

11 CLIMATE (DAYLIGHT)

11.1 Introduction

This section of the Environmental Impact Assessment (EIA) assesses the daylight impact of the proposed residential development, at Kilcartery Grange comprising of 578no. individual houses, 154no. duplex units and 9no. apartment blocks totalling 302 no. apartment units of 1 – 3 bed types. O'Connor Sutton Cronin (OCSC) Consulting Engineers have been appointed to assess this impact and have undertaken the analysis.

The aim of the analysis is to record and analyse the following impacts: -

- Impact of the proposed development in relation to daylight within the proposed development;
- Impact to the existing adjacent buildings external to the development daylight, due to the proposed development.

11.2 Assessment Methodology

In considering the development potential and the quality of amenity for the surrounding properties as well as for the new development once the scheme has been implemented, the analysis has been based on the Building Research Establishment (BRE) guidelines on *Site Layout Planning for Daylight and Sunlight (the BRE Guide)*.

These guidelines provide 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 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 numerical guidelines these should be interpreted flexibly because natural lighting [and sunlight] is only one of the many factors in site layout design.”

11.2.1 Daylight Assessment Methodology for Dwellings within the Proposed Development

Natural light refers to both daylight and sunlight. However, a distinction between these two concepts is required for the purpose of analysis and quantification of natural light in buildings. In this assessment, the term ‘Daylight’ is used for natural light where the source is the sky in overcast sky conditions, whilst ‘Sunlight’ refers specifically to the light coming directly from the sun.

The BRE Guide uses a set of parameters to quantify the potential effect on light levels and states that the guidance “*is intended to be used in conjunction with the interior daylight recommendations in the British Standard BS 8206: Part 2 (BS8206-02)*”.

For new developments, the BRE Guide and BS8206-02, note that the average daylight factor (ADF) may be used. The ADF is a measure of the overall amount of daylight in a space.

The ADF, which was used for this analysis, is a detailed and accurate method of analysis which considers not only the amount of sky visible from the vertical face of the window, but also the window size, room size and room use. Where dimensions for the room to be assessed are available, this is the best method of assessment, but even where they are not, it provides a very informative result.

Table 11.1 below is an excerpt from BS 8206-02 outlining the average daylight factors for different room types that should be achieved to ensure adequate daylight levels within dwellings.

Minimum average daylight factor	
Room type	Minimum average daylight factor %
Bedrooms	1
Living rooms	1.5

Table 11.1: British Standard BS 8206-02 Minimum Daylight Factors

In order to analyse the daylight requirements for the development a detailed 3D model was constructed of the entire development, including properties adjacent to the site, in the Integrated Environmental Solutions Virtual Environment (IES VE) software package. A number of computer simulations were then undertaken in the IES VE software package to ascertain the ADFs achieved within the dwellings of the proposed development.

An image of the model for the proposed development is illustrated in Figure 11.1.

The daylight impact analysis has been assessed on the entire proposed development including the impacts to existing adjacent buildings external to the proposed development.



Figure 11.1: IES VE Model of the Proposed Development.

11.2.2 Daylight Assessment Methodology for Existing Dwellings Adjacent to the Site

11.2.2.1 Identifying Sensitive Receptors

In order to undertake the assessment of any impact to adjacent buildings, first the key sensitive receptors around the site need to be identified. According to the BRE Guide sensitive receptors are described as: -

- Windows to habitable rooms facing the site where the occupants have a reasonable expectation of daylight.
- Other sensitive receptors includes 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, and within, the site where the occupants have a reasonable expectation of daylight.

11.2.2.2 Assessment Criteria for Existing Adjacent Properties

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.

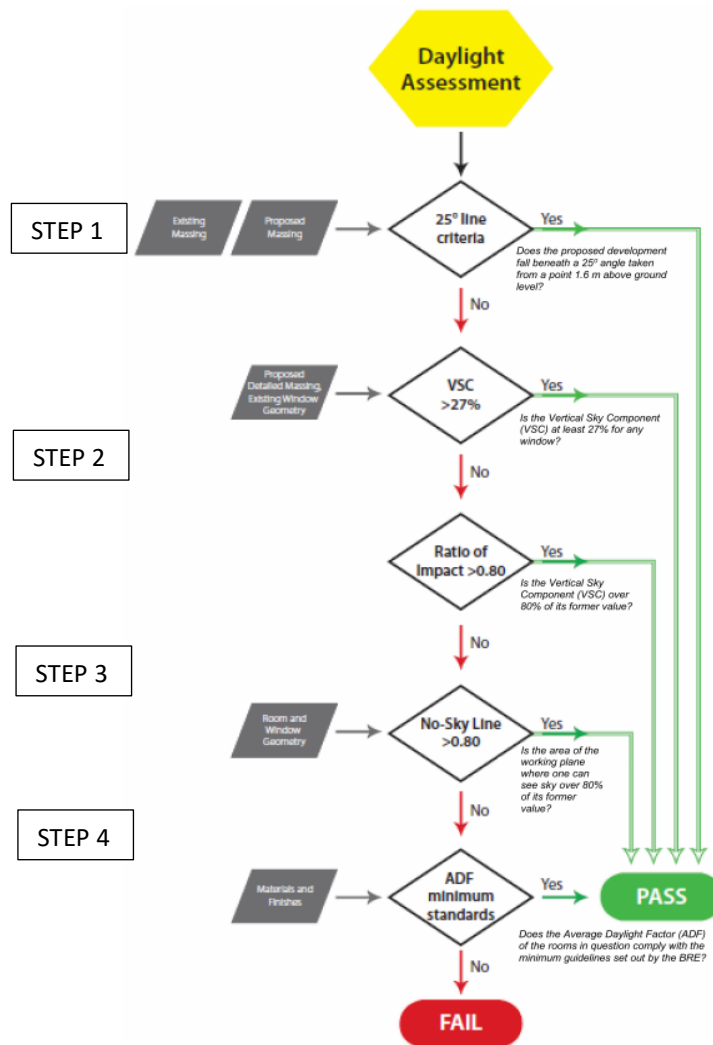


Figure 11.2: Steps on the criteria of compliance.

As per the flow matrix, the BRE and BS8206 guidelines provide four main methods for assessing daylight availability.

Step 1 - 25° Line Criteria

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 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 2).

Step 2 – Vertical Sky Component

The second 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 reduction in the VSC value is less than 20% 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 3 is then followed.

Step 3 – No Sky Line

The third 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 4 is considered more appropriate.

Step 4 – Average Daylight Factor

Step 4 assesses the Average Daylight Factor (ADF) levels. This is a more detailed and therefore more accurate method which considers not only the amount of sky visible from the vertical face of the window, but also the window size, room size and room use. Where dimensions for the room to be assessed are available, this is the best method of assessment, but even where they are not, it provides a very informative result. It gives guidance as to the qualitative and quantitative change in daylight and is related to the British Standard BS 8206 Part II, refer to Table 1 within this Chapter for minimum average daylight factor recommended.

11.3 Receiving Environment

The subject site is located 11km from Dublin City Centre, approximately 1.7km west of Clondalkin Village in South County Dublin, and comprises of greenfield lands, separated by hedgerows and trees. The site is currently unused and has been zoned under the current County Development Plan 2016-1022 for the provision of new residential communities in accordance with the approved plans.

The site is bordered to the west by roadway R136, to the south by the green lands of Corkagh Park, with established residential developments to the North and East of the site.

In addition, permitted PPP development (yet to be constructed) will border the east of the site and has also been considered as present for the daylight assessment.

Figure 11.3 below outlines the proposed site.



Figure 11.3: Outline of proposed site.

11.4 Characteristics of the Proposed Development

11.4.1 Proposed Development

The proposed development subject of this SHD Planning Application will generally comprise: -

- 1,034 no. units (578 no. houses, 154 no. duplex / apartments and 302 no. apartments) ranging from 2 to 6 storeys, comprising the following: -
- 578no. own door houses, including: -
 - 449no. 3-bed 2-storey houses (House Type A, A1, A2, B, C, D, G & H).
 - 31no. 4-bed 2-storey houses (House Type E & J).
 - 98no. 4-bed 3-storey houses (House Type F & F1).
- 154no. own door duplex / apartments, in 3 to 4-storey buildings, including: -
 - 41no. 1-bed duplex / apartments (Type M1 & M2).
 - 49no. 2-bed duplex / apartments (Type K, N1 & N2).
 - 64no. 3-bed duplex / apartments (Type L, L1, L2 & L3).
- 302no. apartment units accommodated in 9no. 4 to 6-storey buildings (with own door access ground floor apartments), including: -
 - Block 1 accommodating 29no. apartments (6no. 1-beds, 18no. 2-beds and 5no. 3 beds).
 - Block 2 accommodating 24no. apartments (4no. 1-beds, 15no. 2-beds and 5no. 3 beds).

- Block 3 accommodating 30no. apartments (13no. 1-beds and 17no. 2-beds).
- Block 4 accommodating 30no. apartments (13no. 1-beds and 17no. 2-beds).
- Block 5 accommodating 45no. apartments (12no. 1-beds, 22no. 2-beds and 11no. 3-beds).
- Block 6 accommodating 37no. apartments (16no. 1-beds and 21no. 2-beds).
- Block 7 accommodating 37no. apartments (16no. 1-beds and 21no. 2-beds) – Temporary creche at ground floor level to revert 7no. residential units on completion of permanent purpose-built creche in Phase 3.
- Block 8 accommodating 33no. apartments (5no. 1-beds, 23no. 2-beds and 5no. 3-beds).
- Block 9 accommodating 37no. apartments (16no. 1-beds and 21no. 2-beds).
- Private rear gardens are provided for all houses. Private patios / terraces and balconies are provided for all duplex and apartment units. Upper level balconies are proposed on elevations of all multi-aspect duplex and apartment buildings.
- Ancillary uses including the provision of 1 no. retail unit (c. 178 sq. m) and community building (c. 785 sq. m).
- 1no. temporary creche (c. 557 sq. m gross floor area in lieu of 7no. ground floor apartment units in Block 7 pending construction of permanent creche at Grange Square)
- 1no. permanent creche building at Grange Square (c. 909 sq. m gross floor area).
- New vehicular access from Outer Ring Road / Grange Castle Road (R136) to the west (left in and left out arrangement) and 2no. new vehicular access points onto Old Nangor Road (L5254) to the north and associated re-alignment of existing adjoining roadways.
- New street network, including spine road (c. 6m in width) extending from Outer Ring Road / Grange Castle Road (R136) to the west onto Old Nangor Road (L5254) to the north.
- New pedestrian and cycle path network.
- Provision of Public Open Space (c. 4.6 Ha) including: -
 - Oak Green Space (c. 7,453 sq. m).
 - Lime Green Space (c. 6,646 sq. m).
 - Grange Square (c. 2,606 sq. m).
- Provision of surface water attenuation measures (SuDs).
- Wastewater pumping station including 18hr storage tank and associated infrastructure.
- 1,510 no. surface car parking spaces.
- 1,105 no. covered bicycle parking spaces.
- Communal bin storage for all terraced houses, duplex / apartment and apartment blocks.
- All associated and ancillary site development, infrastructural, landscaping and boundary treatment works including bin storage.

Figure 11.4 below depicts the entire development site, with subsequent Figures 11.6 – 11.8, illustrating the site in 3 smaller sections clearly highlighting the House Types present. Figure 11.5 represents the colour correspondent to each different house type.



Figure 11.4: Proposed Development

HOUSE TYPES		
[Yellow]	Type A : 3-Bed / 5 PERSON	
[Light Yellow]	Type A1 : 3-Bed / 5 PERSON	
[Light Green]	Type A2 : 3-Bed / 5 PERSON	
[Orange]	Type B : 3-Bed / 5 PERSON	
[Light Orange]	Type C : 3-Bed / 4 PERSON	
[Light Blue]	Type D : 3-Bed / 5 PERSON	
[Light Green]	Type E : 4-Bed / 7 PERSON	
[Green]	Type F : 4-Bed / 6 PERSON	
[Light Green]	Type F1 : 4-Bed / 7 PERSON	
[Light Blue]	Type G : 3-Bed / 5 PERSON	
[Blue]	Type H : 3-Bed / 5 PERSON	
[Dark Blue]	Type J : 4-Bed / 7 PERSON	
HOUSE TYPE		
APARTMENT / DUPLEX TYPE		
[Light Red]	Type K : 2-Bed / 4 PERSON APT.	
[Red]	Type L : 3-Bed / 5 PERSON DUPLEX	
[Dark Red]	Type L1 : 3-Bed / 5 PERSON DUPLEX	
[Pink]	Type L2 : 3-Bed / 5 PERSON DUPLEX	
[Light Pink]	Type L3 : 3-Bed / 5 PERSON DUPLEX	
[Light Purple]	Type M1 : 1-Bed / 2 PERSON APT.	
[Purple]	Type M2 : 1-Bed / 2 PERSON APT.	
[Light Purple]	Type N1 : 2-Bed / 3 PERSON APT.	
[Purple]	Type N2 : 2-Bed / 3 PERSON APT.	
DUPLEX / APT TYPE		
APARTMENT BLOCKS		
[Light Red]	BLOCK 1	6 STOREYS
[Red]	BLOCK 2	5 STOREYS
[Dark Red]	BLOCK 3	5 STOREYS
[Pink]	BLOCK 4	5 STOREYS
[Light Pink]	BLOCK 5	6 STOREYS
[Light Purple]	BLOCK 6	6 STOREYS
[Purple]	BLOCK 7	6 STOREYS
[Dark Purple]	BLOCK 8	6 STOREYS
[Black]	BLOCK 9	6 STOREYS

Figure 11.5: House Types



Figure 11.6: Plan Identifying Houses Type Oak



Figure 11.7: Plan Identifying Houses Type Lime



Figure 11.8: Plan Identifying Houses Type Sycamore

11.4.2 Existing Adjacent Properties

As part of the analysis the impact to the existing adjoining properties from the proposed development was also analysed. Figure 11.9 illustrates the adjoining buildings to the development that were analysed and Table 11.2 outlines these building types.



Figure 11.9: Adjacent Properties

Reference	Building Reference
Ref. 1	Properties along Cherrywood Park
Ref. 2	Properties along Kilcarbery Ave
Ref. 3	PPP Site

Table 11.2: Sensitive Receptors.

11.5 Potential Impact of the Proposed Development

This section will consider the potential impact of the proposed development under the following factors: -

- Impacts to the proposed development in relation to daylight;
- Impact to the existing adjacent buildings external to the development, due to the proposed development.

11.5.1 Proposed Development

11.5.1.1 Construction Stage

The analysis considers both the daylight impact to future residents, and the impact to existing adjacent properties as a result of the proposed development. It is considered that during the construction phase there will be no impacts experienced in relation to daylight and sunlight of the proposed development, and the effect to the existing properties in the adjoining developments will be neutral.

11.5.1.2 Operational Stage

It is considered that the proposed development has the potential to achieve high levels of daylight and sunlight given the site layout and design, including the lower height of the houses and generous areas of amenity space. In addition, the absence of adjacent high-rise buildings that could overshadow the development is a positive for the site.

In order to assess the potential impact of the development during the operational phase, in terms of daylight access, for both the dwellings within the development and the adjacent dwellings, the methodology outlined in Section 11.1.1 of this Chapter has been followed.

Daylight Impact Results for Houses within the Proposed Development

In order to fully assess the potential daylight impact to residential units within the proposed development all House Types within the development have been analysed with the results presented below considered representative of the daylight levels to be expected across the development.

The design and layout of each house type has been carefully considered, with generous window openings to maximise daylight.

In summary, all House Types not only meet but greatly exceed the minimum average daylight factor requirements resulting in a positive effect for the future residents of the development.

Table 11.3 below outlines the results.

House Type	Room Type	BS 8206 minimum standard (%)	Daylight factor level expected (%)	Compliance
A	Kitchen/Dining	1.5	3.3	Y
	Living	1.5	4.3	Y
	Bedroom 1	1.0	5.1	Y
	Bedroom 2	1.0	2.6	Y
	Bedroom 3	1.0	1.6	Y
A1	Kitchen/Dining	1.5	3.2	Y
	Living	1.5	6.0	Y
	Bedroom 1	1.0	5.0	Y
	Bedroom 2	1.0	2.4	Y
	Bedroom 3	1.0	1.6	Y
A2	Kitchen/Dining	1.5	3.2	Y
	Living	1.5	4.1	Y
	Bedroom 1	1.0	4.9	Y
	Bedroom 2	1.0	2.4	Y
	Bedroom 3	1.0	1.6	Y

House Type	Room Type	BS 8206 minimum standard (%)	Daylight factor level expected (%)	Compliance
B	Kitchen/Dining	1.5	3.7	Y
	Living	1.5	3.4	Y
	Bedroom 1	1.0	2.3	Y
	Bedroom 2	1.0	4.7	Y
	Bedroom 3	1.0	1.8	Y
C	Kitchen/Dining	1.5	4.9	Y
	Living	1.5	3.0	Y
	Bedroom 1	1.0	4.2	Y
	Bedroom 2	1.0	2.0	Y
	Bedroom 3	1.0	2.3	Y
D	Kitchen/Dining	1.5	4.8	Y
	Living	1.5	4.6	Y
	Bedroom 1	1.0	1.8	Y
	Bedroom 2	1.0	1.4	Y
	Bedroom 3	1.0	1.5	Y
E	Kitchen/Dining	1.5	3.0	Y
	Living	1.5	4.3	Y
	Bedroom 1	1.0	4.4	Y
	Bedroom 2	1.0	2.3	Y
	Bedroom 3	1.0	2.9	Y
	Bedroom 4	1.0	2.6	Y
F	Kitchen/Dining	1.5	2.8	Y
	Living	1.5	4.8	Y
	Bedroom 1	1.0	5.6	Y
	Bedroom 2	1.0	2.8	Y
	Bedroom 3	1.0	2.9	Y
	Bedroom 4	1.0	6.0	Y
F1	Kitchen/Dining	1.5	2.9	Y
	Living	1.5	5.9	Y
	Bedroom 1	1.0	6.2	Y
	Bedroom 2	1.0	2.8	Y
	Bedroom 3	1.0	3.0	Y
	Bedroom 4	1.0	6.4	Y
G	Kitchen/Dining	1.5	5.1	Y
	Living	1.5	6.5	Y
	Bedroom 1	1.0	4.7	Y
	Bedroom 2	1.0	4.7	Y
	Bedroom 3	1.0	1.6	Y
H	Kitchen/Dining	1.5	6.4	Y
	Living	1.5	6.1	Y
	Bedroom 1	1.0	9.7	Y
	Bedroom 2	1.0	5.4	Y

House Type	Room Type	BS 8206 minimum standard (%)	Daylight factor level expected (%)	Compliance
	Bedroom 3	1.0	1.6	Y
J	Kitchen/Dining	1.5	6.5	Y
	Living	1.5	6.1	Y
	Bedroom 1	1.0	5.3	Y
	Bedroom 2	1.0	9.5	Y
	Bedroom 3	1.0	5.5	Y
	Bedroom 4	1.0	1.6	Y

Table 11.3: House Types - Average Daylight Factor Results.

Daylight Impact Results for Duplex Apartments within the Proposed Development

All Duplex Apartment Types to be provided within the development have been analysed with the results presented below considered representative of the daylight levels to be expected across the development.

The design and layout of each duplex type has been carefully considered, with generous window openings and dual aspect rooms to maximise daylight where possible.

In summary, all Duplex Apartments not only meet but greatly exceed the minimum average daylight factor requirements resulting in a positive effect for the future residents of the development. Table 11.4 below outlines the results.

House Type	Room Type	BS 8206 minimum standard (%)	Daylight factor level expected (%)	Compliance
K	Kitchen/Dining	1.5	4.8	Y
	Bedroom 1	1.0	4.0	Y
	Bedroom 2	1.0	4.2	Y
L	Kitchen/Dining	1.5	2.6	Y
	Living	1.5	3.2	Y
	Bedroom 1	1.0	6.1	Y
	Bedroom 2	1.0	4.0	Y
	Bedroom 3	1.0	5.9	Y
L1	Kitchen/Dining	1.5	3.0	Y
	Living	1.5	3.8	Y
	Bedroom 1	1.0	3.2	Y
	Bedroom 2	1.0	3.2	Y
	Bedroom 3	1.0	3.0	Y
L2	Kitchen/Dining	1.5	3.0	Y
	Living	1.5	3.7	Y
	Bedroom 1	1.0	2.5	Y
	Bedroom 2	1.0	2.8	Y
	Bedroom 3	1.0	2.9	Y
L3	Kitchen/Dining	1.5	3.2	Y
	Living	1.5	3.8	Y
	Bedroom 1	1.0	2.9	Y
	Bedroom 2	1.0	3.0	Y

House Type	Room Type	BS 8206 minimum standard (%)	Daylight factor level expected (%)	Compliance
	Bedroom 3	1.0	3.0	Y
M1	Kitchen/Dining	1.5	5.2	Y
	Bedroom 1	1.0	1.8	Y
M2	Kitchen/Dining	1.5	3.8	Y
	Bedroom 1	1.0	1.7	Y
N1	Kitchen/Dining	1.5	4.6	Y
	Bedroom 1	1.0	4.0	Y
	Bedroom 2	1.0	5.3	Y
N2	Kitchen/Dining	1.5	4.3	Y
	Bedroom 1	1.0	2.0	Y
	Bedroom 2	1.0	3.4	Y

Table 11.4: Duplex Apartments Types - Average Daylight Factor Results.

Daylight Impact Results for Apartments within the Proposed Development

In order to fully assess the potential daylight impact to the apartments within the proposed development, apartment units considered 'worst case' have been selected for analysis and deemed representative of the apartment units across the development. Worst case units are those at ground floor level with less access to daylight. If units at lower levels are compliant with the ADF criteria, units at upper levels with greater access to daylight will also comply.

The design and layout of each apartment type has been carefully considered with generous window openings being provided. Where the opportunity arises, rooms have been designed as dual aspect and bathroom and storage areas have been provided to the back of apartments to give living spaces greater access to daylight.

In summary, all apartments not only meet but greatly exceed the minimum average daylight factor requirements resulting in a positive effect for the future residents of the development.

Tables 11.5, 11.6, 11.7 and 11.8 below outlines the results.

Blocks 1 & 2 Apartments	Room Type	BS 8206 minimum standard (%)	Daylight factor level expected (%)	Compliance
Apt. 1.01 Apt. 2.01	Kitchen/Dining	1.5	3.9	Y
	Bedroom 1	1.0	2.6	Y
	Bedroom 2	1.0	3.3	Y
	Bedroom 3	1.0	3.0	Y
Apt. 1.02 Apt. 2.02	Kitchen/Dining	1.5	2.1	Y
	Bedroom 1	1.0	3.4	Y
Apt. 1.03	Kitchen/Dining	1.5	6.3	Y
	Bedroom 1	1.0	3.1	Y
	Bedroom 2	1.0	5.3	Y
Apt. 1.04	Kitchen/Dining	1.5	3.7	Y
	Bedroom 1	1.0	5.4	Y
	Bedroom 2	1.0	6.1	Y
Apt. 1.05 Apt. 2.03	Kitchen/Dining	1.5	3.5	Y
	Bedroom 1	1.0	2.6	Y

	Bedroom 2	1.0	2.6	Y
Apt. 1.06 Apt. 2.04	Kitchen/Dining	1.5	3.1	Y
	Bedroom 1	1.0	4.2	Y
	Bedroom 2	1.0	2.6	Y

Table 11.5: Apartments Types Blocks 1 & 2 - Average Daylight Factor Results – Room references in drawings No. 6168-207 & 6168-213.

Blocks 3, 4, 6, 7 & 9 Apartments	Room Type	BS 8206 minimum standard (%)	Daylight factor level expected (%)	Compliance
Apt. 3.01 Apt. 4.01 Apt. 6.01 Apt. 7.01 Apt. 9.01	Kitchen/Dining	1.5	4.4	Y
	Bedroom 1	1.0	5.0	Y
	Bedroom 2	1.0	5.4	Y
Apt. 3.02 Apt. 4.02 Apt. 6.02 Apt. 7.02 Apt. 9.02	Kitchen/Dining	1.5	3.7	Y
	Bedroom 1	1.0	3.2	Y
	Bedroom 2	1.0	1.8	Y
Apt. 3.03 Apt. 4.03 Apt. 6.03 Apt. 7.03 Apt. 9.03	Kitchen/Dining	1.5	6.1	Y
	Bedroom 1	1.0	3.0	Y
	Bedroom 2	1.0	1.9	Y
Apt. 3.04 Apt. 4.04 Apt. 6.04 Apt. 7.04 Apt. 9.04	Kitchen/Dining	1.5	5.4	Y
	Bedroom 1	1.0	3.4	Y
Apt. 3.05 Apt. 4.05 Apt. 6.05 Apt. 7.05 Apt. 9.05	Kitchen/Dining	1.5	2.8	Y
	Bedroom 1	1.0	2.2	Y
Apt. 3.06 Apt. 4.06 Apt. 6.06 Apt. 7.06 Apt. 9.06	Kitchen/Dining	1.5	2.7	Y
	Bedroom 1	1.0	2.1	Y
Apt. 3.07 Apt. 4.07 Apt. 6.07 Apt. 7.07 Apt. 9.07	Kitchen/Dining	1.5	7.4	Y
	Bedroom 1	1.0	3.1	Y
	Bedroom 2	1.0	2.3	Y

Table 11.6: Apartments Types Blocks 3, 4, 6, 7 & 9 - Average Daylight Factor Results – Room references in drawings No. 6168-219, 6168-225, 6168-238, 6168-243 & 6168-254

Blocks 5 Apartments	Room Type	BS 8206 minimum standard (%)	Daylight factor level expected (%)	Compliance
Apt. 5.01	Kitchen/Dining	1.5	4.3	Y
	Bedroom 1	1.0	5.0	Y
	Bedroom 2	1.0	5.4	Y
Apt. 5.02	Kitchen/Dining	1.5	3.8	Y
	Bedroom 1	1.0	1.9	Y
	Bedroom 2	1.0	2.0	Y
Apt. 5.03	Kitchen/Dining	1.5	3.8	Y
	Bedroom 1	1.0	1.9	Y
	Bedroom 2	1.0	2.0	Y
Apt. 5.04	Kitchen/Dining	1.5	4.4	Y
	Bedroom 1	1.0	5.0	Y
	Bedroom 2	1.0	5.4	Y
Apt. 5.05	Kitchen/Dining	1.5	3.7	Y
	Bedroom 1	1.0	2.6	Y
	Bedroom 2	1.0	3.0	Y
	Bedroom 3	1.0	3.2	Y
Apt. 5.06	Kitchen/Dining	1.5	2.8	Y
	Bedroom 1	1.0	2.0	Y
Apt. 5.07	Kitchen/Dining	1.5	2.8	Y
	Bedroom 1	1.0	2.1	Y
Apt. 5.08	Kitchen/Dining	1.5	3.7	Y
	Bedroom 1	1.0	2.6	Y
	Bedroom 2	1.0	2.9	Y
	Bedroom 3	1.0	3.2	Y

Table 11.7: Apartments Types Block 5 - Average Daylight Factor Results – Room references in drawings No. 6168-231

Block 8 Apartments	Room Type	BS 8206 minimum standard (%)	Daylight factor level expected (%)	Compliance
Apt. 8.01	Kitchen/Dining	1.5	3.5	Y
	Bedroom 1	1.0	2.6	Y
	Bedroom 2	1.0	3.4	Y
	Bedroom 3	1.0	3.1	Y
Apt. 8.02	Kitchen/Dining	1.5	2.1	Y
	Bedroom 1	1.0	3.5	Y
Apt. 8.03	Kitchen/Dining	1.5	5.5	Y
	Bedroom 1	1.0	2.5	Y
	Bedroom 2	1.0	4.6	Y
Apt. 8.04	Kitchen/Dining	1.5	5.4	Y
	Bedroom 1	1.0	2.1	Y
	Bedroom 2	1.0	2.2	Y
Apt. 8.05	Kitchen/Dining	1.5	3.6	Y
	Bedroom 1	1.0	2.1	Y
	Bedroom 2	1.0	2.1	Y
Apt. 8.06	Kitchen/Dining	1.5	3.6	Y
	Bedroom 1	1.0	6.3	Y
	Bedroom 2	1.0	2.3	Y

Table 11.8: Apartments Types Block 8 - Average Daylight Factor Results – Room references in drawings No. 6168-249

Impact to Adjacent Properties from the Proposed Development

In addition to assessing the impacts to the future inhabitants of the proposed development, the impact on existing adjacent properties external to the development has also been analysed. Figure 11.9 and Table 11.2 above identify the properties that are considered to be in close proximity to the development and require analysis.

In summary the results confirm that the existing developments fall below the 25° line as per Step 1 of the BRE Guidance (Refer to Figure 11.2) confirming that the proposed Kilcarbery development will not cause an impact in relation to daylight to the adjacent properties. Therefore it can be stated that the development will have a neutral effect on the adjacent properties.

Impacts to Adjacent Properties Results

In order to analyse any potential impact on the properties adjacent to the proposed Kilcarbery development, a line has been created which is reflective of a 25° taken from a horizontal level at 1.6m above ground to the highest point on the proposed structures.

Figures 11.10 and 11.11 show that all adjacent properties fall beyond the 25° line, therefore no impact is perceived to the adjacent properties from the proposed Kilcarbery development.

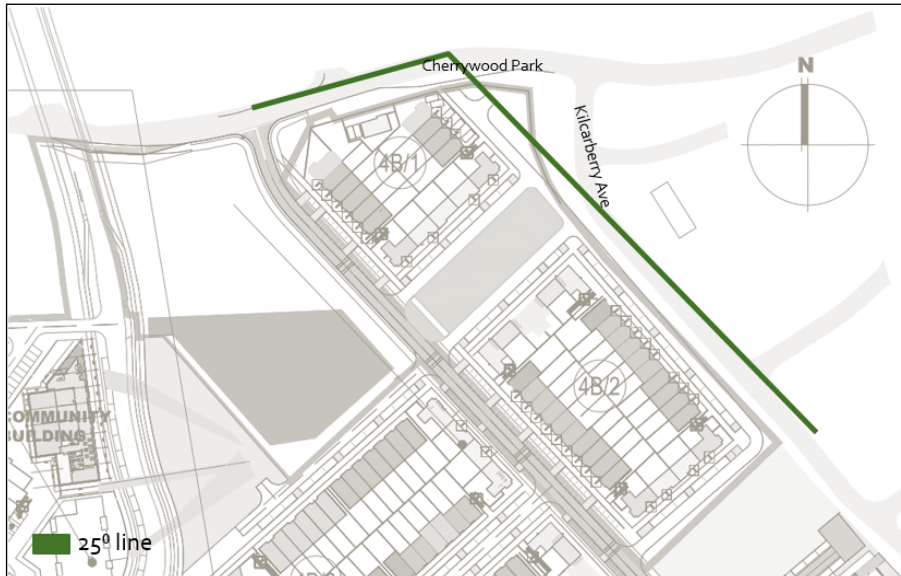


Figure 11.10: 25° Line Adjacent Properties – Cherrywood Park and Kilcarbery Avenue

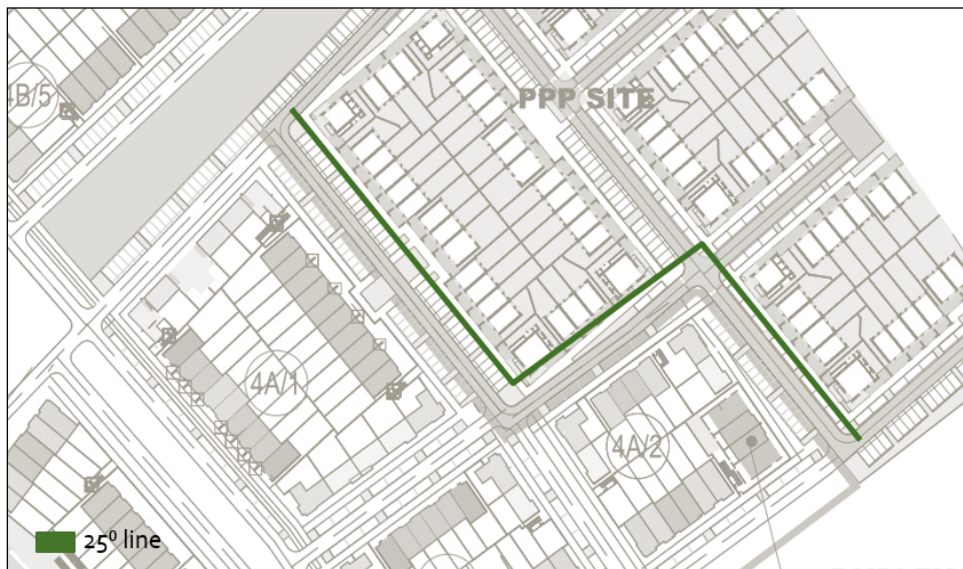


Figure 11.11: 25° Line Adjacent Properties – PPP Site

11.5.1.3 Do-Nothing Impact

The proposed site is located in an area zoned under the current County Development Plan 2016-2022 for the provision of new residential communities in accordance with approved area plans.

If this particular development was not to proceed, it is likely that a similar development would be developed at the site, with the same potential impacts to daylight as the proposed development.

11.5.2 Cumulative – Kilcarbery

In the context of daylight the longer term cumulative impacts are considered not significant as the daylight assessment has shown the development is in compliance with the BRE requirements for daylight both within the proposed development and in relation to adjacent properties.

11.5.2.1 Construction Stage

The analysis considers both the daylight impact to future residents, and the impact to existing adjacent properties as a result of the proposed development. It is considered that during the construction phase there will be no impacts experienced in relation to daylight and sunlight due to the proposed development, and the effect to the existing properties in the adjoining developments will be neutral.

11.5.2.2 Operational Stage

The analysis considers both the daylight impact to future residents, and the impact to existing adjacent properties as a result of the proposed development. It is considered that during the operational phase there will be no impacts experienced in relation to daylight and sunlight due to the proposed development, and the effect to the existing properties in the adjoining developments will be neutral.

11.5.2.3 Do-Nothing Impact

The proposed site is located in an area zoned under the current County Development Plan 2016-2022 for the provision of new residential communities in accordance with approved area plans, and a master plan has been approved for the site by South Dublin County Council.

If this particular development was not to proceed, it is likely that a similar development would be developed at the site, which could pose a potential impact to the site and surrounding areas.

11.6 Ameliorative, Remedial or Reductive Measures

11.6.1 Proposed Development

11.6.1.1 Construction Stage

Remedial measures during the construction phase in relation to daylight are not considered to be required.

11.6.1.2 Operational Stage

Minimal impact, if any, is expected in relation to the daylight levels experienced by the future inhabitants of the proposed site and to the existing inhabitants of the adjoining sites, therefore no remedial or reductive measures are required.

11.6.2 Cumulative – Kilcarbery

11.6.2.1 Construction Stage

Remedial measures during the construction phase in relation to daylight are not considered to be required.

11.6.2.2 Operational Stage

Minimal impact, if any, is expected in relation to the daylight levels experienced by the future inhabitants of the proposed site and to the existing inhabitants of the adjoining sites, therefore no remedial or reductive measures are required.

11.7 Residual Impact of the Proposed Development

11.7.1 Proposed Development

11.7.1.1 Construction Stage

Minimal impact, if any, is expected in relation to the daylight levels experienced by the future inhabitants of the proposed site and to the existing inhabitants of the adjoining sites, therefore it is considered that there will be no residual impacts from the construction stage in respect of daylight.

11.7.1.2 Operational Stage

Minimal impact, if any, is expected in relation to the daylight levels experienced by the future inhabitants of the proposed site and to the existing inhabitants of the adjoining sites, therefore it is considered that there will be no residual impacts during the operational stage in respect of daylight.

11.8 Monitoring

No on-going monitoring is required in relation to daylight.

11.9 Reinstatement

If all grounds are reinstated as per the proposed design no impacts in relation to daylight are perceived.