



## **DAYLIGHT & SUNLIGHT**

INTERNAL DAYLIGHT, SUNLIGHT  
AND OVERSHADOWING REPORT

**Waterfront Square, Reading**

Packaged Living

**17 July 2024**

GIA No: **19977**

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Client **Packaged Living**  
Architect **Assael**  
Project Title **Waterfront Square, Reading**  
Project Number **19977**

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# 1 EXECUTIVE SUMMARY

The purpose of this report is to comment upon whether the daylight and sunlight amenity provided within the Proposed Development at Waterfront Square, Reading will provide adequate daylight and sunlight amenity to future residents and users.

The Assael Architects proposed design is for the demolition of the former Covea Insurance building and construction of residential-led development, which seeks to deliver 254 studio, one, two and three bedroom residential dwellings.

All the proposed habitable rooms and open spaces have been tested according to the methodologies and criteria set out in the BRE Guidelines 'Site Layout Planning for Daylight and Sunlight a Guide to Good Practice (2022)' and EN 17037:2018 including the relevant UK National Annex.

The BRE Guidelines clearly states that they are *"not mandatory and the guide should not be seen as an instrument of planning policy."*

GIA have worked alongside the design team to make the most of daylight and sunlight availability, whilst balancing other important design factors such as the risk of overheating and privacy. This was achieved through an iterative review of the massing, internal layouts and façade details throughout the design process. Further details on design evolution and changes can be found in section 6.1 of this report.

The result is a well designed scheme that will provide future residents with good daylight amenity, and for daylight, 536 (84%) out of all 636 proposed habitable rooms achieve the minimum levels of spatial Daylight Autonomy (sDA) recommended within the UK National Annex for residential buildings.

For sunlight, 154 (61%) out of all 254 dwellings within the Proposed Development will have at least a south-facing window and 130 (51%) of them will achieve at least 1.5 hours of sunlight at the equinox.

This level of performance is considered to be very good in this context and shows that the Proposed Development will provide future occupants with acceptable levels of daylight and sunlight. Further details can be found in section 6.2 and 6.3.

With regard to overshadowing, a variety of amenity spaces have been provided which offers future residents and visitors different sunlit spaces to enjoy throughout the year. Of the total open space provision, 56% sees two or more hours of direct sunlight on 21<sup>st</sup> March, exceeding the BRE recommendation of 50%.

The constrained nature of the courtyard configuration was acknowledged and appreciated early in the design process. It was therefore important to ensure that the public realm surrounding the Proposed Development and rooftop communal amenity space offered excellent sunlight amenity year round, and GIA have worked closely with the design team to ensure that this is the case. Further details can be found in section 6.4 and section 9.

Overall, the proposed development is considered to make the most of the daylight and sunlight available. Where shortfalls occur, it is predominantly because of the courtyard configuration or the obstruction resulting from existing surrounding buildings. It is inevitable that within a context such as this, some rooms may fall short of the recommended levels. The design team has sought to maximise light within these areas as much as possible, however a degree of flexibility ought to be used in applying the BRE criteria for urban locations. The proposed levels of light are considered comparable with what would likely be found within other emerging schemes in the locality.

It is reasonable to conclude that the daylight and sunlight levels proposed are acceptable for the context and in line with expectation for a city location. This is in accordance with the NPPF and Policy CC8 of the Reading Borough Local Plan (2019), all whilst balancing the need to deliver a viable scheme that makes optimum use of land and balances other policy objectives.

## 2 INTRODUCTION

GIA has been instructed to provide a report upon the potential availability of Daylight and Sunlight to the proposed accommodation within the residential scheme prepared by Assael. GIA was specifically instructed to carry out the following:

- To create a 3D computer model of the proposal based upon drawings prepared by Assael.
- Carry out a daylight assessment using the methodologies set out in the BRE guidance for Average Daylight Factor, No-Sky Line and Room Depth Criterion.
- Carry out a sunlight assessment using the methodologies set out in the BRE guidance for Annual Probable Sunlight Hours (APSH) to the fenestration facing within 90° of due south.
- Carry out an overshadowing assessment using the methodology set out in the BRE guidance for Sun Hours On Ground (SHOG) for all relevant amenity areas.
- Prepare a report setting out the analysis and our findings.

## 3 PLANNING POLICY CONTEXT

### 3.1 NATIONAL PLANNING POLICY

#### Revised National Planning Policy Framework (2023)

The National Planning Policy Framework was revised in December 2023 and paragraph 125, part C stipulates that *"...local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site."*

#### Planning Practice Guidance (2023 update)

Paragraph 6 of the section 'Effective use of land' states that *"Where a planning application is submitted, local planning authorities will need to consider whether the Proposed Development would have an unreasonable impact on the daylight and sunlight levels enjoyed by neighbouring occupiers, as well as assessing whether daylight and sunlight within the development itself will provide satisfactory living conditions for future occupants. [...]"*

Paragraph 7 states that *"All developments should maintain acceptable living standards. What this means in practice, in relation to assessing appropriate levels of sunlight and daylight, will depend to some extent on the context for the development as well as its detailed design. For example, in areas of high-density historic buildings, or city centre locations where tall modern buildings predominate, lower daylight and daylight and sunlight levels at some windows may be unavoidable if new developments are to be in keeping with the general form of their surroundings."*

*In such situations good design (such as giving careful consideration to a building's massing and layout of habitable rooms) will be necessary to help make the best use of the site and maintain acceptable living standards.*

### 3.2 LOCAL PLANNING POLICY

#### Reading Borough Local Plan (November 2019)

Policy CC8 (Safeguarding Amenity) states that:

*"Development will not cause a detrimental impact on the living environment of existing residential properties or unacceptable living conditions for new residential properties, in terms of:*

- [...]
- Access to sunlight and daylight;
- [...]"

The additional information regarding Policy CC8 then goes on to recommend the use of the 'BRE Site Layout Planning for Daylight and Sunlight: A guide to good practice' document.

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## 4 BRE GUIDELINES

The Building Research Establishment (BRE) have set out in their handbook 'Site Layout Planning for Daylight and Sunlight a Guide to Good Practice (BR 209 2022)', guidelines and methodology for the measurement and assessment of daylight and sunlight within proposed buildings.

### 4.1 INTRODUCTION

The BRE published the new edition of 'Site layout planning for daylight and sunlight: a guide to good practice' in June 2022 (BR 209). This is to be read in conjunction with BS EN 17037:2018 "Daylight in buildings", the UK National Annex of the British Standard and the CIBSE publication LG 10 'Daylighting – a guide for designers'.

The BR 209 new edition contains amended methodologies for appraising the daylight and sunlight quality within new developments. Nonetheless, the main aim of the guidance is maintained: *"to help rather than constrain the designer"* as stated in Paragraph 1.5 of the new guidance.

The report provides advice, but also clearly states that it *"is not mandatory and the guide should not be seen as an instrument of planning policy."* The guidance also acknowledges in its introduction that *"Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design (see Section 5). In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings."* (Paragraph 1.6)

### 4.2 BS EN 17037:2018 AND THE UK ANNEX

The British Standard BS8206-2:2008 was superseded by the new European Standard on daylight BS EN 17037:2018 "Daylight in buildings".

Following on from the review of the European Standard by a dedicated commission of UK experts, the British Standard Institution appended to BS EN 17037:2018 a UK National Annex which brings the recommended light levels in line with those of the former BS8206-2:2008.

The BS EN 17037 includes four criteria: daylighting, views, sunlight access and glare. However, daylighting and sunlight access are the only criteria considered relevant for residential buildings and therefore discussed within this report.

View out and Glare are mostly relevant in offices and schools, where occupants are more fixed to a certain location within a room. In residential habitable rooms, occupants tend to move more freely and therefore view out and glare are not assessed within residential buildings.

In relation to sunlight access, the assessment considers the hours of sunlight reaching a window on the 21<sup>st</sup> March.

## 4.3 DAYLIGHT

The BRE set out the methods for assessing daylight within a proposed building within section 2.1 and Appendix C of the handbook. This is based on the methods detailed in the BS EN 17037.

BS EN 17037 suggests two possible methodologies for appraising daylight:

- Illuminance Method
- Daylight Factor Method

These methodologies are discussed in more detail below.

Whilst Vertical Sky Component (VSC) is no longer directly used to calculate the levels of daylight indoors, this is still referenced within the BRE guidance as a metric to appraise the level of obstruction faced by a building and the potential for good daylight indoors.

This method of assessment may also be used to appraise the daylight quality in the early stages of the design, when room layouts or window locations are still undecided.

### Vertical Sky Component (VSC)

This method of assessment can be undertaken using a skylight indicator or a Waldram diagram. It measures from a single point, at the centre of the window (if known at the early design stage), the quantum of sky visible taking into account all external obstructions. Whilst these obstructions can be either other buildings or the general landscape, trees are usually ignored unless they form a continuous or dense belt of obstruction.

The VSC method is a useful 'rule of thumb' but has some significant limitations in determining the true quality of daylight within a proposed building. It does not take into account the size of the window, any reflected light off external obstructions, any reflected light within the room, or the use to which that room is put.

### Illuminance method

Climate Based Daylight Modelling (CBDM) is used to predict daylight illuminance using sun and sky conditions derived from standard meteorological

data (often referred to as climate or weather data). This analytical method allows the prediction of absolute daylight illuminance based on the location and building orientation, in addition to the building's daylight systems (shading systems, for example). Annex A within the BS EN 17037 proposes values of target illuminances and minimum target illuminances to exceed 50 % of daylight hours.

This is considered to be the most accurate approach when using climate data, however, it provides a very large amount of data for each assessed room, which then needs to be interrogated. One of the methodologies that can be used to interrogate this data is Spatial Daylight Autonomy (sDA).

### Spatial Daylight Autonomy (sDA)

The sDA assessment is designed to understand how often each point of the room's task area sees illuminance levels at or above a specific threshold.

BS EN 17037 sets out minimum illuminance levels (300lx) that should be exceeded over 50% of the space for more than half of the daylight hours in the year. It also includes recommendations for medium and high daylighting levels within a space (500lx and 700lx respectively). It should be noted here, however, that these targets are specified irrespective of a space's use or design.

The National Annex suggests that these targets can be challenging to achieve within residential settings, particularly in areas of higher density and so suggests lower targets can be considered in this situation. It should be noted here that the reduced targets suggested within the BS EN 17037:2018 National Annex are provided so as to be comparable with the previous BR209's recommendations for ADF. These targets are:

- 100 lux for bedrooms
- 150 lux for living rooms
- 200 lux for living/kitchen/diners, kitchens, and studios.

It is however stated in paragraph C17 of the BRE that: *"Where a room has a shared use, the highest target should apply. For example in a bed sitting room in student accommodation, the value for a living room should be used if students would often spend time in their rooms during the day. Local authorities could use discretion here. For example, the target for*

*a living room could be used for a combined living/dining/kitchen area if the kitchens are not treated as habitable spaces, as it may avoid small separate kitchens in a design”.*

### Daylight Factor method

This method involves calculating the median daylight factor on a reference plane (assessment grid).

*“The daylight factor is the illuminance at a point on the reference plane in a space, divided by the illuminance on an unobstructed horizontal surface outdoors. The CIE standard overcast sky is used, and the ratio is usually expressed as a percentage.”*

This method of assessments considers an overcast sky, and therefore the orientation and location of buildings is not relevant. In order to account for different climatic conditions, Annex A within the BS EN 17037 sets equivalent daylight factor targets (D) for various locations in Europe.

The median daylight factor (MDF) should meet or exceed the target daylight factor relative to a given illuminance for more than half of daylight hours, over 50% of the reference plane.

## 4.4 SUNLIGHT

The BRE provide guidance in respect of sunlight quality for new developments within section 3.1 of the handbook. It is generally acknowledged that the presence of sunlight is more significant in residential accommodation than it is in commercial properties, and this is reflected in the BRE document.

*It states, “in housing, the main requirement for sunlight is in living rooms, where it is valued at any time of the day, but especially in the afternoon. Sunlight is also required in conservatories. It is viewed as less important in bedrooms and in kitchens where people prefer it in the morning rather than the afternoon.”*

The BRE guide considers the critical aspects of orientation and overshadowing in determining the availability of sunlight at a Proposed Development site.

The guide proposes minimising the number of dwellings whose living room face solely north unless there is some compensating factor such as an appealing view to the north, and it suggests a number of techniques to do so. Furthermore, it discusses massing solutions with a sensitive approach to overshadowing, so as to maximize access to sunlight.

At the same time, it acknowledges that the site’s existing urban environment may impose orientation or overshadowing constraints which may not be possible to overcome.

To quantify sunlight access for interiors where sunlight is expected, it refers to the BS EN 17037 criterion that the minimum duration of sunlight exposure in at least one habitable room of a dwelling should be 1.5 h on March 21<sup>st</sup>. Table A.5 also establishes medium and high sunlight targets (3 and 4 hours).

This is to be checked at a reference point located centrally to the window’s width and at the inner surface of the aperture (façade and/or roof). For multiple apertures in different façades it is possible to cumulate the time of sunlight availability if not occurring at the same time. The reference point is minimum 1.2 m above the floor and 0.3 m above the window sill if present.

The summary of section 3.1 of the guide states as follows:

*"In general, a dwelling or non-domestic building which has a particular requirement for sunlight, will appear reasonably sunlit provided that:*

- *At least one main window faces within 90 degrees of due south, and*
- *a habitable room, preferably a main living room, can receive a total of at least 1.5 hours of sunlight on 21 March. This is assessed at the inside centre of the window(s); sunlight received by different windows can be added provided they occur at different times and sunlight hours are not double counted.. "*

#### 4.5 OVERSHADOWING

The BRE guidance in respect of overshadowing of amenity spaces is set out in section 3.3 of the handbook. Here it states as follows:

*"Sunlight in the spaces between and around buildings has an important impact on the overall appearance and ambience of a development. It is valuable for a number of reasons, to:*

- *provide attractive sunlit views (all year)*
- *make outdoor activities like sitting out and children's play more pleasant (mainly warmer months)*
- *encourage plant growth (mainly spring and summer)*
- *dry out the ground, reducing moss and slime (mainly in colder months)*
- *melt frost, ice and snow (in winter)*
- *dry clothes (all year).*

Again, it must be acknowledged that in urban areas the availability of sunlight on the ground is a factor which is significantly controlled by the existing urban fabric around the site in question and so may have very little to do with the form of the development itself. Likewise, there may be many other urban design, planning and site constraints which determine and run contrary to the best form, siting and location of a Proposed Development in terms of availability of sun on the ground.

The summary of section 3.3 of the guide states as follows:

*"3. 3 .17 It is recommended that for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21 March. If as a result of new development an existing garden or amenity area does not meet the above, and the area that can receive two hours of sun on 21 March is less than 0.80 times its former value, then the loss of sunlight is likely to be noticeable. If a detailed calculation cannot be carried out, it is recommended that the centre of the area should receive at least two hours of sunlight on 21 March.."*

#### 4.6 FURTHER RELEVANT INFORMATION

##### **CIBSE LG 10 'Daylighting – a guide for designers'.**

This guide details the process of designing for daylighting. It outlines considerations of form, orientation, and other aspects involved in designing the building envelope to optimise natural light.

The guidance in this document is written primarily for buildings located within the UK, and will be most applicable to projects in northern hemisphere. However, the principles are universal, and can be applied to other locations if the appropriate weather data is used and local standards and regulations are respected

## 5 SIMULATION ASSUMPTIONS

In order to undertake the daylight and sunlight assessments set out in the previous pages, we have prepared a three dimensional computer model and used specialist lighting simulation software.

### 5.1 CALCULATION MODEL

The three dimensional representation of the Proposed Development has been modelled using the drawings prepared by Assael, received by GIA in June 2024. These have been placed in the context of their surrounding buildings which have been modelled from survey information, photogrammetry, OS and site photographs. This allows for a precise model, which in turn ensures that analysis accurately represents the amount of daylight and sunlight available to the building façades, internal and external spaces, considering all of the surrounding obstructions and orientation.

### 5.2 WEATHER DATA

The weather file recorded at Gatwick Airport was considered the most relevant for this assessment.

### 5.3 ASSESSMENT RESOLUTION

The climate-based daylight assessments have been undertaken on an hourly basis whilst the sunlight exposure assessment has been undertaken for every minute on the relevant days.

### 5.4 ASSESSMENT GRIDS

For the daylight assessments, an analysis 'grid' is located within each room at working plane height (850 mm from FFL) and offset by 0.3m from the walls as recommended by BR 209.

Grid points are spaced by 0.2m.

### 5.5 SURFACES REFLECTANCE

The BR 209 states that "surface reflectance's should represent real conditions. Where reflectance values have not been measured or specified, default values to be used in the calculation are given in Table C4."

At C24 the BR209 states "Where surface finishes have been specified or measured on site, they can be used in the calculations with appropriate factors for maintenance and furniture. To allow for these factors, maximum reflectance's for white painted surfaces in the calculations should not exceed 0.8 indoors, and 0.6 outdoors. Maximum reflectance's for light pastel walls should not exceed 0.7 in the calculations, and maximum reflectance's for light wood floors should not exceed 0.4. Surface reflectance's used should be presented in the assessment, along with a specification of the materials if non-default reflectance's are used."

The reflectance values shown in table C4 are used as standard, unless specified by the design team. The following assumptions have been confirmed as appropriate by the client and design team:

- Interior walls - White Paint Finish - 0.7
- Ceilings - White Paint Finish - 0.8
- Floors - Light Timber Veneer (or similar) - 0.4

Table C4: Recommended default surface reflectance's

| SURFACE                         | DEFAULT REFLECTANCE |
|---------------------------------|---------------------|
| INTERIOR WALLS                  | 0.5                 |
| CEILINGS                        | 0.7                 |
| FLOORS                          | 0.2                 |
| EXTERIOR WALLS AND OBSTRUCTIONS | 0.2                 |
| EXTERIOR GROUND                 | 0.2                 |

## 5.6 GLAZING TRANSMITTANCE

BR 209 para C25 states “Glazing transmission factors, including maintenance factors, need to be included in the simulation along with account for, or modelling of, window framing. Where window frames are not specifically included in the model, frame factors should be applied based on the ratio of glass to overall window aperture area for the type of window to be used; this will generally vary with window size and whether the windows have opening lights.”

A glazing visible light transmittance (VLT) of 63% has been used to reflect the triple-glazed windows as in agreement with the wider design team.

## 5.7 FRAMING FACTORS

As standard in BR 209 “Where window types have not been specified, results for the overall window aperture should be multiplied by a default framing factor as given in Table C5.”

The Framing Factors used in the assessments were calculated using the provided elevations.

## 5.8 MAINTENANCE FACTORS

Maintenance factors have been applied as per BR209 with 0.92 for windows not beneath an overhang and 0.76 for windows beneath an overhang.

## 5.9 ASSESSMENT SCENARIO

The detailed assessments include the following proximate consented developments with which the effects of these in the context produce a worst-case scenario:

- 55 Vastern Road (Ref. 231673)
- Vastern Court (Ref. 200328)

These buildings are coloured yellow on the images in section 7.

## 6 CONCLUSIONS

### 6.1 DESIGN EVOLUTION

GIA have worked alongside the design team to make the most of daylight and sunlight availability, whilst balancing other compelling design factors such as the risk of overheating and privacy. This was achieved through an iterative review of the massing, internal layouts and façade details throughout the design process.

A detailed internal assessment was carried out on all proposed habitable rooms once the interim internal arrangements were set out, and advice was provided to optimise daylight and sunlight.

In light of the above, the strategies implemented to optimise the daylight and sunlight performance of the scheme included:

- Prioritising daylight in living areas where it is typically most valued by occupants, for example by providing dual aspect where possible, or by locating them in the most daylight areas of the façades;
- A reduction in height for the link blocks to allow greater light penetration to the courtyard;
- Adopting a lighter floor finish to improve the diffusion of light within all rooms.

The results presented within this report therefore represent a scheme which has been optimised for daylight and sunlight to respond to the inherent constraints of the courtyard configuration, and the external obstructions typical of an urban location. More detail is provided in the next sections.

### 6.2 CONCLUSIONS ON DAYLIGHT

In order to ascertain the levels of daylight and sunlight within the Proposed Development, technical assessments have been undertaken within all proposed habitable rooms.

For daylight, all proposed habitable rooms have been tested for spatial Daylight Autonomy (sDA) according to the targets set out in the UK National Annex of the BS EN 17037:2018, which sets illuminance targets (measured in lux) to be achieved for over 50% of the space for more than half of the daylight hours in the year.

The results given on pages 16–51 show that of the 636 proposed habitable rooms, 536 (84%) see levels of sDA that either meet or exceed the BRE recommendation for their room use and is considered an excellent result.

In addition to the above, 31 Living-Kitchen-Dining rooms (LKDs) and two studios achieve the recommendation of 150 lux for living rooms. Further to this, 12 bedrooms fall slightly below guidelines (i.e. seeing 100 lux on more than 40% of their space for half the daylight hours in the year). Therefore, a total of 581 rooms (91% of the total) are also considered to offer good daylight levels in the context of this urban area.

Of the 55 (9%) rooms seeing lower levels of light, 41 are LKDs, one is a studio, 13 are bedrooms. These rooms are located on the lowest floors where a higher level of obstruction naturally occurs the expectation for daylight is lower. Overall good design practices have been implemented within these rooms to mitigate the lower levels of light available on the facade.

### 6.3 CONCLUSIONS ON SUNLIGHT

For sunlight, all rooms within the proposed units have been tested for solar exposure and orientation. The BRE guidelines recommend at least one main window facing within 90° of due south per-unit, and 1.5 hours of sunlight on 21st March for at least one room in each unit. As such, once the assessments have been carried out per room the results have been interrogated per unit.

154 (61%) out of all 254 dwellings within the Proposed Development will have at least one main south-facing window and 130 (51%) of them will achieve at least 1.5 hours of sunlight at the equinox.

The occurrence of sunlight levels lower than recommendation in some of the units is typical of a courtyard configuration open to the north, especially for rooms on the lowest floors, for which sunlight exposure depends primarily on orientation and the external levels of the surrounding context.

It is important to note that it is common for courtyard configurations in an urban context to have a lower expectation of sunlight and therefore a degree of flexibility ought to be used in applying the BRE criteria for this Site.

In conclusion, the daylight and sunlight levels proposed are considered acceptable for the context and in line with expectation for a urban location. This is in accordance with the NPPF and Policy CC8 of the Reading Borough Local Plan (2019), all whilst balancing the need to deliver a viable scheme that makes optimum use of land and balances other policy objectives.

### 6.4 CONCLUSIONS ON OVERSHADOWING

Sun Hours on Ground assessments have been undertaken for the proposed public realm, first floor courtyard and eighth floor roof terrace. These are all designed to offer residents and visitors access to different sunlit spaces to enjoy during the year. The results from these assessments are shown on pages 52-53.

The BRE states that, in order for an outdoor space to be considered adequately sunlit throughout the year, at least half of its area should receive direct sunlight for two hours or more on the spring equinox (21st March).

Overall, 56% of the total open space provided sees two or more hours of direct sunlight on 21<sup>st</sup> March, exceeding the BRE recommendation of 50%.

The constrained nature of the courtyard configuration was acknowledge and appreciated early in the design process. To respond to the lower levels of sunlight access at podium level in the courtyard, it was decided to include additional amenity at roof level, which has excellent access to sunlight throughout the year.

The roof terrace amenity is therefore considered the main space where residents would go to make the most of sunlight. Sun exposure diagrams on pages 54-61 show that the terrace has more than six hours of sunlight available in the spring (equinox) and throughout the summer for the majority of its area. The courtyard however serves a different purpose, offering a quiet, more shaded space to complement the roof terrace and public realm. Albeit, it will see good levels of sunlight from May to August, when this area is most likely to be used due to longer and warmer days.

Overall, we consider the Proposed Development to offer future residents and visitors good access to a variety of well sunlit communal open spaces to enjoy throughout the year.

## 7 SITE OVERVIEW

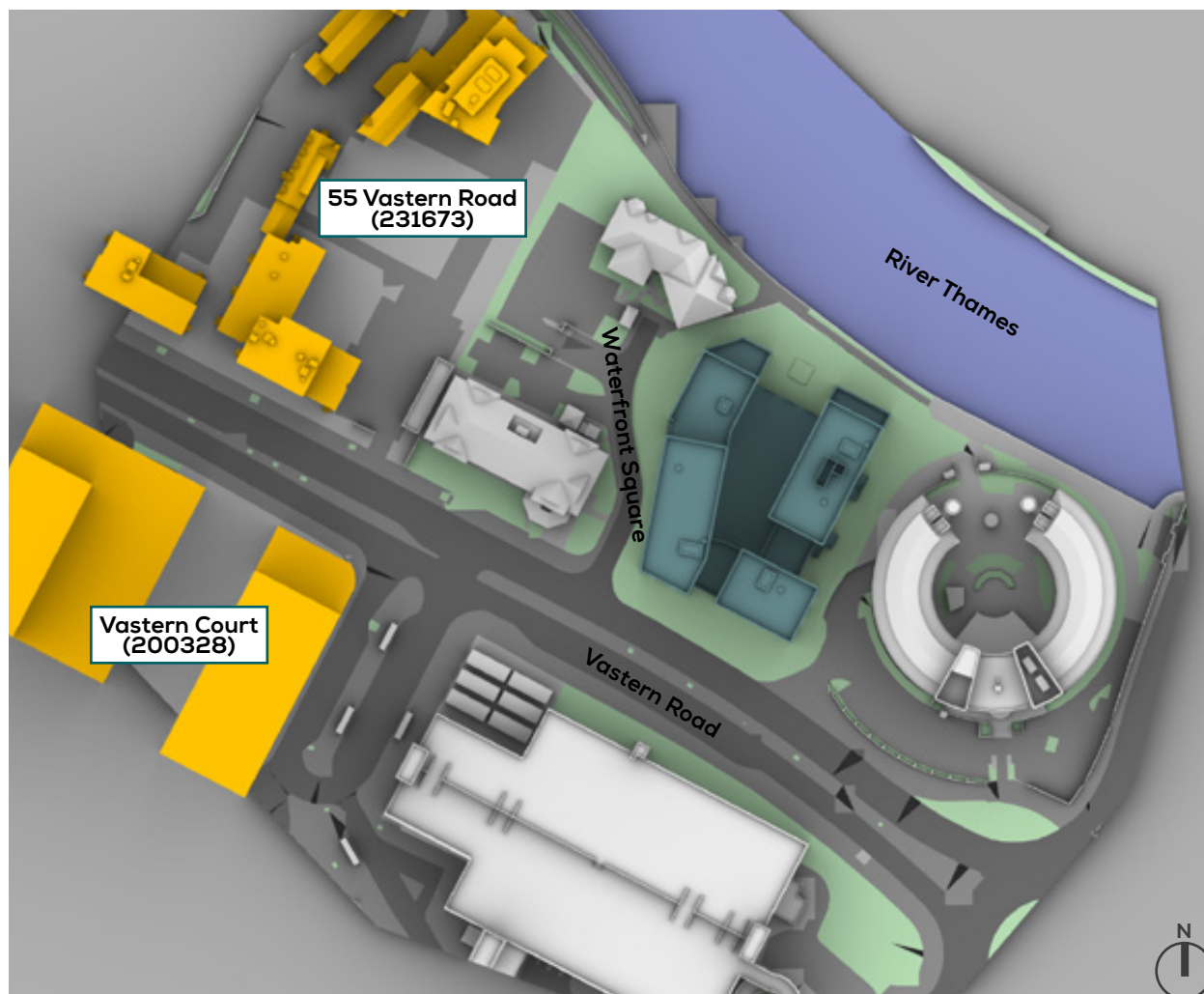


Fig. 01: Top view

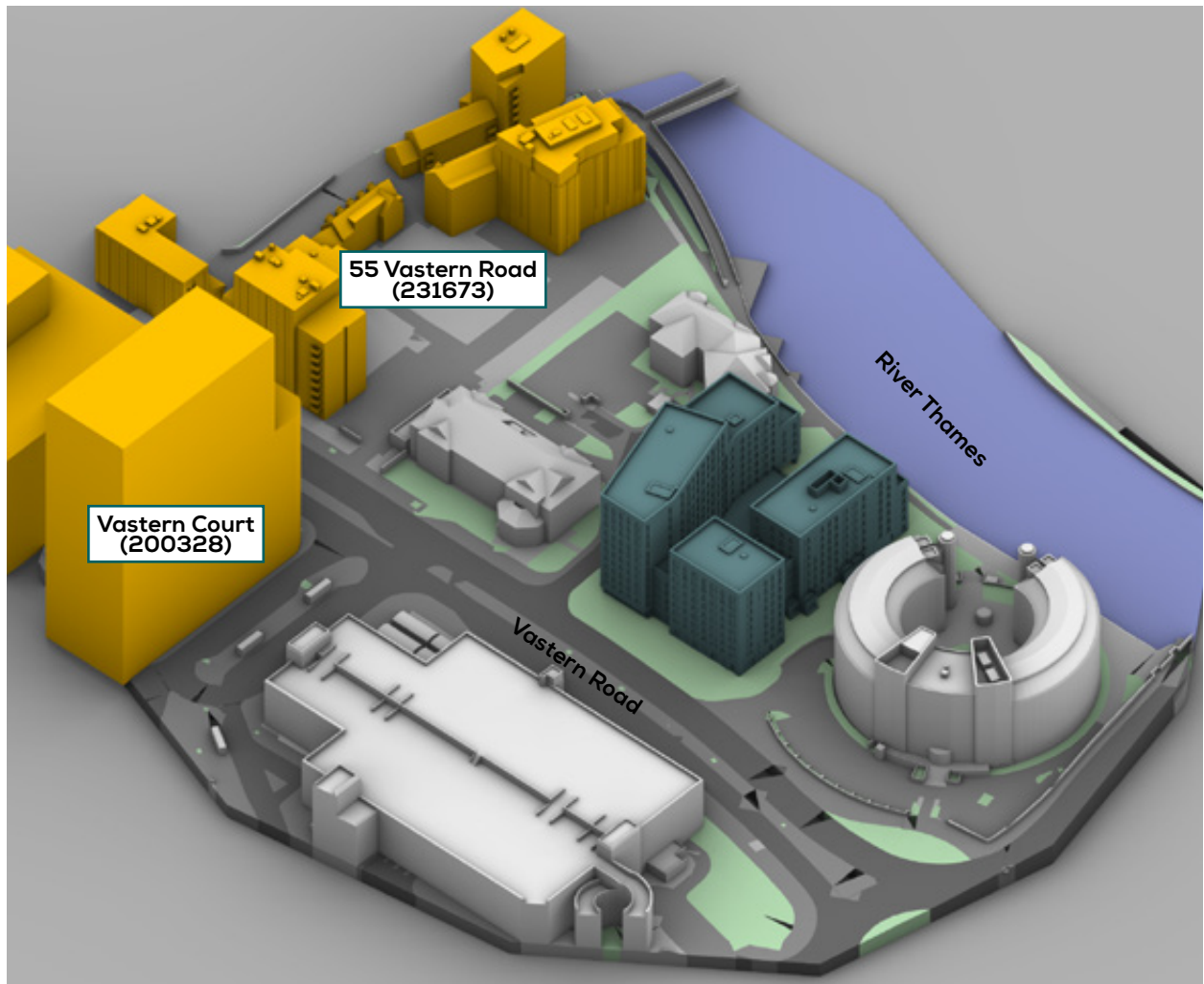


Fig. 02: Perspective view

## 8 INTERNAL DAYLIGHT AND SUNLIGHT ASSESSMENTS

### Ground Floor

| ROOM REF.     | ROOM USE | DAYLIGHT                                                                                                          |       |       |        |                | SUNLIGHT  |        |        |
|---------------|----------|-------------------------------------------------------------------------------------------------------------------|-------|-------|--------|----------------|-----------|--------|--------|
|               |          | EN SPATIAL DAYLIGHT AUTONOMY                                                                                      |       |       |        |                | HOURS:MIN |        |        |
|               |          | percentage of room achieving target illuminance for 2190 hrs (50% of daylight hours)<br>Weather File: GBR_Gatwick |       |       |        |                |           |        |        |
|               |          | 100                                                                                                               | 150   | 200   | TARGET | RELEVANT ENSDA | 1 FEB     | 25 FEB | 21 MAR |
| NP - LEVEL 00 |          |                                                                                                                   |       |       |        |                |           |        |        |
| 1             | BEDROOM  | 73.4                                                                                                              | 58.4  | 44.2  | 100    | 73.4           | 00:03     | 00:03  | 00:02  |
| 2             | BEDROOM  | 68.4                                                                                                              | 43.0  | 32.3  | 100    | 68.4           | 00:00     | 00:00  | 00:00  |
| 3             | L/K/D    | 64.1                                                                                                              | 48.4  | 37.8  | 200    | 37.8           | 00:43     | 00:48  | 00:47  |
| 4             | L/K/D    | 85.1                                                                                                              | 67.7  | 54.2  | 200    | 54.2           | 00:00     | 00:00  | 00:00  |
| 5             | BEDROOM  | 100.0                                                                                                             | 96.7  | 76.2  | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 6             | BEDROOM  | 100.0                                                                                                             | 78.0  | 57.4  | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 7             | BEDROOM  | 100.0                                                                                                             | 92.4  | 69.1  | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 8             | BEDROOM  | 100.0                                                                                                             | 100.0 | 93.5  | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 9             | L/K/D    | 87.4                                                                                                              | 67.9  | 53.5  | 200    | 53.5           | 00:00     | 00:00  | 00:00  |
| 10            | BEDROOM  | 100.0                                                                                                             | 78.0  | 48.4  | 100    | 100.0          | 00:00     | 00:00  | 00:12  |
| 11            | L/K/D    | 96.6                                                                                                              | 53.0  | 26.5  | 200    | 26.5           | 00:00     | 00:00  | 00:00  |
| 12            | L/K/D    | 96.9                                                                                                              | 82.5  | 77.0  | 200    | 77.0           | 00:00     | 00:00  | 00:00  |
| 13            | BEDROOM  | 100.0                                                                                                             | 100.0 | 100.0 | 100    | 100.0          | 00:00     | 00:49  | 02:53  |
| 14            | BEDROOM  | 100.0                                                                                                             | 85.7  | 69.9  | 100    | 100.0          | 00:00     | 00:02  | 02:05  |
| 15            | BEDROOM  | 91.5                                                                                                              | 51.5  | 34.5  | 100    | 91.5           | 00:00     | 00:00  | 00:22  |
| 16            | L/K/D    | 59.0                                                                                                              | 44.9  | 35.9  | 200    | 35.9           | 00:24     | 00:22  | 00:30  |
| 17            | L/K/D    | 47.1                                                                                                              | 36.4  | 30.5  | 200    | 30.5           | 01:59     | 01:48  | 01:43  |
| 18            | BEDROOM  | 30.9                                                                                                              | 15.2  | 8.5   | 100    | 30.9           | 00:12     | 00:11  | 00:21  |
| 19            | BEDROOM  | 44.8                                                                                                              | 22.8  | 14.5  | 100    | 44.8           | 00:37     | 00:34  | 00:39  |
| 20            | BEDROOM  | 32.5                                                                                                              | 16.3  | 9.8   | 100    | 32.5           | 00:00     | 00:00  | 00:00  |
| 21            | L/K/D    | 42.2                                                                                                              | 32.9  | 27.3  | 200    | 27.3           | 01:53     | 01:42  | 01:34  |
| 22            | L/K/D    | 55.6                                                                                                              | 39.1  | 29.6  | 200    | 29.6           | 02:08     | 01:56  | 01:49  |
| 23            | BEDROOM  | 79.4                                                                                                              | 57.9  | 39.3  | 100    | 79.4           | 01:10     | 01:04  | 01:04  |
| 24            | BEDROOM  | 45.5                                                                                                              | 29.3  | 19.5  | 100    | 45.5           | 00:27     | 00:25  | 00:30  |
| 25            | L/K/D    | 88.9                                                                                                              | 82.8  | 68.5  | 200    | 68.5           | 03:34     | 03:15  | 02:53  |
| 26            | BEDROOM  | 97.9                                                                                                              | 53.5  | 38.0  | 100    | 97.9           | 03:09     | 02:53  | 02:34  |

Table 02: Assessment Data



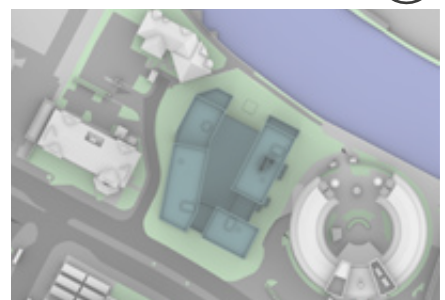
## First Floor

|               |          | DAYLIGHT                                                                             |       |       |        |                | SUNLIGHT  |        |        |
|---------------|----------|--------------------------------------------------------------------------------------|-------|-------|--------|----------------|-----------|--------|--------|
| ROOM REF.     | ROOM USE | EN SPATIAL DAYLIGHT AUTONOMY                                                         |       |       |        |                | HOURS:MIN |        |        |
|               |          | percentage of room achieving target illuminance for 2190 hrs (50% of daylight hours) |       |       |        |                |           |        |        |
|               |          | Weather File: GBR_Gatwick                                                            |       |       |        |                | 1 FEB     | 25 FEB | 21 MAR |
|               |          | 100                                                                                  | 150   | 200   | TARGET | RELEVANT ENSDA |           |        |        |
| NP - LEVEL 01 |          |                                                                                      |       |       |        |                |           |        |        |
| 27            | BEDROOM  | 71.0                                                                                 | 52.3  | 36.8  | 100    | 71.0           | 00:03     | 00:03  | 00:02  |
| 28            | BEDROOM  | 62.7                                                                                 | 38.6  | 27.8  | 100    | 62.7           | 00:00     | 00:00  | 00:01  |
| 29            | L/K/D    | 84.1                                                                                 | 69.1  | 54.7  | 200    | 54.7           | 00:00     | 00:00  | 00:00  |
| 30            | L/K/D    | 86.6                                                                                 | 68.9  | 51.6  | 200    | 51.6           | 00:00     | 00:00  | 00:00  |
| 31            | BEDROOM  | 100.0                                                                                | 95.1  | 63.4  | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 32            | BEDROOM  | 100.0                                                                                | 73.8  | 51.8  | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 33            | BEDROOM  | 100.0                                                                                | 86.1  | 61.1  | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 34            | BEDROOM  | 100.0                                                                                | 100.0 | 87.0  | 100    | 100.0          | 00:00     | 00:00  | 00:07  |
| 35            | L/K/D    | 88.2                                                                                 | 68.9  | 53.2  | 200    | 53.2           | 00:00     | 00:00  | 00:12  |
| 36            | BEDROOM  | 100.0                                                                                | 85.0  | 52.5  | 100    | 100.0          | 00:00     | 00:00  | 00:17  |
| 37            | BEDROOM  | 34.1                                                                                 | 19.3  | 13.0  | 100    | 34.1           | 00:00     | 00:00  | 00:00  |
| 38            | L/K/D    | 41.6                                                                                 | 28.2  | 22.0  | 200    | 22.0           | 00:00     | 00:00  | 00:00  |
| 39            | BEDROOM  | 100.0                                                                                | 100.0 | 96.7  | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 40            | L/K/D    | 100.0                                                                                | 100.0 | 100.0 | 200    | 100.0          | 00:00     | 00:30  | 02:10  |
| 41            | BEDROOM  | 93.8                                                                                 | 53.8  | 33.1  | 100    | 93.8           | 00:00     | 00:00  | 01:19  |
| 42            | BEDROOM  | 100.0                                                                                | 71.5  | 35.8  | 100    | 100.0          | 00:00     | 00:00  | 00:26  |
| 43            | L/K/D    | 73.4                                                                                 | 50.8  | 37.5  | 200    | 37.5           | 00:00     | 00:00  | 01:06  |
| 44            | BEDROOM  | 57.3                                                                                 | 23.1  | 11.9  | 100    | 57.3           | 00:00     | 00:00  | 00:25  |
| 45            | L/K/D    | 43.0                                                                                 | 22.9  | 14.3  | 200    | 14.3           | 00:00     | 00:00  | 00:35  |
| 46            | BEDROOM  | 22.8                                                                                 | 10.1  | 5.7   | 100    | 22.8           | 00:00     | 00:00  | 00:00  |
| 47            | BEDROOM  | 49.6                                                                                 | 19.1  | 10.7  | 100    | 49.6           | 00:00     | 00:00  | 00:07  |
| 48            | L/K/D    | 53.0                                                                                 | 33.9  | 22.3  | 200    | 22.3           | 00:00     | 00:00  | 00:14  |
| 49            | BEDROOM  | 45.6                                                                                 | 19.0  | 9.5   | 100    | 45.6           | 00:00     | 00:00  | 00:04  |
| 50            | BEDROOM  | 53.0                                                                                 | 23.5  | 12.9  | 100    | 53.0           | 00:00     | 00:00  | 00:00  |
| 51            | L/K/D    | 45.2                                                                                 | 27.1  | 17.6  | 200    | 17.6           | 00:00     | 00:00  | 00:00  |
| 52            | BEDROOM  | 23.0                                                                                 | 13.7  | 8.1   | 100    | 23.0           | 00:00     | 00:00  | 00:00  |
| 53            | L/K/D    | 25.8                                                                                 | 13.4  | 9.0   | 200    | 9.0            | 00:00     | 00:00  | 00:00  |
| 54            | BEDROOM  | 74.7                                                                                 | 57.9  | 34.7  | 100    | 74.7           | 00:00     | 00:00  | 00:00  |
| 55            | BEDROOM  | 49.4                                                                                 | 26.1  | 16.1  | 100    | 49.4           | 00:00     | 00:00  | 00:00  |
| 56            | L/K/D    | 98.3                                                                                 | 75.8  | 56.4  | 200    | 56.4           | 05:20     | 05:42  | 05:02  |
| 57            | L/K/D    | 50.5                                                                                 | 39.5  | 32.6  | 200    | 32.6           | 03:30     | 04:59  | 04:32  |
| 58            | BEDROOM  | 96.8                                                                                 | 75.8  | 47.4  | 100    | 96.8           | 00:00     | 00:00  | 00:00  |
| 59            | BEDROOM  | 48.5                                                                                 | 24.3  | 14.6  | 100    | 48.5           | 00:00     | 00:00  | 00:00  |
| 60            | BEDROOM  | 31.7                                                                                 | 15.4  | 8.9   | 100    | 31.7           | 00:00     | 00:00  | 00:00  |
| 61            | BEDROOM  | 15.4                                                                                 | 5.7   | 1.1   | 100    | 15.4           | 00:00     | 00:00  | 00:00  |
| 62            | L/K/D    | 99.4                                                                                 | 62.7  | 33.6  | 200    | 33.6           | 00:48     | 00:43  | 01:00  |
| 63            | L/K/D    | 99.1                                                                                 | 73.1  | 58.1  | 200    | 58.1           | 02:00     | 01:48  | 01:58  |
| 64            | BEDROOM  | 16.6                                                                                 | 6.0   | 1.3   | 100    | 16.6           | 00:00     | 00:00  | 00:00  |
| 65            | BEDROOM  | 17.7                                                                                 | 5.3   | 0.9   | 100    | 17.7           | 00:00     | 00:00  | 00:00  |
| 66            | STUDIO   | 36.5                                                                                 | 15.0  | 7.8   | 200    | 7.8            | 00:00     | 00:00  | 00:00  |
| 67            | L/K/D    | 57.0                                                                                 | 35.4  | 22.6  | 200    | 22.6           | 00:00     | 00:00  | 00:00  |
| 68            | BEDROOM  | 65.8                                                                                 | 25.0  | 13.2  | 100    | 65.8           | 00:00     | 00:00  | 00:00  |
| 69            | L/K/D    | 63.3                                                                                 | 40.8  | 27.6  | 200    | 27.6           | 00:00     | 00:00  | 00:00  |

Table 03: Assessment Data



Fig. 04: Floor Plan



## First Floor (Continued)

|           |          | DAYLIGHT                                                                                                          |       |       |        |                | SUNLIGHT  |        |        |
|-----------|----------|-------------------------------------------------------------------------------------------------------------------|-------|-------|--------|----------------|-----------|--------|--------|
| ROOM REF. | ROOM USE | EN SPATIAL DAYLIGHT AUTONOMY                                                                                      |       |       |        |                | HOURS:MIN |        |        |
|           |          | percentage of room achieving target illuminance for 2190 hrs (50% of daylight hours)<br>Weather File: GBR_Gatwick |       |       |        |                |           |        |        |
|           |          | 100                                                                                                               | 150   | 200   | TARGET | RELEVANT ENSDA | 1 FEB     | 25 FEB | 21 MAR |
| 70        | BEDROOM  | 90.8                                                                                                              | 38.2  | 19.1  | 100    | 90.8           | 00:00     | 00:00  | 00:00  |
| 71        | L/K/D    | 71.9                                                                                                              | 50.0  | 35.9  | 200    | 35.9           | 00:00     | 00:00  | 00:00  |
| 72        | BEDROOM  | 99.3                                                                                                              | 53.6  | 29.1  | 100    | 99.3           | 00:00     | 00:00  | 00:00  |
| 73        | L/K/D    | 78.9                                                                                                              | 58.7  | 43.2  | 200    | 43.2           | 00:00     | 00:00  | 00:00  |
| 74        | BEDROOM  | 100.0                                                                                                             | 64.8  | 36.8  | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 75        | BEDROOM  | 100.0                                                                                                             | 91.4  | 52.7  | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 76        | L/K/D    | 100.0                                                                                                             | 100.0 | 99.1  | 200    | 99.1           | 00:00     | 00:00  | 00:02  |
| 77        | BEDROOM  | 100.0                                                                                                             | 100.0 | 89.5  | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 78        | BEDROOM  | 100.0                                                                                                             | 100.0 | 100.0 | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 79        | L/K/D    | 100.0                                                                                                             | 100.0 | 90.9  | 200    | 90.9           | 00:00     | 01:11  | 04:30  |
| 80        | BEDROOM  | 100.0                                                                                                             | 90.4  | 58.8  | 100    | 100.0          | 00:00     | 00:04  | 02:32  |
| 81        | BEDROOM  | 94.5                                                                                                              | 50.3  | 32.1  | 100    | 94.5           | 00:00     | 00:00  | 00:59  |
| 82        | L/K/D    | 80.7                                                                                                              | 58.6  | 42.4  | 200    | 42.4           | 00:35     | 00:39  | 01:15  |
| 83        | L/K/D    | 76.2                                                                                                              | 53.1  | 37.4  | 200    | 37.4           | 00:48     | 00:49  | 01:10  |
| 84        | BEDROOM  | 55.2                                                                                                              | 22.4  | 13.9  | 100    | 55.2           | 00:18     | 00:19  | 00:41  |
| 85        | BEDROOM  | 43.8                                                                                                              | 19.2  | 12.3  | 100    | 43.8           | 00:42     | 00:40  | 00:57  |
| 86        | BEDROOM  | 55.3                                                                                                              | 23.6  | 13.8  | 100    | 55.3           | 00:56     | 00:52  | 01:06  |
| 87        | L/K/D    | 62.6                                                                                                              | 42.5  | 28.3  | 200    | 28.3           | 01:59     | 01:49  | 01:55  |
| 88        | BEDROOM  | 100.0                                                                                                             | 100.0 | 86.9  | 100    | 100.0          | 02:36     | 02:23  | 02:10  |
| 89        | BEDROOM  | 93.6                                                                                                              | 67.2  | 45.6  | 100    | 93.6           | 02:54     | 02:40  | 02:23  |
| 90        | BEDROOM  | 100.0                                                                                                             | 92.9  | 74.7  | 100    | 100.0          | 03:11     | 02:56  | 02:38  |
| 91        | L/K/D    | 86.7                                                                                                              | 72.9  | 65.3  | 200    | 65.3           | 07:17     | 08:06  | 08:25  |
| 92        | BEDROOM  | 100.0                                                                                                             | 100.0 | 84.9  | 100    | 100.0          | 04:33     | 05:35  | 05:56  |
| 93        | L/K/D    | 73.8                                                                                                              | 57.7  | 47.1  | 200    | 47.1           | 05:16     | 06:14  | 06:24  |
| 94        | BEDROOM  | 100.0                                                                                                             | 99.3  | 80.3  | 100    | 100.0          | 04:22     | 05:35  | 05:47  |
| 95        | L/K/D    | 73.3                                                                                                              | 57.1  | 46.0  | 200    | 46.0           | 04:53     | 06:14  | 06:15  |
| 96        | BEDROOM  | 100.0                                                                                                             | 98.7  | 78.1  | 100    | 100.0          | 04:12     | 05:44  | 05:39  |
| 97        | L/K/D    | 72.4                                                                                                              | 56.1  | 46.0  | 200    | 46.0           | 05:04     | 06:29  | 06:06  |
| 98        | L/K/D    | 80.1                                                                                                              | 63.0  | 52.0  | 200    | 52.0           | 07:13     | 08:30  | 07:38  |
| 99        | BEDROOM  | 100.0                                                                                                             | 95.4  | 67.3  | 100    | 100.0          | 04:30     | 05:38  | 05:03  |
| 100       | BEDROOM  | 100.0                                                                                                             | 98.3  | 80.8  | 100    | 100.0          | 04:52     | 05:33  | 04:59  |
| 101       | L/K/D    | 98.9                                                                                                              | 90.2  | 77.0  | 200    | 77.0           | 05:30     | 05:28  | 04:55  |
| 102       | BEDROOM  | 81.8                                                                                                              | 53.0  | 37.6  | 100    | 81.8           | 00:31     | 00:37  | 00:33  |
| 103       | BEDROOM  | 86.3                                                                                                              | 54.7  | 35.4  | 100    | 86.3           | 00:33     | 00:33  | 00:30  |
| 104       | L/K/D    | 52.0                                                                                                              | 37.6  | 28.8  | 200    | 28.8           | 01:30     | 01:23  | 01:15  |
| 105       | BEDROOM  | 66.7                                                                                                              | 42.8  | 28.6  | 100    | 66.7           | 00:26     | 00:24  | 00:21  |
| 106       | BEDROOM  | 80.2                                                                                                              | 49.6  | 34.0  | 100    | 80.2           | 00:22     | 00:21  | 00:18  |
| 107       | L/K/D    | 46.0                                                                                                              | 34.6  | 27.5  | 200    | 27.5           | 01:18     | 01:12  | 01:05  |
| 108       | STUDIO   | 61.2                                                                                                              | 50.6  | 38.1  | 200    | 38.1           | 01:14     | 01:08  | 01:01  |

Table 04: Assessment Data



## Second Floor

|               |          | DAYLIGHT                                                                             |       |       |        |                | SUNLIGHT  |        |        |
|---------------|----------|--------------------------------------------------------------------------------------|-------|-------|--------|----------------|-----------|--------|--------|
| ROOM REF.     | ROOM USE | EN SPATIAL DAYLIGHT AUTONOMY                                                         |       |       |        |                | HOURS:MIN |        |        |
|               |          | percentage of room achieving target illuminance for 2190 hrs (50% of daylight hours) |       |       |        |                |           |        |        |
|               |          | Weather File: GBR_Gatwick                                                            |       |       |        |                | 1 FEB     | 25 FEB | 21 MAR |
|               |          | 100                                                                                  | 150   | 200   | TARGET | RELEVANT ENSDA |           |        |        |
| NP - LEVEL 02 |          |                                                                                      |       |       |        |                |           |        |        |
| 109           | BEDROOM  | 90.3                                                                                 | 69.7  | 53.5  | 100    | 90.3           | 00:03     | 00:03  | 00:04  |
| 110           | BEDROOM  | 93.0                                                                                 | 56.6  | 38.0  | 100    | 93.0           | 00:00     | 00:00  | 00:04  |
| 111           | L/K/D    | 86.2                                                                                 | 71.6  | 57.5  | 200    | 57.5           | 00:00     | 00:00  | 00:00  |
| 112           | L/K/D    | 87.8                                                                                 | 73.7  | 57.2  | 200    | 57.2           | 00:00     | 00:00  | 00:02  |
| 113           | BEDROOM  | 100.0                                                                                | 98.4  | 78.0  | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 114           | BEDROOM  | 100.0                                                                                | 83.0  | 58.9  | 100    | 100.0          | 00:00     | 00:00  | 00:03  |
| 115           | BEDROOM  | 100.0                                                                                | 92.7  | 70.8  | 100    | 100.0          | 00:00     | 00:00  | 00:07  |
| 116           | BEDROOM  | 100.0                                                                                | 100.0 | 95.1  | 100    | 100.0          | 00:00     | 00:00  | 00:11  |
| 117           | L/K/D    | 92.1                                                                                 | 74.0  | 58.4  | 200    | 58.4           | 00:00     | 00:00  | 00:16  |
| 118           | BEDROOM  | 100.0                                                                                | 98.1  | 71.9  | 100    | 100.0          | 00:00     | 00:00  | 00:27  |
| 119           | BEDROOM  | 83.7                                                                                 | 45.2  | 27.4  | 100    | 83.7           | 00:00     | 00:00  | 00:00  |
| 120           | L/K/D    | 71.9                                                                                 | 48.6  | 38.6  | 200    | 38.6           | 00:00     | 00:00  | 00:00  |
| 121           | BEDROOM  | 100.0                                                                                | 100.0 | 100.0 | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 122           | L/K/D    | 100.0                                                                                | 100.0 | 100.0 | 200    | 100.0          | 00:00     | 00:30  | 02:33  |
| 123           | BEDROOM  | 97.2                                                                                 | 69.4  | 41.0  | 100    | 97.2           | 00:00     | 00:00  | 01:42  |
| 124           | BEDROOM  | 100.0                                                                                | 86.8  | 49.0  | 100    | 100.0          | 00:00     | 00:00  | 00:49  |
| 125           | L/K/D    | 76.5                                                                                 | 57.0  | 43.0  | 200    | 43.0           | 00:00     | 00:44  | 01:29  |
| 126           | BEDROOM  | 74.1                                                                                 | 35.8  | 19.7  | 100    | 74.1           | 00:00     | 00:00  | 00:49  |
| 127           | L/K/D    | 47.5                                                                                 | 30.1  | 19.4  | 200    | 19.4           | 00:00     | 00:00  | 00:37  |
| 128           | BEDROOM  | 34.8                                                                                 | 15.8  | 8.9   | 100    | 34.8           | 00:00     | 00:00  | 00:00  |
| 129           | BEDROOM  | 59.2                                                                                 | 26.5  | 15.0  | 100    | 59.2           | 00:00     | 00:00  | 00:07  |
| 130           | L/K/D    | 57.1                                                                                 | 40.5  | 28.9  | 200    | 28.9           | 00:00     | 00:00  | 00:32  |
| 131           | BEDROOM  | 60.1                                                                                 | 30.4  | 17.1  | 100    | 60.1           | 00:00     | 00:00  | 00:37  |
| 132           | BEDROOM  | 71.2                                                                                 | 36.4  | 21.2  | 100    | 71.2           | 00:00     | 00:00  | 00:32  |
| 133           | L/K/D    | 50.6                                                                                 | 34.2  | 24.7  | 200    | 24.7           | 00:00     | 00:00  | 00:08  |
| 134           | BEDROOM  | 50.0                                                                                 | 28.5  | 17.1  | 100    | 50.0           | 00:00     | 00:00  | 00:00  |
| 135           | BEDROOM  | 56.8                                                                                 | 33.3  | 21.2  | 100    | 56.8           | 00:00     | 00:00  | 00:00  |
| 136           | L/K/D    | 43.6                                                                                 | 29.1  | 21.7  | 200    | 21.7           | 00:00     | 00:00  | 00:00  |
| 137           | BEDROOM  | 86.3                                                                                 | 67.4  | 46.3  | 100    | 86.3           | 00:00     | 00:00  | 00:00  |
| 138           | BEDROOM  | 60.9                                                                                 | 33.3  | 21.0  | 100    | 60.9           | 00:00     | 00:00  | 00:00  |
| 139           | L/K/D    | 100.0                                                                                | 96.2  | 76.0  | 200    | 76.0           | 05:53     | 05:42  | 05:05  |
| 140           | L/K/D    | 59.3                                                                                 | 48.2  | 40.2  | 200    | 40.2           | 03:59     | 05:04  | 04:32  |
| 141           | BEDROOM  | 100.0                                                                                | 85.3  | 62.1  | 100    | 100.0          | 00:00     | 00:00  | 00:00  |
| 142           | BEDROOM  | 61.2                                                                                 | 33.0  | 19.4  | 100    | 61.2           | 00:00     | 00:00  | 00:00  |
| 143           | BEDROOM  | 40.9                                                                                 | 19.4  | 10.6  | 100    | 40.9           | 00:00     | 00:00  | 00:00  |
| 144           | BEDROOM  | 39.7                                                                                 | 15.3  | 6.1   | 100    | 39.7           | 00:00     | 00:00  | 00:00  |
| 145           | BEDROOM  | 43.9                                                                                 | 16.8  | 6.9   | 100    | 43.9           | 00:00     | 00:00  | 00:00  |
| 146           | L/K/D    | 99.4                                                                                 | 81.0  | 51.5  | 200    | 51.5           | 00:48     | 00:48  | 01:23  |
| 147           | L/K/D    | 99.7                                                                                 | 76.9  | 62.7  | 200    | 62.7           | 02:00     | 01:55  | 02:12  |
| 148           | BEDROOM  | 35.1                                                                                 | 15.2  | 7.3   | 100    | 35.1           | 00:00     | 00:00  | 00:00  |
| 149           | BEDROOM  | 39.8                                                                                 | 15.0  | 6.2   | 100    | 39.8           | 00:00     | 00:00  | 00:00  |

Table 05: Assessment Data