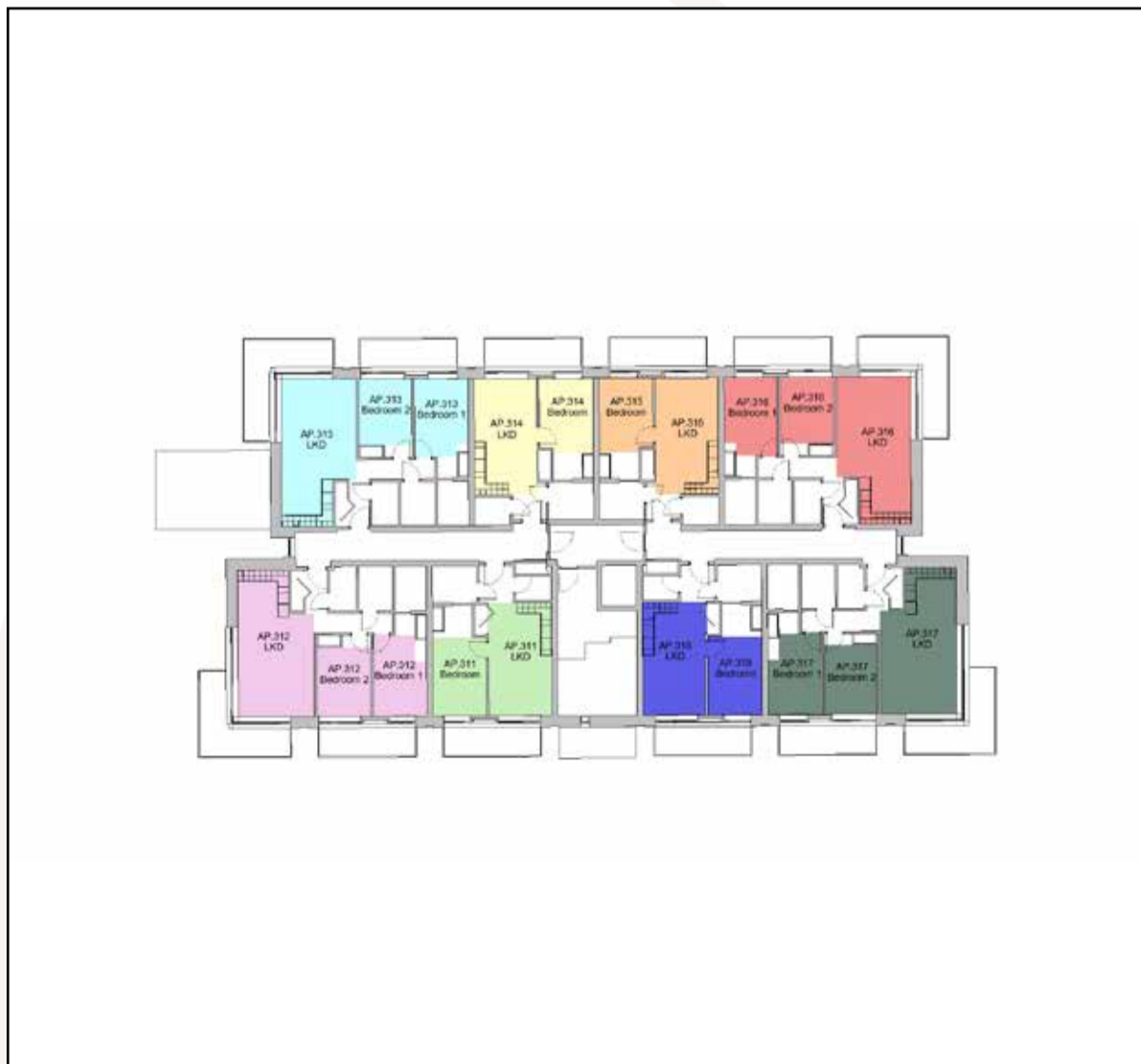


Figure J.10: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).



### J.2.11 Apartment Block 3 - Second Floor

RECEIVED 17/09/2023

Table No. J.2.11 - Supplementary Studies: Apartment Block 3 - Second Floor						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
AP.321	LKD	35%	99%	Non-compliant	100%	Yes
AP.321	Bedroom	35%	100%	Non-compliant	98%	Yes
AP.322	LKD	99%	100%	Compliant	100%	Yes
AP.322	Bedroom 1	41%	100%	Non-compliant	99%	Yes
AP.322	Bedroom 2	98%	100%	Compliant	100%	Yes
AP.323	LKD	90%	100%	Compliant	100%	Yes
AP.323	Bedroom 1	75%	100%	Compliant	99%	Yes
AP.323	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.324	LKD	51%	100%	Compliant	100%	Yes
AP.324	Bedroom	71%	100%	Compliant	98%	Yes
AP.325	LKD	52%	100%	Compliant	100%	Yes
AP.325	Bedroom	64%	100%	Compliant	98%	Yes
AP.326	LKD	83%	100%	Compliant	100%	Yes
AP.326	Bedroom 1	71%	100%	Compliant	99%	Yes
AP.326	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.327	LKD	92%	100%	Compliant	100%	Yes
AP.327	Bedroom 1	40%	100%	Non-compliant	99%	Yes
AP.327	Bedroom 2	96%	100%	Compliant	100%	Yes
AP.328	LKD	35%	96%	Non-compliant	100%	Yes
AP.328	Bedroom	35%	100%	Non-compliant	99%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.

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

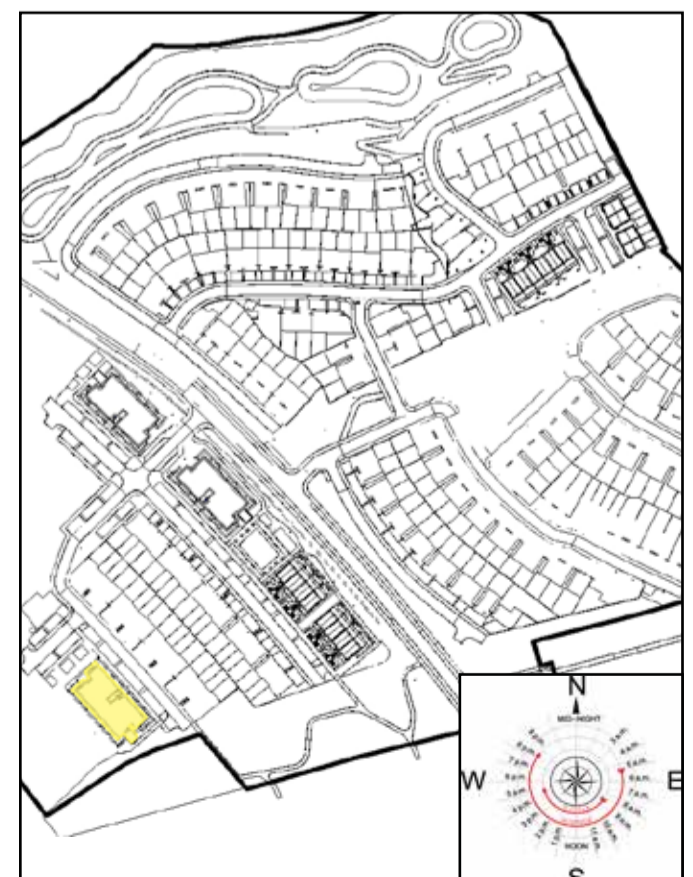
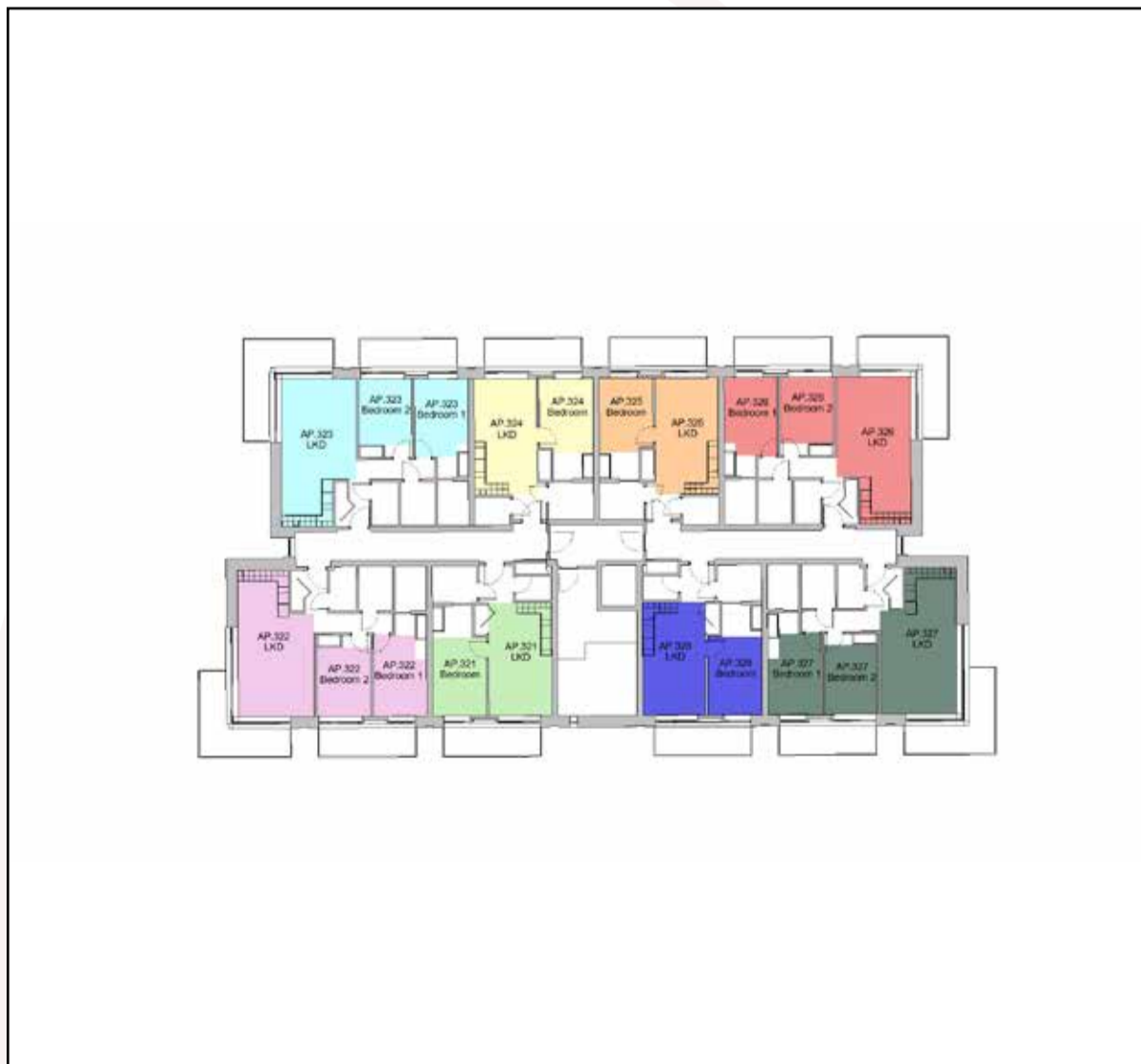


Figure J.11: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.12 Apartment Block 3 - Third Floor

RECEIVED 17/09/2023

Table No. J.2.12 - Supplementary Studies: Apartment Block 3 - Third Floor						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
AP.331	LKD	49%	100%	Non-compliant	100%	Yes
AP.331	Bedroom	55%	100%	Compliant	99%	Yes
AP.332	LKD	100%	100%	Compliant	100%	Yes
AP.332	Bedroom 1	67%	100%	Compliant	98%	Yes
AP.332	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.333	LKD	99%	100%	Compliant	100%	Yes
AP.333	Bedroom 1	93%	100%	Compliant	99%	Yes
AP.333	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.334	LKD	63%	100%	Compliant	100%	Yes
AP.334	Bedroom	86%	100%	Compliant	99%	Yes
AP.335	LKD	64%	100%	Compliant	100%	Yes
AP.335	Bedroom	83%	100%	Compliant	98%	Yes
AP.336	LKD	90%	100%	Compliant	100%	Yes
AP.336	Bedroom 1	93%	100%	Compliant	99%	Yes
AP.336	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.337	LKD	99%	100%	Compliant	100%	Yes
AP.337	Bedroom 1	64%	100%	Compliant	99%	Yes
AP.337	Bedroom 2	100%	100%	Compliant	100%	Yes
AP.338	LKD	48%	100%	Non-compliant	100%	Yes
AP.338	Bedroom	55%	100%	Compliant	99%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

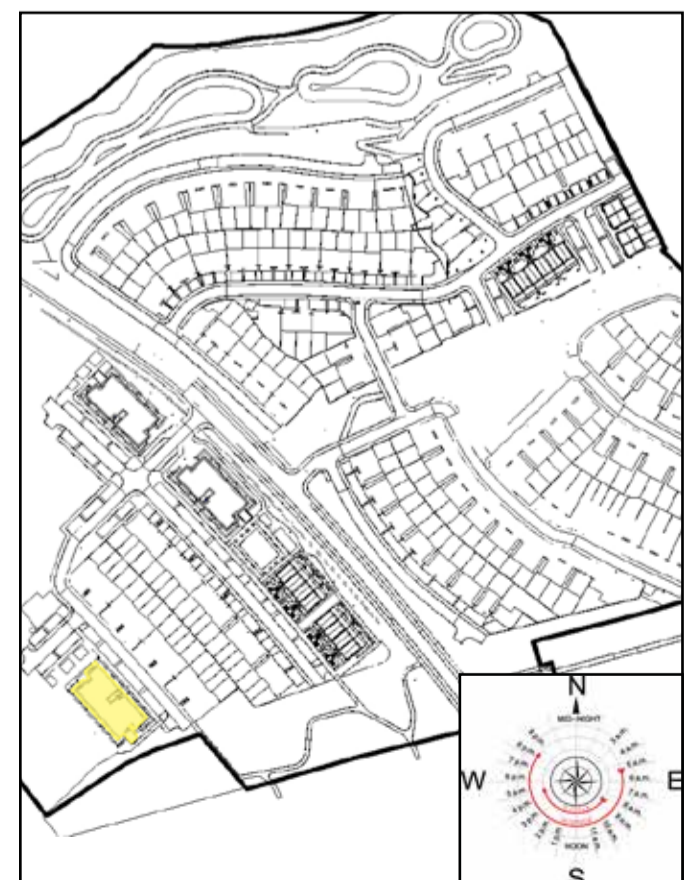
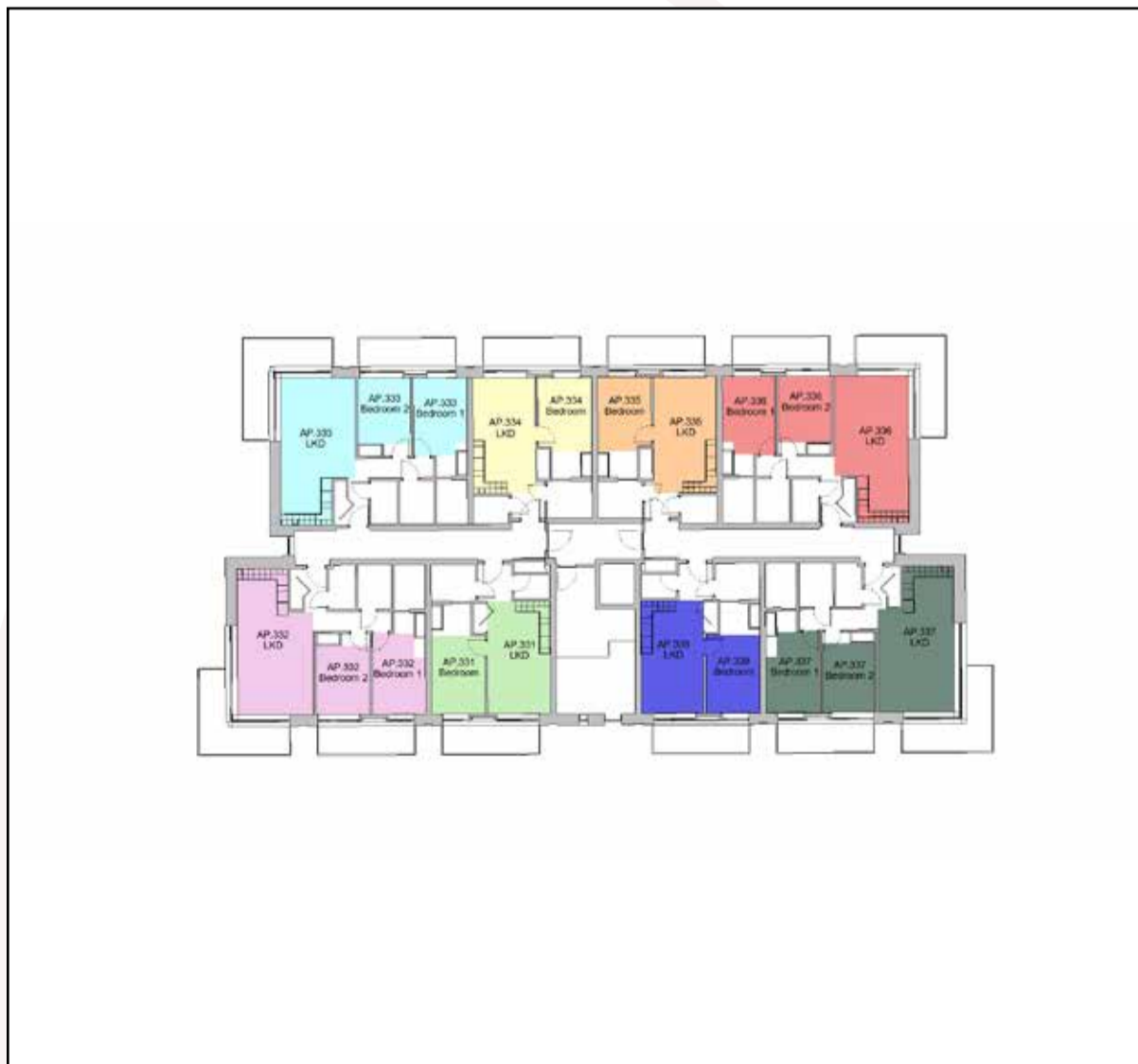


Figure J.12: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.13 Duplexes G. 185a - G. 190a - Ground Floor

RECEIVED 17/02/2023

Table No. J.2.13 - Supplementary Studies: Duplexes G. 185a - G. 190a - Ground Floor						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
G. 185a	K/L/D	40%	100%	Non-compliant	99%	Yes
G. 185a	Bedroom 1	83%	100%	Compliant	98%	Yes
G. 185a	Bedroom 2	4%	50%	Non-compliant	88%	Yes
G. 186a	Bedroom 2	5%	52%	Non-compliant	88%	Yes
G. 186a	K/L/D	35%	100%	Non-compliant	99%	Yes
G. 186a	Bedroom 1	78%	100%	Compliant	98%	Yes
G. 187a	K/L/D	40%	100%	Non-compliant	99%	Yes
G. 187a	Bedroom 1	81%	100%	Compliant	98%	Yes
G. 187a	Bedroom 2	4%	50%	Non-compliant	88%	Yes
G. 188a	K/L/D	39%	100%	Non-compliant	99%	Yes
G. 188a	Bedroom 1	75%	100%	Compliant	98%	Yes
G. 188a	Bedroom 2	5%	54%	Non-compliant	88%	Yes
G. 189a	K/L/D	45%	100%	Non-compliant	99%	Yes
G. 189a	Bedroom 1	75%	100%	Compliant	98%	Yes
G. 189a	Bedroom 2	4%	52%	Non-compliant	88%	Yes
G. 190a	K/L/D	46%	100%	Non-compliant	99%	Yes
G. 190a	Bedroom 1	61%	100%	Compliant	98%	Yes
G. 190a	Bedroom 2	4%	30%	Non-compliant	88%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.

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

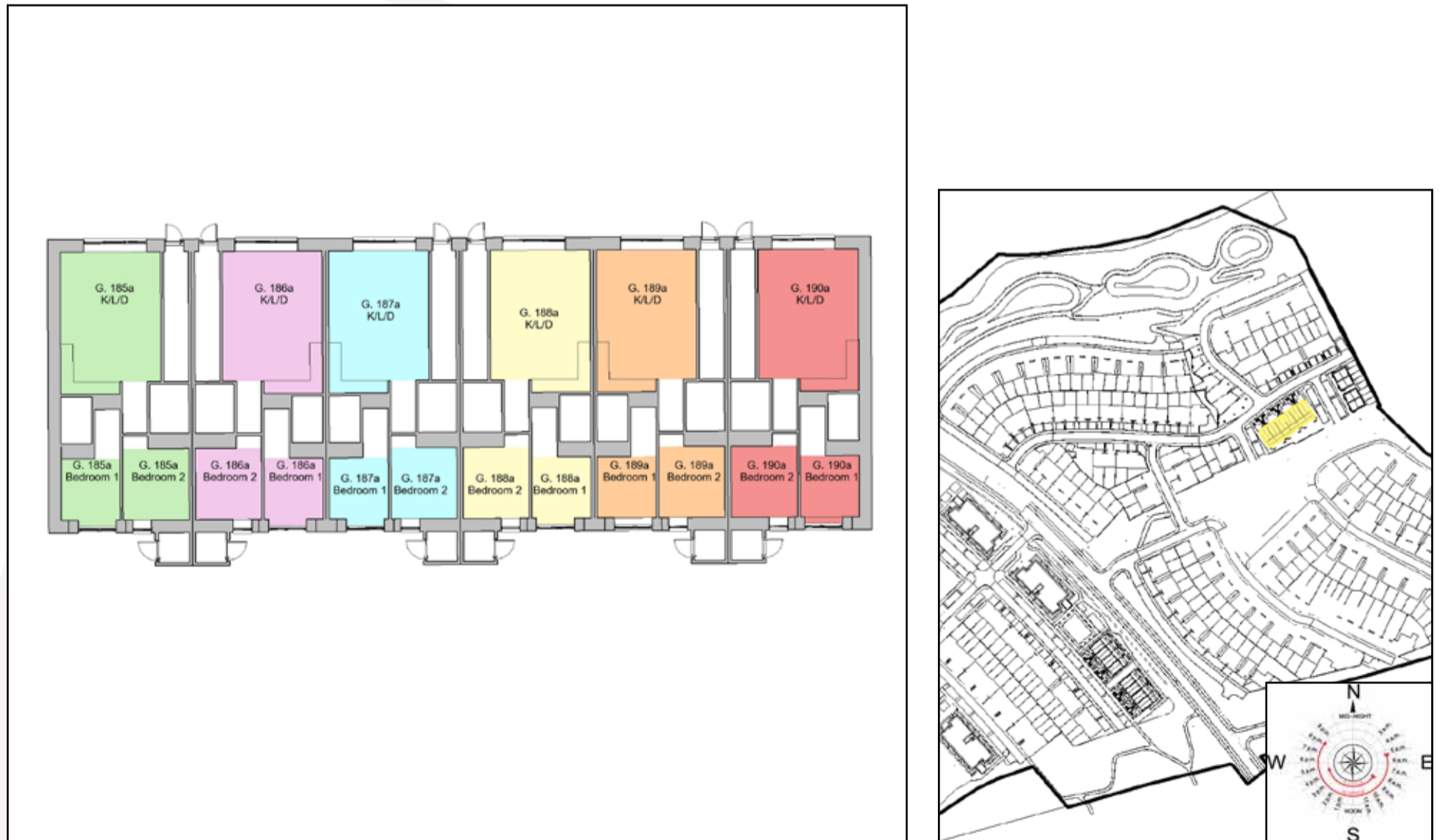


Figure J.13: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.14 Duplexes G. 185b - G. 187b - First and Second Floors

RECEIVED 17/09/2023

Table No. J.2.14 - Supplementary Studies: Duplexes G. 185b - G. 187b - First and Second Floors						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
G. 185b	Kitchen/Dining	100%	100%	Compliant	100%	Yes
G. 185b	Living Room	86%	100%	Compliant	97%	Yes
G. 185b	Master Bedroom	60%	100%	Compliant	96%	Yes
G. 185b	Bedroom 2	100%	100%	Compliant	99%	Yes
G. 185b	Bedroom 3	100%	100%	Compliant	99%	Yes
G. 186b	Kitchen/Dining	79%	100%	Compliant	97%	Yes
G. 186b	Living Room	98%	100%	Compliant	98%	Yes
G. 186b	Master Bedroom	56%	100%	Compliant	96%	Yes
G. 186b	Bedroom 2	98%	100%	Compliant	99%	Yes
G. 186b	Bedroom 3	100%	100%	Compliant	98%	Yes
G. 187b	Kitchen/Dining	80%	100%	Compliant	97%	Yes
G. 187b	Living Room	94%	100%	Compliant	97%	Yes
G. 187b	Master Bedroom	52%	100%	Compliant	96%	Yes
G. 187b	Bedroom 2	100%	100%	Compliant	99%	Yes
G. 187b	Bedroom 3	100%	100%	Compliant	98%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

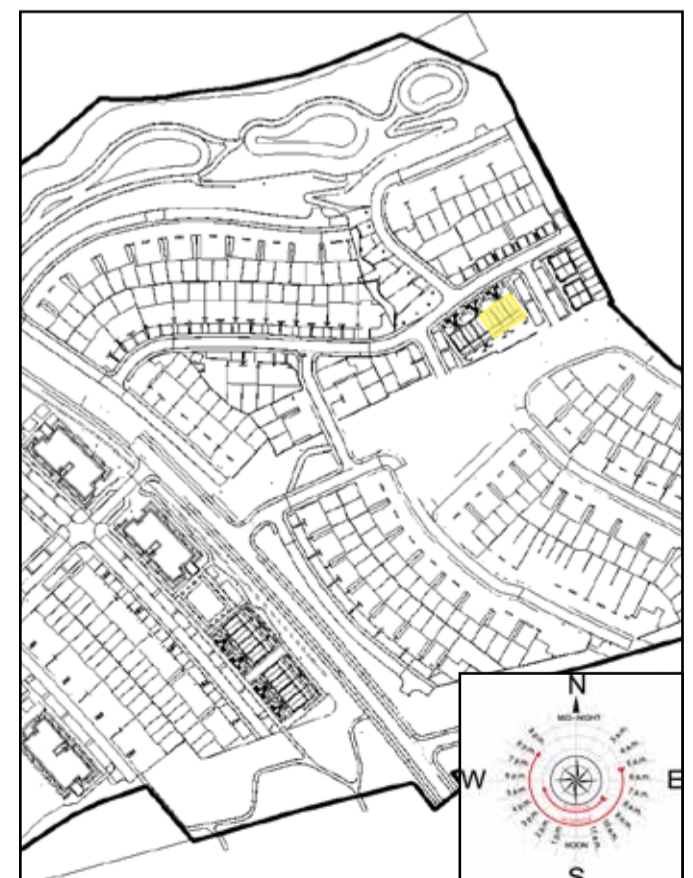
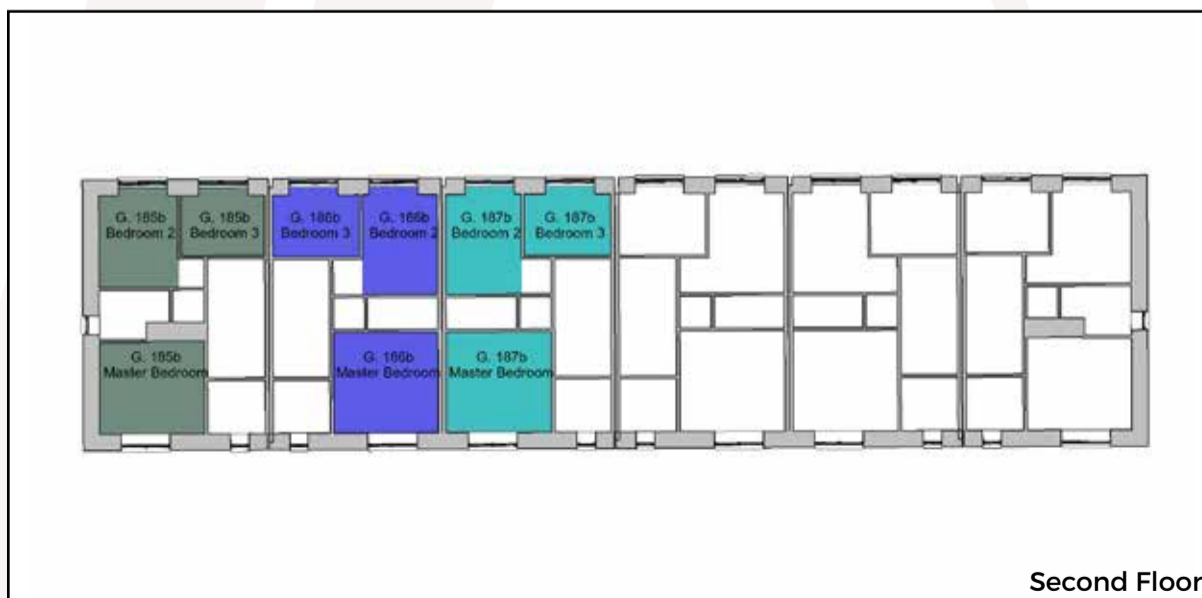


Figure J.14: Floor plans of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.15 Duplexes G. 188b - G. 190b - First and Second Floors

RECEIVED 17/09/2023

Table No. J.2.15 - Supplementary Studies: Duplexes G. 188b - G. 190b - First and Second Floors						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
G. 188b	Kitchen/Dining	86%	100%	Compliant	97%	Yes
G. 188b	Living Room	90%	100%	Compliant	98%	Yes
G. 188b	Master Bedroom	53%	100%	Compliant	96%	Yes
G. 188b	Bedroom 2	100%	100%	Compliant	99%	Yes
G. 188b	Bedroom 3	100%	100%	Compliant	98%	Yes
G. 189b	Kitchen/Dining	88%	100%	Compliant	97%	Yes
G. 189b	Living Room	89%	100%	Compliant	97%	Yes
G. 189b	Master Bedroom	49%	100%	Non-compliant	96%	Yes
G. 189b	Bedroom 2	100%	100%	Compliant	99%	Yes
G. 189b	Bedroom 3	100%	100%	Compliant	98%	Yes
G. 190b	Kitchen/Dining	100%	100%	Compliant	100%	Yes
G. 190b	Living Room	53%	100%	Compliant	98%	Yes
G. 190b	Master Bedroom	49%	100%	Non-compliant	96%	Yes
G. 190b	Bedroom 2	100%	100%	Compliant	99%	Yes
G. 190b	Bedroom 3	100%	100%	Compliant	98%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.

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

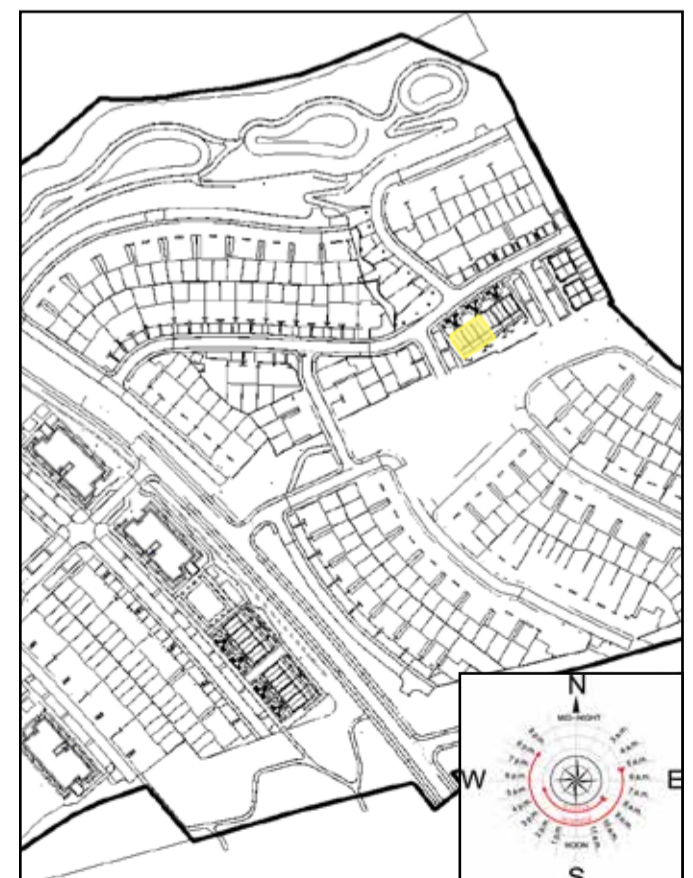


Figure J.15: Floor plans of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.16 Duplexes G. 206a - G. 209a - Ground Floor

RECEIVED 17/09/2023

Table No. J.2.16 - Supplementary Studies: Duplexes G. 206a - G. 209a - Ground Floor						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux <small>(recommendation &gt;50%)</small>	% of area above 100 Lux <small>(recommendation &gt;95%)</small>	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
G. 206a	K/L/D	15%	70%	Non-compliant	99%	Yes
G. 206a	Bedroom 1	94%	100%	Compliant	98%	Yes
G. 206a	Bedroom 2	11%	55%	Non-compliant	88%	Yes
G. 207a	K/L/D	24%	82%	Non-compliant	99%	Yes
G. 207a	Bedroom 1	86%	100%	Compliant	98%	Yes
G. 207a	Bedroom 2	9%	54%	Non-compliant	88%	Yes
G. 208a	K/L/D	26%	88%	Non-compliant	99%	Yes
G. 208a	Bedroom 1	69%	100%	Compliant	98%	Yes
G. 208a	Bedroom 2	5%	39%	Non-compliant	88%	Yes
G. 209a	K/L/D	22%	78%	Non-compliant	99%	Yes
G. 209a	Bedroom 1	97%	100%	Compliant	98%	Yes
G. 209a	Bedroom 2	13%	71%	Non-compliant	88%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."



Figure J.16: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.17 Duplexes G. 206b - G. 209b - First and Second Floors

RECEIVED 17/02/2023

Table No. J.2.17 - Supplementary Studies: Duplexes G. 206b - G. 209b - First and Second Floors						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
G. 206b	Kitchen/Dining	87%	100%	Compliant	99%	Yes
G. 206b	Living Room	100%	100%	Compliant	97%	Yes
G. 206b	Master Bedroom	96%	100%	Compliant	96%	Yes
G. 206b	Bedroom 2	96%	100%	Compliant	99%	Yes
G. 206b	Bedroom 3	100%	100%	Compliant	99%	Yes
G. 207b	Kitchen/Dining	41%	100%	Non-compliant	97%	Yes
G. 207b	Living Room	100%	100%	Compliant	97%	Yes
G. 207b	Master Bedroom	89%	100%	Compliant	96%	Yes
G. 207b	Bedroom 2	76%	100%	Compliant	99%	Yes
G. 207b	Bedroom 3	100%	100%	Compliant	98%	Yes
G. 208b	Kitchen/Dining	41%	100%	Non-compliant	97%	Yes
G. 208b	Living Room	100%	100%	Compliant	97%	Yes
G. 208b	Master Bedroom	82%	100%	Compliant	96%	Yes
G. 208b	Bedroom 2	76%	100%	Compliant	99%	Yes
G. 208b	Bedroom 3	100%	100%	Compliant	98%	Yes
G. 209b	Kitchen/Dining	82%	100%	Compliant	97%	Yes
G. 209b	Living Room	100%	100%	Compliant	97%	Yes
G. 209b	Master Bedroom	99%	100%	Compliant	96%	Yes
G. 209b	Bedroom 2	96%	100%	Compliant	99%	Yes
G. 209b	Bedroom 3	100%	100%	Compliant	98%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.

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

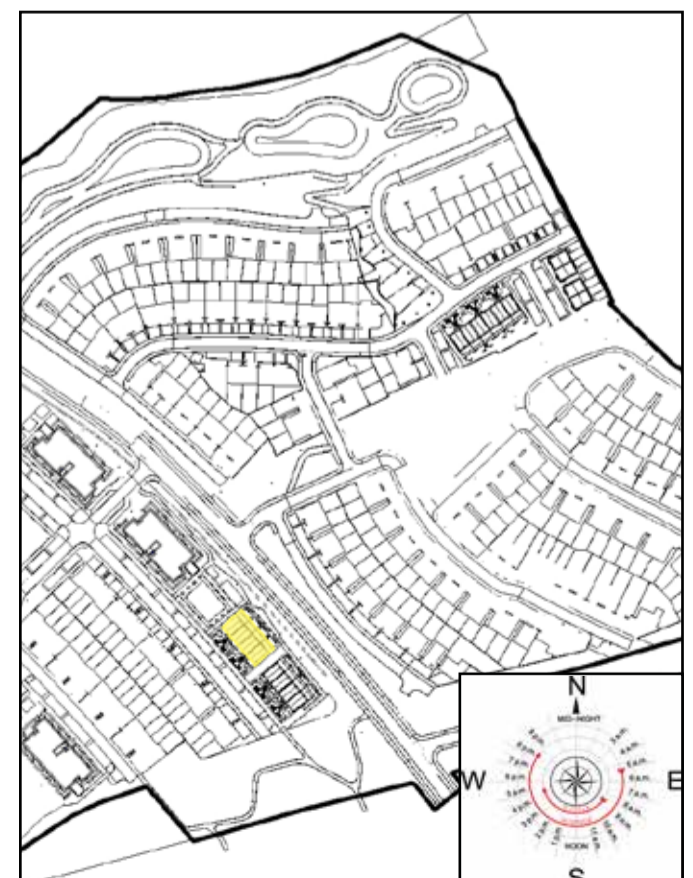


Figure J.17: Floor plans of assessed building (L), Keyplan highlighting the assessed building (R).

### J.2.18 Duplexes G. 210a - G. 213a - Ground Floor

RECEIVED 17/09/2023

Table No. J.2.18 - Supplementary Studies: Duplexes G. 210a - G. 213a - Ground Floor						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
G. 210a	K/L/D	7%	57%	Non-compliant	99%	Yes
G. 210a	Bedroom 1	97%	100%	Compliant	98%	Yes
G. 210a	Bedroom 2	9%	57%	Non-compliant	89%	Yes
G. 211a	K/L/D	21%	82%	Non-compliant	99%	Yes
G. 211a	Bedroom 1	92%	100%	Compliant	98%	Yes
G. 211a	Bedroom 2	11%	59%	Non-compliant	88%	Yes
G. 212a	K/L/D	22%	82%	Non-compliant	99%	Yes
G. 212a	Bedroom 1	61%	100%	Compliant	98%	Yes
G. 212a	Bedroom 2	2%	30%	Non-compliant	89%	Yes
G. 213a	K/L/D	19%	75%	Non-compliant	99%	Yes
G. 213a	Bedroom 1	92%	100%	Compliant	98%	Yes
G. 213a	Bedroom 2	13%	86%	Non-compliant	88%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.  
 \*\* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."



Figure J.18: Floor plan of assessed building (L), Keyplan highlighting the assessed building (R).



### J.2.19 Duplexes G. 210b - G. 213b - First and Second Floors

RECEIVED 17/09/2023

Table No. J.2.19 - Supplementary Studies: Duplexes G. 210b - G. 213b - First and Second Floors						
Unit Number	Room Description	SDA (I.S. EN 17037 Criterion)			No Sky Line (NSL)	
		% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets I.S. EN 17037 Criteria*	% of room where the sky is visible from the working plane	Above 80%**
G. 210b	Kitchen/Dining	63%	100%	Compliant	98%	Yes
G. 210b	Living Room	100%	100%	Compliant	97%	Yes
G. 210b	Master Bedroom	95%	100%	Compliant	96%	Yes
G. 210b	Bedroom 2	73%	100%	Compliant	99%	Yes
G. 210b	Bedroom 3	100%	100%	Compliant	99%	Yes
G. 211b	Kitchen/Dining	29%	100%	Non-compliant	97%	Yes
G. 211b	Living Room	96%	100%	Compliant	97%	Yes
G. 211b	Master Bedroom	95%	100%	Compliant	96%	Yes
G. 211b	Bedroom 2	77%	100%	Compliant	99%	Yes
G. 211b	Bedroom 3	100%	100%	Compliant	98%	Yes
G. 212b	Kitchen/Dining	33%	100%	Non-compliant	97%	Yes
G. 212b	Living Room	96%	100%	Compliant	97%	Yes
G. 212b	Master Bedroom	84%	100%	Compliant	96%	Yes
G. 212b	Bedroom 2	92%	100%	Compliant	99%	Yes
G. 212b	Bedroom 3	100%	100%	Compliant	99%	Yes
G. 213b	Kitchen/Dining	99%	100%	Compliant	100%	Yes
G. 213b	Living Room	99%	100%	Compliant	97%	Yes
G. 213b	Master Bedroom	89%	100%	Compliant	96%	Yes
G. 213b	Bedroom 2	90%	100%	Compliant	99%	Yes
G. 213b	Bedroom 3	100%	100%	Compliant	98%	Yes

\* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.3.1 on page 11.

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

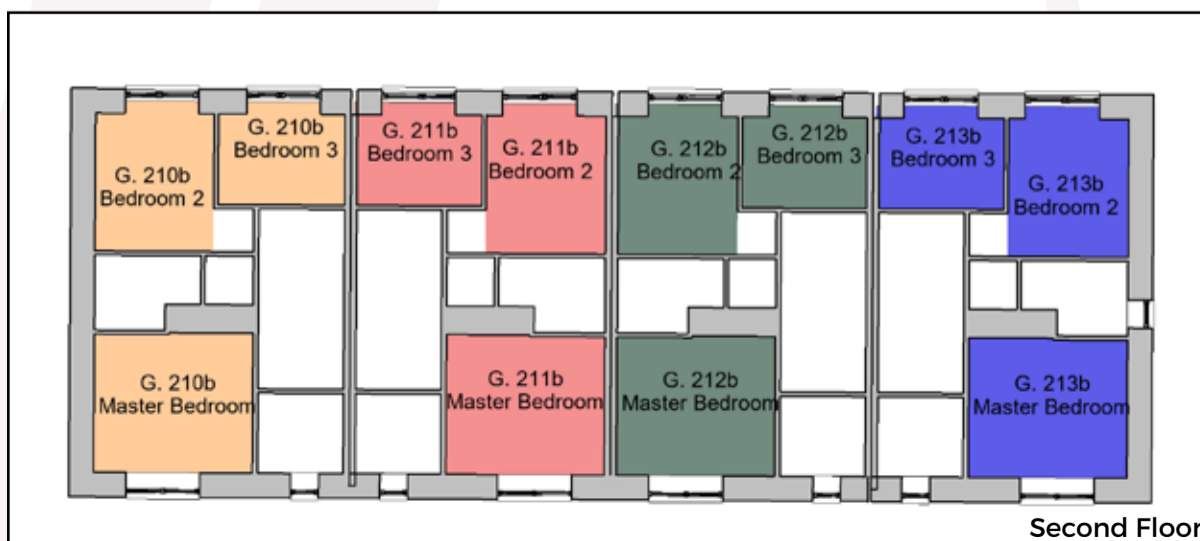


Figure J.19: Floor plans of assessed building (L), Keyplan highlighting the assessed building (R).