OCSC
O'CONNOR · SUTTON · CRONIN
MULTIDISCIPLINARY CONSULTING ENGINEERS

L371: ANGLESEA TERRACE RESIDENTIAL DEVELOPMENT

DAYLIGHT, SUNLIGHT & OVERSHADOWING ASSESSMENT

For
The Land Development Agency.

9 October 2025

NOTICE

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DOCUMENT CONTROL & HISTORY

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1 EXECUTIVE SUMMARY

OCSC (M&E) have been appointed to carry out a Daylight, Sunlight & Overshadowing Assessment for the Anglesea Terrace residential development.

The aim of the study is to record and analyse the results for the following:

- The internal daylight levels within the living/Kitchen and bedroom spaces;
- The quality of amenity space being provided as part of the development, in relation to sunlight;
- The impact of the proposed scheme on adjacent properties.

The results show 99.7% for criterion 1 and 93.5% for criterion 2 of all the spaces assessed within the proposed development comply with internal daylight levels when each space was assessed under the newer Third Edition Daylight standard (BR209).

It is important to note that the performance targets which are included should be used with a degree of flexibility as per the extract below from the BRE Guide:

"The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the designer. Although it gives numeral guidelines these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design."

The calculation methodology for daylight and sunlight is based on the Building Research Establishments "Site Layout Planning for Daylight and Sunlight: A Good Practice Guide" by PJ Littlefair, 2022 Third Edition.

Sunlight to proposed development amenity spaces

In relation to amenity space sunlight, excellent levels of sunlight are experienced across the proposed amenity space. The communal amenity space provided exceed the BRE guidelines for sunlight on the test day of 21st of March.

Overshadowing

The overshadowing images have shown that there is a negligible impact to the surrounding developments when the proposed scheme is assessed in relation to overshadowing.

Impact to neighbouring properties

Due to the unique positioning and height of the proposed development relative to adjacent properties, there is an impact on the Vertical Sky Component (VSC) assessment to some of the adjacent properties. As a result, several windows in the neighbouring residential properties do not meet the VSC requirements outlined in the BRE guidelines. In order to better understand the impacts, a full internal daylight assessment was carried out on selected spaces within adjacent properties to ascertain daylight levels achieved with the proposed scheme

in place. Results from this additional internal daylight assessments have confirmed that sufficient daylight levels can still be maintained achieved except few spaces with the adjacent spaces considered impacted by the proposed development.

However, the design team have explored and implemented the following measures to mitigate the impact on neighbouring properties:

- The capacity study for the site showed a building of 8 -18 floors. The overall height and massing of the latest design has been reduced to a 4 / 7 / 16 storey profile to reduce negative impacts on the adjacent buildings;
- The Western portion of the building is limited to 4 storeys to be respectful to the adjacent Anglesea terrace residences;
- Residential use is positioned along Anglesea Terrace in a parallel footprint to be respectful of the existing adjacent residential buildings and enhance the street environment;
- The New development positions the tower at a point on the site furthest away from the Anglesea Terrace Residences;
- The building creates a u-Shaped footprint in a Northerly direction away from Anglesea Terrace to create an attractive public amenity that is accessible off the street and can be accessed by all. This improves the public realm offering in the Cul De Sac;
- Lighter toned façade materials will be explored to improve light reflectivity to the street environment and the adjacent anglesea terrace residence facades;
- The site has a limited footprint, and is zoned to target a density of over 100 u/ha as set out in the spatial development framework. This, paired with the aspect/nature of the site, leaves the design team limited options in terms of configuring the overall mass of the building.

2 INTRODUCTION

OCSC (M&E) have been appointed to carry out a Daylight, Sunlight & Overshadowing Assessment for the Anglesea Terrace residential development.

The aim of the study is to record and analyse the results for the following:

- The internal daylight levels within the living and bedroom areas;
- The quality of amenity space being provided as part of the development, in relation to sunlight;
- The impact of the proposed scheme on adjacent properties.

Daylight and sunlight in the proposed development was assessed under the BRE Guidelines (Third edition) as stated below:

- The Building Research Establishment's "Site Layout Planning for Daylight and Sunlight: A Good Practice Guide" by PJ Littlefair, 2022 Third Edition.

3 PROPOSED DEVELOPMENT

Refer to description of development in Architects Design Statement.

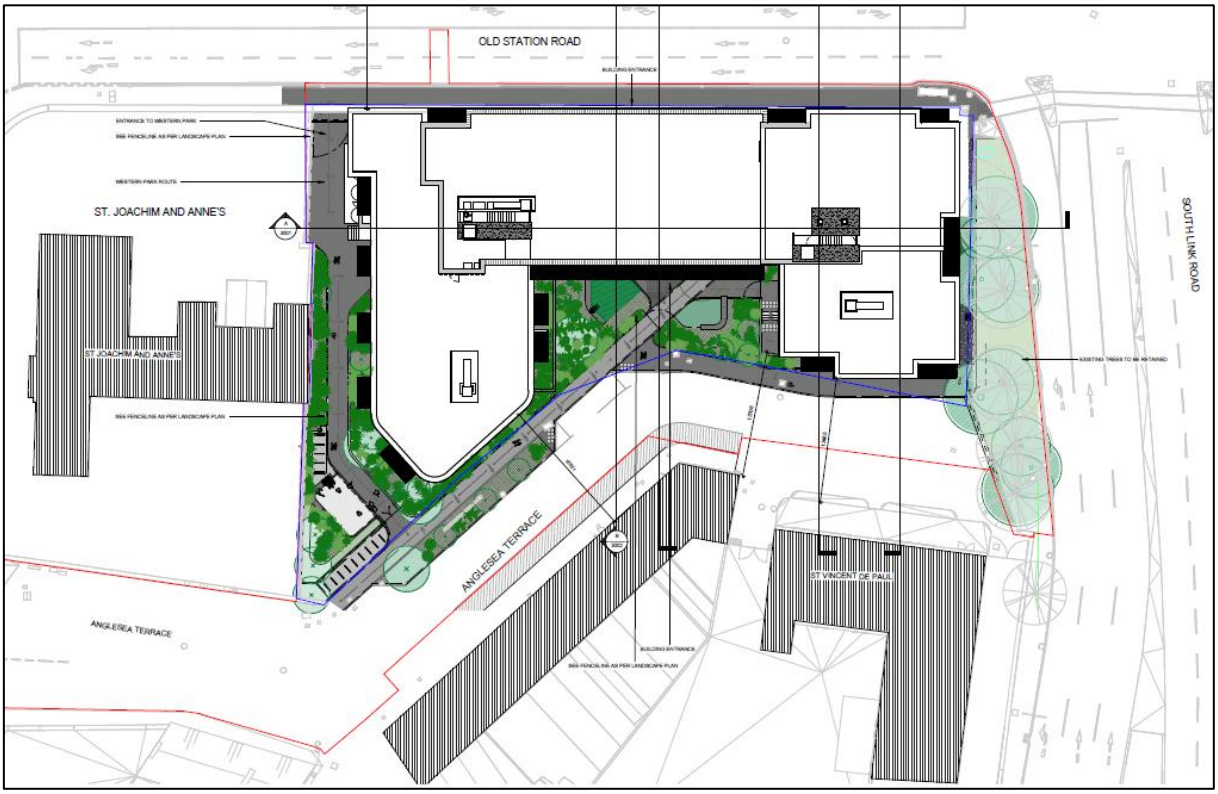


Figure 1: Proposed Development Site Plan

4 PROPOSED BUILDING DESIGN

To ensure that daylight levels were maximised for the development, several key design strategies were incorporated during concept design.

BUILDING MATERIAL SELECTION

The selection of materials play an important role in ambient daylight levels. The façade of the proposed development has been carefully selected to promote a sense of brightness. This will ensure light is reflected throughout the development. The inclusion of greenery to the amenity spaces will help to improve the sense of light and brightness within the dwellings.

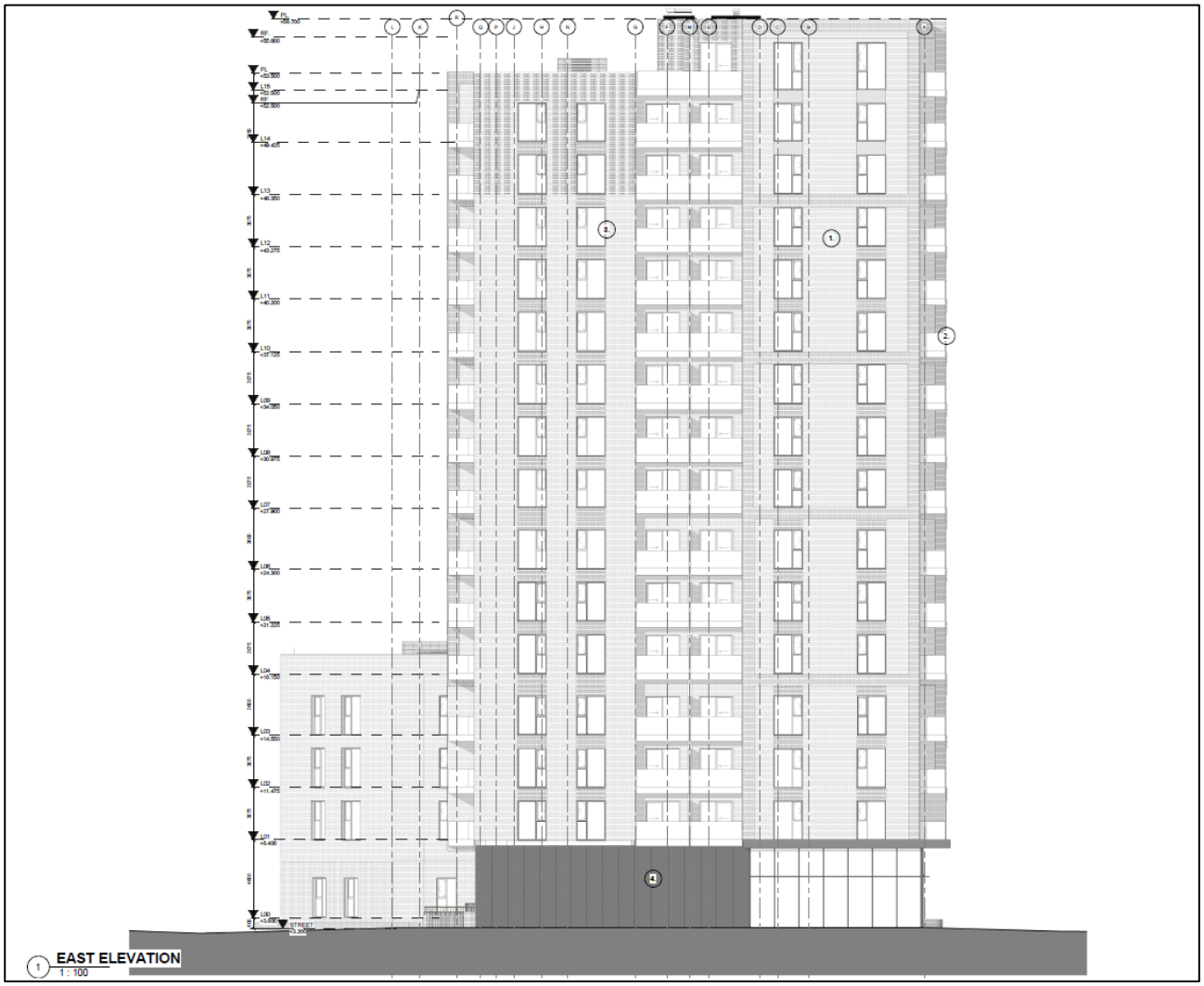


Figure 2: Façade Views of Proposed Development

GLAZING TO WALL RATIO

The primary function of the glazing to wall ratio is to maximise daylight within the space while reducing excessive solar gains within a given development. The other advantage, in conjunction with appropriate materials, is that the more light coloured, reflective materials used externally, the more ambient daylight will be reflected to the surrounding areas. Extensive analysis was undertaken on all building façades to ensure glazing widths were maximised to promote access to daylight. The image below illustrates the glazing to wall ratio of the proposed development.

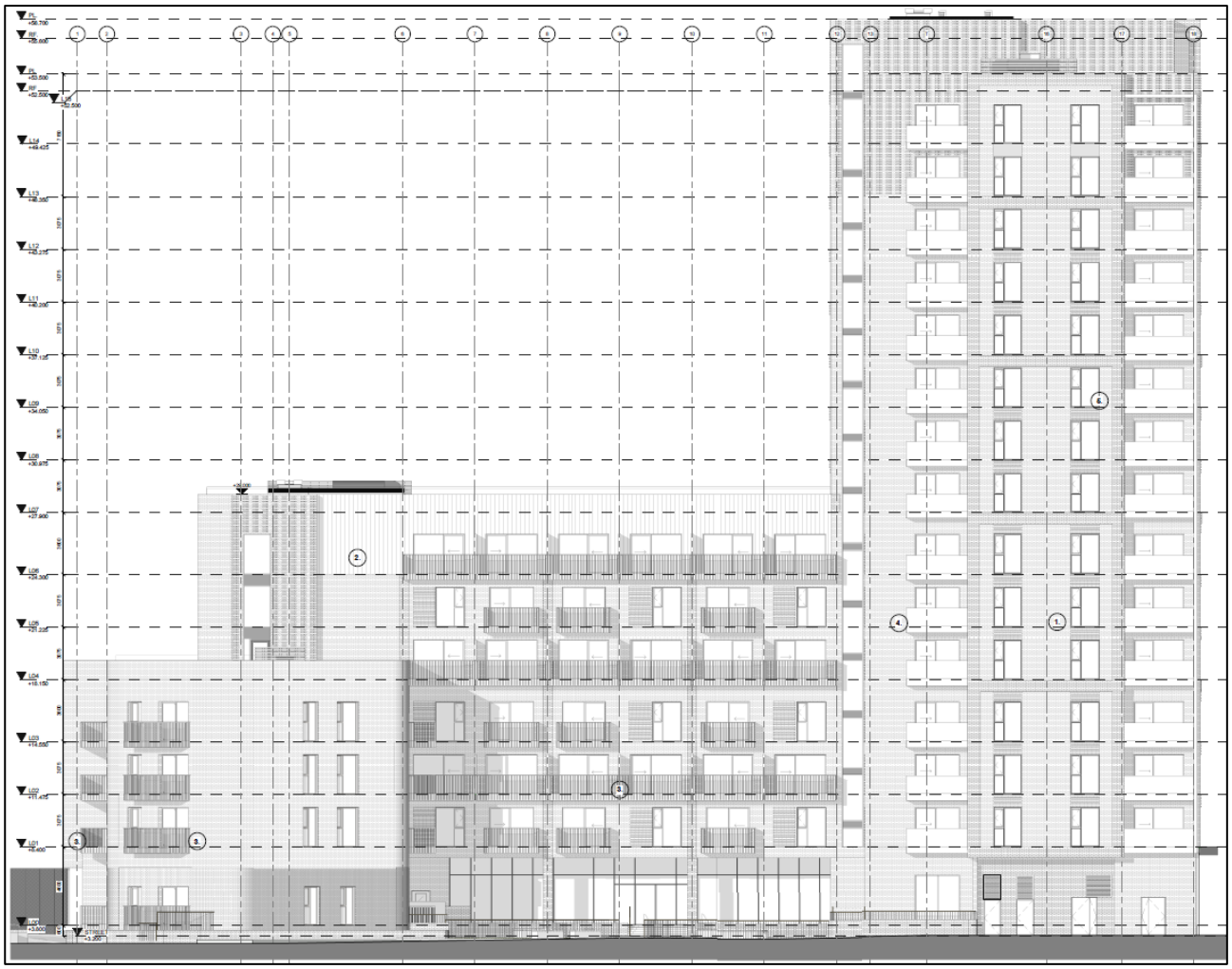


Figure 3: Front Elevation Glazing to Wall Ratio

5 GUIDELINES FOR DAYLIGHTING AND SUNLIGHT

The analysis of the development's daylight potential and the quality of amenity spaces have been based on the Building Research Establishment (BRE) guidelines on "Site Layout Planning for Daylight and Sunlight: A BRE "Site Layout Planning for Daylight and Sunlight: A Good Practice Guide" by PJ Littlefair, 2022.

The guideline provides the criteria and methodology for calculations pertaining to daylight and sunlight and is the primary reference for this matter. The guide gives simple rules for analysing sites where the geometry of the surroundings is straightforward, supplementing them with graphical methods for complex sites.

However, it is important to note that the performance targets which are included should be used with a degree of flexibility as per the extract below from the BRE guidance:

"The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the designer. Although it gives numeral guidelines these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design."

6 DAYLIGHT LEVELS WITHIN THE PROPOSED DEVELOPMENT

ASSESSMENT CRITERIA – INTERNAL DAYLIGHT (2022 METHODOLOGY)

The proposed scheme's daylight levels have been tested to the more recently published Third Edition (2022). The 2022 Methodology standard goes beyond the average daylight levels within a space, and accounts for the distribution of light within a space.

Level of recommendation for vertical and inclined daylight opening	Target illuminance E_T lx	Fraction of space for target level $F_{plane,\%}$	Minimum target illuminance E_{TM} lx	Fraction of space for minimum target level $F_{plane,\%}$	Fraction of daylight hours $F_{time,\%}$
Minimum	300	50 %	100	95 %	50 %
Medium	500	50 %	300	95 %	50 %
High	750	50 %	500	95 %	50 %
NOTE Table A.3 gives target daylight factor (D_T) and minimum target daylight factor (D_{TM}) corresponding to target illuminance level and minimum target illuminance, respectively, for the CEN capital cities.					

Figure 4: 2022 Methodology – Table A.1

2022 Methodology features two daylight criteria for compliance:

- Criterion one recommends that in the analysed space an illuminance of ≥ 100 lux must be achieved for half of the daylight time in a year (2,190 hours), across ≥ 95% of the floor area of the given space;

- Criterion two recommends that in the analysed space an illuminance of ≥ 300 lux must be achieved for half of the daylight time in a year (2,190 hours), across ≥ 50% of the floor area of the given space.

In order to analyse the daylight performance for the proposed scheme in this regard, detailed 3D model was generated of the entire development and adjacent properties. A number of computer simulations were then undertaken in IES VE to ascertain the lux levels achieved within all units of the proposed development.

DAYLIGHT PARAMETERS

The surface reflectance values outlined in Table 1 have been used in the analysis, as per the BR209 document (Third edition).

Surface Type	Reflectance (%)
External Wall	20
Internal Partitions	50
Ceiling	70
Floor	20
Adjacent Buildings	20
Glazing Transmittance	70

Table 1: Surface Reflectance Values

The lux calculations are carried out in a working plane that lies 850mm above the floor and it is offset 500mm from the perimeter of the room. A grid of 250mm is used to calculate all different points within the room and the average of these points determines Lux levels achieved.

Unit assessed are based on the following drawings provided by Henry J Lyons Architect:

Job No.	Drawing No.	Drawing Type
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1000 - Ground Floor	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1001 - First Floor Plan	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1002 - Second Floor	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1003 - Third Floor Plan	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1004 - Fourth Floor Plan	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1005 - Fifth Floor Plan	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1006 - Sixth Floor	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1007 - Seventh Floor	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1008 - Eighth Floor	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1009 - Ninth Floor Plan	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1010 - Tenth Floor Plan	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1011 - Eleventh Floor	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1012 - Twelvth Floor	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1013 - Thirteenth Floor	Floor Plans

Job No.	Drawing No.	Drawing Type
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1014 - Fourteenth Floor	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 1015 - Fifteenth Floor	Floor Plans
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 2001 - North Elevation	Elevation
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 2002 - East Elevation	Elevation
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 2003 - South Elevation	Elevation
921255	921255-HJL-AT-ZZ-M3-A-0001 - Sheet - 2004 - West Elevation	Elevation

Table 2: List of drawings referenced in the Daylight models

TREES

BRE Guideline outlines the following in relation to the inclusion of trees within daylight and sunlight calculations.

"The question of whether trees or fences should be included in the calculation depends upon the type of shade they produce. Normally trees and shrubs need not to be included, partly because their shapes are almost impossible to predict, and partly because the dappled shade of a tree is more pleasant than the deep shadow of a building (this applies specially to deciduous trees)."

Within Appendix H of the BRE Guidelines the following statements are outlined:

"It is generally more difficult to calculate the effects of trees on daylight because of their irregular shapes and because some light will generally penetrate through the tree crown. Where the effect of a new building on existing buildings nearby is being analysed, it is usual to ignore the effect of existing trees. This is because daylight is at its scarcest and most valuable in winter when most trees will not be in leaf. "

When assessing the skylight in new dwellings:

"Sometimes, however, trees should be taken into account, e.g where a new dwelling is proposed near to large existing trees."

When assessing the sunlight in gardens:

"In 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."

DAYLIGHT RESULTS – INTERNAL DAYLIGHT IN PROPOSED DWELLINGS

This section outlines the assessment of internal daylight levels in the Anglesea Terrace residential development.

In summary, 99.7% for criterion 1 and 93.5% for criterion 2 of proposed development achieve the recommended Lux levels outlined under the Third Edition standard. Units which fall marginally short in relation to the third edition requirements (mainly due to internal layouts, position in the building or floor level) are compensated with access and views to green areas and high-quality amenity spaces (see Compensatory Measures below).

In all cases, generous floor to ceiling heights have been designed into the project with glazing areas being increased to amplify the quality of daylight received. Careful consideration has been given to room layout design, generally aiming to allocate storage and circulation areas to the back of rooms, and living spaces to the front - where the highest level of daylight is expected. The results of the analysis are outlined in the accompanying tables.

Legends

Figure 5: Ground Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Ground Floor	2BED	1	Liv/Din	100%	Y	100%	Y
		2	Bedroom	95%	Y	55%	Y
		3	Bedroom	100%	Y	32%	N
	1BED	4	Bedroom	98%	Y	29%	N
		5	Liv/Din	100%	Y	55%	Y
	1BED	6	Liv/Din	100%	Y	56%	Y
		7	Bedroom	100%	Y	34%	N

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Ground Floor	2BED	8	Bedroom	96%	Y	34%	N
		9	Liv/Din	100%	Y	63%	Y
		10	Bedroom	100%	Y	93%	Y
	1BED	11	Liv/Din	100%	Y	66%	Y
		12	Bedroom	100%	Y	51%	Y
	1BED	13	Liv/Din	89%	N	24%	N
		14	Bedroom	100%	Y	84%	Y

Table 3: BR209 Methodology Results (Ground Floor)

Legends

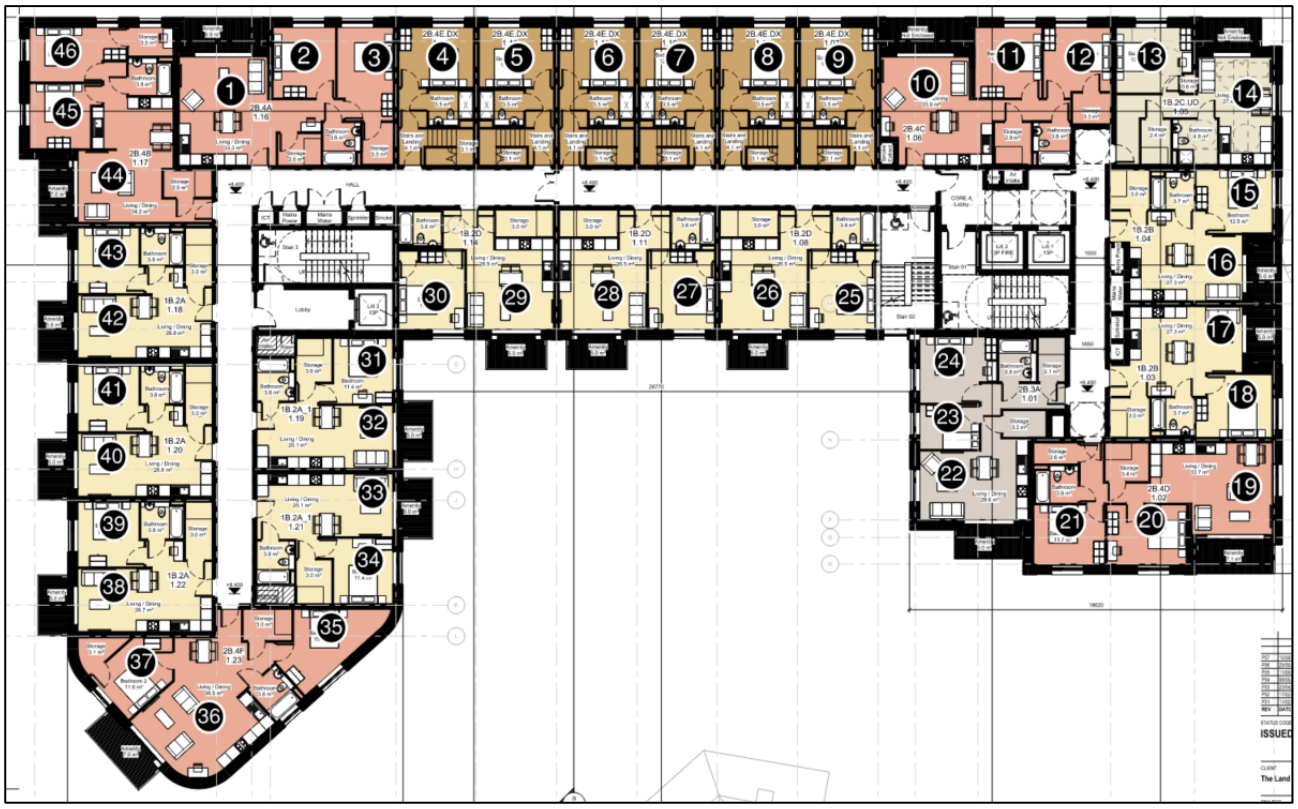


Figure 6: First Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
First Floor	2BED	1	Liv/Din	100%	Y	74%	Y
		2	Bedroom	100%	Y	96%	Y
		3	Bedroom	100%	Y	95%	Y
	2BED	4	Bedroom	100%	Y	54%	Y
	2BED	5	Bedroom	100%	Y	56%	Y
	2BED	6	Bedroom	100%	Y	54%	Y
	2BED	7	Bedroom	100%	Y	58%	Y
	2BED	8	Bedroom	100%	Y	59%	Y
	2BED	9	Bedroom	100%	Y	50%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
First Floor	2BED	10	Liv/Din	100%	Y	60%	Y
		11	Bedroom	100%	Y	70%	Y
		12	Bedroom	100%	Y	96%	Y
	1BED	13	Bedroom	100%	Y	86%	Y
		14	Liv/Din	100%	Y	96%	Y
	1BED	15	Bedroom	100%	Y	89%	Y
		16	Liv/Din	95%	Y	46%	N
	1BED	17	Liv/Din	98%	Y	41%	N
		18	Bedroom	100%	Y	97%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
First Floor	2BED	19	Liv/Din	100%	Y	99%	Y
		20	Bedroom	100%	Y	96%	Y
		21	Bedroom	100%	Y	100%	Y
	2BED	22	Liv/Din	100%	Y	100%	Y
		23	Bedroom	100%	Y	100%	Y
		24	Bedroom	100%	Y	54%	Y
	1BED	25	Bedroom	100%	Y	100%	Y
		26	Liv/Din	100%	Y	99%	Y
	1BED	27	Bedroom	100%	Y	99%	Y
		28	Liv/Din	100%	Y	94%	Y
	1BED	29	Liv/Din	100%	Y	93%	Y
		30	Bedroom	100%	Y	90%	Y
	1BED	31	Bedroom	100%	Y	52%	Y
		32	Liv/Din	100%	Y	75%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
First Floor	1BED	33	Liv/Din	100%	Y	73%	Y
		34	Bedroom	100%	Y	79%	Y
	2BED	35	Bedroom	97%	Y	80%	Y
		36	Liv/Din	99%	Y	65%	Y
		37	Bedroom	100%	Y	97%	Y
	1BED	38	Liv/Din	100%	Y	88%	Y
		39	Bedroom	100%	Y	100%	Y
	1BED	40	Liv/Din	100%	Y	84%	Y
		41	Bedroom	100%	Y	99%	Y
	1BED	42	Liv/Din	100%	Y	91%	Y
		43	Bedroom	100%	Y	100%	Y
	2BED	44	Liv/Din	100%	Y	80%	Y
		45	Bedroom	100%	Y	80%	Y
		46	Bedroom	100%	Y	100%	Y

Table 4: BR209 Methodology Results (First Floor)

Legends

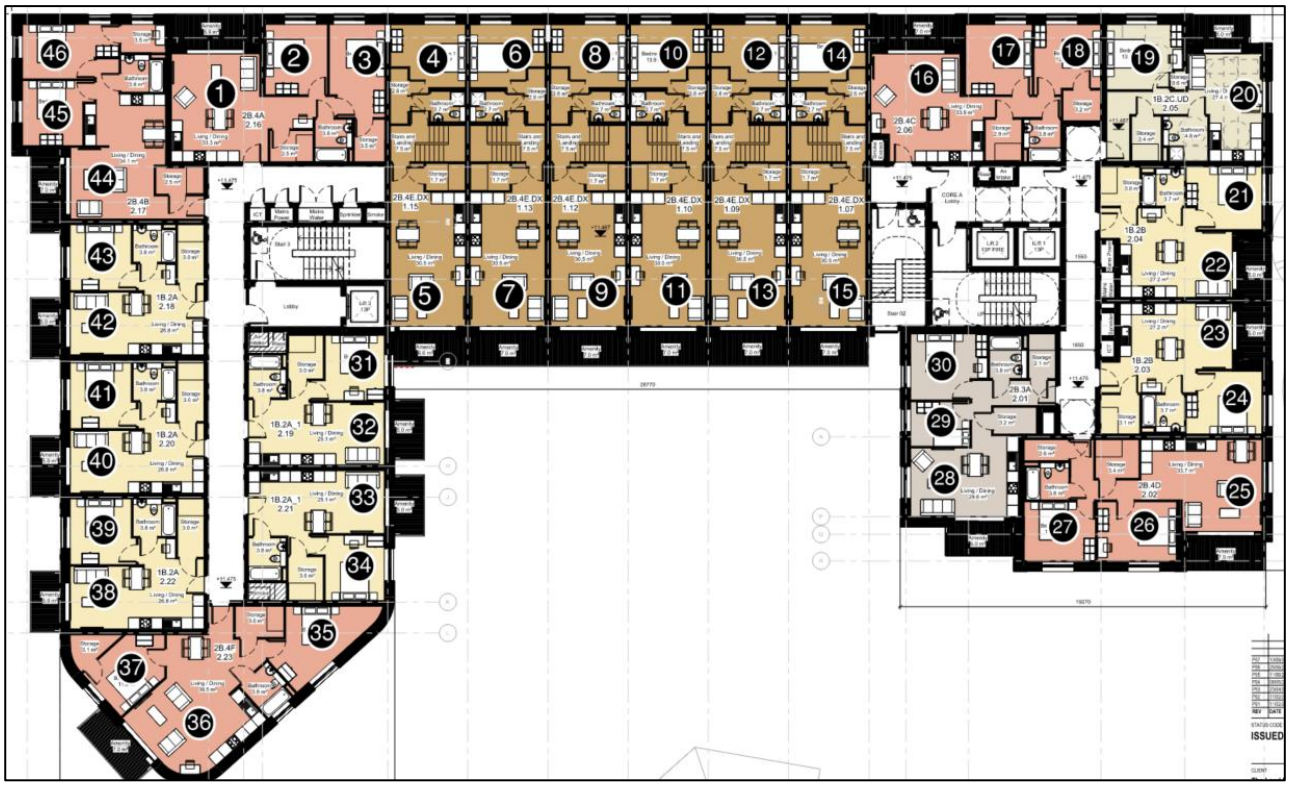


Figure 7: Second Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Second Floor	2BED	1	Liv/Din	100%	Y	83%	Y
		2	Bedroom	100%	Y	97%	Y
		3	Bedroom	100%	Y	95%	Y
	2BED	4	Bedroom	100%	Y	55%	Y
		5	Liv/Din	100%	Y	71%	Y
	2BED	6	Bedroom	100%	Y	56%	Y
		7	Liv/Din	100%	Y	100%	Y
	2BED	8	Bedroom	100%	Y	54%	Y
		9	Liv/Din	100%	Y	100%	Y
	2BED	10	Bedroom	100%	Y	61%	Y
		11	Liv/Din	100%	Y	100%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Second Floor	2BED	12	Bedroom	100%	Y	58%	Y
		13	Liv/Din	100%	Y	100%	Y
	2BED	14	Bedroom	100%	Y	56%	Y
		15	Liv/Din	100%	Y	100%	Y
	2BED	16	Liv/Din	95%	Y	60%	Y
		17	Bedroom	98%	Y	71%	Y
		18	Bedroom	100%	Y	97%	Y
	1BED	19	Bedroom	100%	Y	87%	Y
		20	Liv/Din	100%	Y	97%	Y
	1BED	21	Bedroom	100%	Y	90%	Y
		22	Liv/Din	100%	Y	46%	N

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Second Floor	1BED	23	Liv/Din	100%	Y	41%	N
		24	Bedroom	100%	Y	97%	Y
	2BED	25	Liv/Din	100%	Y	100%	Y
		26	Bedroom	100%	Y	100%	Y
		27	Bedroom	100%	Y	100%	Y
	2BED	28	Liv/Din	100%	Y	100%	Y
		29	Bedroom	100%	Y	100%	Y
		30	Bedroom	100%	Y	55%	Y
	1BED	31	Bedroom	100%	Y	54%	Y
		32	Liv/Din	100%	Y	87%	Y
	1BED	33	Liv/Din	100%	Y	100%	Y
		34	Bedroom	100%	Y	80%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Second Floor	2BED	35	Bedroom	97%	Y	82%	Y
		36	Liv/Din	99%	Y	100%	Y
		37	Bedroom	100%	Y	100%	Y
	1BED	38	Liv/Din	100%	Y	99%	Y
		39	Bedroom	100%	Y	100%	Y
	1BED	40	Liv/Din	100%	Y	86%	Y
		41	Bedroom	100%	Y	100%	Y
	1BED	42	Liv/Din	100%	Y	98%	Y
		43	Bedroom	100%	Y	98%	Y
	2BED	44	Liv/Din	100%	Y	83%	Y
		45	Bedroom	100%	Y	93%	Y
		46	Bedroom	100%	Y	100%	Y

Table 5: BR209 Methodology Results (Second Floor)

Legends

Figure 8: Third Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Third Floor	2BED	1	Liv/Din	100%	Y	83%	Y
		2	Bedroom	100%	Y	97%	Y
		3	Bedroom	100%	Y	96%	Y
	2BED	4	Bedroom	100%	Y	57%	Y
	2BED	5	Bedroom	100%	Y	58%	Y
	2BED	6	Bedroom	100%	Y	56%	Y
	2BED	7	Bedroom	100%	Y	59%	Y
	2BED	8	Bedroom	100%	Y	60%	Y
	2BED	9	Bedroom	100%	Y	52%	Y
	2BED	10	Liv/Din	100%	Y	61%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Third Floor		11	Bedroom	100%	Y	72%	Y
		12	Bedroom	100%	Y	97%	Y
	1BED	13	Bedroom	100%	Y	88%	Y
		14	Liv/Din	100%	Y	98%	Y
	1BED	15	Bedroom	100%	Y	91%	Y
		16	Liv/Din	95%	Y	47%	N
	1BED	17	Liv/Din	98%	Y	42%	N
		18	Bedroom	100%	Y	98%	Y
	2BED	19	Liv/Din	100%	Y	100%	Y
		20	Bedroom	100%	Y	100%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Third Floor		21	Bedroom	100%	Y	100%	Y
	2BED	22	Liv/Din	100%	Y	100%	Y
		23	Bedroom	100%	Y	100%	Y
		24	Bedroom	100%	Y	60%	Y
	1BED	25	Bedroom	100%	Y	100%	Y
		26	Liv/Din	100%	Y	100%	Y
	1BED	27	Bedroom	100%	Y	100%	Y
		28	Liv/Din	100%	Y	95%	Y
	1BED	29	Liv/Din	100%	Y	94%	Y
		30	Bedroom	100%	Y	92%	Y
	1BED	31	Bedroom	100%	Y	55%	Y
		32	Liv/Din	100%	Y	100%	Y
	1BED	33	Liv/Din	100%	Y	100%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Third Floor		34	Bedroom	100%	Y	100%	Y
	2BED	35	Bedroom	97%	Y	100%	Y
		36	Liv/Din	99%	Y	100%	Y
		37	Bedroom	100%	Y	100%	Y
	1BED	38	Liv/Din	100%	Y	99%	Y
		39	Bedroom	100%	Y	100%	Y
	1BED	40	Liv/Din	100%	Y	100%	Y
		41	Bedroom	100%	Y	100%	Y
	1BED	42	Liv/Din	100%	Y	99%	Y
		43	Bedroom	100%	Y	100%	Y
	2BED	44	Liv/Din	100%	Y	85%	Y
		45	Bedroom	100%	Y	100%	Y
		46	Bedroom	100%	Y	100%	Y

Table 6: BR209 Methodology Results (Third Floor)

Legends

Figure 9: Fourth Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Fourth Floor	2BED	1	Liv/Din	100%	Y	99%	Y
		2	Bedroom	100%	Y	88%	Y
		3	Bedroom	100%	Y	72%	Y
	2BED	4	Bedroom	100%	Y	55%	Y
		5	Liv/Din	100%	Y	100%	Y
	2BED	6	Bedroom	100%	Y	57%	Y
		7	Liv/Din	100%	Y	100%	Y
	2BED	8	Bedroom	100%	Y	55%	Y
		9	Liv/Din	100%	Y	100%	Y
	2BED	10	Bedroom	100%	Y	63%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Fourth Floor		11	Liv/Din	100%	Y	100%	Y
	2BED	12	Bedroom	100%	Y	59%	Y
		13	Liv/Din	100%	Y	100%	Y
	2BED	14	Bedroom	100%	Y	56%	Y
		15	Liv/Din	100%	Y	100%	Y
	2BED	16	Liv/Din	96%	Y	61%	Y
		17	Bedroom	98%	Y	72%	Y
		18	Bedroom	100%	Y	97%	Y
	1BED	19	Bedroom	100%	Y	88%	Y
		20	Liv/Din	100%	Y	98%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Fourth Floor	1BED	21	Bedroom	100%	Y	91%	Y
		22	Liv/Din	100%	Y	47%	N
	1BED	23	Liv/Din	100%	Y	42%	N
		24	Bedroom	100%	Y	98%	Y
	2BED	25	Liv/Din	100%	Y	100%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Fourth Floor		26	Bedroom	100%	Y	100%	Y
		27	Bedroom	100%	Y	100%	Y
	2BED	28	Liv/Din	100%	Y	100%	Y
		29	Bedroom	100%	Y	100%	Y
		30	Bedroom	100%	Y	69%	Y

Table 7: BR209 Methodology Results (Fourth Floor)

Legends

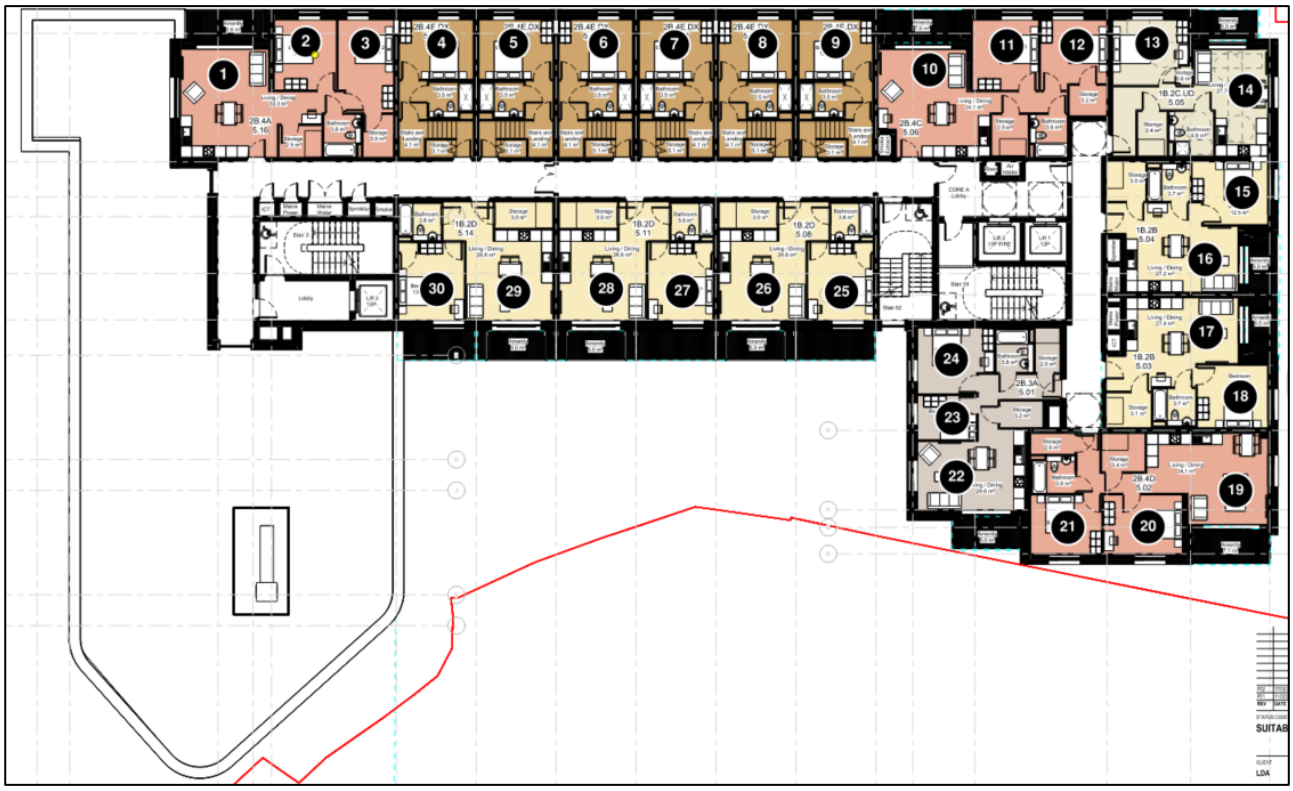


Figure 10: Fifth Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Fifth Floor	2BED	1	Liv/Din	100%	Y	99%	Y
		2	Bedroom	100%	Y	88%	Y
		3	Bedroom	100%	Y	72%	Y
	2BED	4	Bedroom	100%	Y	57%	Y
	2BED	5	Bedroom	100%	Y	59%	Y
	2BED	6	Bedroom	100%	Y	56%	Y
	2BED	7	Bedroom	100%	Y	60%	Y
	2BED	8	Bedroom	100%	Y	62%	Y
	2BED	9	Bedroom	97%	Y	52%	Y
	2BED	10	Liv/Din	100%	Y	71%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Fifth Floor		11	Bedroom	100%	Y	73%	Y
		12	Bedroom	100%	Y	97%	Y
	1BED	13	Bedroom	100%	Y	89%	Y
		14	Liv/Din	100%	Y	98%	Y
	1BED	15	Bedroom	100%	Y	91%	Y
		16	Liv/Din	97%	Y	48%	N
	1BED	17	Liv/Din	98%	Y	42%	N
		18	Bedroom	100%	Y	98%	Y
	2BED	19	Liv/Din	100%	Y	99%	Y
		20	Bedroom	100%	Y	100%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Fifth Floor		21	Bedroom	100%	Y	100%	Y
	2BED	22	Liv/Din	100%	Y	100%	Y
		23	Bedroom	100%	Y	100%	Y
		24	Bedroom	100%	Y	72%	Y
	1BED	25	Bedroom	100%	Y	100%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Fifth Floor		26	Liv/Din	100%	Y	100%	Y
	1BED	27	Bedroom	100%	Y	100%	Y
		28	Liv/Din	100%	Y	97%	Y
	1BED	29	Liv/Din	100%	Y	99%	Y
		30	Bedroom	100%	Y	100%	Y

Table 8: BR209 Methodology Results (Fifth Floor)

Legends

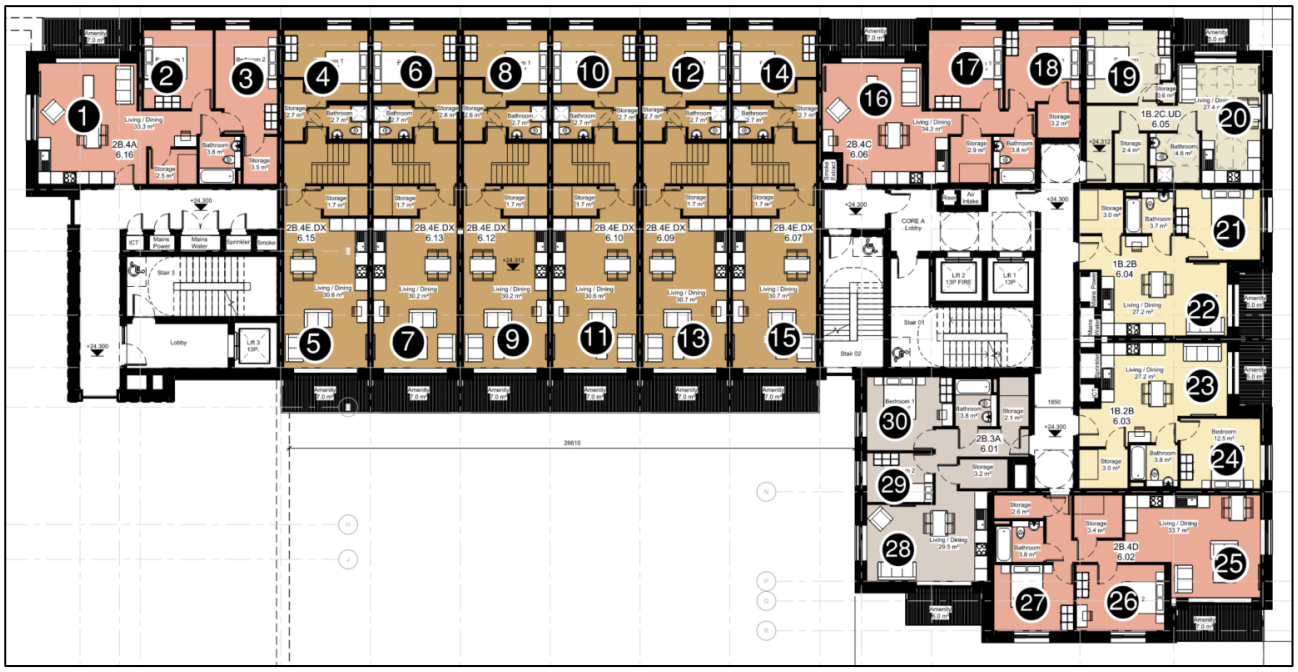


Figure 11: Sixth Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Sixth Floor	2BED	1	Liv/Din	100%	Y	100%	Y
		2	Bedroom	100%	Y	88%	Y
		3	Bedroom	100%	Y	77%	Y
	2BED	4	Bedroom	99%	Y	55%	Y
		5	Liv/Din	100%	Y	100%	Y
	2BED	6	Bedroom	100%	Y	58%	Y
		7	Liv/Din	100%	Y	100%	Y
	2BED	8	Bedroom	99%	Y	55%	Y
		9	Liv/Din	100%	Y	100%	Y
	2BED	10	Bedroom	100%	Y	63%	Y
		11	Liv/Din	100%	Y	100%	Y
	2BED	12	Bedroom	100%	Y	59%	Y
		13	Liv/Din	100%	Y	100%	Y
	2BED	14	Bedroom	98%	Y	57%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Sixth Floor	2BED	15	Liv/Din	100%	Y	100%	Y
		16	Liv/Din	100%	Y	71%	Y
		17	Bedroom	100%	Y	73%	Y
		18	Bedroom	100%	Y	97%	Y
	1BED	19	Bedroom	100%	Y	89%	Y
		20	Liv/Din	100%	Y	98%	Y
	1BED	21	Bedroom	100%	Y	91%	Y
		22	Liv/Din	95%	Y	48%	N
	1BED	23	Liv/Din	98%	Y	42%	N
		24	Bedroom	100%	Y	98%	Y
		25	Liv/Din	100%	Y	100%	Y
	2BED	26	Bedroom	100%	Y	100%	Y
		27	Bedroom	100%	Y	100%	Y
	2BED	28	Liv/Din	100%	Y	100%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
		29	Bedroom	100%	Y	100%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Sixth Floor		30	Bedroom	100%	Y	90%	Y

Table 9: BR209 Methodology Results (Sixth Floor)

Legends

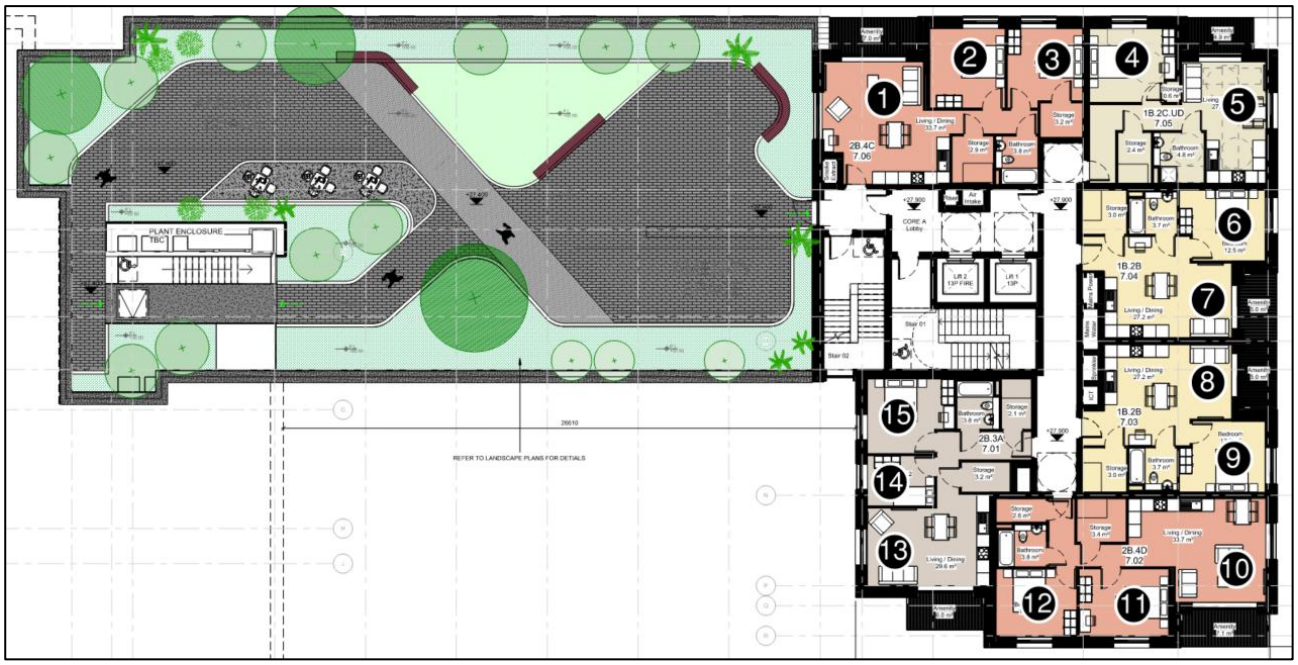


Figure 12: Seventh Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Seventh Floor	2BED	1	Liv/Din	100%	Y	100%	Y
		2	Bedroom	100%	Y	73%	Y
		3	Bedroom	100%	Y	97%	Y
	1BED	4	Bedroom	100%	Y	89%	Y
		5	Liv/Din	100%	Y	98%	Y
	1BED	6	Bedroom	100%	Y	91%	Y
		7	Liv/Din	100%	Y	49%	N
	1BED	8	Liv/Din	100%	Y	45%	N

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Seventh Floor		9	Bedroom	100%	Y	98%	Y
		10	Liv/Din	100%	Y	100%	Y
	2BED	11	Bedroom	100%	Y	100%	Y
		12	Bedroom	100%	Y	100%	Y
		13	Liv/Din	100%	Y	100%	Y
	2BED	14	Bedroom	100%	Y	100%	Y
		15	Bedroom	100%	Y	97%	Y

Table 10: BR209 Methodology Results (Seventh Floor)

Legends

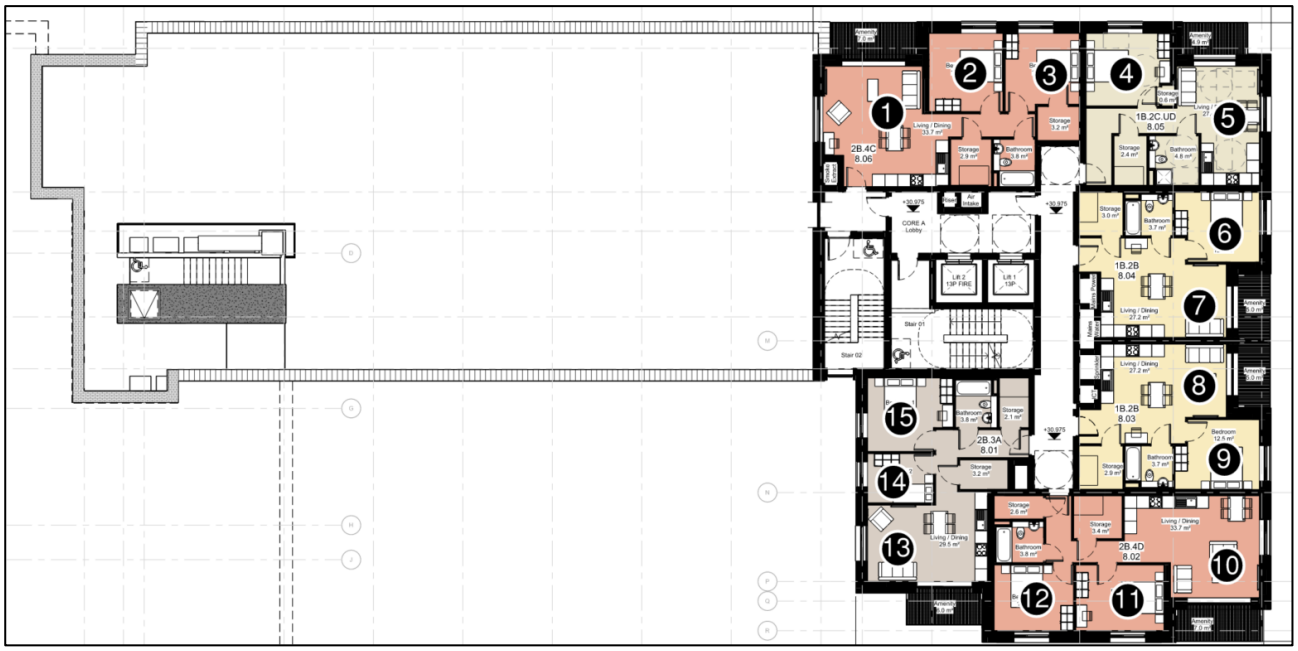


Figure 13: Eighth Floor Legend

Results

Proposed Units – BR209 (New) Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Eighth Floor	2BED	1	Liv/Din	100%	Y	100%	Y
		2	Bedroom	100%	Y	73%	Y
		3	Bedroom	100%	Y	97%	Y
	1BED	4	Bedroom	100%	Y	89%	Y
		5	Liv/Din	100%	Y	98%	Y
	1BED	6	Bedroom	100%	Y	91%	Y
		7	Liv/Din	100%	Y	50%	Y
	1BED	8	Liv/Din	100%	Y	45%	N

Proposed Units – BR209 (New) Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Eighth Floor		9	Bedroom	100%	Y	98%	Y
	2BED	10	Liv/Din	100%	Y	100%	Y
		11	Bedroom	100%	Y	100%	Y
		12	Bedroom	100%	Y	100%	Y
	2BED	13	Liv/Din	100%	Y	100%	Y
		14	Bedroom	100%	Y	100%	Y
		15	Bedroom	100%	Y	98%	Y

Table 11: BR209 Methodology Results (Eighth Floor)

Legends

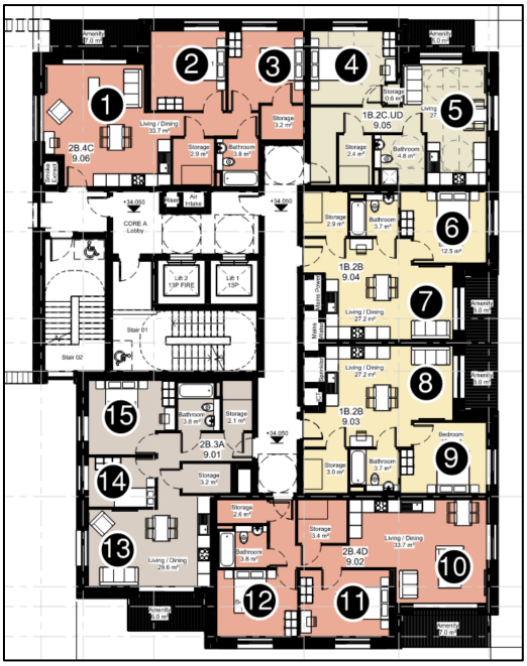


Figure 14: Ninth Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Ninth Floor	2BED	1	Liv/Din	100%	Y	100%	Y
		2	Bedroom	100%	Y	73%	Y
		3	Bedroom	100%	Y	97%	Y
	1BED	4	Bedroom	100%	Y	89%	Y
		5	Liv/Din	100%	Y	99%	Y
	1BED	6	Bedroom	100%	Y	91%	Y
		7	Liv/Din	100%	Y	51%	Y
	1BED	8	Liv/Din	100%	Y	46%	N

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Ninth Floor		9	Bedroom	100%	Y	98%	Y
	2BED	10	Liv/Din	100%	Y	100%	Y
		11	Bedroom	100%	Y	100%	Y
		12	Bedroom	100%	Y	100%	Y
	2BED	13	Liv/Din	100%	Y	100%	Y
		14	Bedroom	100%	Y	100%	Y
		15	Bedroom	100%	Y	98%	Y

Table 12: BR209 Methodology Results (Ninth Floor)

Legends

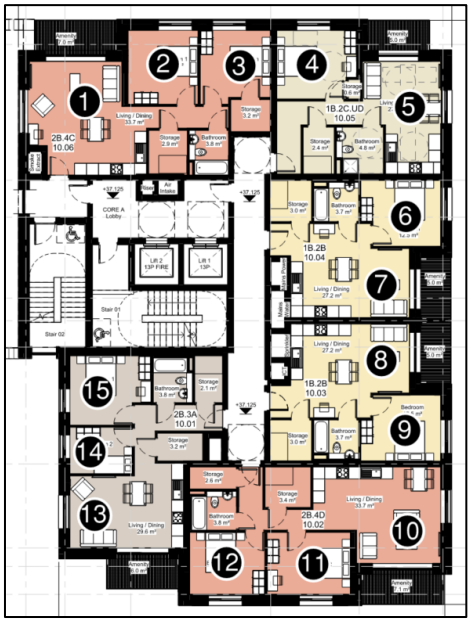


Figure 15: Tenth Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Tenth Floor	2BED	1	Liv/Din	100%	Y	100%	Y
		2	Bedroom	100%	Y	74%	Y
		3	Bedroom	100%	Y	97%	Y
	1BED	4	Bedroom	100%	Y	89%	Y
		5	Liv/Din	100%	Y	99%	Y
	1BED	6	Bedroom	100%	Y	91%	Y
		7	Liv/Din	100%	Y	52%	Y
	1BED	8	Liv/Din	100%	Y	47%	N

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Tenth Floor		9	Bedroom	100%	Y	98%	Y
	2BED	10	Liv/Din	100%	Y	100%	Y
		11	Bedroom	100%	Y	100%	Y
		12	Bedroom	100%	Y	100%	Y
		13	Liv/Din	100%	Y	100%	Y
	2BED	14	Bedroom	100%	Y	100%	Y
		15	Bedroom	100%	Y	98%	Y

Table 13: BR209 Methodology Results (Tenth Floor)

Legends

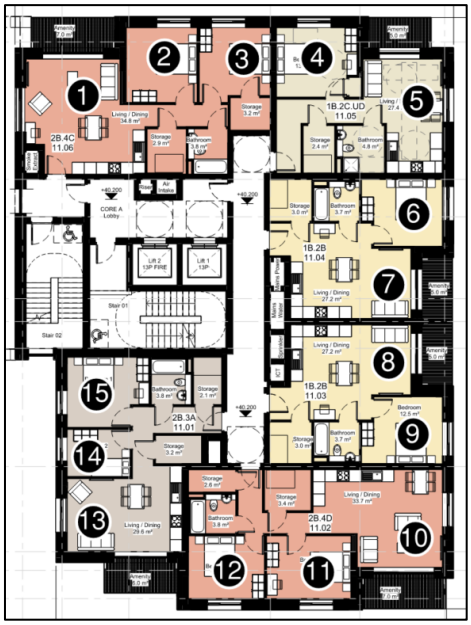


Figure 16: Eleventh Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Eleventh Floor	2BED	1	Liv/Din	100%	Y	100%	Y
		2	Bedroom	100%	Y	74%	Y
		3	Bedroom	100%	Y	97%	Y
	1BED	4	Bedroom	100%	Y	89%	Y
		5	Liv/Din	100%	Y	99%	Y
	1BED	6	Bedroom	100%	Y	91%	Y
		7	Liv/Din	100%	Y	52%	Y
	1BED	8	Liv/Din	100%	Y	48%	N

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Eleventh Floor		9	Bedroom	100%	Y	98%	Y
	2BED	10	Liv/Din	100%	Y	100%	Y
		11	Bedroom	100%	Y	100%	Y
		12	Bedroom	100%	Y	100%	Y
	2BED	13	Liv/Din	100%	Y	100%	Y
		14	Bedroom	100%	Y	100%	Y
		15	Bedroom	100%	Y	98%	Y

Table 14: BR209 Methodology Results (Eleventh Floor)

Legends

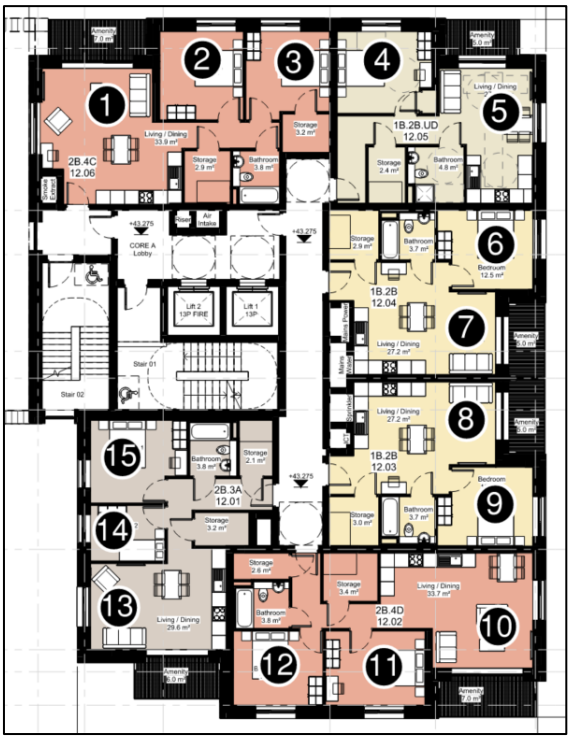


Figure 17: Twelfth Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Twelfth Floor	2BED	1	Liv/Din	100%	Y	100%	Y
		2	Bedroom	100%	Y	75%	Y
		3	Bedroom	100%	Y	97%	Y
	1BED	4	Bedroom	100%	Y	90%	Y
		5	Liv/Din	100%	Y	99%	Y
	1BED	6	Bedroom	100%	Y	91%	Y
		7	Liv/Din	100%	Y	53%	Y
	1BED	8	Liv/Din	100%	Y	49%	N

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Twelfth Floor		9	Bedroom	100%	Y	98%	Y
	2BED	10	Liv/Din	100%	Y	100%	Y
		11	Bedroom	100%	Y	100%	Y
		12	Bedroom	100%	Y	100%	Y
	2BED	13	Liv/Din	100%	Y	100%	Y
		14	Bedroom	100%	Y	100%	Y
		15	Bedroom	100%	Y	98%	Y

Table 15: BR209 Methodology Results (Twelfth Floor)

Legends

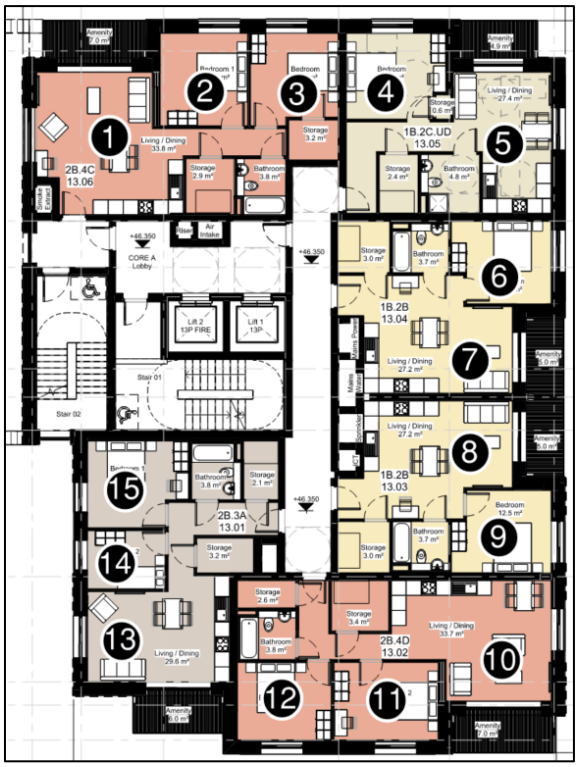


Figure 18: Thirteenth Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Thirteenth Floor	2BED	1	Liv/Din	100%	Y	100%	Y
		2	Bedroom	100%	Y	76%	Y
		3	Bedroom	100%	Y	97%	Y
	1BED	4	Bedroom	100%	Y	92%	Y
		5	Liv/Din	100%	Y	99%	Y
	1BED	6	Bedroom	100%	Y	92%	Y
		7	Liv/Din	100%	Y	53%	Y
	1BED	8	Liv/Din	100%	Y	50%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Thirteenth Floor		9	Bedroom	100%	Y	98%	Y
	2BED	10	Liv/Din	100%	Y	100%	Y
		11	Bedroom	100%	Y	100%	Y
		12	Bedroom	100%	Y	100%	Y
	2BED	13	Liv/Din	100%	Y	100%	Y
		14	Bedroom	100%	Y	100%	Y
		15	Bedroom	100%	Y	98%	Y

Table 16: BR209 Methodology Results (Thirteenth Floor)

Legends

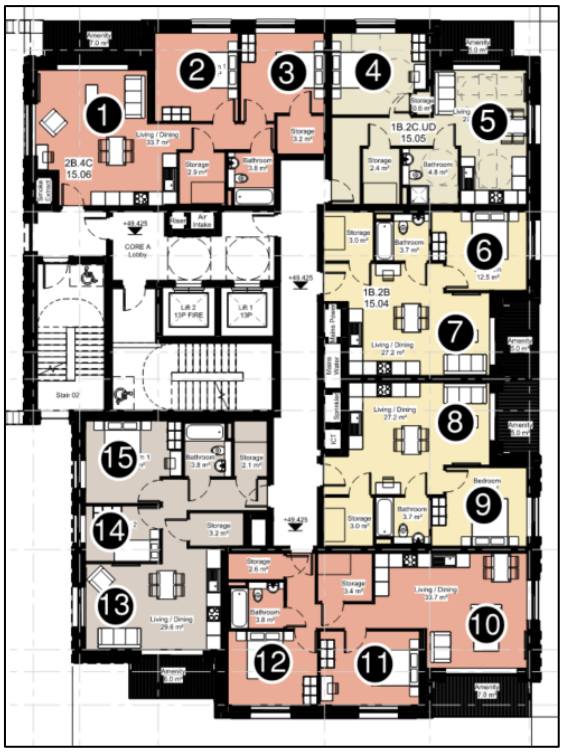


Figure 19: Fourteenth Floor Legend

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Fourteenth Floor	2BED	1	Liv/Din	100%	Y	100%	Y
		2	Bedroom	100%	Y	76%	Y
		3	Bedroom	100%	Y	97%	Y
	1BED	4	Bedroom	100%	Y	92%	Y
		5	Liv/Din	100%	Y	99%	Y
	1BED	6	Bedroom	100%	Y	92%	Y
		7	Liv/Din	100%	Y	54%	Y
	1BED	8	Liv/Din	100%	Y	51%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Fourteenth Floor		9	Bedroom	100%	Y	98%	Y
	2BED	10	Liv/Din	100%	Y	100%	Y
		11	Bedroom	100%	Y	100%	Y
		12	Bedroom	100%	Y	100%	Y
	2BED	13	Liv/Din	100%	Y	100%	Y
		14	Bedroom	100%	Y	100%	Y
		15	Bedroom	100%	Y	98%	Y

Table 17: BR209 Methodology Results (Fourteenth Floor)

Legends

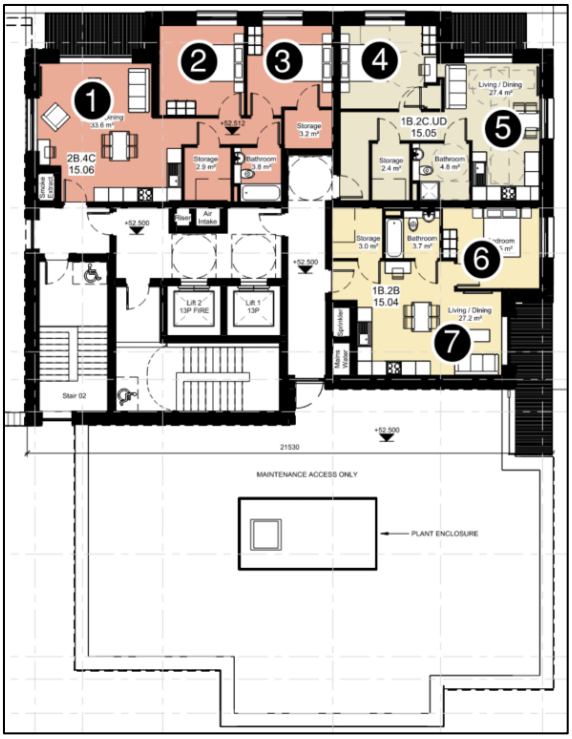


Figure 20: Fifteenth Floor

Results

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Fifteenth Floor	2BED	1	Liv/Din	100%	Y	100%	Y
		2	Bedroom	100%	Y	77%	Y
		3	Bedroom	100%	Y	98%	Y
	1BED	4	Bedroom	100%	Y	94%	Y

Proposed Units – BR209 Standard							
Floor	Unit Type	Legend	Space	2022 Methodology Criterion 1 (%) (Compliance at ≥ 95% @100lux)	2022 Methodology Criterion 1 Compliance	2022 Methodology Criterion 2 (%) (Compliance at ≥ 50% @300lux)	2022 Methodology Criterion 2 Compliance
Fifteenth Floor	1BED	5	Liv/Din	100%	Y	100%	Y
		6	Bedroom	100%	Y	93%	Y
		7	Liv/Din	100%	Y	55%	Y

Table 18: BR209 Methodology Results (Fifteenth Floor)

7 SUNLIGHT & OVERSHADOWING ASSESSMENT TO AMENITY SPACES WITHIN THE DEVELOPMENT

BRE Guide Third Edition (2022) recommend that for external amenity spaces to appear adequately sunlit throughout the year, at least half of the garden or amenity space should receive at least two hours of sunlight on March 21st.

In order to show the sunlight levels within the proposed scheme design, a sunlight study has been carried out for the amenity space surrounding the development.

SUNLIGHT COMMUNAL AMENITY SPACES

The red squares in Figure 21 below illustrate the areas that receive a minimum of 2 hours of sunlight on the 21st of March for the proposed schemes. It is clear that the majority of the communal amenity space receive 2 hours or more of sunlight on March 21st. Therefore, compliance with BRE Guidelines is considered as achieved with regards to amenity space sunlight.

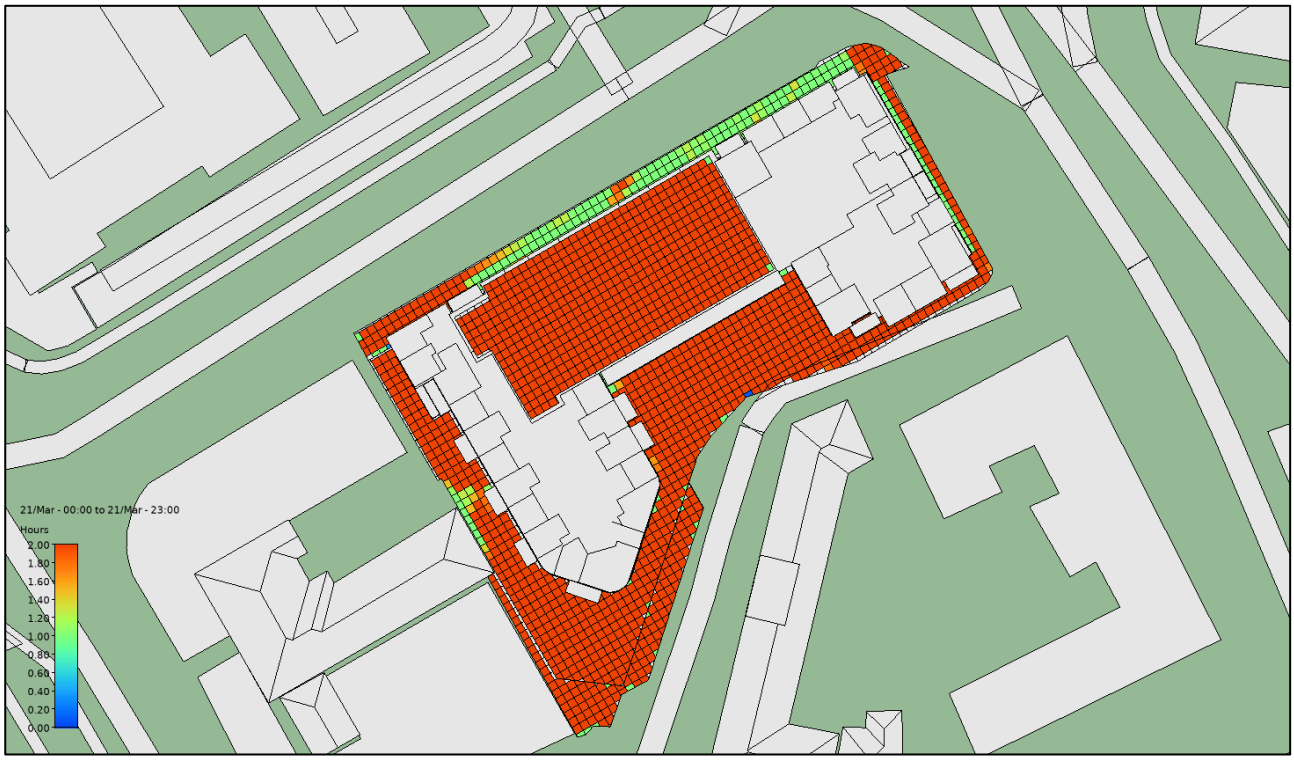


Figure 21: Amenity Spaces (Including Landscape on Seventh Floor) - Hours of Sunlight on March 21st

Figure 22: Amenity Spaces (Excluding Landscape on Seventh Floor) - Hours of Sunlight on March 21st

8 SUNLIGHT ASSESSMENT WITHIN THE PROPOSED DEVELOPMENT (APSH)

In order to assess the amount of sunlight that is received by windows within the proposed development, the Annual Probable Sunlight Hours (APSH) calculation methods as outlined in BRE Guide Third Edition (2022) have been used.

BRE Guidelines outline that 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. BRE Guidelines also state that sunlight is less important in bedrooms and kitchens, however, all windows to occupied rooms within the development have been included within the analysis.

The sunlight values experienced across the development have been assessed against the BRE Guide Third Edition (2022). The 2022 methodology states that windows shall receive a minimum of 1.5 hours of direct sunlight on the test day, March 21st. The 2022 Methodology also sets out a standard for medium (3 hours), and high (4 hours) levels of direct sunlight.

It must be noted that the results within this report should be treated with certain degree of flexibility, based on the following statement in the BRE Guidelines:

"the guide is intended for building designers and their clients, consultants and planning officials. 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 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".

In addition, BRE Guidelines states that "the degree of satisfaction is related to the expectation of sunlight. If a room is necessarily north facing or if the building is in a densely-built urban area, the absence of sunlight is more acceptable than when its exclusion seems arbitrary".

SUNLIGHT ASSESSMENT – (THIRD EDITION METHODOLOGY)

The sunlight values expected across the development are illustrated in the following images. Windows coloured red achieve the high, medium, or minimum standard as outlined in BRE Guide Third Edition (2022) on March 21st.

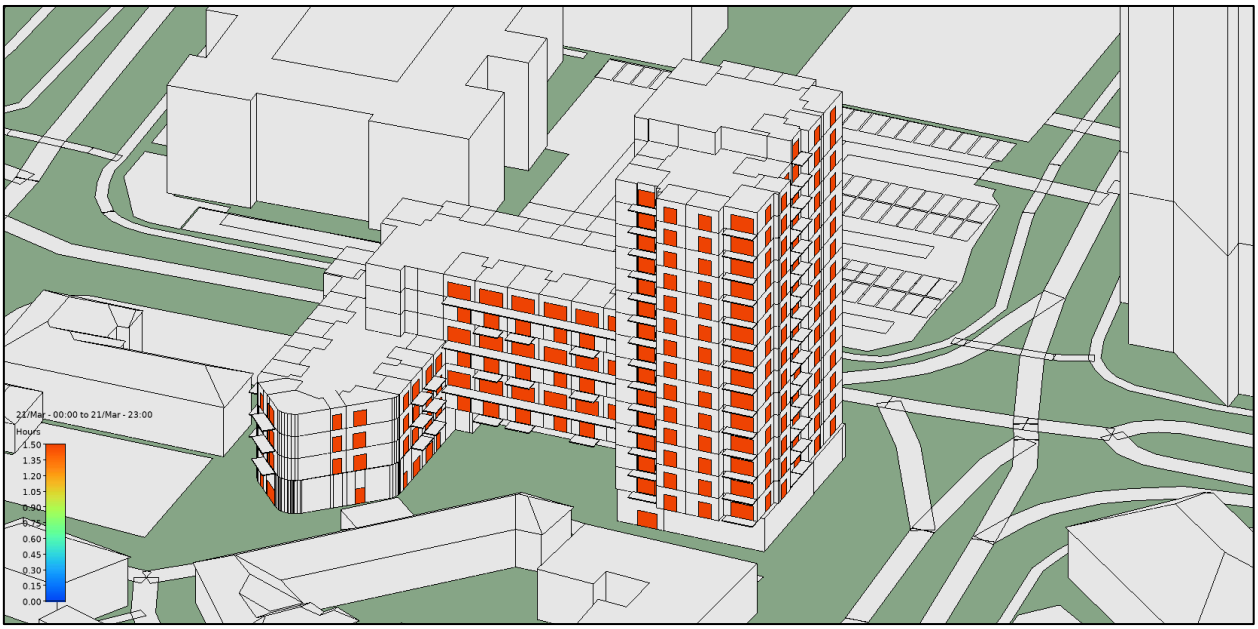


Figure 23: Sunlight Exposure March 21st (2022 Methodology Min Level) – South East Elevation

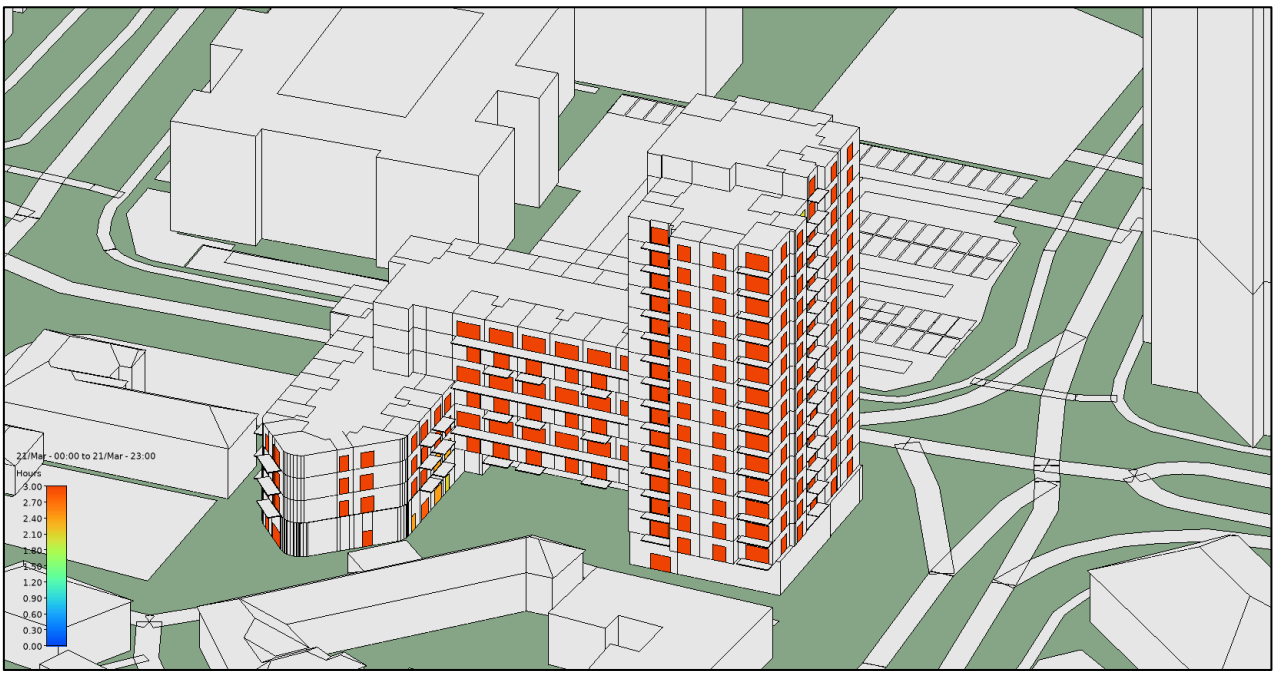


Figure 24: Sunlight Exposure March 21st (2022 Methodology Medium Level) – South East Elevation

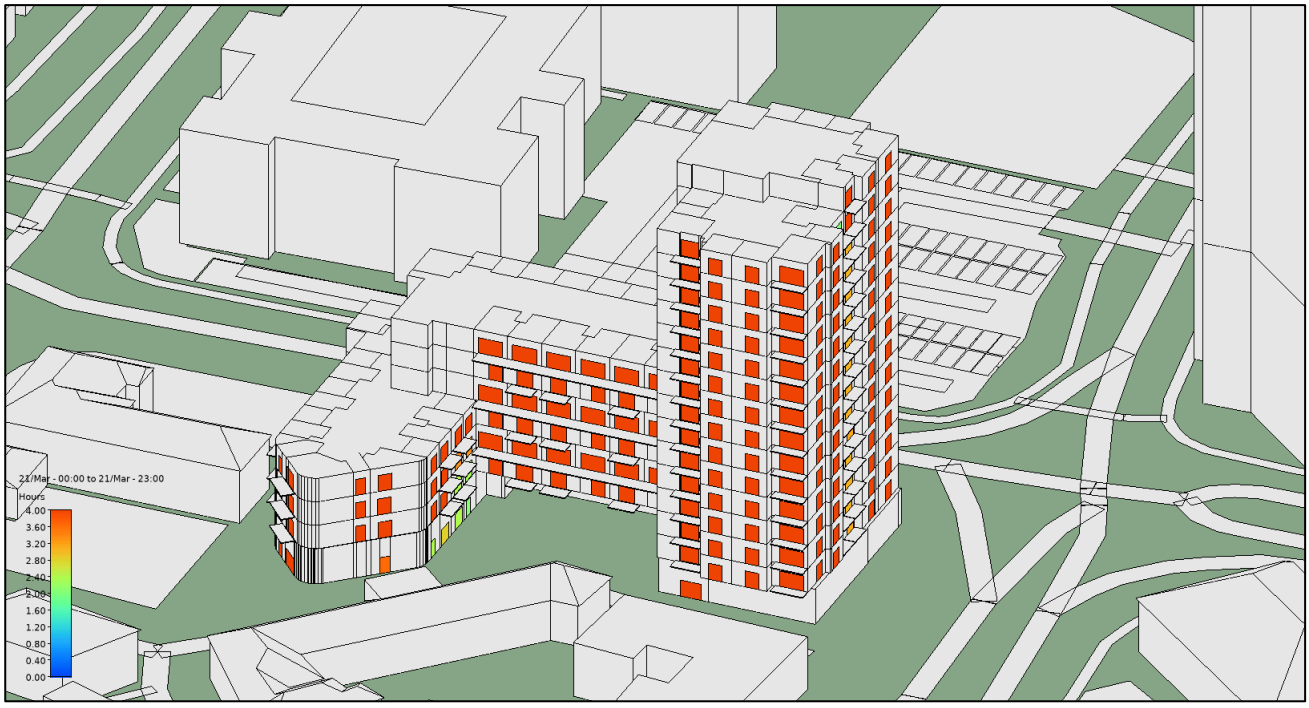


Figure 25: Sunlight Exposure March 21st (2022 Methodology High Level) – South East Elevation

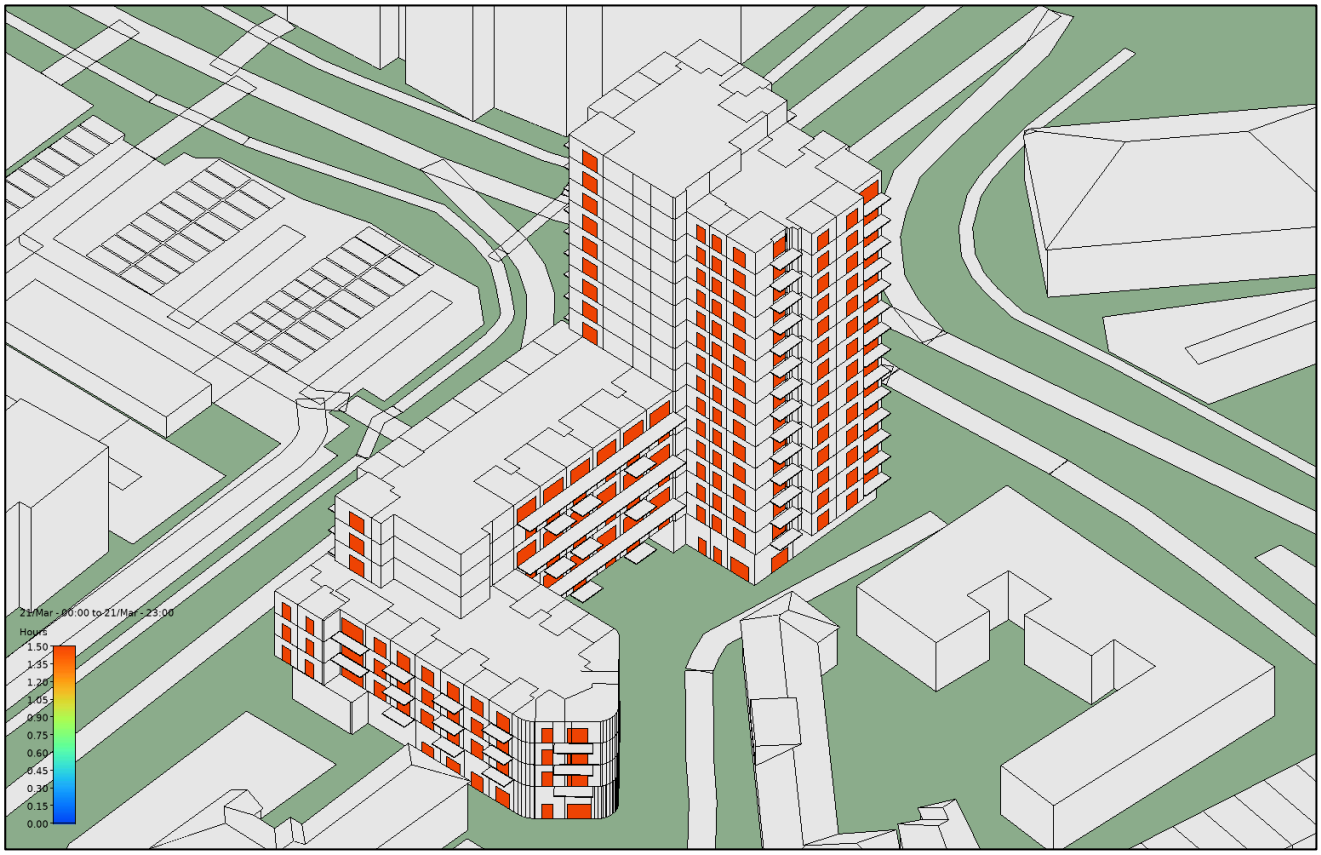


Figure 26: Sunlight Exposure March 21st (2022 Methodology Min Level) – South West Elevation

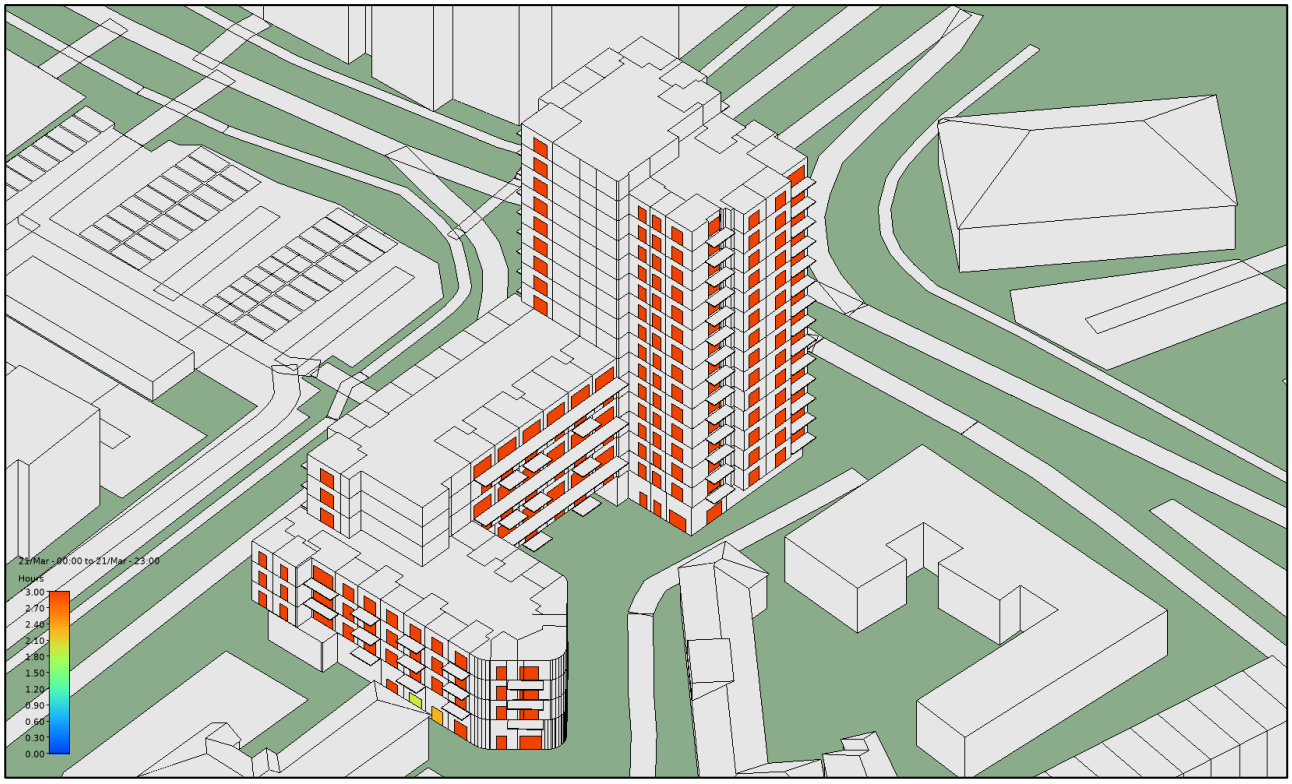


Figure 27: Sunlight Exposure March 21st (2022 Methodology Medium Level) – South West Elevation

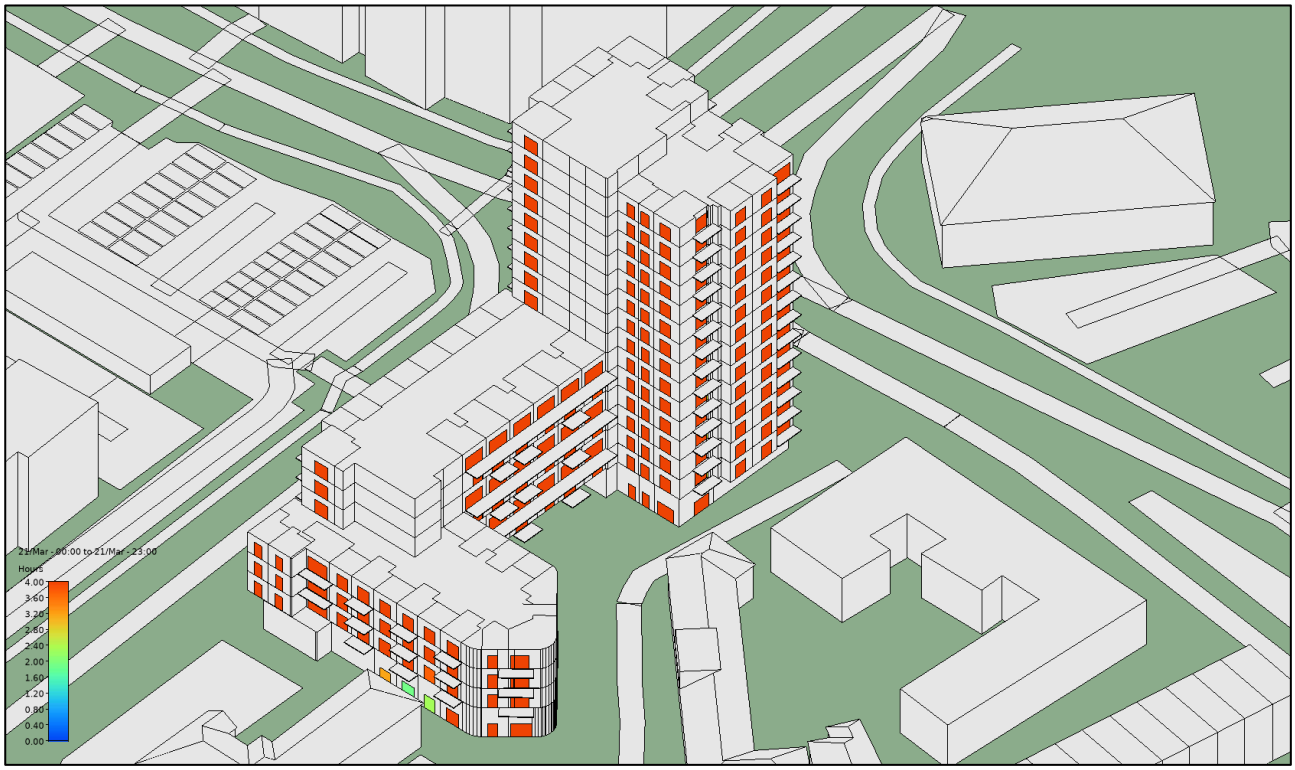


Figure 28: Sunlight Exposure March 21st (2022 Methodology High Level) – South West Elevation

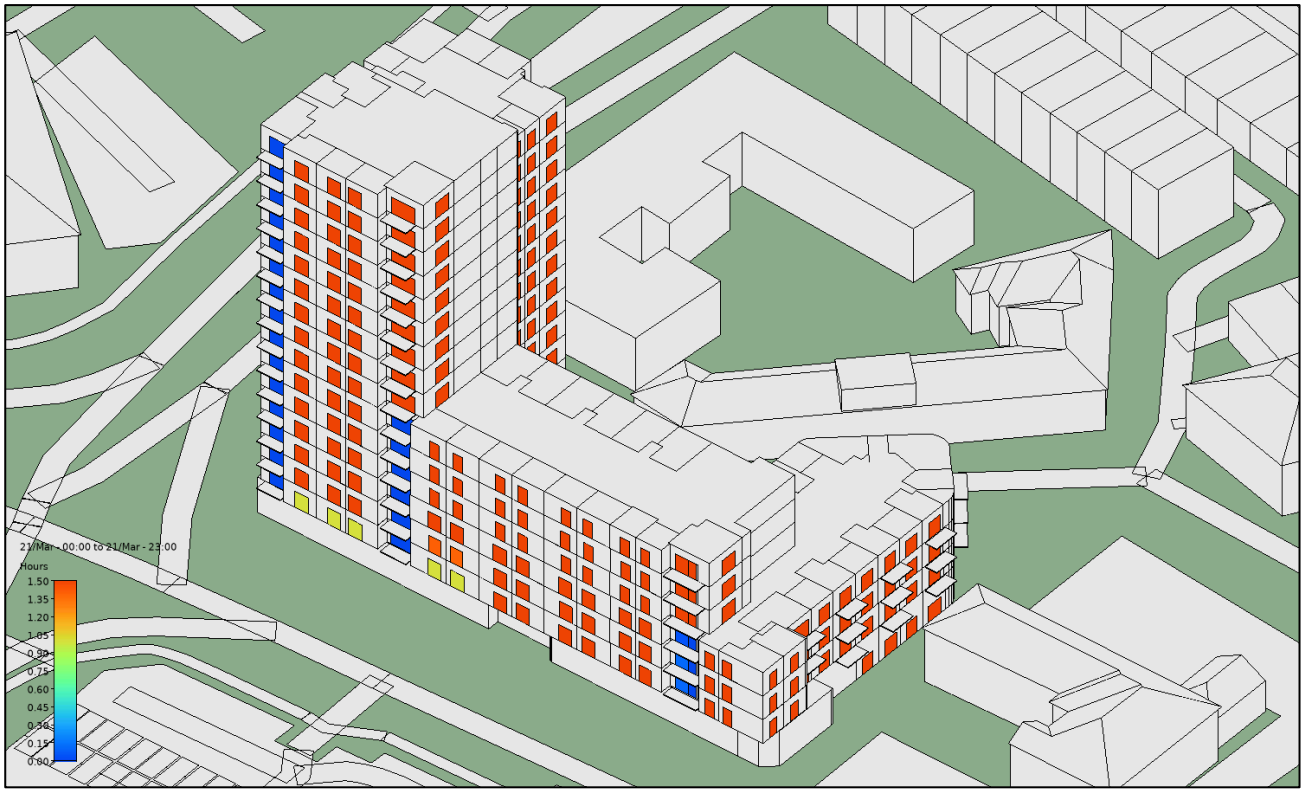


Figure 29: Sunlight Exposure March 21st (2022 Methodology Min Level) – North West Elevation

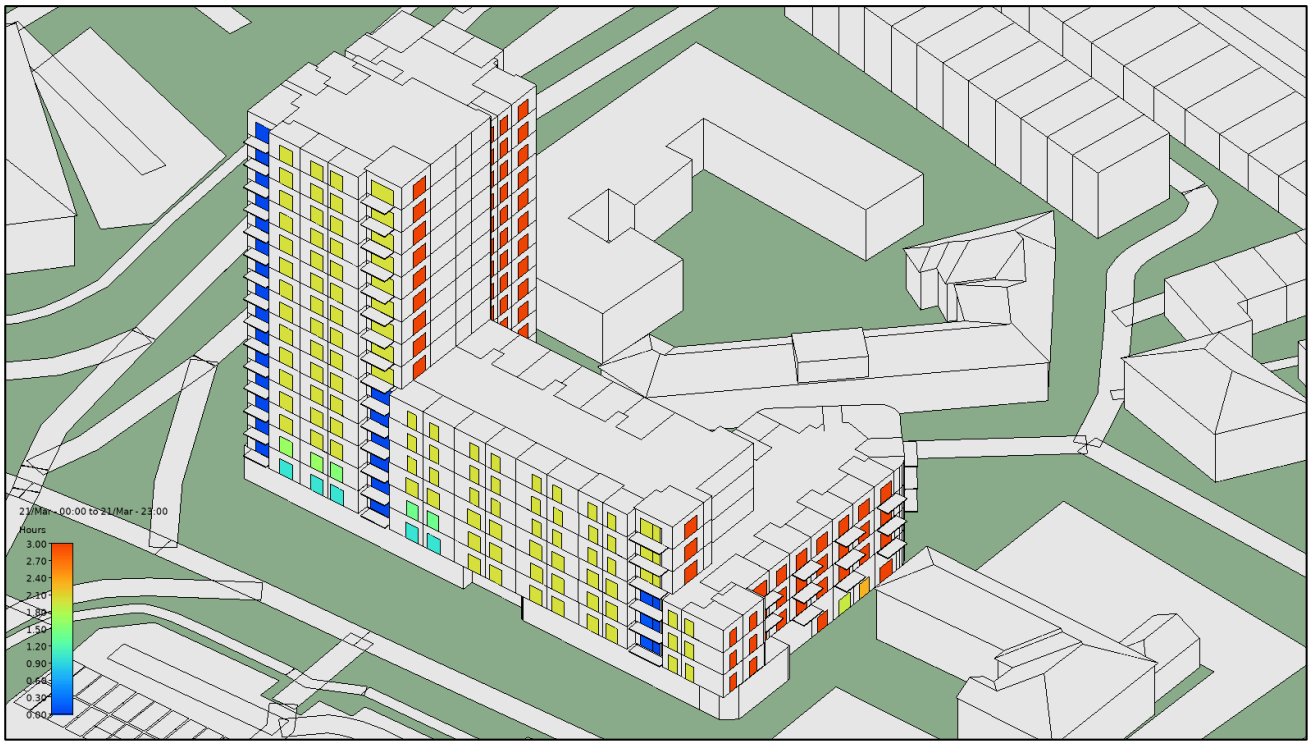


Figure 30: Sunlight Exposure March 21st (2022 Methodology Medium Level) – North West Elevation

Figure 31: Sunlight Exposure March 21st (2022 Methodology High Level) – North West Elevation

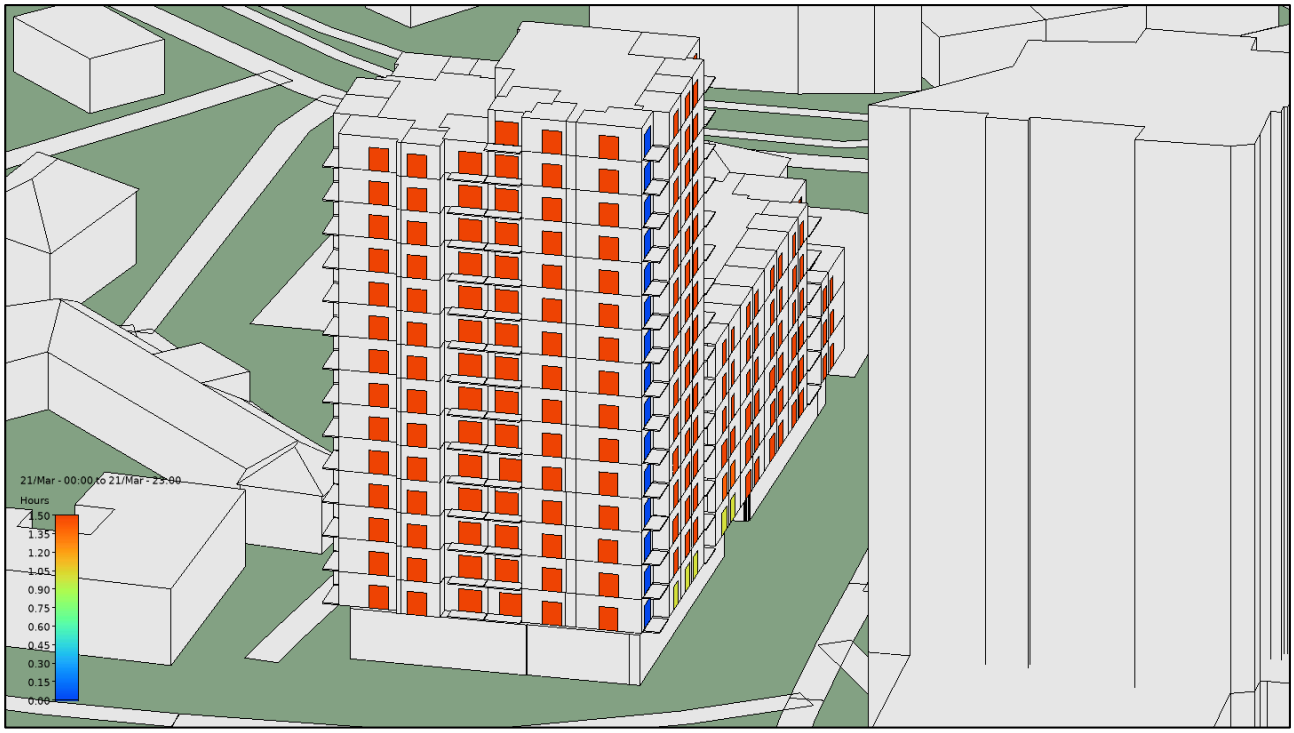


Figure 32: Sunlight Exposure March 21st (2022 Methodology Min Level) – North East Elevation

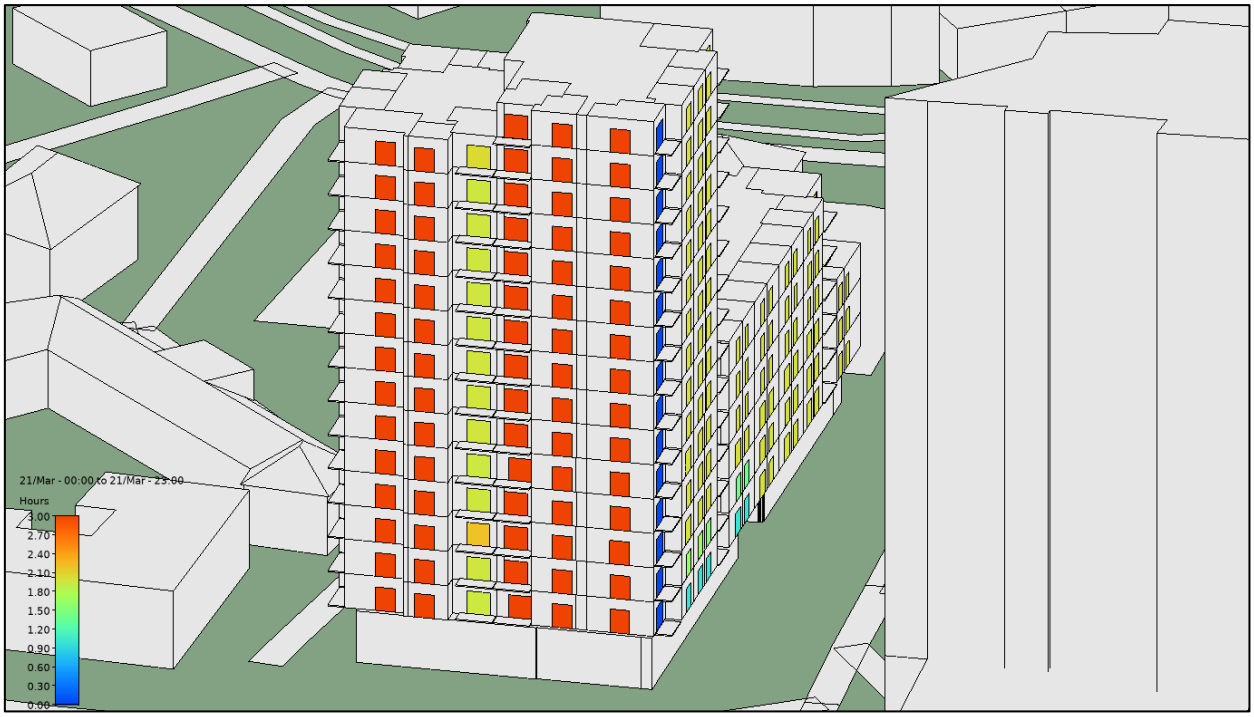


Figure 33: Sunlight Exposure March 21st (2022 Methodology Medium Level) – North East Elevation

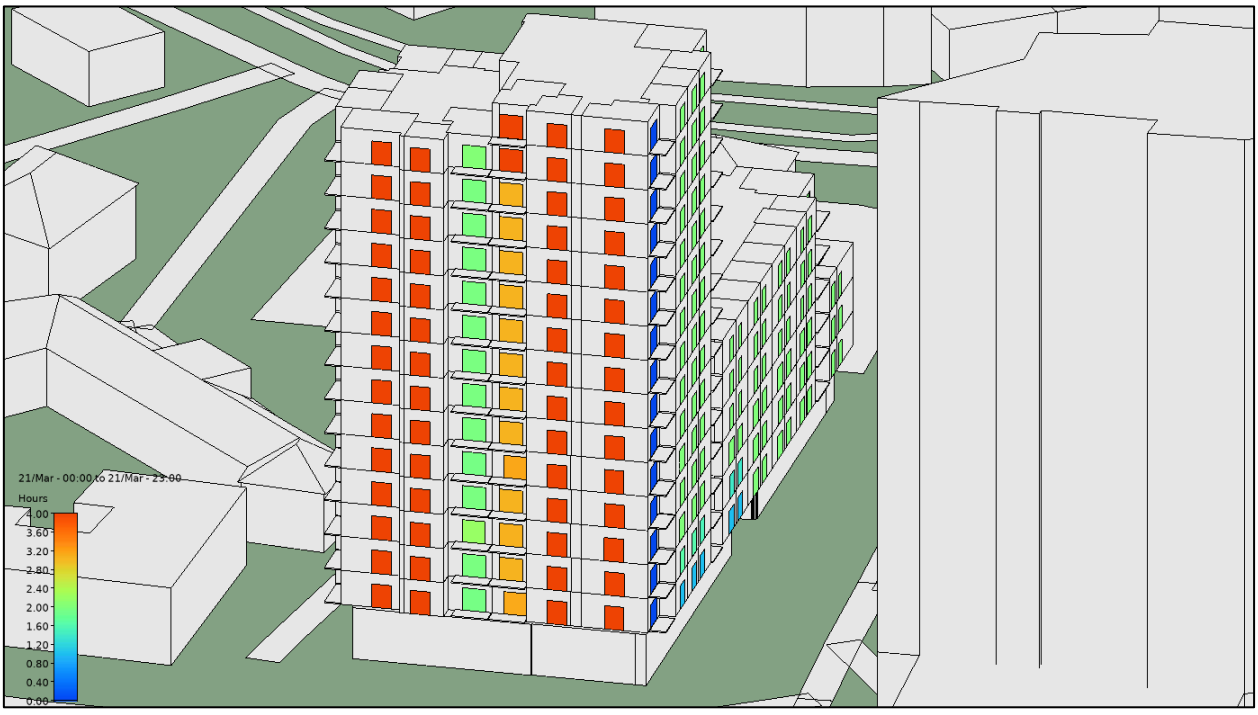


Figure 34: Sunlight Exposure March 21st (2022 Methodology High Level) – North East Elevation

It can be seen in the figures above that the majority of windows exceed the minimum values outlined in the BRE guidance document. Of windows falling short of the BRE guidance is mainly due to the North facing orientation which naturally results in less sunlight exposure due to the path of the sun more so exposing the remaining orientations to sunlight.

9 ASSESSING THE IMPACT ON SURROUNDING PROPERTIES

DAYLIGHT & SUNLIGHT IMPACT METHODOLOGY

As per the BRE Guidelines it is important to safeguard the daylight to nearby buildings, from a proposed development, where a reasonable expectation of daylight is required. The flow matrix below outlines the criteria to be assessed, as per the BRE Guidelines, in order to ascertain any potential impact to adjacent buildings from the proposed development.

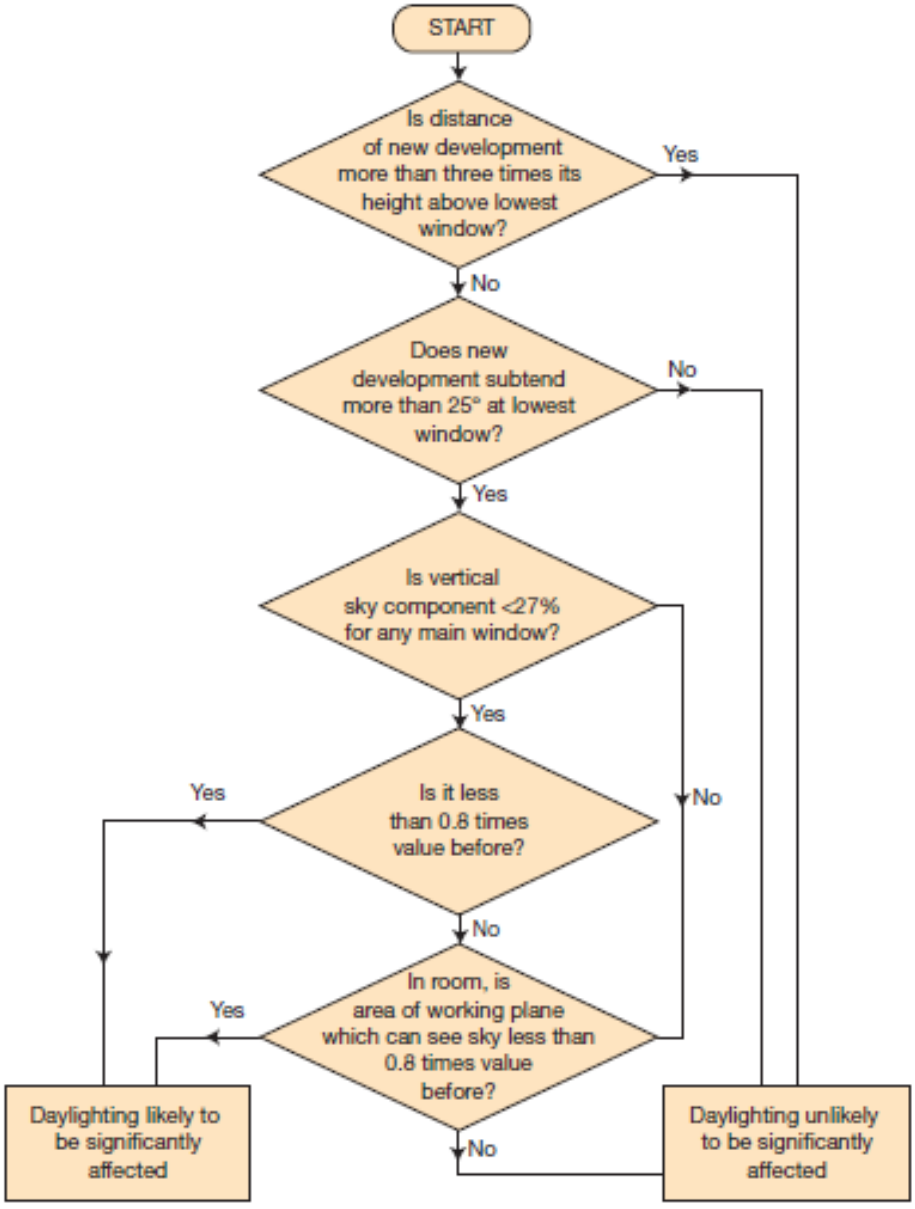


Figure 35: Daylight Assessment Methodology for Adjacent Properties

DISTANCE FROM THE PROPOSED DEVELOPMENT – STEP 1

As per the flow matrix, the loss of light to existing windows is not required to be analysed if the distance of each part of the new development from the existing window is three or more times its height above the centre of the existing windows. Otherwise, BRE guideline provide the following methods for assessing daylight availability.

25° LINE CRITERIA – STEP 2

In the first instance, if a proposed development falls beneath a 25° angle taken from a point 1.6 metres above ground level from any adjacent properties, then the BRE Guidelines say that no further analysis is required in relation to impact on surrounding properties as adequate skylight will still be available. If the proposed development extends beyond the 25° line then further analysis is required (Step 3).

VERTICAL SKY COMPONENT – STEP 3

The following method is known as the Vertical Sky Component (VSC). The VSC calculation is the ratio of the direct sky illuminance falling on the outside of a window, to the simultaneous horizontal illuminance under an unobstructed sky. The BRE Guide sets out two guidelines for the VSC:

- If the VSC at the centre of the existing window exceeds 27% with the new development in place, then enough sky light should still be reaching the existing window;
- If the VSC with the new development in place is both less than 27% and less than 80% its former value, then the reduction in light to the window is likely to be noticeable;
- This means that even if the VSC is less than 27%, as long as the VSC value is still greater than 80% of its former value, this would be acceptable and thus the impact would be considered negligible.

It is important to note that the VSC is a simple geometrical calculation which provides an early indication of the potential for daylight entering the space. However, it does not assess or quantify the actual daylight levels inside the rooms. If the VSC standard is not met on any window, Step 4 is then followed.

NO SKY LINE – STEP 4

This method is the No Sky Line or Daylight Distribution Method. This method assesses the change in position of the No Sky Line between the existing and proposed situations. It does take into account the number and size of windows to a room, but still does not give any qualitative or quantitative assessment of the light in the room, only where sky can or cannot be seen. Thus, as this method is limited, Step 3 is considered more appropriate.

The next two sections on the following pages outline the details of the analysis undertaken in relation to adjacent properties.

IDENTIFYING SENSITIVE RECEPTORS

Prior to following the flow matrix, first the key sensitive receptors around the site need to be identified. According to the BRE Guide, sensitive receptors are described as:

- Habitable rooms in residential buildings, where the occupants have a reasonable expectation of daylight;
- Other sensitive receptors are gardens and open spaces on adjacent properties to the new scheme, excluding public footpaths, front gardens and car parks. In accordance with the BRE Guide, windows are selected as sensitive receptors on the basis of being a habitable room facing the proposed development.

Similarly, amenities and open spaces are selected on the basis of being in the immediate vicinity of the proposed development. The primary purpose of a daylight, sunlight and overshadowing assessment is to determine the likely loss of light to adjacent buildings resulting from the construction of the proposed development.

Therefore, in this case, the proposed development is identified as the potential source of impact. The sensitive receptors identified for this study are windows of habitable rooms facing the site where the occupants have a reasonable expectation of daylight. Table 19 identifies all sensitive receptors analysed, whilst Figure 36 identifies their location.

Development Ref.	Development name	Status
Ref. 1	Residential Houses	Existing
Ref. 2	Residential Houses	Existing
Ref. 3	Residential Houses	Existing
Ref. 4	Mixed Use Development – Residential Apartments	Existing
Ref. 5	Commercial Building	Existing
Ref. 6	Commercial Building	Existing
Ref. 7	Commercial Building	Existing
Ref. 8	Commercial Building	Existing

Table 19: Sensitive Receptors Surrounding the Proposed Development

Ref.5 to 8 have not been included in the analysis as they are commercial properties. According to the BRE guidelines, commercial properties do not require analysis for the adjacent property VSC calculation.

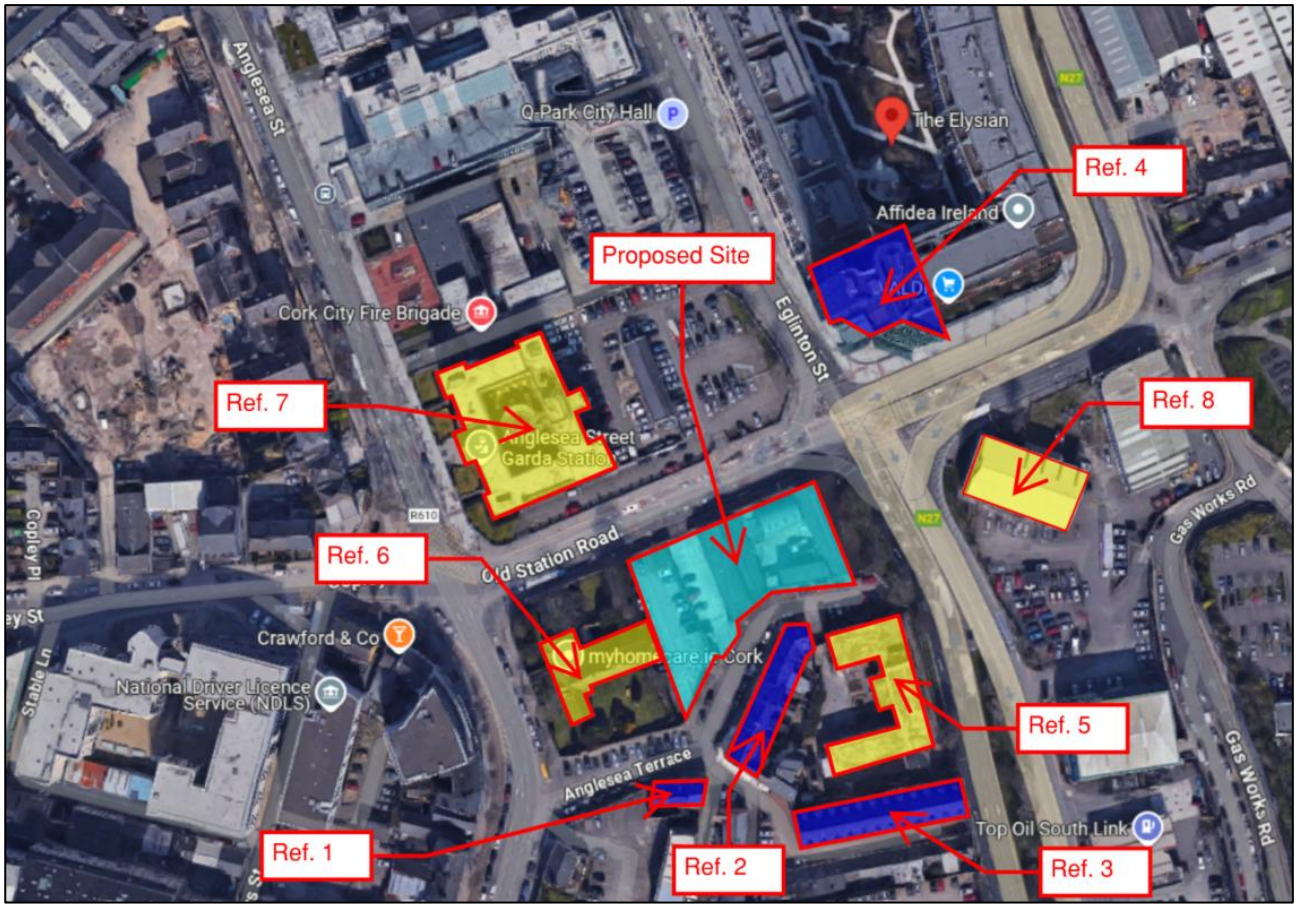


Figure 36: Location of sensitive receptors

DAYLIGHT IMPACT ON SURROUNDING PROPERTIES

25º line criteria

BRE Guidelines state that if a proposed development falls beneath a 25° line taken from a point 1.6 metres above ground level from any adjacent properties, then no impact is perceived, and further analysis is not required. This methodology was followed for this analysis (to assess the impact of the reduction in block heights), as it was followed for the initial assessment for the permitted.

As the sensitivity receptors fall above the 25° line (Step 2), a VSC assessment was then carried out (Step 3).

VSC > 27%

As previously outlined, sensitive receptor ref. 1 to 4 have been selected for VSC analysis. All the windows of adjacent properties were modelled to give a good indication of the daylight impact that will be perceived by sensitive receptor ref. 1 to 4. Since the VSC with the proposed development in place is less than 27% to a few spaces, then additional analysis is required in accordance with BRE Guidelines.

Ref. 1

Figure 37: Location of sensitive receptors – Ref. 1

Window Ref.	Window Legend	VSC Received with Proposed Scheme in Place (%)	Required VSC as per BRE Guidelines	Meets BRE Guidelines	VSC received with the current scenario (Existing) (%)	% of its Former Value	Meets BRE Guidelines (VSC>80% of its Former Value)
Ref. 1	1	31.25%	≥27%	Y	N/A	N/A	NA
	2	31.75%	≥27%	Y	N/A	N/A	NA
	3	29.31%	≥27%	Y	N/A	N/A	NA
	4	31.97%	≥27%	Y	N/A	N/A	NA
	5	32.30%	≥27%	Y	N/A	N/A	NA
	6	30.27%	≥27%	Y	N/A	N/A	NA

Window Ref.	Window Legend	VSC Received with Proposed Scheme in Place (%)	Required VSC as per BRE Guidelines	Meets BRE Guidelines	VSC received with the current scenario (Existing) (%)	% of its Former Value	Meets BRE Guidelines (VSC>80% of its Former Value)
	7	32.59%	≥27%	Y	N/A	N/A	NA
	8	32.79%	≥27%	Y	N/A	N/A	NA
	9	31.01%	≥27%	Y	N/A	N/A	NA

Table 20: VSC Results (Ref. 1)

Ref. 2

Figure 38: Location of sensitive receptors – Ref. 2

Figure 39: Location of sensitive receptors – Ref. 2

Figure 40: Location of sensitive receptors – Ref. 2

Window Ref.	Window Legend	VSC Received with Proposed Scheme in Place (%)	Required VSC as per BRE Guidelines	Meets BRE Guidelines	VSC received with the current scenario (Existing) (%)	% of its Former Value	Meets BRE Guidelines (VSC>80% of its Former Value)
Ref. 2	1	7.16%	≥27%	N	32.49%	22.04%	N
	2	7.20%	≥27%	N	32.40%	22.22%	N
	3	7.05%	≥27%	N	29.23%	24.12%	N
	4	17.50%	≥27%	N	35.72%	48.99%	N
	5	18.96%	≥27%	N	36.45%	52.02%	N
	6	19.99%	≥27%	N	35.64%	56.09%	N
	7	17.14%	≥27%	N	34.59%	49.55%	N
	8	21.41%	≥27%	N	36.03%	59.42%	N
	9	22.19%	≥27%	N	36.76%	60.36%	N
	10	20.18%	≥27%	N	35.53%	56.80%	N
	11	27.79%	≥27%	Y	N/A	N/A	NA
	12	29.39%	≥27%	Y	N/A	N/A	NA
	13	24.64%	≥27%	N	36.34%	67.80%	N
	14	27.14%	≥27%	Y	N/A	N/A	NA
	15	23.13%	≥27%	N	36.36%	63.61%	N
	16	28.57%	≥27%	Y	N/A	N/A	NA
	17	30.83%	≥27%	Y	N/A	N/A	NA
	18	27.72%	≥27%	Y	N/A	N/A	NA
	19	32.07%	≥27%	Y	N/A	N/A	NA
	20	33.03%	≥27%	Y	N/A	N/A	NA
	21	31.17%	≥27%	Y	N/A	N/A	NA
	22	33.15%	≥27%	Y	N/A	N/A	NA
	23	33.94%	≥27%	Y	N/A	N/A	NA

Table 21: VSC Results (Ref. 2)

Ref. 3

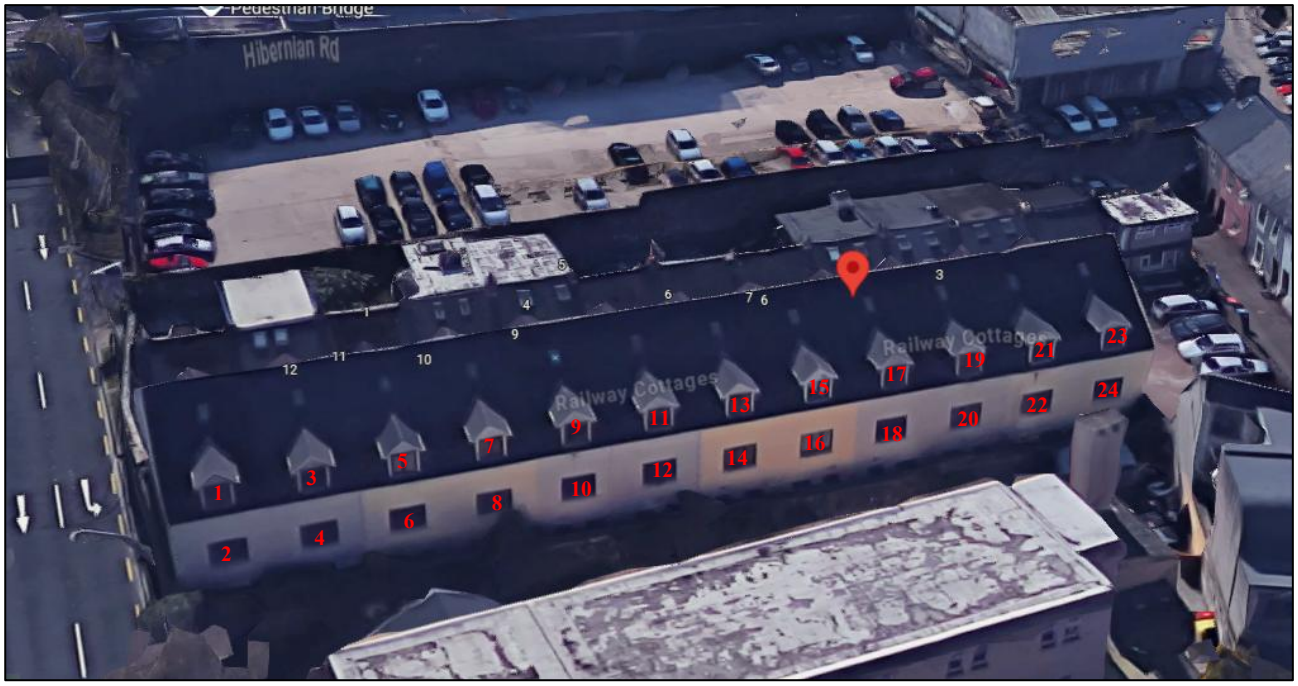


Figure 41: Location of sensitive receptors – Ref. 3

Window Ref.	Window Legend	VSC Received with Proposed Scheme in Place (%)	Required VSC as per BRE Guidelines	Meets BRE Guidelines	VSC received with the current scenario (Existing) (%)	% of its Former Value	Meets BRE Guidelines (VSC>80% of its Former Value)
Ref. 3	1	34.27%	≥27%	Y	N/A	N/A	N/A
	2	33.25%	≥27%	Y	N/A	N/A	N/A
	3	34.37%	≥27%	Y	N/A	N/A	N/A
	4	32.83%	≥27%	Y	N/A	N/A	N/A
	5	33.80%	≥27%	Y	N/A	N/A	N/A
	6	31.92%	≥27%	Y	N/A	N/A	N/A
	7	33.80%	≥27%	Y	N/A	N/A	N/A
	8	31.57%	≥27%	Y	N/A	N/A	N/A
	9	33.60%	≥27%	Y	N/A	N/A	N/A
	10	31.11%	≥27%	Y	N/A	N/A	N/A
	11	33.34%	≥27%	Y	N/A	N/A	N/A
	12	30.74%	≥27%	Y	N/A	N/A	N/A
	13	33.50%	≥27%	Y	N/A	N/A	N/A
	14	30.37%	≥27%	Y	N/A	N/A	N/A
	15	33.48%	≥27%	Y	N/A	N/A	N/A
	16	30.22%	≥27%	Y	N/A	N/A	N/A
	17	33.50%	≥27%	Y	N/A	N/A	NA

Window Ref.	Window Legend	VSC Received with Proposed Scheme in Place (%)	Required VSC as per BRE Guidelines	Meets BRE Guidelines	VSC received with the current scenario (Existing) (%)	% of its Former Value	Meets BRE Guidelines (VSC>80% of its Former Value)
Ref. 3	18	30.20%	≥27%	Y	N/A	N/A	NA
	19	33.70%	≥27%	Y	N/A	N/A	NA
	20	30.24%	≥27%	Y	N/A	N/A	NA
	21	33.56%	≥27%	Y	N/A	N/A	NA
	22	29.97%	≥27%	Y	N/A	N/A	NA
	23	33.77%	≥27%	Y	N/A	N/A	NA
	24	30.07%	≥27%	Y	N/A	N/A	NA

Table 22: VSC Results (Ref. 3)

Ref. 4

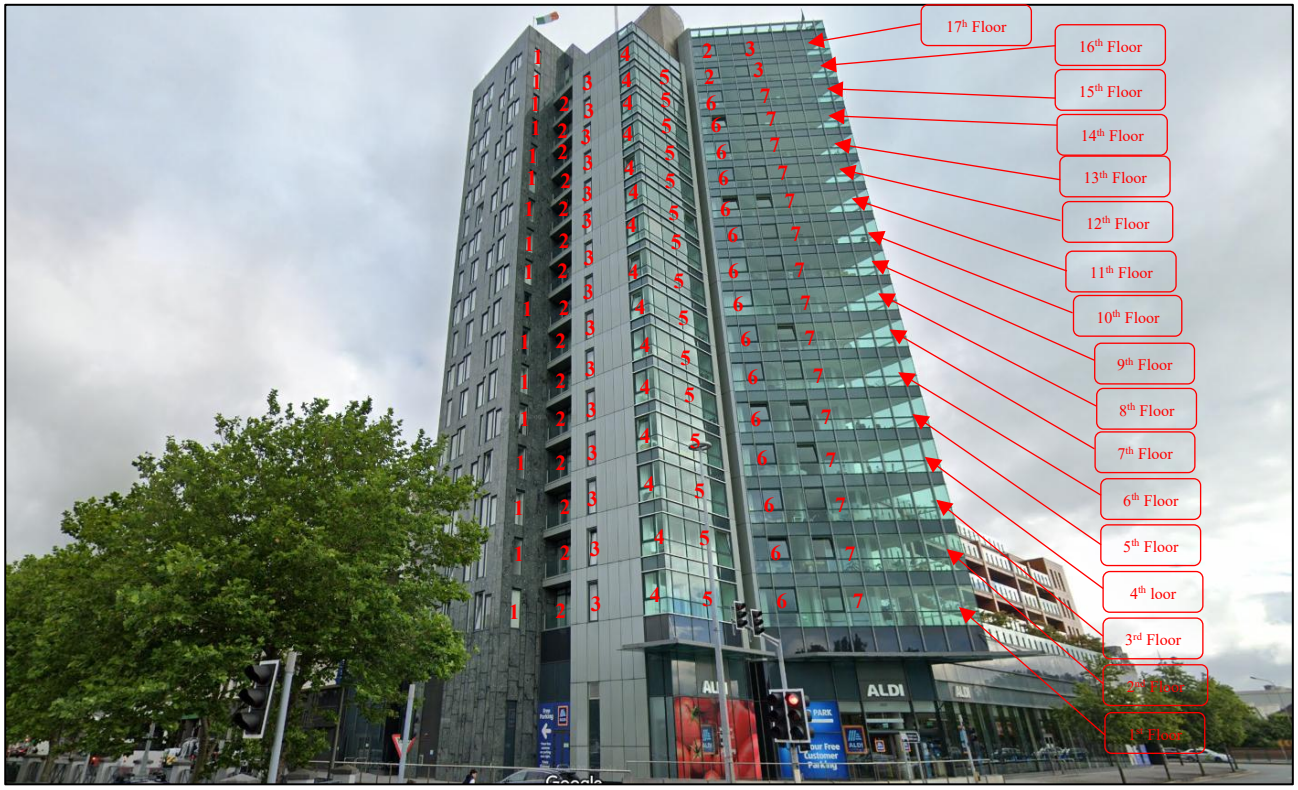


Figure 42: Location of sensitive receptors – Ref. 4

Window Ref.	Window Legend	VSC Received with Proposed Scheme in Place (%)	Required VSC as per BRE Guidelines	Meets BRE Guidelines	VSC received with the current scenario (Existing) (%)	% of its Former Value	Meets BRE Guidelines (VSC>80% of its Former Value)
Ref. 4 (1st Floor)	1	27.13%	≥27%	Y	N/A	N/A	N/A
	2	27.33%	≥27%	Y	N/A	N/A	N/A
	3	30.49%	≥27%	Y	N/A	N/A	N/A
	4	32.24%	≥27%	Y	N/A	N/A	N/A
	5	31.27%	≥27%	Y	N/A	N/A	N/A
	6	29.66%	≥27%	Y	N/A	N/A	N/A
	7	31.76%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (2nd Floor)	1	27.48%	≥27%	Y	N/A	N/A	N/A
	2	27.66%	≥27%	Y	N/A	N/A	N/A
	3	31.92%	≥27%	Y	N/A	N/A	N/A
	4	32.99%	≥27%	Y	N/A	N/A	N/A
	5	31.84%	≥27%	Y	N/A	N/A	N/A
	6	30.45%	≥27%	Y	N/A	N/A	N/A
	7	32.27%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (3rd Floor)	1	27.65%	≥27%	Y	N/A	N/A	N/A
	2	27.95%	≥27%	Y	N/A	N/A	N/A
	3	32.71%	≥27%	Y	N/A	N/A	N/A
	4	34.49%	≥27%	Y	N/A	N/A	N/A
	5	32.33%	≥27%	Y	N/A	N/A	N/A
	6	31.73%	≥27%	Y	N/A	N/A	N/A
	7	33.50%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (4th Floor)	1	27.41%	≥27%	Y	N/A	N/A	N/A
	2	28.47%	≥27%	Y	N/A	N/A	N/A
	3	33.42%	≥27%	Y	N/A	N/A	N/A
	4	34.36%	≥27%	Y	N/A	N/A	N/A
	5	32.57%	≥27%	Y	N/A	N/A	N/A
	6	32.42%	≥27%	Y	N/A	N/A	N/A
	7	34.11%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (5th Floor)	1	27.95%	≥27%	Y	N/A	N/A	N/A
	2	28.48%	≥27%	Y	N/A	N/A	N/A
	3	33.93%	≥27%	Y	N/A	N/A	N/A
	4	35.48%	≥27%	Y	N/A	N/A	N/A
	5	33.51%	≥27%	Y	N/A	N/A	N/A
	6	32.66%	≥27%	Y	N/A	N/A	N/A
	7	34.68%	≥27%	Y	N/A	N/A	N/A
	1	28.53%	≥27%	Y	N/A	N/A	N/A

Window Ref.	Window Legend	VSC Received with Proposed Scheme in Place (%)	Required VSC as per BRE Guidelines	Meets BRE Guidelines	VSC received with the current scenario (Existing) (%)	% of its Former Value	Meets BRE Guidelines (VSC>80% of its Former Value)
Ref. 4 (6th Floor)	2	29.26%	≥27%	Y	N/A	N/A	N/A
	3	33.93%	≥27%	Y	N/A	N/A	N/A
	4	35.95%	≥27%	Y	N/A	N/A	N/A
	5	33.68%	≥27%	Y	N/A	N/A	N/A
	6	33.71%	≥27%	Y	N/A	N/A	N/A
	7	35.27%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (7th Floor)	1	29.31%	≥27%	Y	N/A	N/A	N/A
	2	29.64%	≥27%	Y	N/A	N/A	N/A
	3	34.89%	≥27%	Y	N/A	N/A	N/A
	4	36.43%	≥27%	Y	N/A	N/A	N/A
	5	34.69%	≥27%	Y	N/A	N/A	N/A
	6	34.06%	≥27%	Y	N/A	N/A	N/A
	7	35.67%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (8th Floor)	1	29.59%	≥27%	Y	N/A	N/A	N/A
	2	30.00%	≥27%	Y	N/A	N/A	N/A
	3	35.05%	≥27%	Y	N/A	N/A	N/A
	4	36.87%	≥27%	Y	N/A	N/A	N/A
	5	34.51%	≥27%	Y	N/A	N/A	N/A
	6	34.73%	≥27%	Y	N/A	N/A	N/A
	7	36.67%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (9th Floor)	1	30.13%	≥27%	Y	N/A	N/A	N/A
	2	30.06%	≥27%	Y	N/A	N/A	N/A
	3	35.53%	≥27%	Y	N/A	N/A	N/A
	4	37.64%	≥27%	Y	N/A	N/A	N/A
	5	35.49%	≥27%	Y	N/A	N/A	N/A
	6	34.98%	≥27%	Y	N/A	N/A	N/A
	7	37.33%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (10th Floor)	1	30.76%	≥27%	Y	N/A	N/A	N/A
	2	30.56%	≥27%	Y	N/A	N/A	N/A
	3	36.03%	≥27%	Y	N/A	N/A	N/A
	4	37.34%	≥27%	Y	N/A	N/A	N/A
	5	36.04%	≥27%	Y	N/A	N/A	N/A
	6	35.93%	≥27%	Y	N/A	N/A	N/A
	7	37.46%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (11th Floor)	1	30.90%	≥27%	Y	N/A	N/A	N/A
	2	30.71%	≥27%	Y	N/A	N/A	N/A

Window Ref.	Window Legend	VSC Received with Proposed Scheme in Place (%)	Required VSC as per BRE Guidelines	Meets BRE Guidelines	VSC received with the current scenario (Existing) (%)	% of its Former Value	Meets BRE Guidelines (VSC>80% of its Former Value)
Ref. 4 (11th Floor)	3	36.14%	≥27%	Y	N/A	N/A	N/A
	4	38.33%	≥27%	Y	N/A	N/A	N/A
	5	36.44%	≥27%	Y	N/A	N/A	N/A
	6	36.33%	≥27%	Y	N/A	N/A	N/A
	7	38.48%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (12th Floor)	1	30.94%	≥27%	Y	N/A	N/A	N/A
	2	30.97%	≥27%	Y	N/A	N/A	N/A
	3	36.51%	≥27%	Y	N/A	N/A	N/A
	4	38.48%	≥27%	Y	N/A	N/A	N/A
	5	36.87%	≥27%	Y	N/A	N/A	N/A
	6	36.92%	≥27%	Y	N/A	N/A	N/A
	7	39.05%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (13th Floor)	1	30.99%	≥27%	Y	N/A	N/A	N/A
	2	31.38%	≥27%	Y	N/A	N/A	N/A
	3	36.70%	≥27%	Y	N/A	N/A	N/A
	4	38.97%	≥27%	Y	N/A	N/A	N/A
	5	37.28%	≥27%	Y	N/A	N/A	N/A
	6	37.19%	≥27%	Y	N/A	N/A	N/A
	7	39.25%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (14th Floor)	1	31.97%	≥27%	Y	N/A	N/A	N/A
	2	31.24%	≥27%	Y	N/A	N/A	N/A
	3	36.91%	≥27%	Y	N/A	N/A	N/A
	4	38.51%	≥27%	Y	N/A	N/A	N/A
	5	37.46%	≥27%	Y	N/A	N/A	N/A
	6	37.49%	≥27%	Y	N/A	N/A	N/A
	7	39.21%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (15th Floor)	1	34.97%	≥27%	Y	N/A	N/A	N/A
	2	31.44%	≥27%	Y	N/A	N/A	N/A
	3	37.06%	≥27%	Y	N/A	N/A	N/A
	4	38.84%	≥27%	Y	N/A	N/A	N/A
	5	37.45%	≥27%	Y	N/A	N/A	N/A
	6	38.47%	≥27%	Y	N/A	N/A	N/A
	7	39.47%	≥27%	Y	N/A	N/A	N/A
Ref. 4 (16th Floor)	1	37.62%	≥27%	Y	N/A	N/A	N/A
	2	39.45%	≥27%	Y	N/A	N/A	N/A
	3	39.48%	≥27%	Y	N/A	N/A	N/A

Window Ref.	Window Legend	VSC Received with Proposed Scheme in Place (%)	Required VSC as per BRE Guidelines	Meets BRE Guidelines	VSC received with the current scenario (Existing) (%)	% of its Former Value	Meets BRE Guidelines (VSC>80% of its Former Value)
Ref. 4 (17th Floor)	1	39.06%	≥27%	Y	N/A	N/A	N/A
	2	39.53%	≥27%	Y	N/A	N/A	N/A
	3	39.56%	≥27%	Y	N/A	N/A	N/A

Table 23: VSC Results (Ref. 4)

Average Daylight Factor

In order to demonstrate that the surrounding properties classified as impacted by the proposed development will continue to receive good levels of daylight, a more detailed assessment on internal daylight levels (beyond the VSC analysis outlined in the previous section) has been carried out. This method not only considers the amount of sky visible from the vertical face of the window, but also the window size, room size and room use. It gives guidance as to the qualitative and quantitative change in daylight. Parameters used for the calculations are outlined in Table 1.

This step is not typically recommended for assessing the impact to adjacent properties because there is generally not enough information of the surrounding properties available. The selected apartments assessed under the average daylight factor method have shown that the units in questions will achieve sufficient levels of daylight once the Anglesea Terrace residential development is in place.

To provide an indication of the expected daylight levels within the surrounding properties, a sample of rooms/houses that fail to meet the Vertical Sky Component (VSC) criteria has been selected for analysis. The 'worst-case' rooms/houses are those located in close proximity to the proposed development and situated at lower levels. In this case, Ref. 2 has been selected for analysis, as it is the only property with windows facing the proposed development that do not meet the VSC requirements, as shown below.

Figure 43: Location of sensitive receptors – Ref. 2 (Rooms Selected for ADF Analysis)

Figure 44: Location of sensitive receptors – Ref. 2 (Rooms Selected for ADF Analysis)

Space	Space Type	BS 8206 ADF requirement (%)	ADF results (%)	Meets minimum BS 8206 ADF criteria
Room 1	Bedroom	1%	1.34%	Y
Room 2	Bedroom	1%	1.24%	Y
Room 3	Liv/Din	2%	1.23%	N
Room 4	Bedroom	1%	2.20%	Y
Room 5	Bedroom	1%	1.73%	Y
Room 6	Bedroom	1%	1.93%	Y
Room 7	Liv/Din	2%	1.72%	N
Room 8	Bedroom	1%	1.97%	Y
Room 9	Bedroom	1%	1.92%	Y
Room 10	Liv/Din	2%	1.91%	N
Room 11	Bedroom	1%	2.19%	Y
Room 12	Liv/Din	2%	3.48%	Y

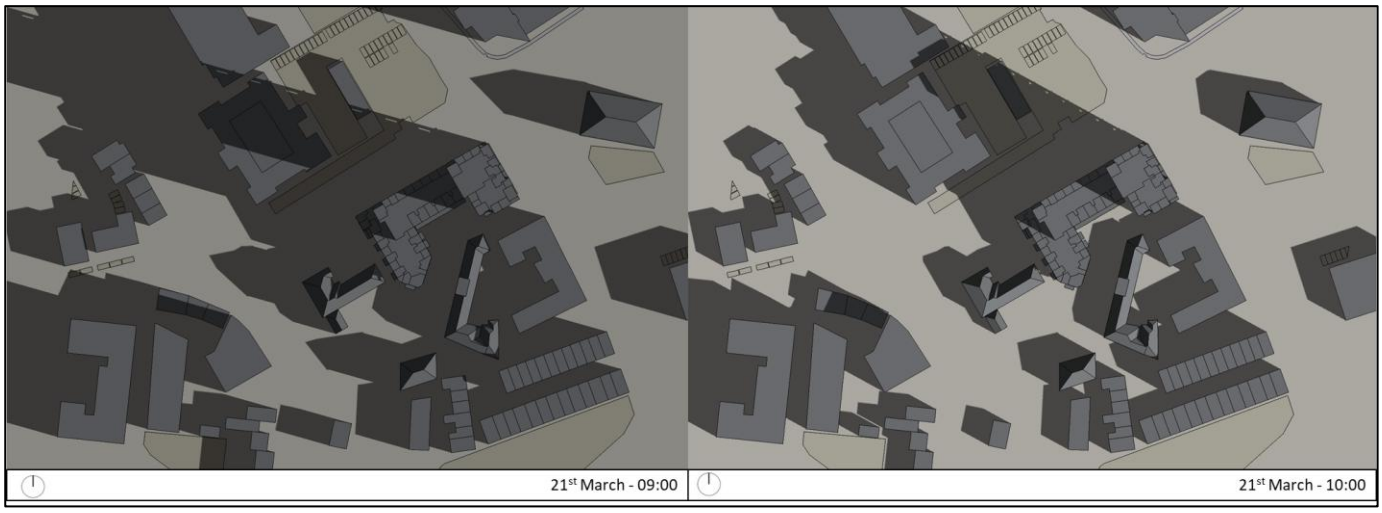
Table 24: ADF Results (Ref. 2)

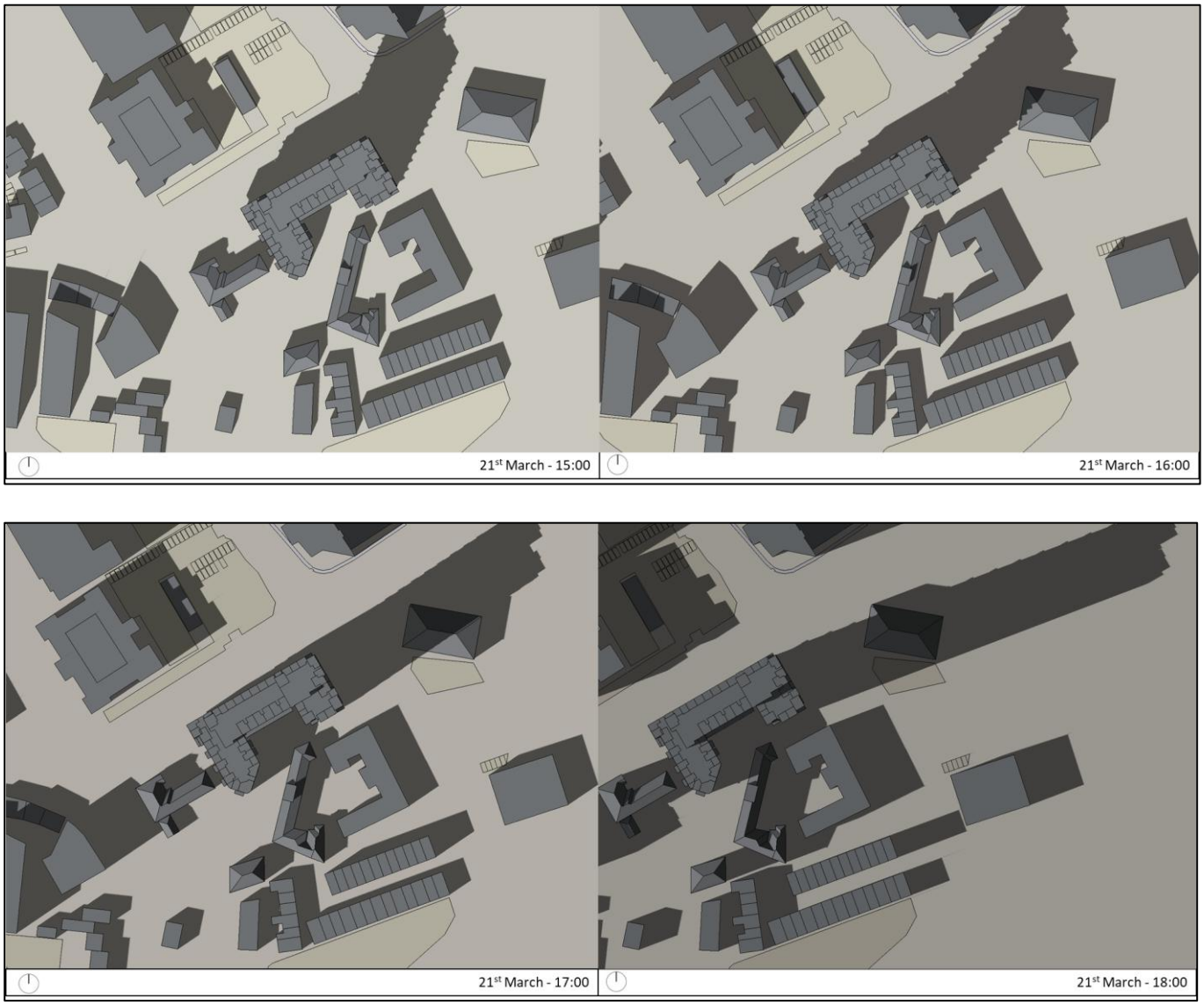
All adjacent properties (apart from few spaces) selected for analysis have achieved the minimum ADF level target set out as per the BR206 guidelines. Therefore, it can be shown that sufficient levels of daylight will still be achieved once the proposed development is constructed.

As the site is located within an established compact, urban area, on zoned residential lands, it represents a prime opportunity to deliver compact and sustainable development in line with national and local planning policy. It is generally accepted in urban planning that a certain level of impact, particularly in relation to daylight and sunlight is unavoidable in high density urban environments. In this case, there should be a balanced and flexible approach where there is a significant need to optimise land use in serviced urban areas and the objective of achieving urban regeneration and

compact growth as articulated in Section 5.3.7 of the 2024 Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities which state that: *"In drawing conclusions in relation to daylight performance, planning authorities must weigh up the overall quality of the design and layout of the scheme and the measures proposed to maximise daylight provision, against the location of the site and the general presumption in favour of increased scales of urban residential development."*

10 OVERSHADOWING IMPACT TO PROPERTIES




21st March - 15:00
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21st March - 18:00

11 CONCLUSION

Anglesea Terrace residential development has been analysed in order to determine the following:

- The daylight levels within the living and bedroom areas throughout the proposed units within the development;
- The quality of amenity space being provided as part of the development, in relation to sunlight;
- The impact of the amended scheme to the adjacent properties surrounding the proposed development.

Calculations and methodology used are in accordance with BRE Guidelines for daylight and sunlight and based on the Building Research Establishments "Site Layout Planning for Daylight and Sunlight: A Good Practice Guide" by PJ Littlefair, 2022 Third Edition.

"The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather that constrain the designer. Although it gives numeral guidelines these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design"

Internal Daylight

The analysis confirms that the majority of spaces not only meet but greatly exceed the recommendations outlined within the Third Edition (2022) methodology, 99.7% for Criterion 1 and 93.5% for Criterion 2 within the proposed development has been achieved.

Throughout the development, comfortable and desirable spaces have been designed to enhance the opportunity for improved daylight levels and extensive glazing to every room enabling deep daylight penetration and providing enhanced views to landscaped open spaces.

Sunlight

Sunlight analysis has shown that excellent levels of amenity sunlight will be achieved within the proposed development. The vast majority of all amenity spaces achieved the 2 hours or greater sunlight on March 21st - thus complying with BRE Guidelines.

Overshadowing

The overshadowing images have shown that there is a negligible impact to the surrounding units when the proposed schemes are assessed on the 21st March test day.

Impact to neighbouring properties

Due to the unique positioning and height of the proposed development relative to adjacent properties, there is an impact on the Vertical Sky Component (VSC) assessment to some of the adjacent properties. As a result, several windows in the neighbouring residential properties do not meet the VSC requirements outlined in the

BRE guidelines. In order to better understand the impacts, a full internal daylight assessment was carried out on selected spaces within adjacent properties to ascertain daylight levels achieved with the proposed scheme in place. Results from this additional internal daylight assessments have confirmed that sufficient daylight levels can still be maintained achieved except few spaces with the adjacent spaces considered impacted by the proposed development.

However, the design team have explored and implemented the following measures to mitigate the impact on neighbouring properties.

- The capacity study for the site showed a building of 8 -18 floors. The overall height and massing of the latest design has been reduced to a 4 / 7 / 16 storey profile to reduce negative impacts on the adjacent buildings;
- The Western portion of the building is limited to 4 storeys to be respectful to the adjacent Anglesea terrace residences;
- Residential use is positioned along Anglesea Terrace in a parallel footprint to be respectful of the existing adjacent residential buildings and enhance the street environment.
- The New development positions the tower at a point on the site furthest away from the Anglesea Terrace Residences;
- The building creates a u-Shaped footprint in a Northerly direction away from Anglesea Terrace to create an attractive public amenity that is accessible off the street and can be accessed by all. This improves the public realm offering in the Cul De Sac;
- Lighter toned façade materials will be explored to improve light reflectivity to the street environment and the adjacent anglesea terrace residence facades;
- The site has a limited footprint, and is zoned to target a density of over 100 u/ha as set out in the spatial development framework. This, paired with the aspect/nature of the site, leaves the design team limited options in terms of configuring the overall mass of the building.

12 VERIFICATION

This report was compiled and verified by:

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