Daylight Analysis and Overshadowing

Stocking Lane, Dublin 16

14/09/2021

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Contents

1. Executive Summary

H3D were engaged by MacCabe Durney Barnes to provide a report on the impact of the proposed residential development at Stocking Lane, Dublin 16. H3D were instructed to carry out the following:

- To create a 3D computer analysis model of the scheme based upon drawings provided by Matt Barnes Architect.
- Analyse the Average Daylight Factor (ADF) in respect of the proposed residential units.
- Carry out a study to investigate if the amenity areas within the site achieve 2 hours of sunlight on March 21st.
- Carry out a study to investigate if the adjacent amenity areas achieve 2 hours of sunlight on March 21st.
- Carry out a Vertical Sky Component (VSC) analysis on the adjacent windows facing the proposed development.
- Prepare a report setting out the analysis and the findings.

Methodology

The assessment of the proposed development was prepared using the methodology's set out in the British Standard: Lighting for Buildings – Part 2: Code for Practice for Daylighting, BRE 209, 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice', Second Edition 2011, by P. J. Littlefair and the Design Standards for New Apartments - Guidelines for Planning Authorities (March 2018).

BRE Guide and Advisory Note

The numerical guidelines given in these documents are purely advisory. The BRE Guide states that:

> "The advice given here is not mandatory and the guide should not be an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design."
>
> "It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location" (Section 1.6, p1)

Overall Conclusion.

In our opinion, after carrying out a comprehensive daylight and sunlight assessment of the proposed development using simulation modelling and comparing results achieved against the BRE Guide and BS recommended guidelines, the proposed development would not cause an unacceptable overshadowing impact on the neighbouring rear garden amenity spaces.

From the Average Daylight Factor (ADF) analysis, all habitable spaces passed the BRE guideline levels. In our opinion, the proposed development is considered to provide an excellent standard of amenity from a daylight perspective.

All rear garden amenity spaces and communal spaces analysed exceeded the BRE guideline level for overshadowing thus meeting the BRE guideline levels.

All windows analysed exceeded the BRE guideline level for VSC thus meeting the BRE guideline levels.

Cian Heffernan
MSc, BEng (Hon) Civil, PgD

2. Average Daylight Factor (ADF)

This portion of the report considers the daylight analysis of the proposed development at Stocking Lane, Dublin 16 The objective of this analysis is to demonstrate that the proposed residential units provided as part of the proposed development provide an acceptable standard of amenity in respect of daylight.

The BRE document defines ADF as: The ratio of total daylight flux incident on the working plane to the area of the working plane, expressed as a percentage of the outdoor illuminance on a horizontal plane due to an unobstructed CIE standard overcast sky.

In housing *BS 8206-2:2008: Lighting for buildings - Part 2: Code of practice for daylighting* [1] gives minimum values of ADF of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms. The results of the ADF for the tested rooms are shown in the tables below.

The calculations were carried out using the 'IES Virtual Environment' software and based on the layout drawings prepared by Matt Barnes Architect.

[1] It is noted that BS 8206-2:2008: Lighting for buildings - Part 2: Code of practice for daylighting was recently replaced with BS EN 17037:2018 Daylight in Buildings. However, given that the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities refer to the BS 8206-2:2008 and not to BS EN 17037:2018, BS 8206:2008 has been referenced in the preparation of this report.

Average Daylight Factor (ADF)					
Unit	Floor	Room	Minimum ADF recommended in BS 8206[1] (%)	Predicted ADF	Compliance Demonstrated
1	00	Kitchen	2.0	2.7	Yes
1	00	Living	1.5	7.8	Yes
1	01	Bedroom 1	1.0	3.9	Yes
1	01	Bedroom 2	1.0	3.2	Yes
1	01	Bedroom 3	1.0	3.2	Yes
1	01	Bedroom 4	1.0	5.2	Yes
2	00	Bedroom 1	1.0	3.3	Yes
2	00	KLD	2.0	3.4	Yes
3	01	Bedroom 1	1.0	2.2	Yes
3	01	Bedroom 2	1.0	2.9	Yes
3	01	Bedroom 3	1.0	3.8	Yes
3	02	KLD	2.0	3.1	Yes

Table 1: Block A - 1-3 - Predicted ADF Results

Average Daylight Factor (ADF)					
Unit	Floor	Room	Minimum ADF recommended in BS 8206[1] (%)	Predicted ADF	Compliance Demonstrated
16	00	Kitchen	2.0	2.5	Yes
16	00	Living	1.5	7.9	Yes
16	01	Bedroom 1	1.0	3.3	Yes
16	01	Bedroom 2	1.0	3.0	Yes
16	01	Bedroom 3	1.0	2.8	Yes
16	01	Bedroom 4	1.0	4.5	Yes
17	00	Bedroom 1	1.0	6.1	Yes
17	00	KLD	2.0	2.9	Yes
18	01	Bedroom 1	1.0	2.3	Yes
18	01	Bedroom 2	1.0	2.5	Yes
18	01	Bedroom 3	1.0	3.1	Yes
18	02	KLD	2.0	2.7	Yes

Table 2: Block A - 16-18 - Predicted ADF Results

Average Daylight Factor (ADF)					
Unit	Floor	Room	Minimum ADF recommended in BS 8206[1] (%)	Predicted ADF	Compliance Demonstrated
House D1	00	Kitchen	2.0	6.7	Yes
House D1	00	Living	1.5	7.1	Yes
House D1	02	Bedroom 1	1.0	2.1	Yes
House D1	01	Bedroom 2	1.0	4.0	Yes
House D1	01	Bedroom 3	1.0	3.8	Yes
House D1	01	Bedroom 4	1.0	8.1	Yes
House D1	00	Bedroom 1	1.0	2.1	Yes

Table 3: Block D - Predicted ADF Results

Average Daylight Factor (ADF)					
Unit	Floor	Room	Minimum ADF recommended in BS 8206[1] (%)	Predicted ADF	Compliance Demonstrated
28	00	Bedroom 1	1.0	5.9	Yes
28	00	KLD	2.0	4.1	Yes
29	00	Bedroom 1	1.0	3.4	Yes
29	00	Bedroom 2	1.0	4.4	Yes
29	00	KLD	2.0	3.4	Yes
30	01	Bedroom 1	1.0	3.2	Yes
30	01	Bedroom 2	1.0	5.2	Yes
30	01	KLD	2.0	2.5	Yes
31	01	Bedroom 1	1.0	4.4	Yes
31	01	Bedroom 2	1.0	3.1	Yes
31	01	Bedroom 3	1.0	4.0	Yes
31	02	KLD	2.0	3.0	Yes
32	02	Bedroom 1	1.0	3.8	Yes
32	02	Bedroom 2	1.0	6.5	Yes
32	02	KLD	2.0	5.2	Yes

Table 4: Block E 28-32 - Predicted ADF Results

Average Daylight Factor (ADF)					
Unit	Floor	Room	Minimum ADF recommended in BS 8206[1] (%)	Predicted ADF	Compliance Demonstrated
33	00	Bedroom 1	1.0	1.4	Yes
33	00	Bedroom 2	1.0	3.8	Yes
33	00	KLD	2.0	2.8	Yes
34	00	Bedroom 1	1.0	3.4	Yes
34	00	Bedroom 2	1.0	2.9	Yes
34	00	KLD	2.0	2.2	Yes
35	00	Bedroom 1	1.0	1.7	Yes
35	00	KLD	2.0	2.2	Yes
36	00	Bedroom 1	1.0	2.1	Yes
36	00	KLD	2.0	2.7	Yes
37	00	Bedroom 1	1.0	1.5	Yes
37	00	Bedroom 2	1.0	1.6	Yes
37	00	KLD	2.0	2.3	Yes
38	00	Bedroom 1	1.0	1.7	Yes
38	00	Bedroom 2	1.0	1.0	Yes
38	00	KLD	2.0	3.3	Yes

Table 5: Block F 33-38 - Predicted ADF Results

Average Daylight Factor (ADF)					
Unit	Floor	Room	Minimum ADF recommended in BS 8206[1] (%)	Predicted ADF	Compliance Demonstrated
55	00	Bedroom 1	1.0	1.3	Yes
55	00	Bedroom 2	1.0	0.6	Yes
55	00	KLD	2.0	2.7	Yes
56	00	Bedroom 1	1.0	1.2	Yes
56	00	Bedroom 2	1.0	1.5	Yes
56	00	KLD	2.0	2.1	Yes
57	00	Bedroom 1	1.0	1.7	Yes
57	00	KLD	2.0	2.0	Yes
58	00	Bedroom 1	1.0	2.9	Yes
58	00	KLD	2.0	2.0	Yes
59	00	Bedroom 1	1.0	1.1	Yes
59	00	KLD	2.0	2.6	Yes

Table 6: Block G 55-59 - Predicted ADF Results

Average Daylight Factor (ADF)					
Unit	Floor	Room	Minimum ADF recommended in BS 8206[1] (%)	Predicted ADF	Compliance Demonstrated
77	00	Bedroom 1	1.0	4.2	Yes
77	00	Bedroom 2	1.0	4.1	Yes
77	00	KLD	2.0	4.6	Yes
78	00	Bedroom 1	1.0	4.2	Yes
78	00	Bedroom 2	1.0	3.7	Yes
78	00	KLD	2.0	4.2	Yes
79	00	Bedroom 1	1.0	4.3	Yes
79	00	KLD	2.0	3.3	Yes
79	00	Bedroom 1	1.0	4.3	Yes
80	00	KLD	2.0	4.4	Yes
80	00	Bedroom 1	1.0	4.3	Yes
80	00	KLD	2.0	4.8	Yes
81	01	Bedroom 3	1.0	4.4	Yes
81	01	Kitchen	2.0	3.4	Yes
81	01	Living	1.5	3.7	Yes
81	02	Bedroom 1	1.0	1.2	Yes
81	02	Bedroom 2	1.0	4.0	Yes
82	01	Bedroom 1	1.0	3.2	Yes
82	01	Kitchen	2.0	3.2	Yes
82	02	Bedroom 2	1.0	1.4	Yes
82	02	Living	1.5	3.0	Yes
83	01	Bedroom 1	1.0	3.3	Yes
83	01	Kitchen	2.0	3.1	Yes
83	02	Bedroom 2	1.0	1.6	Yes
83	02	Living	1.5	3.2	Yes
84	01	Bedroom 3	1.0	3.7	Yes
84	01	Kitchen	2.0	3.8	Yes
84	01	Living	1.5	3.6	Yes
84	02	Bedroom 1	1.0	1.4	Yes
84	02	Bedroom 2	1.0	4.3	Yes

Table 7: Block H 77-84 - Predicted ADF Results

Average Daylight Factor (ADF)					
Unit	Floor	Room	Minimum ADF recommended in BS 8206[1] (%)	Predicted ADF	Compliance Demonstrated
97	00	Bedroom 1	1.0	4.7	Yes
97	00	Bedroom 2	1.0	3.8	Yes
97	00	KLD	2.0	4.7	Yes
98	00	Bedroom 1	1.0	4.7	Yes
98	00	Bedroom 2	1.0	3.6	Yes
98	00	KLD	2.0	4.7	Yes
99	00	Bedroom 1	1.0	4.7	Yes
99	00	Bedroom 2	1.0	3.8	Yes
99	00	KLD	2.0	4.6	Yes
100	00	Bedroom 1	1.0	4.8	Yes
100	00	Bedroom 2	1.0	3.6	Yes
100	00	KLD	2.0	4.7	Yes
101	00	Bedroom 1	1.0	4.8	Yes
101	00	Bedroom 2	1.0	4.0	Yes
101	00	KLD	2.0	5.0	Yes
102	00	Bedroom 1	1.0	3.7	Yes
102	00	Bedroom 2	1.0	4.1	Yes
102	00	KLD	2.0	4.3	Yes
103	00	Bedroom 1	1.0	1.8	Yes
103	00	Bedroom 2	1.0	5.7	Yes
103	00	KLD	2.0	3.5	Yes
104	00	Bedroom 1	1.0	3.3	Yes
104	00	Bedroom 2	1.0	1.8	Yes
104	00	KLD	2.0	2.6	Yes
105	01	Bedroom 3	1.0	3.3	Yes
105	01	Kitchen	2.0	3.3	Yes
105	01	Living	1.5	1.8	Yes
105	02	Bedroom 1	1.0	2.5	Yes
105	02	Bedroom 2	1.0	3.5	Yes
106	01	Bedroom 3	1.0	3.3	Yes
106	01	KLD	2.0	1.8	Yes
106	02	Bedroom 1	1.0	2.6	Yes
106	02	Bedroom 2	1.0	3.3	Yes
107	01	Bedroom 3	1.0	3.2	Yes
107	01	KLD	2.0	1.8	Yes
107	02	Bedroom 1	1.0	4.8	Yes
107	02	Bedroom 2	1.0	3.4	Yes
108	01	Bedroom 3	1.0	3.3	Yes
108	01	KLD	2.0	1.7	Yes
108	02	Bedroom 1	1.0	2.5	Yes
108	02	Bedroom 2	1.0	3.3	Yes
109	01	Bedroom 3	1.0	3.2	Yes
109	01	KLD	2.0	4.3	Yes
109	02	Bedroom 1	1.0	1.8	Yes
109	02	Bedroom 2	1.0	2.6	Yes
110	01	Bedroom 3	1.0	3.9	Yes
110	01	KLD	2.0	3.9	Yes
110	02	Bedroom 1	1.0	1.7	Yes
110	02	Bedroom 2	1.0	5.6	Yes
111	01	Bedroom 3	1.0	4.8	Yes
111	01	Kitchen	2.0	3.8	Yes
111	01	Living	1.5	4.9	Yes
111	02	Bedroom 1	1.0	4.7	Yes
111	02	Bedroom 2	1.0	3.8	Yes

112	01	Bedroom 3	1.0	4.8	Yes
112	01	KLD	2.0	4.7	Yes
112	02	Bedroom 1	1.0	3.6	Yes
112	02	Bedroom 2	1.0	4.7	Yes

Table 8: Block H 97-112 - Predicted ADF Results

Average Daylight Factor (ADF)					
Unit	Floor	Room	Minimum ADF recommended in BS 8206[1] (%)	Predicted ADF	Compliance Demonstrated
113	00	Bedroom 1	1.0	1.3	Yes
113	00	Bedroom 2	1.0	1.7	Yes
113	00	KLD	2.0	2.0	Yes
114	00	Bedroom 1	1.0	4.1	Yes
114	00	Bedroom 2	1.0	3.7	Yes
114	00	KLD	2.0	2.0	Yes
115	00	Bedroom 1	1.0	1.0	Yes
115	00	Bedroom 2	1.0	2.8	Yes
115	00	KLD	2.0	3.0	Yes
116	00	Bedroom 1	1.0	1.1	Yes
116	00	KLD	1.0	2.7	Yes
118	01	Bedroom 1	2.0	1.3	Yes
118	01	Bedroom 2	1.0	1.9	Yes
118	01	KLD	1.0	2.0	Yes
119	01	Bedroom 1	2.0	4.2	Yes
119	01	Bedroom 2	1.0	3.8	Yes
119	01	KLD	1.0	2.0	Yes
120	01	Bedroom 1	2.0	1.0	Yes
120	01	Bedroom 2	1.0	2.7	Yes
120	01	KLD	1.0	3.1	Yes
121	01	Bedroom 1	2.0	1.1	Yes
121	01	KLD	1.0	2.8	Yes
122	02	Bedroom 1	1.0	1.3	Yes
122	02	Bedroom 2	2.0	1.8	Yes
122	02	KLD	1.0	2.0	Yes
123	02	Bedroom 1	2.0	4.1	Yes
123	02	Bedroom 2	1.5	3.7	Yes
123	02	KLD	1.0	2.0	Yes
124	02	Bedroom 1	1.0	1.0	Yes
124	02	Bedroom 2	1.0	2.8	Yes
124	02	KLD	2.0	3.1	Yes
125	02	Bedroom 1	1.0	1.2	Yes
125	02	KLD	1.0	2.8	Yes
126	02	Bedroom 1	1.0	4.0	Yes
126	02	Bedroom 2	2.0	5.7	Yes
126	02	KLD	1.0	3.1	Yes
127	03	Bedroom 1	1.0	3.1	Yes
127	03	Bedroom 2	1.0	4.6	Yes
127	03	KLD	2.0	5.3	Yes
128	03	Bedroom 1	1.0	3.8	Yes
128	03	Bedroom 2	1.0	3.7	Yes
128	03	KLD	1.0	3.7	Yes
129	03	Bedroom 1	2.0	2.8	Yes
129	03	KLD	1.0	6.9	Yes

Table 9: Block L 113-129 - Predicted ADF Results

Average Daylight Factor (ADF)					
Unit	Floor	Room	Minimum ADF recommended in BS 8206[1] (%)	Predicted ADF	Compliance Demonstrated
130	00	Bedroom 1	1.0	4.5	Yes
130	00	Bedroom 2	1.0	3.8	Yes
130	00	KLD	2.0	4.6	Yes
131	00	Bedroom 1	1.0	4.5	Yes
131	00	Bedroom 2	1.0	3.5	Yes
131	00	KLD	2.0	4.6	Yes
132	01	Bedroom	1.0	3.8	Yes
132	01	Kitchen	2.0	4.1	Yes
132	01	Living	1.5	4.5	Yes
132	02	Bedroom 1	1.0	1.5	Yes
132	02	Bedroom 3	1.0	4.9	Yes
133	01	Bedroom 2	1.0	4.1	Yes
133	01	Kitchen	2.0	3.7	Yes
133	01	Living	1.5	4.7	Yes
133	02	Bedroom 1	1.0	1.6	Yes
133	02	Bedroom 3	1.0	7.1	Yes

Table 10: Block M 130-133 - Predicted ADF Results

[1] It is noted that BS 8206-2:2008: Lighting for buildings - Part 2: Code of practice for daylighting was recently replaced with BS EN 17037:2018 Daylight in Buildings. However, given that the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities refer to the BS 8206-2:2008 and not to BS EN 17037:2018, BS 8206:2008 has been referenced in the preparation of this report.

3. Amenity Overshadowing – Within Site

As per section 3.3 of 'Site layout Planning for daylight and Sunlight' by Paul Littlefair it is recommended that at least half of the amenity areas should receive at least two hours of sunlight on March 21st.

To investigate this, the area of sunlit amenity space is calculated as a percentage of the total area. Paragraph 3.3.11 states that if the area is poorly lit and does not achieve the minimum two hours but the value is no less than 0.8 times the current state then further loss of light would not be significant.

An analysis of the neighbouring garden amenity areas was carried out by calculating the area of sunlight that received a minimum of two hours of sunlight on March 21st. Below are results in numerical and graphical form.

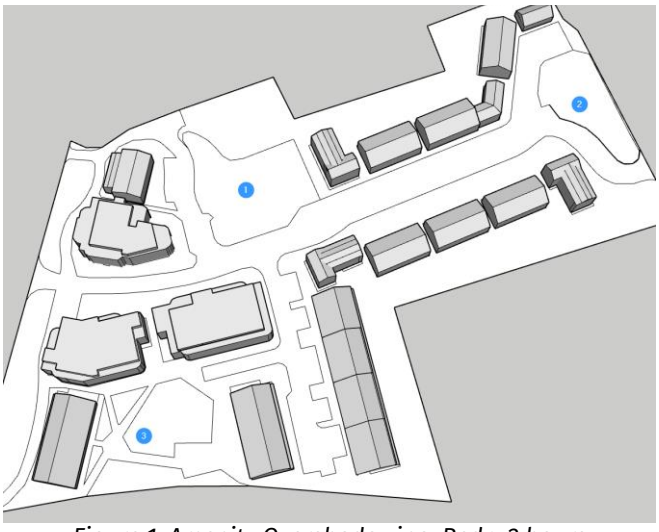

Figure 1: Amenity Overshadowing: Red > 2 hours

Amenity Overshadowing						
Number	Garden Area (m^2)	Area receiving 2 hours of sunlight on March 21st (%)	Minimum area receiving 2 hours of sunlight on March 21st (%)	Area receiving 2 hours of sunlight on March 21st - Existing (m^2)	>0.8 times existing	Compliance Demonstrated
1	1203	100	50.0%	N/A	N/A	Yes
2	764	100	50.0%	N/A	N/A	Yes
3	1203	95.85	50.0%	N/A	N/A	Yes

Table 11: Amenity Overshadowing Results – External to Site

Of the 3 communal amenity spaces analysed within the site all spaces complied with the BRE guideline level for Amenity Overshadowing.

4. Amenity Overshadowing – External to Site

As per section 3.3 of 'Site layout Planning for daylight and Sunlight' by Paul Littlefair it is recommended that at least half of the amenity areas should receive at least two hours of sunlight on March 21st.

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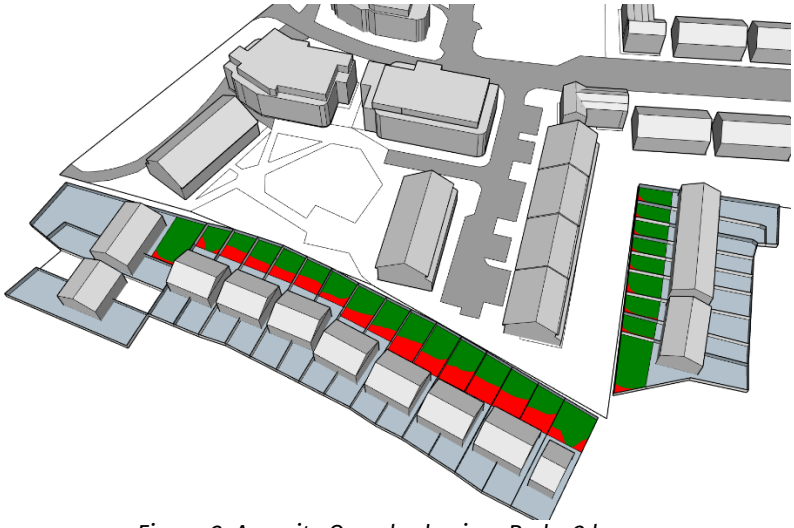

Figure 2: Amenity Overshadowing: Red > 2 hours

Amenity Overshadowing							
Road	Number	Garden Area (m^2)	Area receiving 2 hours of sunlight on March 21st (%)	Minimum area receiving 2 hours of sunlight on March 21st (%)	Area receiving 2 hours of sunlight on March 21st - Existing (m^2)	>0.8 times existing	Compliance Demonstrated
Prospect Heath	9	121.9	89.7	50.0%	N/A	N/A	Yes
Prospect Ave	1	49.7	87.4	50.0%	N/A	N/A	Yes
	3	53.5	51.5	50.0%	N/A	N/A	Yes
	5	57.1	65.5	50.0%	N/A	N/A	Yes
	7	56.2	60.0	50.0%	N/A	N/A	Yes
	9	56.2	55.6	50.0%	N/A	N/A	Yes
	11	56.0	76.6	50.0%	N/A	N/A	Yes
	13	72.5	62.6	50.0%	N/A	N/A	Yes
	15	64.2	74.5	50.0%	N/A	N/A	Yes
	17	83.9	53.4	50.0%	N/A	N/A	Yes
	19	80.2	65.6	50.0%	N/A	N/A	Yes
	21	79.1	65.2	50.0%	N/A	N/A	Yes
	23	73.5	48.8	50.0%	N/A	N/A	Yes
	25	71.8	47.56	50.0%	N/A	N/A	Yes
	27	66.3	56.81	50.0%	N/A	N/A	Yes
	29	76.7	89.6	50.0%	N/A	N/A	Yes
Springvale	30	69.6	71.4	50.0%	N/A	N/A	Yes
	65	107.3	90.0	50.0%	N/A	N/A	Yes
	66	43.2	74.3	50.0%	N/A	N/A	Yes
	67	49.3	74.0	50.0%	N/A	N/A	Yes
	68	58.2	78.1	50.0%	N/A	N/A	Yes
	69	46.1	74.0	50.0%	N/A	N/A	Yes
	70	45.0	74.0	50.0%	N/A	N/A	Yes
	71	47.3	73.7	50.0%	N/A	N/A	Yes
	72	46.5	74.0	50.0%	N/A	N/A	Yes
	73	49.3	67.5	50.0%	N/A	N/A	Yes

Table 12: Amenity Overshadowing Results – External to Site

Of the 26 rear garden spaces analysed all spaces complied with the BRE guideline level for Amenity Overshadowing.

5. Vertical Sky Component (VSC)

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

The VSC is usually expressed as a percentage and the maximum value for a completely unobstructed window is slightly less than 40%. The recommendations set down in the BRE report,' Site layout for daylight and sunlight, a guide to good practice', would indicate, for residential properties, that a VSC value of greater than 27% is acceptable. However, a 20% VSC is good for an urban area.

It should be noted that the Guide itself, within the introduction, states that the advice given was not mandatory and the Guide should not be an instrument of planning policy, its aim being to help rather constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly.

A VSC Analysis was carried out on the rear windows of the properties facing the proposed development from Prospect Avenue and Springvale.

Figure 3: 3D Aerial VIew – Prospect Avenue (1)

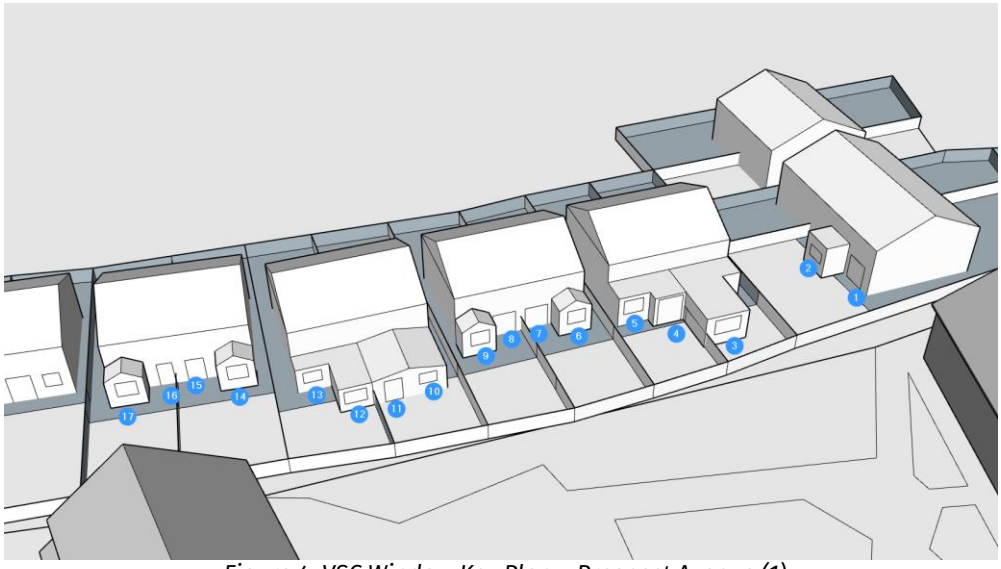

Figure 4: VSC Window Key Plan – Prospect Avenue (1)

Figure 5: 3D Aerial VIew – Prospect Avenue (2)

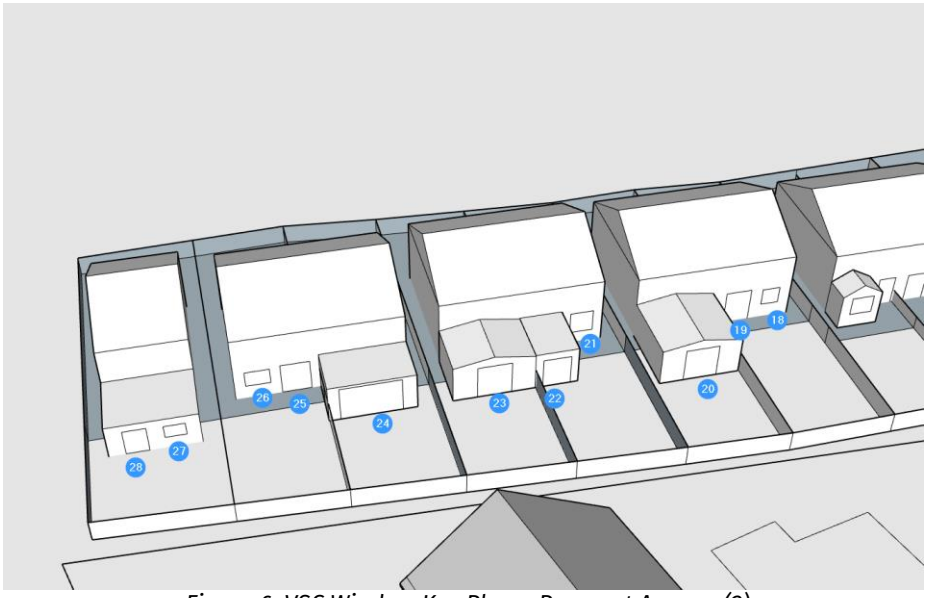

Figure 6: VSC Window Key Plan – Prospect Avenue (2)

Window	Proposed	<27% Pass/Fail	Existing	Difference	>0.8 Existing	Compliance Demonstrated
1	28.4	Pass	N/A	N/A	N/A	Yes
2	32.0	Pass	N/A	N/A	N/A	Yes
3	32.7	Pass	N/A	N/A	N/A	Yes
4	27.9	Pass	N/A	N/A	N/A	Yes
5	32.4	Pass	N/A	N/A	N/A	Yes
6	33.7	Pass	N/A	N/A	N/A	Yes
7	28.6	Pass	N/A	N/A	N/A	Yes
8	28.7	Pass	N/A	N/A	N/A	Yes
9	33.7	Pass	N/A	N/A	N/A	Yes
10	32.9	Pass	N/A	N/A	N/A	Yes
11	32.0	Pass	N/A	N/A	N/A	Yes
12	32.0	Pass	N/A	N/A	N/A	Yes
13	28.9	Pass	N/A	N/A	N/A	Yes
14	32.2	Pass	N/A	N/A	N/A	Yes
15	28.0	Pass	N/A	N/A	N/A	Yes
16	27.3	Pass	N/A	N/A	N/A	Yes
17	31.6	Pass	N/A	N/A	N/A	Yes
18	32.5	Pass	N/A	N/A	N/A	Yes
19	29.4	Pass	N/A	N/A	N/A	Yes
20	32.7	Pass	N/A	N/A	N/A	Yes
21	30.1	Pass	N/A	N/A	N/A	Yes
22	32.6	Pass	N/A	N/A	N/A	Yes
23	33.3	Pass	N/A	N/A	N/A	Yes
24	33.4	Pass	N/A	N/A	N/A	Yes
25	29.7	Pass	N/A	N/A	N/A	Yes
26	34.6	Pass	N/A	N/A	N/A	Yes
27	35.5	Pass	N/A	N/A	N/A	Yes
28	34.8	Pass	N/A	N/A	N/A	Yes

Table 13: VSC Results – Prospect Avenue

Of the 28 doors/windows analysed from Prospect Avenue all windows complied with the BRE guideline level for Vertical Sky Component.

Figure 7: 3D Aerial VIew – Springvale

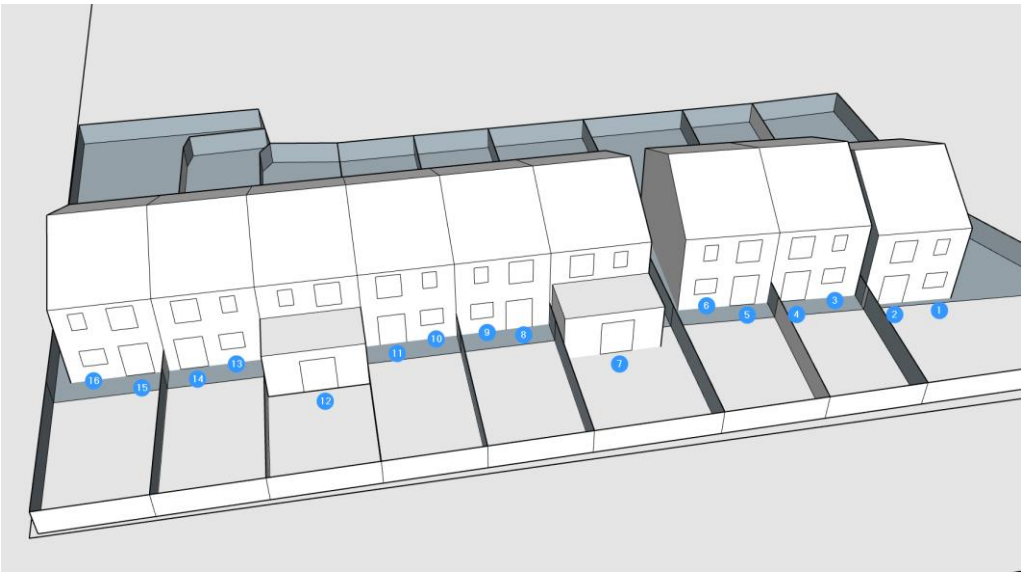

Figure 8: VSC Window Key Plan – Springvale

Window	Proposed	<27% Pass/Fail	Existing	Difference	>0.8 Existing	Compliance Demonstrated
1	33.73	Pass	N/A	N/A	N/A	Yes
2	32.45	Pass	N/A	N/A	N/A	Yes
3	31.01	Pass	N/A	N/A	N/A	Yes
4	31.84	Pass	N/A	N/A	N/A	Yes
5	31.23	Pass	N/A	N/A	N/A	Yes
6	32.10	Pass	N/A	N/A	N/A	Yes
7	31.24	Pass	N/A	N/A	N/A	Yes
8	27.17	Pass	N/A	N/A	N/A	Yes
9	31.57	Pass	N/A	N/A	N/A	Yes
10	31.54	Pass	N/A	N/A	N/A	Yes
11	27.32	Pass	N/A	N/A	N/A	Yes
12	30.29	Pass	N/A	N/A	N/A	Yes
13	28.12	Pass	N/A	N/A	N/A	Yes
14	29.77	Pass	N/A	N/A	N/A	Yes
15	30.19	Pass	N/A	N/A	N/A	Yes
16	31.15	Pass	N/A	N/A	N/A	Yes

Table 14: VSC Results – Springvale

Of the 16 doors/windows analysed from Springvale all windows complied with the BRE guideline level for Vertical Sky Component.

6. Conclusion

Average Daylight Factor (ADF)

Average daylight factor (ADF) is a measure of the adequacy of diffuse daylight within a room, and accounts for factors such as the size of a window in relation to the size of the room; the reflectance of the walls; and the nature of the glazing and number of windows.

BRE guidelines confirm that the acceptable minimum ADF target value depends on the room use. That is 1% for a bedroom, 1.5% for a living room and 2% for a family kitchen. In cases where one room serves more than one purpose, the minimum ADF should be that for the room type with the higher value. With that, the combined Kitchen/Living/Dining spaces were analysed against the 2% value.

All four habitable spaces assessed meet or exceed the BRE guideline levels, so the proposed development is considered to provide an acceptable standard of amenity from a daylight perspective. Future occupants will enjoy good levels of daylight within the proposed scheme.

Amenity Overshadowing – Within Site

All communal amenity spaces analysed exceeded the BRE guideline level for overshadowing thus meeting the BRE guideline levels.

Amenity Overshadowing – External to Site

All rear garden amenity spaces analysed exceeded the BRE guideline level for overshadowing thus meeting the BRE guideline levels.

Vertical Sky Component (VSC)

All windows analysed exceeded the BRE guideline level for VSC thus meeting the BRE guideline levels.

- Address
  Ardcroney,
  Nenagh,
  Co. Tipperary

- Online
  Email: info@h3d.ie
  Website: www.h3d.ie

- Phone: 083 8369814