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DAYLIGHT & SUNLIGHT

INTERNAL DAYLIGHT, SUNLIGHT AND OVERSHADOWING REPORT

Summerhill Road, Dunboyne, Co. Meath

Solkerry Ventures Limited

14 August 2026

GIA No: **23176**

PROJECT DATA:

Client	**Solkerry Ventures Limited**
Architect	**JFA Architects**
Project Title	**Summerhill Road, Dunboyne, Co. Meath**
Project Number	**23176**

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Prepared by	**RL**
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1 EXECUTIVE SUMMARY

The purpose of this report is to ascertain whether the Proposed Residential Development at Summerhill Road located in Dunboyne, Co. Meath will provide adequate daylight and sunlight amenity to the future residents. The Proposed Development compromises of 170 no. residential houses, 52 units within duplex typologies and apartment block A containing 26 units.

The assessments within this report are based on the methodology and criteria set out in the 2022 edition of the BRE Guidelines and BS EN 17037:2018 (including the UK National Annex).

The report contains the final assessments undertaken for a representative selection of duplex and apartment units as well as the proposed public and communal open space.

The representative sample of units comprises a selection of each duplex typology and the Ground and First floors of the apartment block (Block A). Whilst the house typologies have not been technically assessed, given the low-rise nature of the surrounding context, their favourable orientation, appropriate layouts and generous fenestration, these units are expected to be well lit and offer acceptable daylight and sunlight amenity for future occupiers.

For daylight, 96% (85/89) of the proposed habitable rooms tested achieve the minimum levels of Median Daylight Illuminance (MDI) recommended within the BS EN 17037:2018 UKNA and the BRE Guidelines for residential buildings. A further two open-plan living/kitchen/dining (LKDs) rooms meet or exceed the recommendation of 150 lux for living rooms.

The two ground-floor units in Duplexes A and C falling short of the BRE recommendation for daylight for living rooms see lower daylight levels as a function of their orientation, generous proportions and inset location which is a necessary trade-off to protect privacy to these units.

The compensatory measures applicable for these two ground-floor units include:

- Both bedrooms exceed the BRE recommendation for daylight;
- The units exceed the BRE recommendation for sunlight;
- Both units are oversized by c. 10 sqm beyond the minimum space standard;
- Both units are dual-aspect;
- Both units have generous floor to ceiling heights;
- Both units have well sunlit south facing private external amenity;
- Duplexes A and C sit directly beside a well sunlit communal open space and have access to well sunlit public open space within the development.

Therefore, overall the daylight amenity within the Proposed Development, when considered alongside the applicable compensatory measures, is considered acceptable.

For sunlight, 89% (23/26) of the units tested within the Proposed Development will have at least one main window per-unit facing within 90° of due south, and all (100%) of the tested units have at least 1.5 hours of sunlight on 21st March within at least one room. Therefore, overall the sunlight amenity within the Proposed Development is considered acceptable.

More details on the daylight and sunlight results can be found in Section 5 of this report and a more detailed breakdown of the compensatory measures can be found in Section 6.

For overshadowing, all five communal open spaces and all four areas of public open space would far exceed the BRE recommendation, providing future residents with excellent, well sunlit open space to be enjoyed throughout the year. The overshadowing results can be found in Section 9 of this report.

In conclusion, when considered alongside the compensatory measures embedded in the design, the Proposed Development will provide future residents with excellent daylight and sunlight amenity overall.

Subsequent to the technical assessments being undertaken, minor amendments were made to the internal configuration of the 1Bed units in Block A. The amendments reduced the depth of both the LKD and bedroom which would result in a small increases in the daylight performance. As these rooms are all BRE compliant it was not considered necessary to update the analysis to reflect this insignificant change to the layouts.

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 JFA Architects. GIA was specifically instructed to carry out the following:

- To create a 3D computer model of the proposal based upon drawings prepared by JFA Architects;
- Carry out a Median Daylight Illuminance (MDI) assessment as recommended by BRE;
- Carry out an assessment of sunlight exposure on 21st March as recommended within the BRE guidance;
- Carry out an overshadowing assessment of communal and public open spaces using the methodology set out in the BRE guidance for Sun Hours On Ground (SHOG) for all relevant amenity areas; and
- Prepare a report setting out the analysis and our findings.

3 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.

3.1 INTRODUCTION

The BRE published the latest 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'.

BR 209 contains 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)

3.2 BS EN 17037:2018 AND THE UK ANNEX

The latest European Standard on daylight is BS EN 17037:2018 "Daylight in buildings". Following a review by a dedicated commission of UK experts, the British Standard Institution appended a UK National Annex which noted that the new recommendations "may not be achievable for some buildings, particularly dwellings" and specifically mentions dwellings in a dense urban area or with tall trees outside. The annex goes on to suggest lower recommended light levels for dwellings, in line with those of the previous version of the British Standard, BS8206-2:2008.

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

View out and Glare are not solely but 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, BS EN 17037:2018 suggests that the hours of sunlight reaching a window is considered "on a selected date between February 1st and March 21st". BR209 recommends that this date is preferably the equinox (see section 3.4).

3.3 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 over 50% or more of the assessment area.

BS EN 17037 sets out minimum illuminance levels (300 lux) 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 (500 lux and 700 lux 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.

3.4 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 21st. 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.. "*

3.5 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.."

3.6 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

4 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.

Calculation model

The three dimensional representation of the proposed development has been modelled using the drawings prepared by JFA Architects, received by GIA in July 2026. These have been placed in the context of their surrounding buildings which have been modelled from approved drawings from the planning portal 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.

The weather file recorded at Dublin, Ireland was considered the most relevant for this assessment.

Surfaces reflectance

In general, the reflectance value to be applied to surfaces in the computational modelling follows the BR 209 Annex C, unless specified by the design team. Assumptions applied are:

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

The following surface reflectance assumptions as per BR 209 have been used:

- Exterior ground and external obstructions -0.2

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 .

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.

Glazing transmittance

A glazing visible light transmittance (VLT) of 70% has been used as in agreement with the wider design team. A framing factor has been taken from the elevations supplied. 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.

The final transmittance values are shown in the table below.

	BS EN 17037:2018						
	Glazing Type	TV Normal	Building Type & Atmosphere (NA.2)	Glazing Exposure (NA.3)	Glazing Dirt/Weathering (NA.4)	Framing Factor	TV Total
	Type 1	0.70	Urban (8)	Vertical (x1)	Not Sheltered (x1)	0.85	0.55
	Type 2	0.70	Urban (8)	Vertical (x1)	Sheltered (x3)	0.85	0.45
	Type 3	0.70	Urban (8)	Vertical (x1)	Not Sheltered (x1)	0.80	0.52
	Type 4	0.70	Urban (8)	Vertical (x1)	Sheltered (x3)	0.80	0.43
	Type 5	0.70	Urban (8)	Vertical (x1)	Not Sheltered (x1)	0.75	0.48
	Type 6	0.70	Urban (8)	Vertical (x1)	Not Sheltered (x1)	0.70	0.45
	Type 7	0.70	Urban (8)	Vertical (x1)	Not Sheltered (x1)	0.65	0.42
	Type 8	0.70	Urban (8)	Vertical (x1)	Not Sheltered (x1)	0.60	0.39

Table 01: Transmittance and maintenance factors

4.1 GLASS TRANSMITTANCE - WINDOW MAPS



Fig. 01: South-east view - Block A

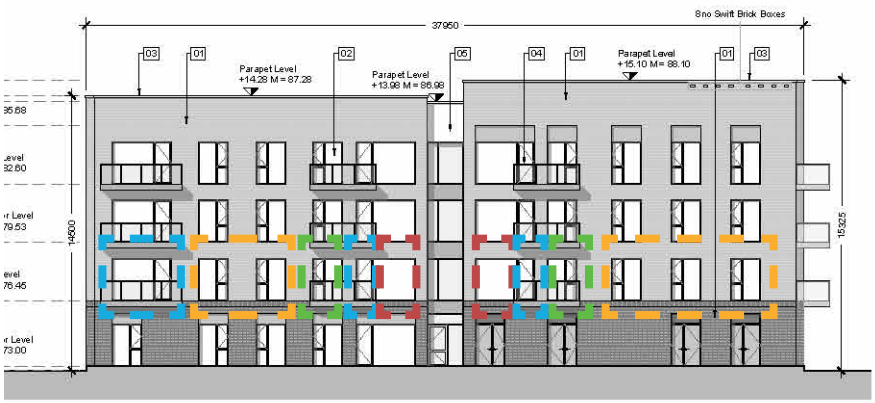


Fig. 02: North-west view - Block A

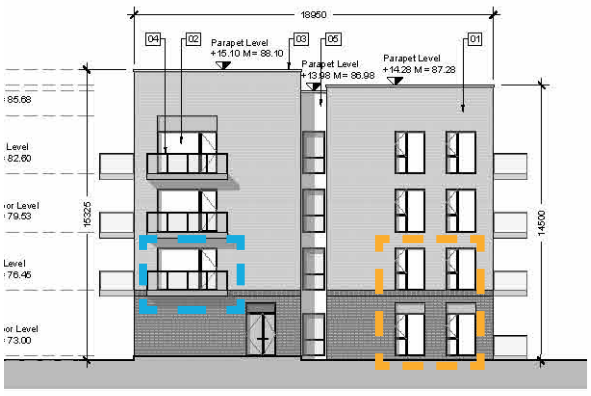


Fig. 03: South-west view - Block A



Fig. 04: North-east view - Block A

1 2 3 4 5 6 7 8



Fig. 05: Front elevation - Duplex A,B,C & D



Fig. 06: Rear Elevation - Duplex A,B,C & D



Fig. 07: Side elevation - Duplex A & D

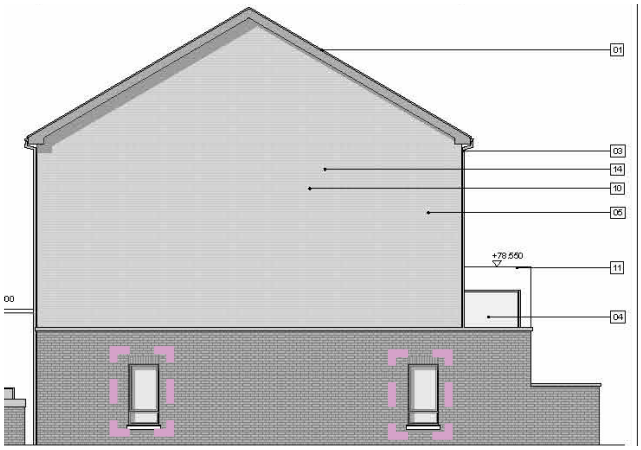


Fig. 08: Side elevation - Duplex B

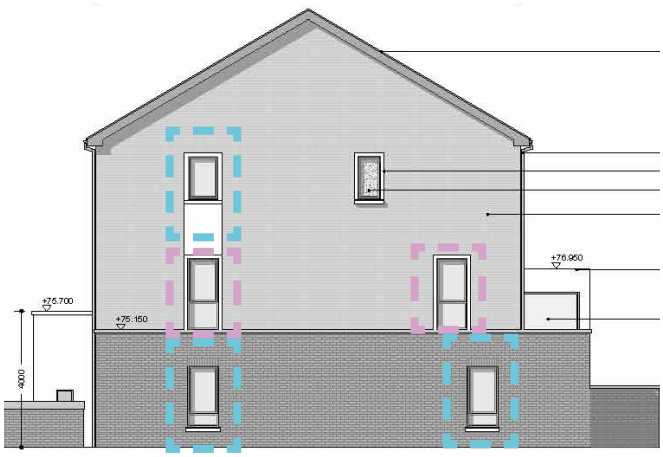


Fig. 09: Side elevation - Duplex C



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5 DISCUSSIONS & CONCLUSIONS

To ascertain the levels of daylight and sunlight within the Proposed Development, a representative sample of units has been assessed. All habitable rooms within the selected sample have been tested in accordance with the BRE Guidelines (BR209: 2022) and the UK National Annex (UKNA) to BS EN 17037:2018.

The report presents the final assessments undertaken for the representative sample of units and the proposed open spaces.

The representative sample of units comprises a selection of each duplex typology and the Ground and First floors of the apartment block (Block A). Whilst the house typologies have not been technically assessed, given the low-rise nature of the surrounding context, their favourable orientation, appropriate layouts and generous fenestration, these units are expected to be well lit and offer acceptable daylight and sunlight amenity for future occupiers.

5.1 CONCLUSIONS ON DAYLIGHT

For daylight, the representative selection of units has been assessed for Median Daylight Illuminance (MDI) according to the targets set out in the UKNA of BS EN 17037:2018 and the BRE Guidelines, which sets illuminance targets (measured in lux) to be achieved for over 50% of the space for more than a half of the daylight hours of the year.

Overall, the results given on pages 18-27 show that 96% (85/89) of the habitable rooms assessed within the Proposed Development will see levels of MDI that either meet or exceed the BRE/BS EN 17037 UKNA recommendations, which is considered excellent.

All proposed habitable rooms within Block A meet the MDI levels recommended.

The four remaining rooms are all open-plan living/kitchen/dining (LKDs) located within duplex blocks and are discussed in further detail below.

Two of the four LKDs falling short of recommendation, one in Duplex B and one in Duplex D are both ground floor LKD (room nos. 42 and 79) that fall short of the recommendation of 200 lux for rooms that include a kitchen. These two LKDs exceed the recommendation of 150 lux for living rooms, thus achieving good daylight given its primary use as a living space. Such results can be deemed acceptable for their primary use as living spaces, especially considering the layout arrangement with the living area at the front of the room and the kitchen area at the back. This is explained in the BRE Guidelines, at Paragraph C17 of Appendix C states that *"Where a room has a shared use, the highest target should apply. [...] 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. The kitchen space would still need to be included in the assessment area."*

Both bedrooms associated with these two units are very well daylit with over twice the recommended MDI level for bedrooms and the units are well sunlit with c. 3.5-6.5hrs of sunlight on 21st March. Furthermore, the units are dual-aspect, they have generous floor to ceiling heights, are c. 10sqm larger than the minimum space standards and have direct access to private patios, communal open space and generous public open space within the development. Therefore, when considered alongside the compensatory measures (further detail provided in the following pages), the daylight provision within these units as a whole is considered to be acceptable.

Duplex A

The single remaining room within Duplex A falling short of recommendation and below the living room target is a ground floor LKD (room no. 45) that achieves an MDI of 136 lux. This LKD sees lower daylight ingress owing to its northerly orientation, generous proportions and inset location. This LKD has been arranged to provide the living zone at the front, closest to the window, whilst the kitchen is located at the rear, thus ensuring good daylight is provided within the zone it is most appreciated.

Both bedrooms associated with this unit are very well daylit with over twice the recommended MDI level for bedrooms, the unit is well sunlit with c. 7hrs of sunlight on 21st March in one bedroom and c. 6.5hrs in the other. The unit is dual-aspect, it has a generous floor to ceiling height, is c. 10sqm larger than the minimum standards and have direct access to a well sunlit south-facing private patio as well as communal open space and generous public open space within the development. Therefore, when considered alongside the compensatory measures (further detail provided in the following pages), the daylight provision within

this unit as a whole is considered to be acceptable.

Duplex C

The single remaining room within Duplex C falling short of recommendation and below the living room target is a ground floor LKD (room no. 58) that achieves an MDI of 117 lux. This LKD sees lower daylight ingress owing to its northerly orientation, generous proportions and inset location. This LKD has been arranged to provide the living zone at the front, closest to the window, whilst the kitchen is located at the rear, thus ensuring good daylight is provided within the zone it is most appreciated.

Both bedrooms associated with this unit are very well daylit with over twice the recommended MDI level for bedrooms, the unit is well sunlit with c. 6.5hrs of sunlight on 21st March in one bedroom and c. 6hrs in the other. The unit is dual-aspect, it has a generous floor to ceiling height, is c. 10sqm larger than the minimum standards and has direct access to a well sunlit south-facing private patio as well as communal open space and generous public open space within the development. Therefore, when considered alongside the compensatory measures (further detail provided in the following pages), the daylight provision within this unit as a whole is considered to be acceptable.

Summary

The vast majority of rooms within the Proposed Development will be well daylit, providing acceptable and in most cases excellent daylight amenity within all units. The scheme overall is considered to be acceptable in term of daylight, when viewed alongside the compensatory measures outlined in the following pages.

The assessed duplex layouts are replicated across the development, those assessed are representative of all units, all others are expected to perform similarly or have higher daylight levels. It should however be noted that the ground floor duplex LKDs see lower daylight access as a function of their location within a recess, which has been provided to offer increased privacy.

5.2 CONCLUSIONS ON SUNLIGHT

For sunlight, all rooms within the selection of units tested have been assessed for orientation and sun exposure. The BRE Guidelines recommend at least one main window per-unit should be facing within 90° of due south, and at least 1.5 hours of sunlight should be achieved on 21st March for at least one room in each unit.

Overall, 78% (23/26) of the proposed units assessed will have at least one south-facing window and all 26 (100%) would achieve at least 1.5 hours of sunlight on the equinox within at least one habitable room.

Therefore, all units within the Proposed Development will be well sunlit and the scheme overall is considered to be acceptable in term of sunlight amenity.

5.3 CONCLUSIONS ON OVERSHADOWING

Overshadowing assessments have been undertaken for the areas of public (POS) and communal (COS) open space provided within the Proposed Development. The results from these assessments are shown on pages 28-30 of this report.

Five communal open spaces are proposed within the site, all of which far exceed the BRE recommendation of 50% of their areas seeing two or more hours of direct sunlight on 21st March and so offer very well sunlit open space throughout the year for the enjoyment of future residents.

In addition, the four areas of public open spaces proposed within the site also far exceed the BRE recommendation of 50% of their areas seeing two or more hours of direct sunlight on 21st March and so offer additional very well sunlit open space throughout the year for the enjoyment of future residents.

As such it is considered that all future occupants will be able to access multiple well sunlit open spaces throughout the year.

6 COMPENSATORY MEASURES

The Sustainable Urban Housing: Design Standards for New Apartments Guidelines advise that *"[6.7] Where an applicant cannot fully meet all of the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, which planning authorities should apply their discretion in accepting taking account of its assessment of specific. This may arise due to a design constraints associated with the site or location and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

For those units where shortfalls occur, the compensatory measures provided in the following pages should be considered, which outline those units where one habitable room per unit is below the BRE recommended levels for daylight or the dwelling falls short of the BRE recommendation for sunlight, and the relevant compensatory measures provided. Further to the dwelling specific compensatory measures, the following are applicable for all dwellings:

- Access to a variety of well sunlit communal and public open spaces within the site;
- Good storage within all units;
- High-quality, energy efficient fixtures, fittings and finishes;
- Good thermal/overheating performance.

Passing
LKDs meeting Living Room target
Marginal Shortfalls
Not meeting Guidance

	ROOM USE	DAYLIGHT LEVEL (LUX) (ROOM)	SUNLIGHT LEVEL (MINS)(UNIT)	COMPENSATORY MEASURES						
				BEDROOMS PASSING DAYLIGHT	UNIT PASSING SUNLIGHT	PROVISION OF PRIVATE AMENITY	ACCESS TO WELL SUNLIT OPEN SPACE	OVERSIZED UNIT	DUAL-ASPECT	ENHANCED CEILING HEIGHTS
K	L/K/D	136	07:04	O	O	O	O	+10sqm	O	O
	BEDROOM	351								
	BEDROOM	404								
S	L/K/D	117	06:35	O	O	O	O	+10sqm	O	O
	BEDROOM	327								
	BEDROOM	368								

Duplex A

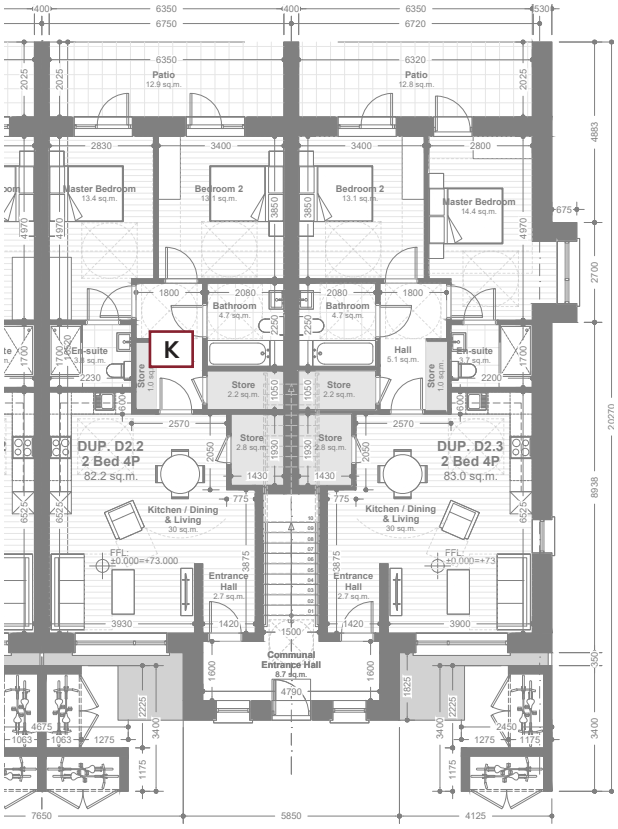


Fig. 10: Level 00

Duplex C

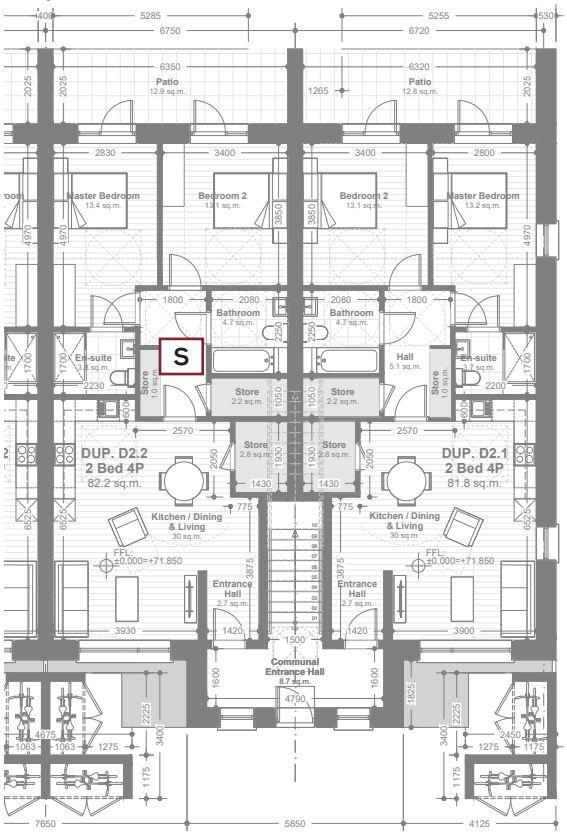


Fig. 11: Level 00

7 SITE OVERVIEW



Fig. 12: Top view

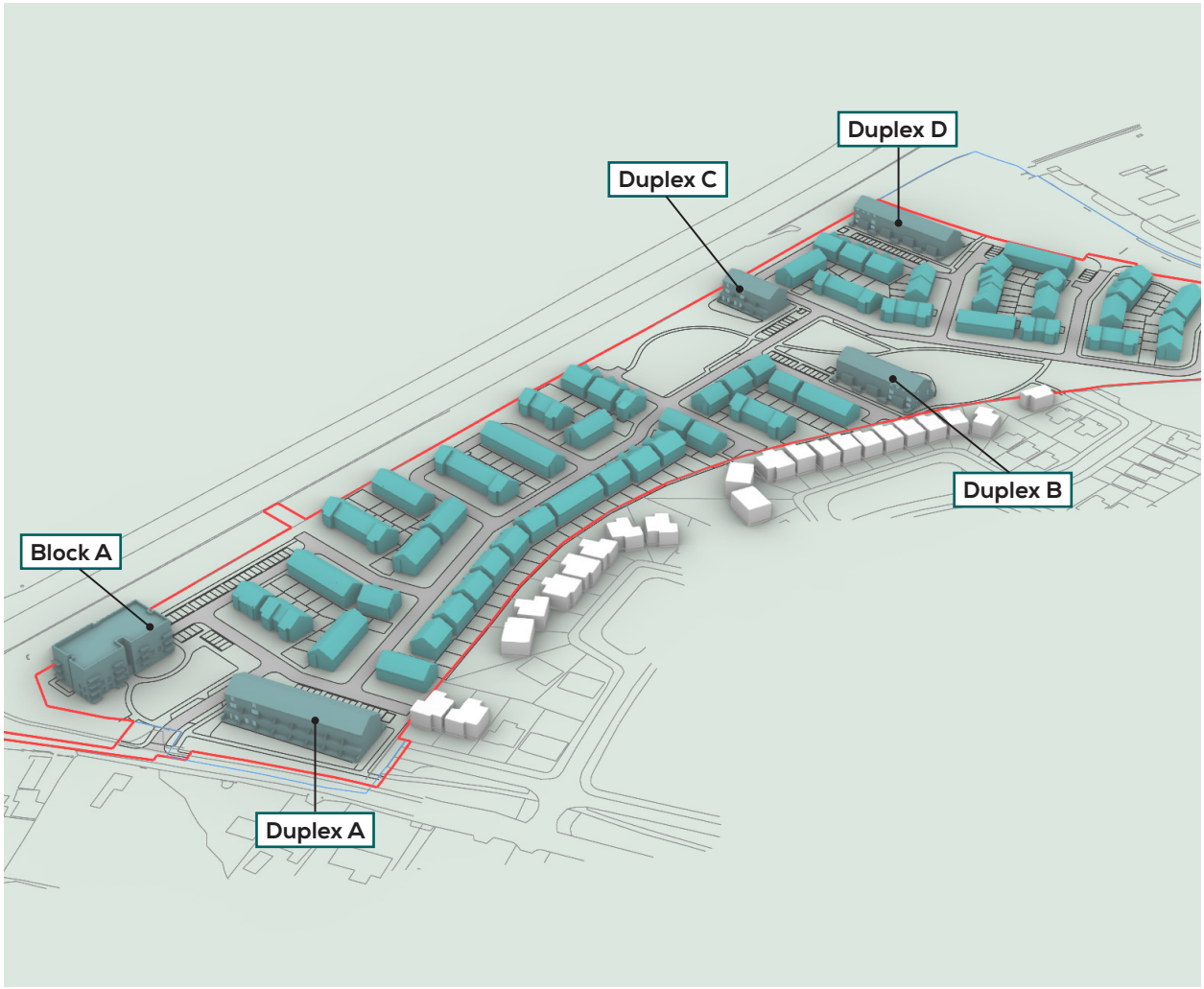


Fig. 13: Perspective view

8 INTERNAL DAYLIGHT & SUNLIGHT ASSESSMENTS

Block A - Level 00

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
BLOCK A - LEVEL 00							
1	A	L/K/D	361	200	YES	04:52	YES
2	A	BEDROOM	312	100	YES	05:31	
3	B	BEDROOM	380	100	YES	05:29	YES
4	B	BEDROOM	473	100	YES	04:20	
5	B	L/K/D	1076	200	YES	10:56	

Block A - Level 01

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
BLOCK A - LEVEL 01							
6	C	L/K/D	645	200	YES	04:30	YES
7	C	BEDROOM	487	100	YES	06:13	
8	C	BEDROOM	385	100	YES	06:03	
9	D	BEDROOM	278	100	YES	04:11	YES
10	D	L/K/D	363	200	YES	06:49	
11	E	L/K/D	362	200	YES	04:37	YES
12	E	BEDROOM	280	100	YES	06:07	
13	F	BEDROOM	396	100	YES	06:20	YES
14	F	BEDROOM	486	100	YES	04:54	
15	F	L/K/D	1014	200	YES	10:23	
16	G	L/K/D	582	200	YES	04:55	YES
17	G	BEDROOM	449	100	NO	01:00	
18	G	BEDROOM	356	100	NO	01:00	
19	H	BEDROOM	234	100	NO	01:00	NO
20	H	L/K/D	312	200	NO	02:13	
21	I	L/K/D	315	200	NO	01:40	NO
22	I	BEDROOM	235	100	NO	01:00	
23	J	BEDROOM	329	100	NO	01:00	NO
24	J	BEDROOM	407	100	NO	01:00	
25	J	L/K/D	624	200	NO	02:43	

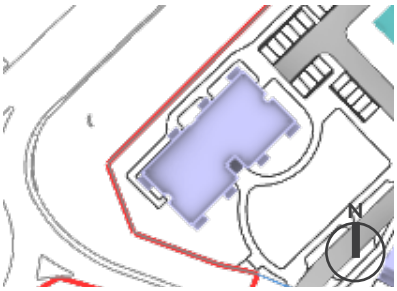
Table 02: Assessment Data



Fig. 14: Level 00



Fig. 15: Level 01



Duplex A - Level 00

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
DUPLEX A - LEVEL 00							
26	K	L/K/D	136	200	NO	00:27	YES
27	K	BEDROOM	351	100	YES	07:04	
28	K	BEDROOM	404	100	YES	06:23	
29	L	BEDROOM	395	100	YES	07:04	YES
30	L	BEDROOM	490	100	YES	06:54	
31	L	L/K/D	209	200	NO	01:05	

Duplex A - Level 01

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
DUPLEX A - LEVEL 01							
32	M	LIVING ROOM	283	150	NO	00:25	YES
33	M	KITCHEN	491	200	YES	08:07	
34	N	KITCHEN	693	200	YES	08:26	YES
35	N	LIVING ROOM	425	150	NO	01:21	

Duplex A - Level 02

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
DUPLEX A - LEVEL 02							
36	M	BEDROOM	233	100	NO	00:00	
37	M	BEDROOM	229	100	NO	00:00	
38	M	BEDROOM	547	100	YES	07:19	
39	N	BEDROOM	543	100	YES	07:19	
40	N	BEDROOM	433	100	NO	01:05	
41	N	BEDROOM	231	100	NO	00:00	

Table 03: Assessment Data

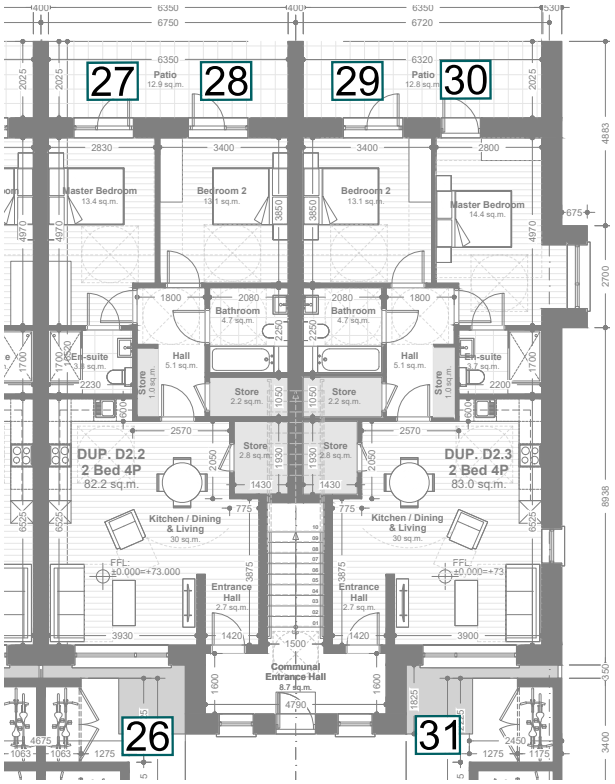


Fig. 16: Level 00

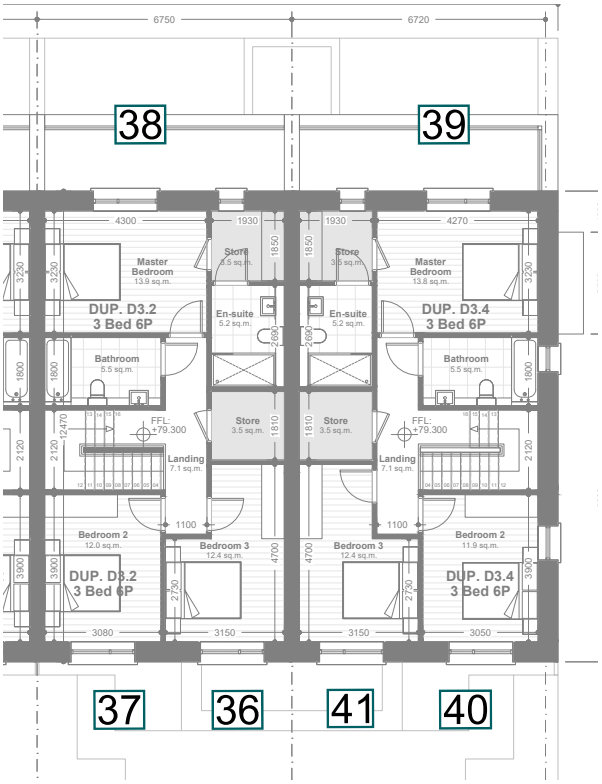


Fig. 18: Level 02

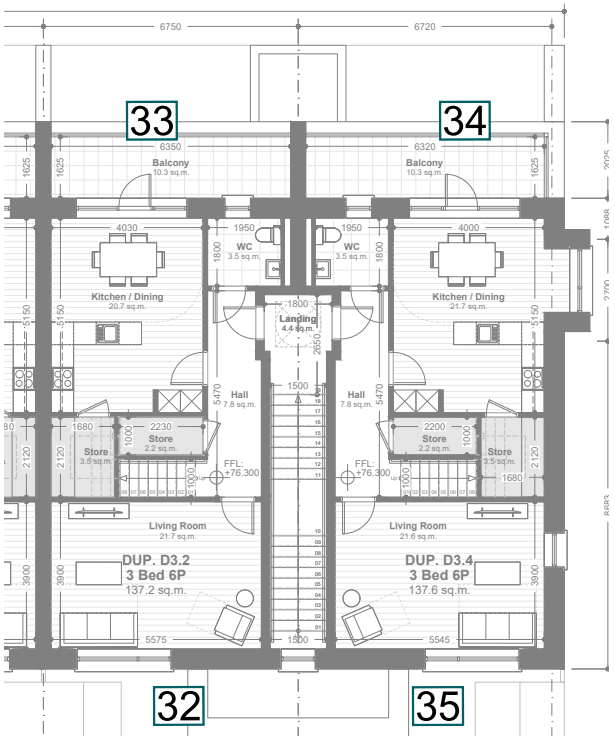
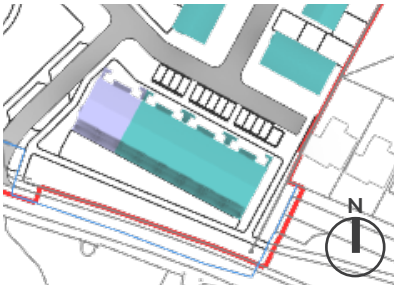


Fig. 17: Level 01



Duplex B - Level 00

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
DUPLEX B - LEVEL 00							
42	O	L/K/D	171	200	YES	03:41	YES
43	O	BEDROOM	224	100	NO	01:02	
44	O	BEDROOM	243	100	NO	00:00	
45	P	BEDROOM	252	100	NO	01:00	YES
46	P	BEDROOM	455	100	YES	00:00	
47	P	L/K/D	312	200	YES	05:23	

Duplex B - Level 01

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
DUPLEX B - LEVEL 01							
48	Q	LIVING ROOM	392	150	YES	06:08	YES
49	Q	KITCHEN	315	200	NO	02:06	
50	R	KITCHEN	318	200	NO	05:50	YES
51	R	LIVING ROOM	390	150	YES	10:30	

Duplex B - Level 02

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
DUPLEX B - LEVEL 02							
52	Q	BEDROOM	325	100	YES	06:03	
53	Q	BEDROOM	324	100	YES	06:03	
54	Q	BEDROOM	337	100	NO	01:08	
55	R	BEDROOM	346	100	NO	01:11	
56	R	BEDROOM	321	100	YES	11:19	
57	R	BEDROOM	334	100	YES	06:06	

Table 04: Assessment Data

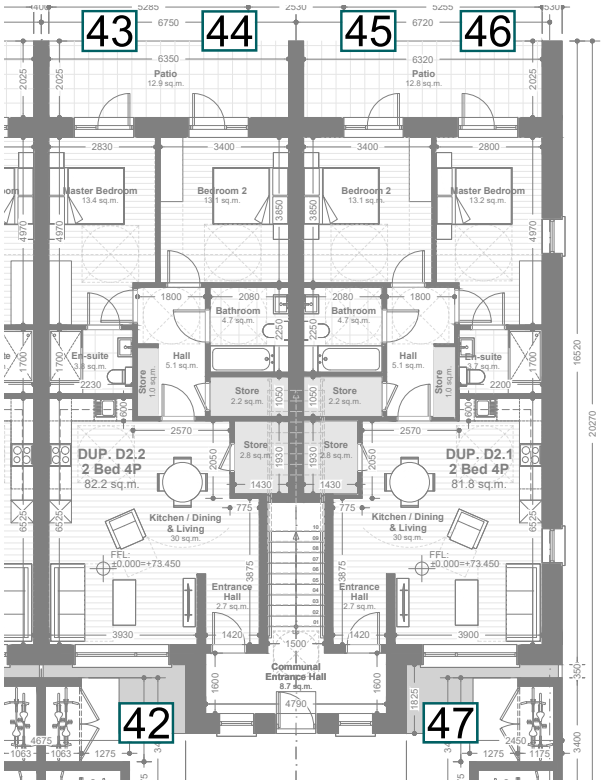


Fig. 19: Level 00

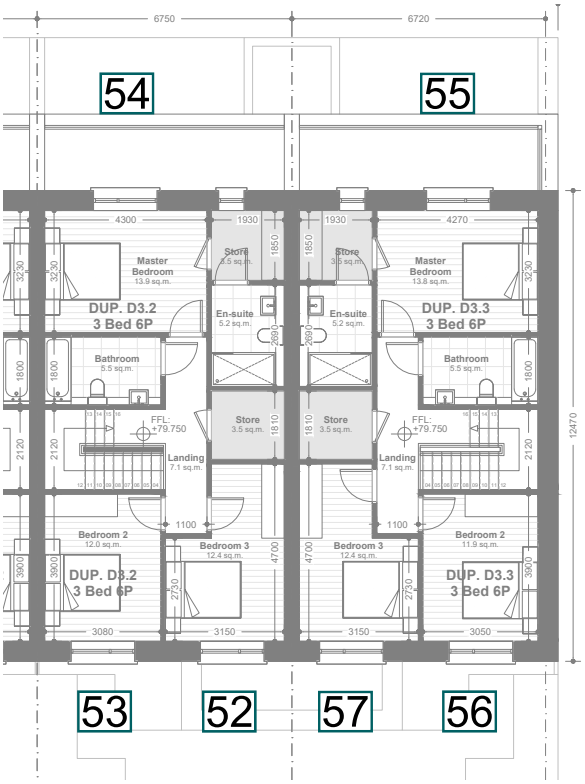


Fig. 21: Level 02

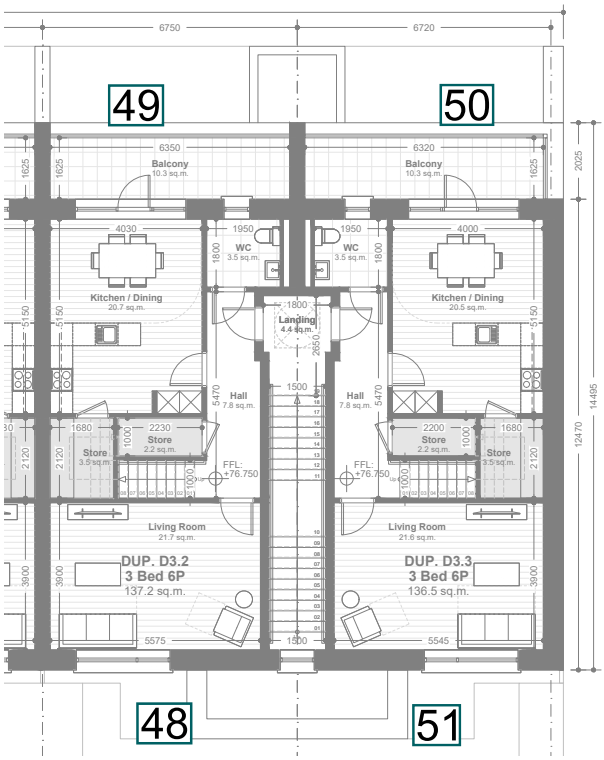
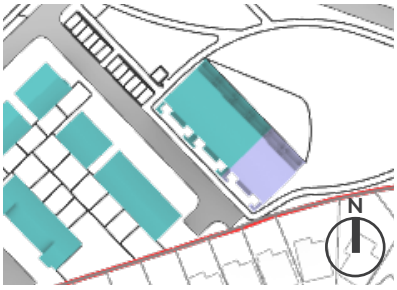


Fig. 20: Level 01



Duplex C - Level 00

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
DUPLEX C - LEVEL 00							
58	S	L/K/D	117	200	NO	00:53	YES
59	S	BEDROOM	327	100	YES	06:35	
60	S	BEDROOM	368	100	YES	05:52	
61	T	BEDROOM	363	100	YES	06:34	YES
62	T	BEDROOM	583	100	YES	05:31	
63	T	L/K/D	239	200	NO	00:00	

Duplex C - Level 01

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
DUPLEX C - LEVEL 01							
64	U	LIVING ROOM	284	150	NO	01:13	YES
65	U	KITCHEN	448	200	YES	07:19	
66	V	KITCHEN	610	200	YES	07:20	YES
67	V	LIVING ROOM	464	150	NO	01:13	

Duplex C - Level 02

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
DUPLEX C - LEVEL 02							
68	U	BEDROOM	239	100	NO	01:00	
69	U	BEDROOM	237	100	NO	01:00	
70	U	BEDROOM	490	100	YES	06:40	
71	V	BEDROOM	502	100	YES	06:41	
72	V	BEDROOM	471	100	NO	00:57	
73	V	BEDROOM	248	100	NO	00:57	

Table 05: Assessment Data

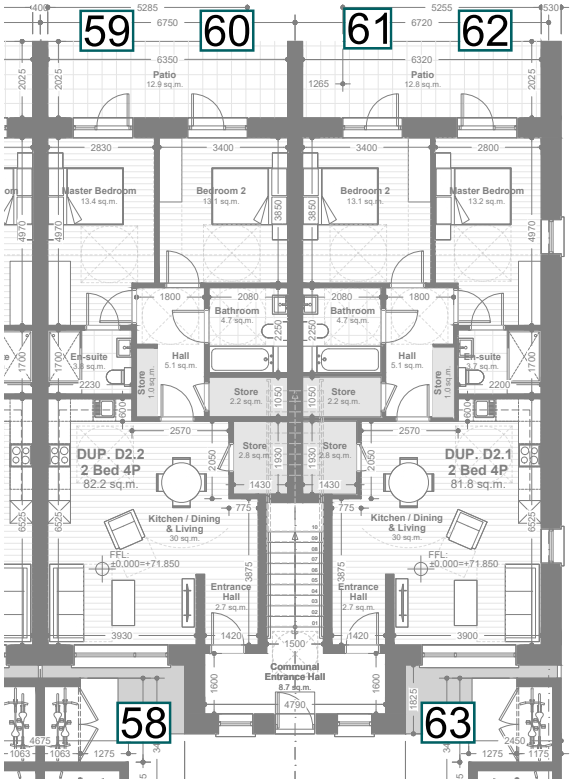


Fig. 22: Level 00

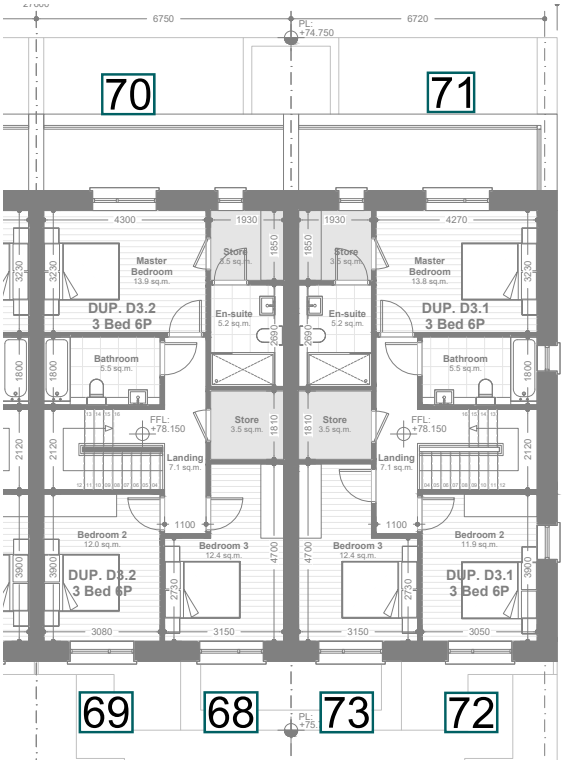


Fig. 24: Level 02

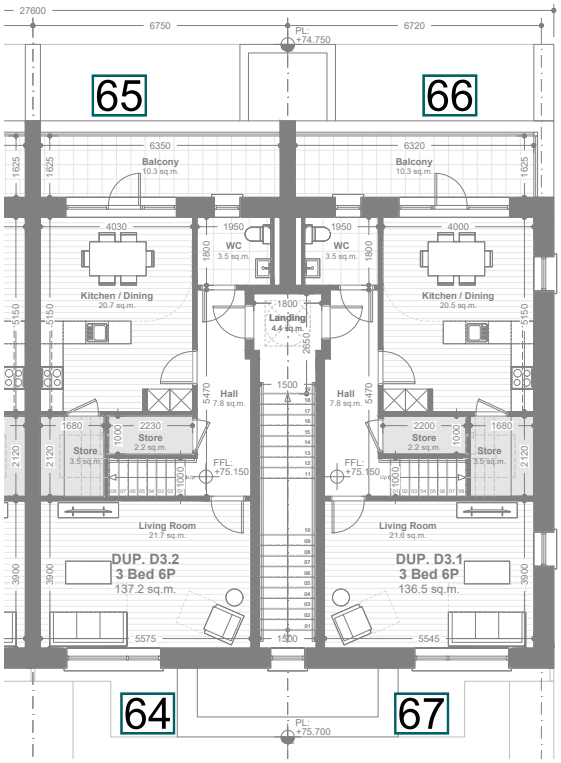
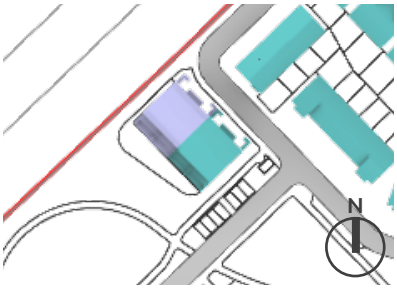


Fig. 23: Level 01



Duplex D - Level 00

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
DUPLEX D - LEVEL 00							
74	W	L/K/D	293	200	YES	05:29	YES
75	W	BEDROOM	444	100	NO	01:03	
76	W	BEDROOM	260	100	NO	00:00	
77	X	BEDROOM	267	100	NO	01:00	YES
78	X	BEDROOM	238	100	NO	00:00	
79	X	L/K/D	195	200	YES	06:22	

Duplex D - Level 01

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
DUPLEX D - LEVEL 01							
80	Y	LIVING ROOM	591	150	YES	07:10	YES
81	Y	KITCHEN	527	200	NO	03:11	
82	Z	KITCHEN	325	200	NO	00:03	YES
83	Z	LIVING ROOM	420	150	YES	07:09	

Duplex D - Level 02

ROOM REF.	FLAT	ROOM USE	DAYLIGHT		SUNLIGHT		
			MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM		BY DWELLING
					WINDOW WITHIN 90° DUE SOUTH	21 MAR	WINDOW WITHIN 90° DUE SOUTH
DUPLEX D - LEVEL 02							
84	Y	BEDROOM	336	100	YES	06:21	
85	Y	BEDROOM	570	100	YES	06:21	
86	Y	BEDROOM	370	100	NO	01:11	
87	Z	BEDROOM	360	100	NO	01:11	
88	Z	BEDROOM	335	100	YES	06:21	
89	Z	BEDROOM	351	100	YES	06:21	

Table 06: Assessment Data

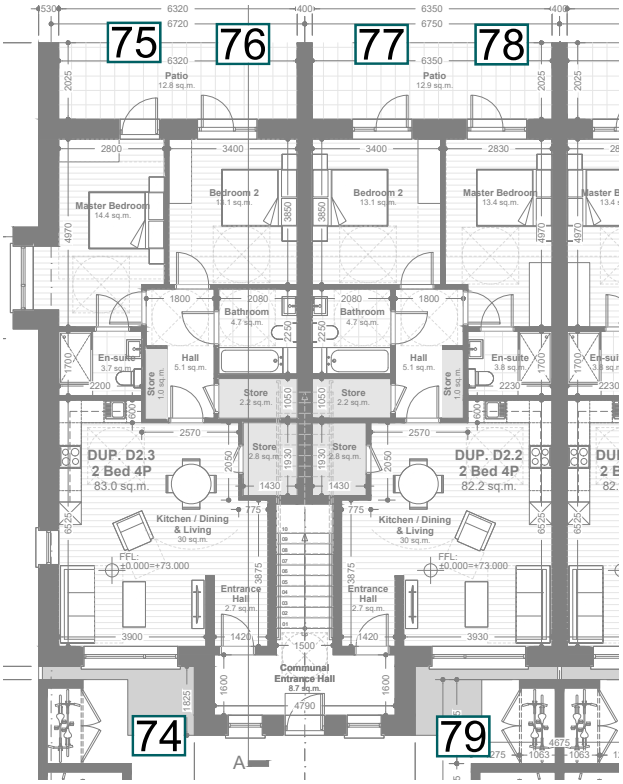


Fig. 25: Level 00

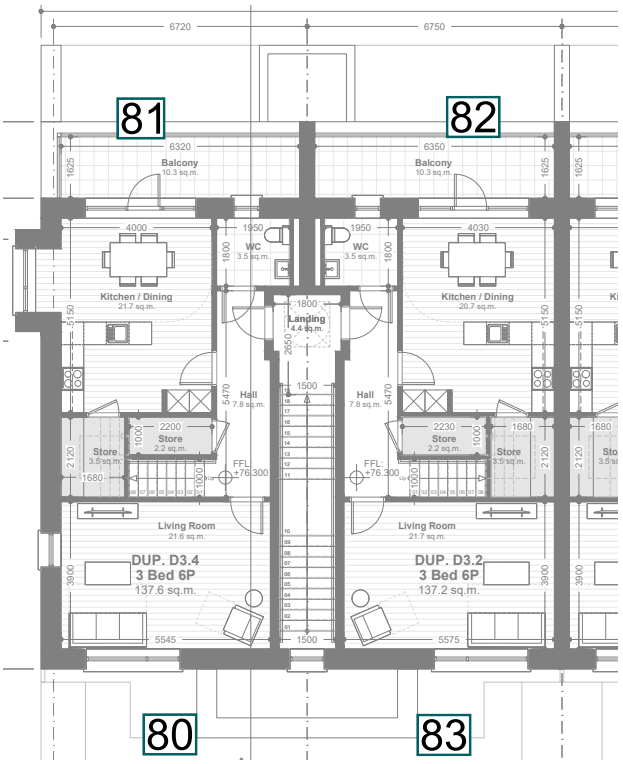


Fig. 26: Level 01

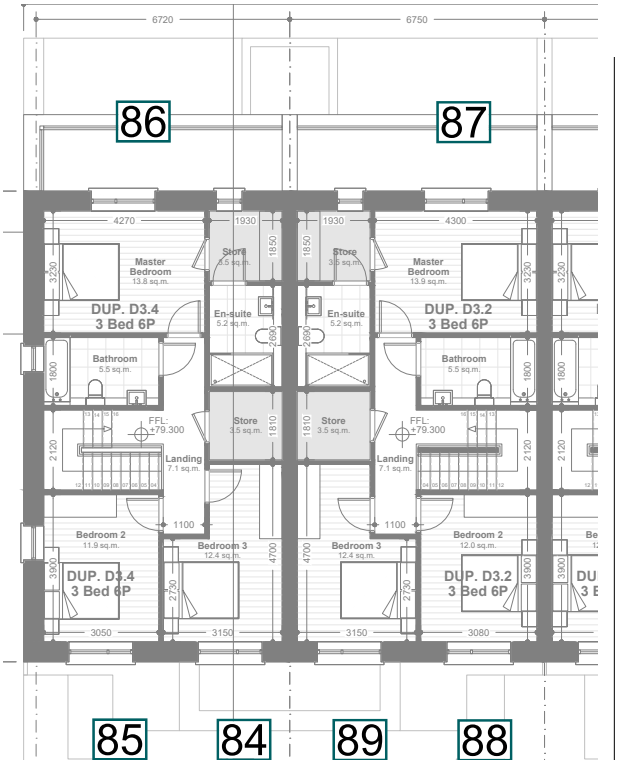
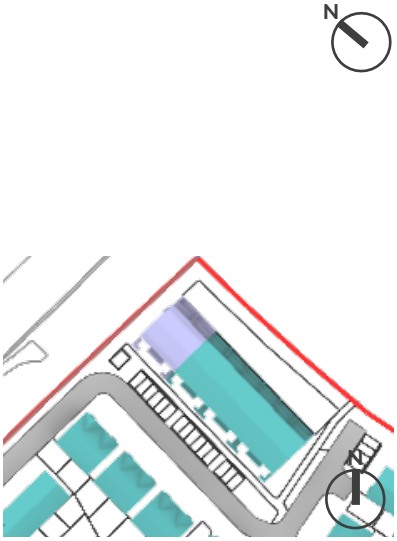
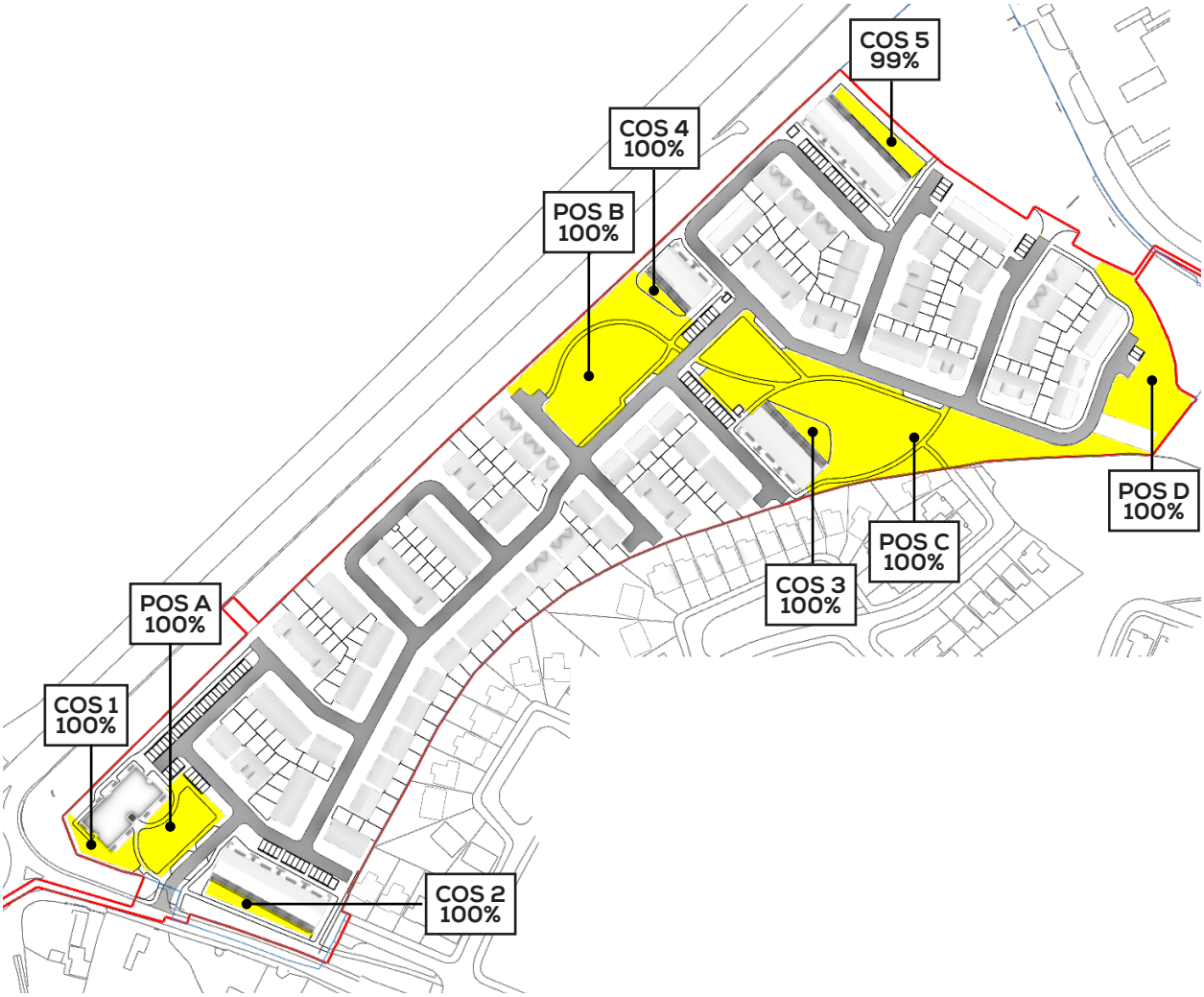


Fig. 27: Level 02



9 OVERSHADOWING ASSESSMENTS

OPEN SPACES
BRE TEST - 21ST MARCH (SPRING EQUINOX)



(BRE RECOMMENDS 2+ HOURS OF SUNLIGHT ON 21ST MARCH FOR AT LEAST 50% OF THE OPEN SPACE)
COMBINED AREAS: 99%

SUN HOURS ON GROUND
BRE TEST - 21ST MARCH

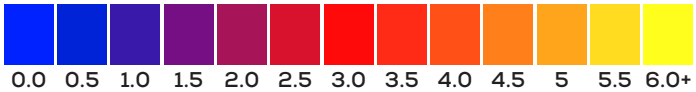


OPEN SPACES
SUN EXPOSURE - 21ST MARCH (SPRING EQUINOX)



N

SUN EXPOSURE
TOTAL HOURS

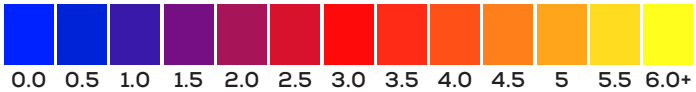


OPEN SPACES
SUN EXPOSURE - 21ST JUNE





SUN EXPOSURE
TOTAL HOURS



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What we do:

Climate & Resilience
Daylight & Sunlight
Flood Risk & Drainage
Light Obstruction Notices
Measured Surveys
Party Wall & Neighbourly Matters
Rights of Light
Solar PV
Wind Analysis

Where we are:

Belfast
Birmingham
Bristol
Dublin
London
Manchester

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