

Daylight and Sunlight Report

(Neighbouring Properties)

03 August 2022

Speakers Corner, Lower Careys Rd, Limerick, Ireland



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1 EXECUTIVE SUMMARY

1.1 Overview

- 1.1.1 Right of Light Consulting has been commissioned by Fewer Harrington & Partners to undertake a daylight and sunlight study of the proposed development at Speakers Corner, Lower Careys Rd, Limerick, Ireland.
- 1.1.2 The study is based on the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice, 2nd Edition' by P J Littlefair 2011.
- 1.1.3 The aim of the study is to assess the impact of the development on the light receivable by the neighbouring properties at 1 to 12 Bourke Avenue, 172, 174 & 176 Hyde Road, 5 to 9 Lord Edward Street and Mid-West Simon Community.
- 1.1.4 The window key in Appendix 1 identifies the windows analysed in this study. Appendix 2 gives the numerical results of the various daylight and sunlight tests. Where room layouts are not known the daylight distribution test has not been undertaken.
- 1.1.5 The results demonstrate that the proposed development will have a relatively low impact on the light receivable by its neighbouring properties. Non-compliance with the BRE recommendations is limited to the daylight or sunlight tests in respect of windows 47, 56, 71, 112 to 114, 116, 134 to 136 & 141 to 143. In our opinion, taking into account the overall high level of compliance with the BRE recommendations, and the mitigating factors set out in section 4, the proposed development is acceptable in terms of daylight and sunlight.

2 INFORMATION SOURCES

2.1 Drawings

2.1.1 This report is based on the following drawings:

Davidson Hickey

002 Survey Rev -

Comhairle Cathrach & Contae Luimnigh

D-01	Site Plan	Rev -
D-02	Site Plan	Rev -

Fewer Harrington & Partners

Site Plan	Rev -
Ground Floor Plan	Rev -
First & Second Floor Plans	Rev -
Third & Fourth Floor Plans	Rev -
Roof Plan	Rev -
Front & Rear Elevations	Rev -
Side Elevations	Rev -
Section 1-1	Rev -
Nortern Site Elevation & Section 1-1	Rev -
	Ground Floor Plan First & Second Floor Plans Third & Fourth Floor Plans Roof Plan Front & Rear Elevations Side Elevations Section 1-1

2.2 Daylight Distribution Room Layout Information

2.2.1 The daylight distribution test has been applied based on the following room layout information:

Online Local Authority planning records

1 to 12 Bourke Avenue:

1705-006 Proposed Plans Rev -

Mid West Simon Community:

1624-PL04Second Floor PlanRev -1624-PL03First Floor PlanRev -1624-PL02Ground Floor PlanRev -

3 METHODOLOGY OF THE STUDY

3.1 Local Planning Policy

- 3.1.1 We understand that the Local Authority take the conventional approach of considering daylight and sunlight amenity with reference to the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice, 2nd Edition' by P J Littlefair 2011. A new European standard BS EN 17037 'Daylight in Buildings' was published in May 2019. An update to the BRE guide to take into account the European standard is expected sometime in 2021. It is not yet clear, how and to what extent, the European recommendations will be adopted by the BRE and Local Authorities.
- 3.1.2 The standards set out in the BRE guide are intended to be used flexibly. The BRE guide states:
- 3.1.3 "The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather 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."

3.2 National Planning Policy Framework

- 3.2.1 The BRE numerical guidelines should be considered in the context of the National Planning Policy Framework (NPPF), which stipulates that local planning authorities should take a flexible approach to daylight and sunlight to ensure the efficient use of land. The NPPF states:
- 3.2.2 "Local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards)."

3.3 Daylight to Windows

- 3.3.1 Diffuse daylight is the light received from the sun which has been diffused through the sky. Even on a cloudy day, when the sun is not visible, a room will continue to be lit with light from the sky. This is diffuse daylight.
- 3.3.2 Diffuse daylight calculations should be undertaken to all rooms within domestic properties, where daylight is required, including living rooms, kitchens and bedrooms. The BRE guide states that windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. These room types are non-habitable and do not have a requirement for daylight.
- 3.3.3 The BRE guide states that the tests may also be applied to non-domestic buildings where there is a reasonable expectation of daylight. The BRE guide explains that this would normally include schools, hospitals, hotels and hostels, small workshops and some offices. The BRE guide is not explicit in terms of which types of offices it regards as having a requirement for daylight. However, it is widely accepted amongst consultants and local authorities, that for planning purposes, offices (which are commercial in nature) do not have a requirement for daylight. The point is touched on in the 'Daylighting and Sunlighting' guidance note published by the Royal Institution of Chartered Surveyors (RICS), which gives guidance to surveyors on how to produce their reports:
- 3.3.4 "The report should establish the limits of the assessment. For example, existing commercial premises are rarely assessed for loss of amenity."
- 3.3.5 The BRE guide contains two tests which measure diffuse daylight:

Test 1 Vertical Sky Component

- 3.3.6 The Vertical Sky Component is a measure of available skylight at a given point on a vertical plane. Diffuse daylight may be adversely affected if after a development the Vertical Sky Component is both less than 27% and less than 0.8 times its former value.
- 3.3.7 The BRE guide states that the total amount of skylight can be calculated by finding the Vertical Sky Component at the centre of each main window. The BRE guide does not define the term 'main window'. However, in our opinion, where a room has

multiple windows, the largest window is usually taken as the main window and the smaller window(s) as secondary. Although we generally follow the practice of testing all windows, including secondary windows, our interpretation of the BRE guide is that the Vertical Sky Component targets do not apply to secondary windows.

Test 2 Daylight Distribution

- 3.3.8 The distribution of daylight within a room can be calculated by plotting the 'no sky line'. The no sky line is a line which separates areas of the working plane that do and do not have a direct view of the sky. Daylight may be adversely affected if, after the development, the area of the working plane in a room which can receive direct skylight is reduced to less than 0.8 times its former value.
- 3.3.9 The BRE guide states that both the total amount of skylight (Vertical Sky Component) and its distribution within the building (Daylight Distribution) are important. The BRE guide states that where room layouts are known, the impact on the daylighting distribution can be found by plotting the 'no sky line' in each of the main rooms. Therefore, we are of the opinion that application of the test is not a requirement of the BRE guide where room layouts are not known. We don't endorse the practice of applying the test based on assumed room layouts, because the test is very sensitive to the size and layout of the room and the results are likely to be misleading. However, we can provide additional daylight distribution data upon request by the local authority, if neighbouring room layout information is confirmed.

3.4 Sunlight availability to Windows

- 3.4.1 The BRE sunlight tests should be applied to all main living rooms and conservatories which have a window which faces within 90 degrees of due south. The guide states that kitchens and bedrooms are less important, although care should be taken not to block too much sunlight. The tests should also be applied to non-domestic buildings where there is a particular requirement for sunlight.
- 3.4.2 The test is intended to be applied to main windows which face within 90 degrees of due south. However, the BRE guide explains that if the main window faces within 90 degrees of due north, but a secondary window faces within 90 degrees of due south, sunlight to the secondary window should be checked. For completeness, we have

tested all windows which face within 90 degrees of due south. The BRE guide states that sunlight availability may be adversely affected if the centre of the window:

- receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March and
- receives less than 0.8 times its former sunlight hours during either period and
- has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

3.5 Overshadowing to Gardens and Open Spaces

- 3.5.1 The availability of sunlight should be checked for all open spaces where sunlight is required. This would normally include:
 - Gardens, usually the main back garden of a house
 - Parks and playing fields
 - Children's playgrounds
 - Outdoor swimming pools and paddling pools
 - Sitting out areas, such as those between non-domestic buildings and in public squares
 - Focal points for views such as a group of monuments or fountains.
- 3.5.2 One way to consider overshadowing is by preparing shadow plots. However, the BRE guide states that it must be borne in mind that nearly all structures will create areas of new shadow, and some degree of transient overshadowing is to be expected. Therefore, shadow plots are of limited use as interpretation of the plots is subjective. Shadow plots have not been undertaken as part of this study.
- 3.5.3 The BRE guide also contains an objective overshadowing test which has been adopted for the purpose of this study. The guide recommends that at least 50% of the area of each amenity space listed above 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 which can receive two hours of sunlight on 21 March is less than 0.8 times its former value, then the loss of light is likely to be noticeable.

4 RESULTS OF THE STUDY

4.1 Windows & Amenity Areas Considered

- 4.1.1 The aim of the study is to assess the impact of the development on the light receivable by the neighbouring properties at 1 to 12 Bourke Avenue, 172, 174 & 176 Hyde Road, 5 to 9 Lord Edward Street and Mid-West Simon Community.
- 4.1.2 Appendix 1 provides a plan and photographs to indicate the positions of the windows and outdoor amenity areas analysed in this study. Appendix 2 lists the detailed numerical daylight and sunlight test results.

4.2 Daylight to Windows

Vertical Sky Component

- 4.2.1 All windows which have a requirement for daylight, pass the Vertical Sky Component test, with the exception of windows 112 to 114 at 6 to 7 Lord Edward Street and 134 to 136 & 141 to 143 at 5 Lord Edward Street. However, for the windows that do not pass, the following mitigating factors apply:
- 4.2.2 The BRE guide acknowledges that if an existing neighbouring building stands close to the common boundary a higher degree of obstruction may be unavoidable. The guide goes on to explain that where existing neighbouring buildings sit close to the boundary, as with windows 112 to 114 at 6 to 7 Lord Edward Street, alternative Vertical Sky Component targets may be applied. The methodology for setting new targets is set out in Appendix F of the guide. The alternative Vertical Sky Component targets are derived by calculating the level of light that the window would achieve if obstructed by a hypothetical 'mirror-image' of the existing neighbouring building, an equal distance away from the boundary. However, we have not taken this approach due to the irregular boundary which makes it impractical to derive alternative targets using the mirror image approach. Nevertheless, we are of the opinion that the closeness of the windows to the boundary remains a mitigating factor.
- 4.2.3 Windows 113, 114 & 141 at 5 & 6 to 7 Lord Edward Street, achieve before/after ratios of 0.7 and above, which is fairly close to the target of 0.8 stated in the BRE guide.

4.2.4 Furthermore, the BRE guide states that its numerical guidelines should be interpreted flexibly since natural lighting is only one of many factors in site layout design.

Daylight Distribution

4.2.5 We have undertaken the Daylight Distribution test where room layouts are known. All rooms with a requirement for daylight pass the Daylight Distribution test with the exception of the rooms served by windows 47, 56 and 71 which appear to serve bedrooms. In our opinion, this is a mitigating factor because the BRE guide states that bedrooms should be analysed, although they are less important than living rooms, dining rooms and kitchens. Furthermore, whilst the BRE guide gives numerical guidelines, the guide states that these should be interpreted flexibly, since natural lighting is only one of many factors in site layout design.

4.3 Sunlight to Windows

4.3.1 All windows with a requirement for daylight pass the Annual Probable Sunlight Hours test with the exception of window 116 at 6 to 7 Lord Edward Street. Since we have not had access to the neighbouring properties, we are not able to confirm room uses. However, in our opinion, the Annual Probable Sunlight Hours targets stated in the BRE guide are only intended to be applied to main living room windows. This is because the BRE guide states that kitchens and bedrooms are less important. From our external observations, it seems unlikely that the window which falls short serves a main living room. Furthermore, whilst the BRE guide gives numerical guidelines, the guide states that these should be interpreted flexibly, since natural lighting is only one of many factors in site layout design.

4.4 Overshadowing to Gardens and Open Spaces

4.4.1 All gardens and open spaces tested meet the BRE recommendations.

4.5 Conclusion

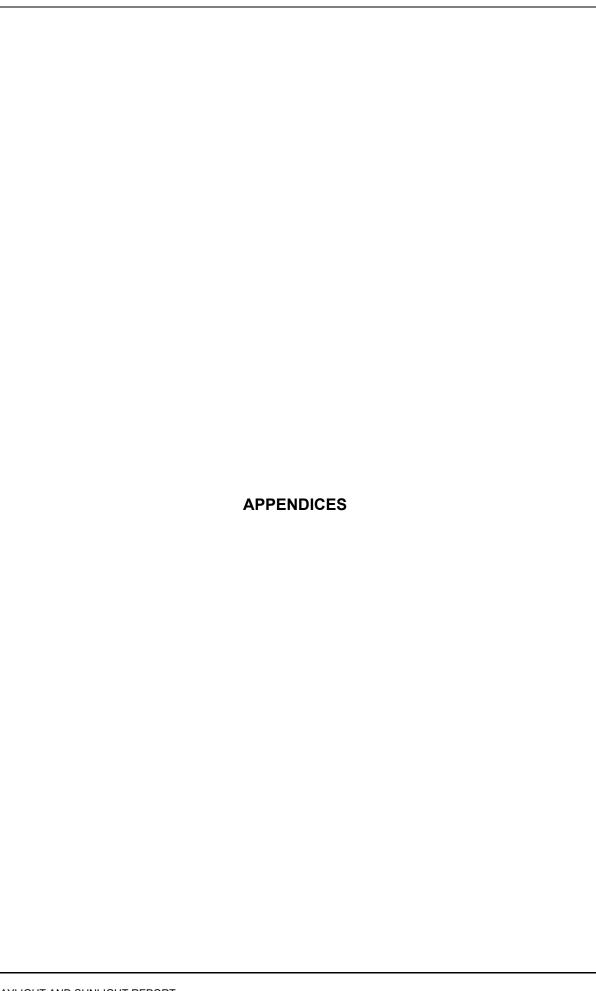
4.5.1 The results demonstrate that the proposed development will have a relatively low impact on the light receivable by its neighbouring properties. Non-compliance with the BRE recommendations is limited to the daylight or sunlight tests in respect of windows 47, 56, 71, 112 to 114, 116, 134 to 136 & 141 to 143. In our opinion, taking into account the overall high level of compliance with the BRE recommendations, and

the mitigating factors set out in section 4, the proposed development is acceptable in terms of daylight and sunlight.

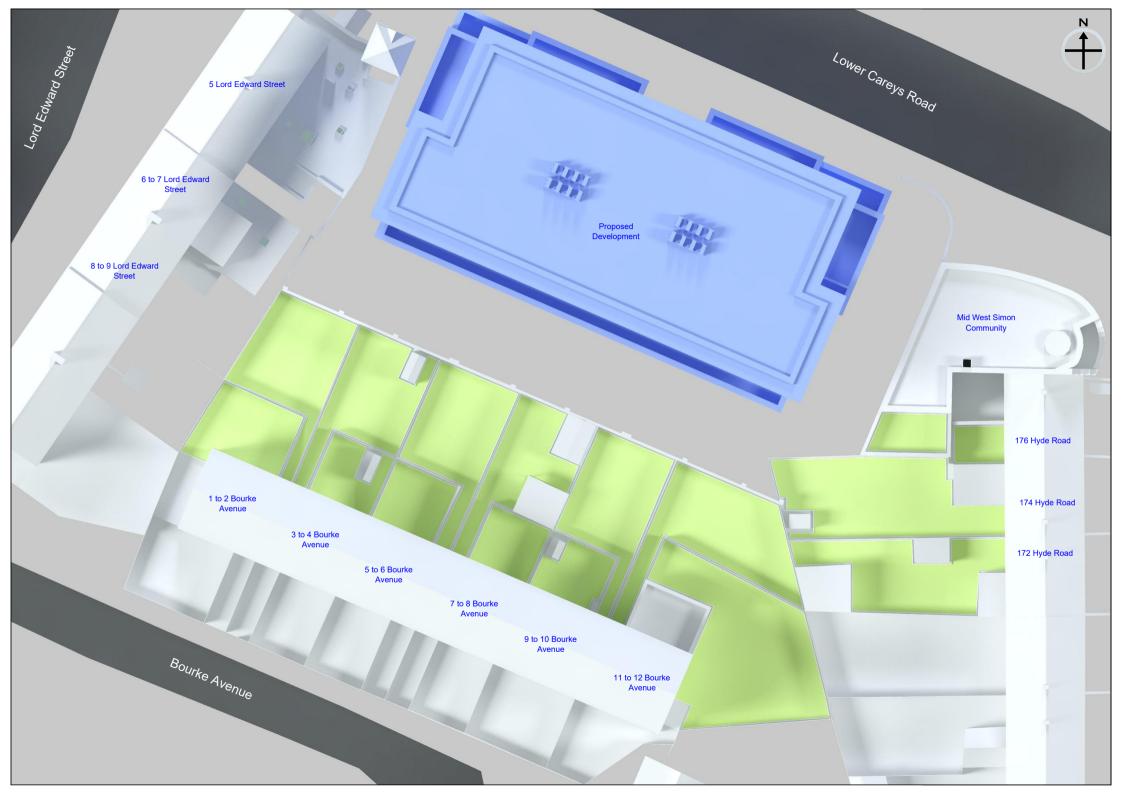
5 CLARIFICATIONS

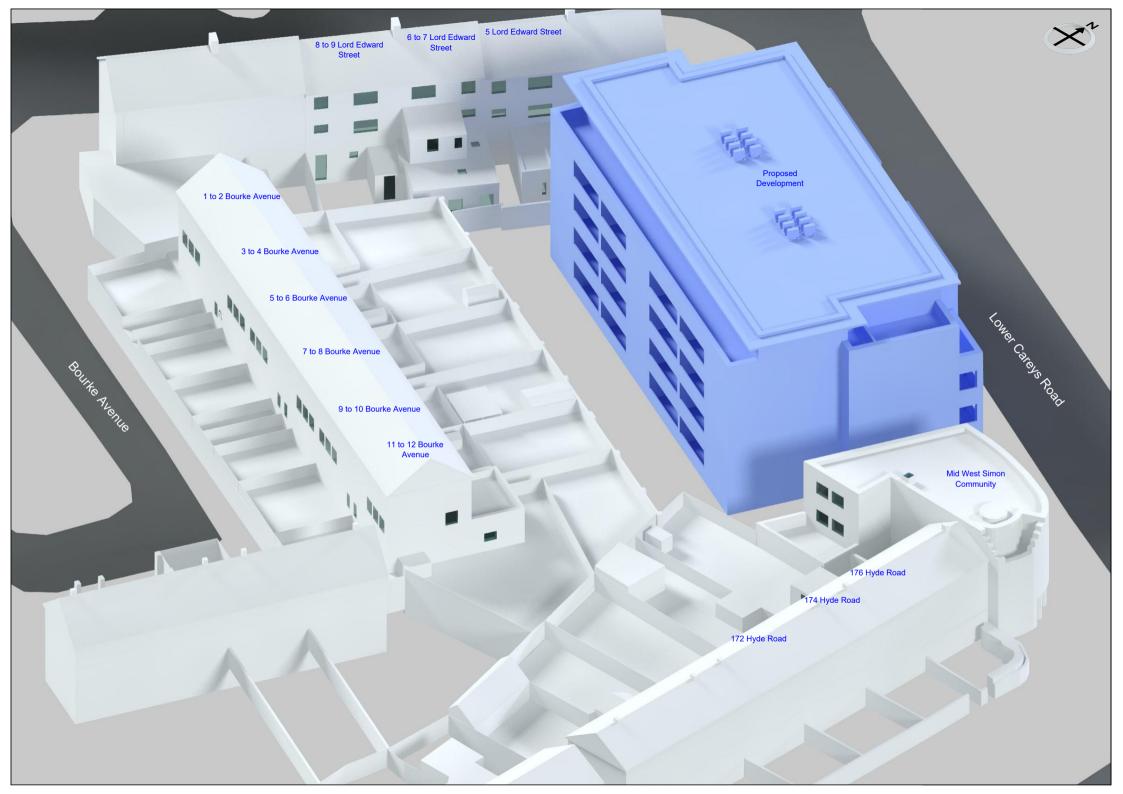
5.1 General

- 5.1.1 The report provided is solely for the use of the client and no liability to anyone else is accepted.
- 5.1.2 The study is limited to assessing daylight, sunlight and overshadowing to neighbouring properties as set out in section 2.2, 3.2 and 3.3 of the BRE Guide.
- 5.1.3 The study is based on the information listed in section 2 of this report. The study has been undertaken without access to the proposed development site or neighbouring properties.
- 5.1.4 This study does not calculate the effects of trees and hedges on daylight, sunlight and overshadowing to gardens. The BRE guide states that it is usual to ignore the effect of existing trees.
- 5.1.5 The impact on solar panels is a material planning consideration. However, the BRE guide does not provide assessment criteria for this. The assessment of impact on any neighbouring solar panels is therefore beyond the scope of this report.
- 5.1.6 We have undertaken the study following the guidelines of the RICS publication "Surveying Safely". Where limited access or information is available, assumptions will have been made which may affect the conclusions reached in this report. For example, where neighbouring room uses are not known, we will either make an assumption regarding the use, or take the prudent approach of treating the use of the room as being used for domestic purposes. Therefore, the report may need to be updated if room uses are confirmed by the local authority or by the consultation responses.
- 5.1.7 This report is based upon and subject to the scope of work set out in Right of Light Consulting's quotation and standard terms and conditions.



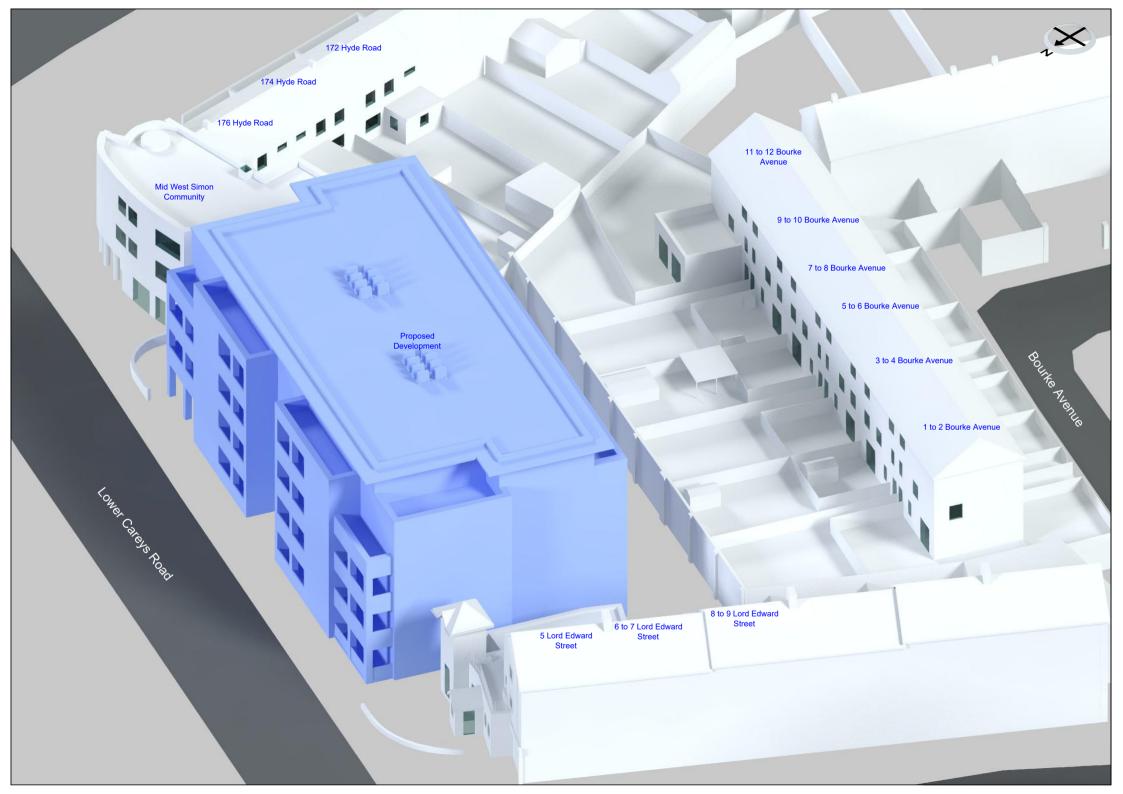
	APPENDIX 1	
	WINDOW & GARDEN KEY	
AYLIGHT AND SUNLIGHT REPORT		











Neighbouring Windows



Mid West Simon Community



Mid West Simon Community



176 Hyde Road



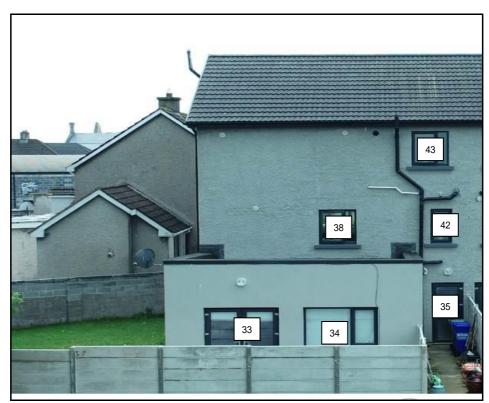
174 Hyde Road



172 Hyde Road



11 to 12 Bourke Avenue



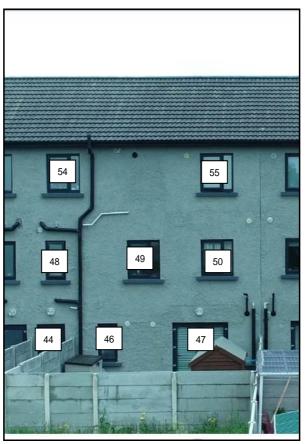
11 to 12 Bourke Avenue



11 to 12 Bourke Avenue



11 to 12 Bourke Avenue



9 to 10 Bourke Avenue



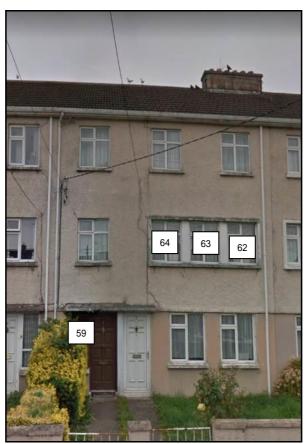
9 to 10 Bourke Avenue



9 to 10 Bourke Avenue



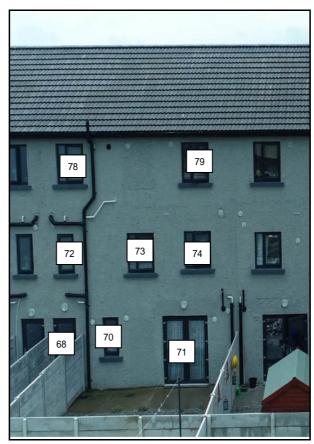
7 to 8 Bourke Avenue



7 to 8 Bourke Avenue



7 to 8 Bourke Avenue



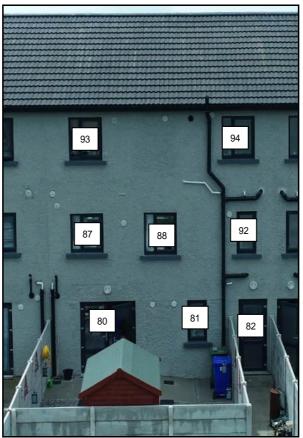
5 to 6 Bourke Avenue



5 to 6 Bourke Avenue



5 to 6 Bourke Avenue



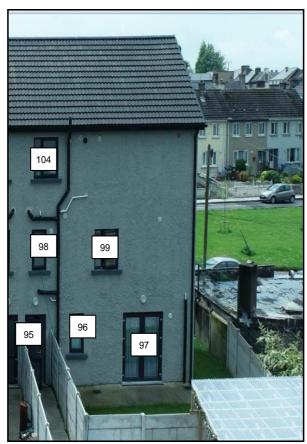
3 to 4 Bourke Avenue



3 to 4 Bourke Avenue



3 to 4 Bourke Avenue



1 to 2 Bourke Avenue



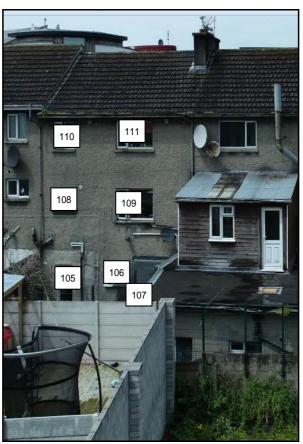
1 to 2 Bourke Avenue



1 to 2 Bourke Avenue



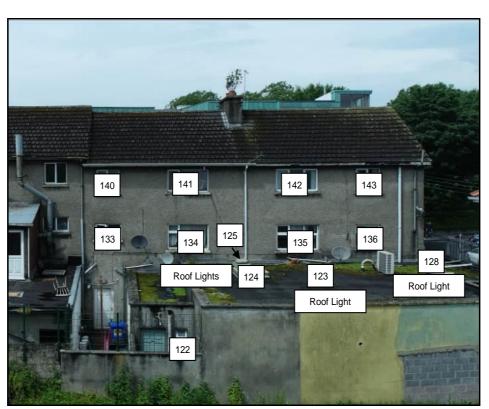
1 to 2 Bourke Avenue



8 to 9 Lord Edward Street



6 to 7 Lord Edward Street



5 Lord Edward Street



5 Lord Edward Street



5 Lord Edward Street

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AYLIGHT AND SUNLIGHT REPORT				
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Appendix 2 - Vertical Sky Component Speakers Corner, Lower Careys Rd, Limerick, Ireland

Reference	Room Use		Vertical Sky Component				
		Before	After	Loss	Ratio		
Mid West Simon Comm	unity						
Ground Floor							
Window 1	Office	39.4%	38.3%	1.1%	0.97		
Window 2	Circulation	39.3%	36.1%	3.2%	0.92		
First Floor							
Window 3	Bedroom	39.6%	39.3%	0.3%	0.99		
Window 4	Bedroom	39.5%	38.9%	0.6%	0.98		
Window 5	Living/Kitchen	39.4%	36.0%	3.4%	0.91		
Window 6	Bedroom	35.2%	35.2%	0.0%	1.0		
Window 7	Bedroom	34.9%	34.9%	0.0%	1.0		
Window 13	Staircase & Landing	99.3%	96.2%	3.1%	0.97		
Second Floor							
Window 8	Bedroom	39.6%	39.4%	0.2%	0.99		
Window 9	Bedroom	39.6%	39.1%	0.5%	0.99		
Window 10	Living/Kitchen	39.5%	36.9%	2.6%	0.93		
Window 11	Bedroom	37.7%	37.7%	0.0%	1.0		
Window 12	Bedroom	37.6%	37.6%	0.0%	1.0		
176 Hyde Road							
Ground Floor							
Window 14	Domestic	23.6%	23.0%	0.6%	0.97		
Window 15	Domestic	22.8%	21.6%	1.2%	0.95		
First Floor							
Window 16	Domestic	21.1%	21.1%	0.0%	1.0		
Window 17	Domestic	27.5%	27.2%	0.3%	0.99		
Window 18	Domestic	29.9%	28.2%	1.7%	0.94		
174 Hyde Road							
Ground Floor							
Window 19	Domestic	31.5%	28.2%	3.3%	0.9		
Window 20	Domestic	28.5%	28.5%	0.0%	1.0		

Appendix 2 - Vertical Sky Component Speakers Corner, Lower Careys Rd, Limerick, Ireland

Reference	Room Use		ertical Sky C	component	
		Before	After	Loss	Ratio
Window 21	Domestic	19.8%	19.8%	0.0%	1.0
Window 22	Domestic	28.7%	28.5%	0.2%	0.99
First Floor					
Window 23	Domestic	31.5%	29.2%	2.3%	0.93
Window 24	Domestic	33.8%	31.4%	2.4%	0.93
Window 25	Domestic	34.4%	32.2%	2.2%	0.94
172 Hyde Road					
Ground Floor					
Window 26	Domestic	29.9%	27.7%	2.2%	0.93
Window 27	Domestic	19.2%	16.9%	2.3%	0.88
Window 28	Domestic	33.2%	30.8%	2.4%	0.93
First Floor					
Window 29	Domestic	35.1%	33.0%	2.1%	0.94
Window 30	Domestic	35.3%	33.3%	2.0%	0.94
Window 31	Domestic	33.5%	31.7%	1.8%	0.95
11 to 12 Bourke Avenue					
Ground Floor					
Window 32	Living/Dining	35.1%	35.1%	0.0%	1.0
Window 33	Living/Dining	37.3%	28.6%	8.7%	0.77
Window 34	Living/Dining	37.5%	27.8%	9.7%	0.74
Window 35	Stairs	27.7%	19.8%	7.9%	0.71
Window 36	Stairs	33.9%	33.9%	0.0%	1.0
First Floor					
Window 37	Living/Dining	37.1%	37.1%	0.0%	1.0
Window 38	Living/Dining	38.4%	32.6%	5.8%	0.85
Window 39	Living/Dining	33.4%	33.4%	0.0%	1.0
Window 40	Living/Dining	34.5%	34.5%	0.0%	1.0
Window 41	Living/Dining	35.3%	35.3%	0.0%	1.0
Window 42	Bathroom/WC	38.5%	31.9%	6.6%	0.83

Appendix 2 - Vertical Sky Component Speakers Corner, Lower Careys Rd, Limerick, Ireland

Doforopoo	Doom Hoe	Vertical Sky Component					
Reference	Room Use	v Before	After	Loss	Ratio		
		- Deloie	Aitei	LUSS	Natio		
Second Floor							
Window 43	Bathroom/WC	37.8%	33.2%	4.6%	0.88		
	Datili Colli, VV C	37.070	33.2 /0	4.070	0.00		
9 to 10 Bourke Avenue							
Ground Floor							
Window 44	Stairs	33.3%	24.8%	8.5%	0.74		
Window 45	Stairs	34.5%	34.5%	0.0%	1.0		
Window 46	Bathroom/WC	36.2%	27.1%	9.1%	0.75		
Window 47	Bedroom	37.5%	28.0%	9.5%	0.75		
First Floor							
Window 48	Bathroom/WC	38.5%	31.6%	6.9%	0.82		
Window 49	Living/Dining	38.5%	31.1%	7.4%	0.81		
Window 50	Living/Dining	38.6%	30.8%	7.8%	0.8		
Window 51	Living/Dining	37.4%	_	0.0%	1.0		
Window 52	Living/Dining	37.6%	37.6%	0.0%	1.0		
Window 53	Living/Dining	37.8%	37.8%	0.0%	1.0		
0							
Second Floor	Bathroom/WC	27.00/	22.00/	5.0%	0.87		
Window 54		37.8%	32.8%				
Window 55	Bedroom	37.7%	32.2%	5.5%	0.85		
7 to 8 Bourke Avenue							
Ground Floor							
Window 56	Bedroom	37.8%	27.8%	10.0%	0.74		
Window 57	Bathroom/WC	37.7%	27.7%	10.0%	0.73		
Window 58	Stair	37.8%	27.8%	10.0%	0.74		
Window 59	Stair	36.8%	36.8%	0.0%	1.0		
First Floor	Lindo of Dialog	00.007	00.50/	0.40/	0.70		
Window 60	Living/Dining	38.6%	30.5%	8.1%	0.79		
Window 61	Living/Dining	38.5%	30.4%	8.1%	0.79		
Window 62	Living/Dining	37.9%	37.9%	0.0%	1.0		

Appendix 2 - Vertical Sky Component Speakers Corner, Lower Careys Rd, Limerick, Ireland

Dofessor	Doom Use		ertical Sky C	`omnopont	
Reference	Room Use	v Before	After	Loss	Ratio
Window 63	Living/Dining	38.0%	38.0%	0.0%	1.0
Window 64	Living/Dining	38.1%	38.1%	0.0%	1.0
Window 65	Bathroom/WC	38.5%	30.4%	8.1%	0.79
Second Floor					
Window 66	Bedroom	37.7%	32.0%	5.7%	0.85
Window 67	Bathroom/WC	37.6%	31.8%	5.8%	0.85
5 to 6 Bourke Avenue					
Ground Floor					
Window 68	Stair	37.7%	27.8%	9.9%	0.74
Window 69	Stair	36.9%	36.9%	0.0%	1.0
Window 70	Bathroom/WC	37.6%	27.8%	9.8%	0.74
Window 71	Bedroom	37.5%	28.1%	9.4%	0.75
<u>First Floor</u>					
Window 72	Bathroom/WC	38.4%	30.4%	8.0%	0.79
Window 73	Living/Dining	38.3%	30.5%	7.8%	0.8
Window 74	Living/Dining	38.2%	30.7%	7.5%	0.8
Window 75	Living/Dining	38.4%	38.4%	0.0%	1.0
Window 76	Living/Dining	38.4%	38.4%	0.0%	1.0
Window 77	Living/Dining	38.4%	38.4%	0.0%	1.0
Second Floor					
Window 78	Bathroom/WC	37.6%	31.9%	5.7%	0.85
Window 79	Bedroom	37.5%	32.1%	5.4%	0.86
3 to 4 Bourke Avenue					
Ground Floor					
Window 80	Bedroom	37.1%	28.6%	8.5%	0.77
Window 81	Bathroom/WC	36.6%	28.9%	7.7%	0.79
Window 82	Stair	36.4%	29.3%	7.1%	8.0
Window 83	Stair	37.2%	37.2%	0.0%	1.0
Window 84	Stair	37.5%	37.5%	0.0%	1.0

Appendix 2 - Vertical Sky Component Speakers Corner, Lower Careys Rd, Limerick, Ireland

Reference	Room Use	,			
Reference	Room ose	Before	/ertical Sky C After	Loss	Ratio
Window 85	Stair	37.3%	37.3%	0.0%	1.0
Window 86	Stair	37.3%	37.3%	0.0%	1.0
First Floor					
Window 87	Living/Dining	38.1%	31.0%	7.1%	0.81
Window 88	Living/Dining	37.9%	31.3%	6.6%	0.83
Window 89	Living/Dining	38.5%	38.5%	0.0%	1.0
Window 90	Living/Dining	38.5%	38.5%	0.0%	1.0
Window 91	Living/Dining	38.5%	38.5%	0.0%	1.0
Window 92	Bathroom/WC	37.6%	31.8%	5.8%	0.85
Second Floor					
Window 93	Bedroom	37.4%	32.4%	5.0%	0.87
Window 94	Bathroom/WC	37.2%	33.0%	4.2%	0.89
1 to 2 Bourke Avenue					
Ground Floor					
Window 95	Stair	36.2%	29.4%	6.8%	0.81
Window 96	Bathroom/WC	35.8%	29.4%	6.4%	0.82
Window 97	Bedroom	35.0%	29.4%	5.6%	0.84
First Floor					
Window 98	Bathroom/WC	37.4%	31.9%	5.5%	0.85
Window 99	Living/Dining	37.0%	32.1%	4.9%	0.87
Window 100	Living/Dining	32.5%	32.5%	0.0%	1.0
Window 101	Living/Dining	38.5%	38.5%	0.0%	1.0
Window 102	Living/Dining	38.5%	38.5%	0.0%	1.0
Window 103	Living/Dining	38.5%	38.5%	0.0%	1.0
Second Floor					
Window 104	Bathroom/WC	37.1%	33.3%	3.8%	0.9
8 to 9 Lord Edward Street					

Ground Floor

Appendix 2 - Vertical Sky Component Speakers Corner, Lower Careys Rd, Limerick, Ireland

Reference	Room Use		Vertical Sky Component					
- Reference	- Room ose	Before	After	Loss	Ratio			
Window 105	Domestic	26.2%	24.0%	2.2%	0.92			
Window 106	Domestic	28.1%	27.1%	1.0%	0.96			
Window 107	Domestic	21.7%	21.7%	0.0%	1.0			
<u>First Floor</u>								
Window 108	Domestic	35.0%	31.9%	3.1%	0.91			
Window 109	Domestic	33.8%	31.1%	2.7%	0.92			
Second Floor								
Window 110	Domestic	35.6%	33.1%	2.5%	0.93			
Window 111	Domestic	35.8%	32.6%	3.2%	0.91			
6 to 7 Lord Edward Street								
Ground Floor								
Window 112	Domestic	12.3%	7.6%	4.7%	0.62			
Window 113	Domestic	22.2%	16.3%	5.9%	0.73			
Window 114	Domestic	26.7%	18.7%	8.0%	0.7			
Window 115	Domestic	83.4%	76.7%	6.7%	0.92			
Window 116	Domestic	49.2%	43.6%	5.6%	0.89			
First Floor								
Window 117	Domestic	35.3%	28.8%	6.5%	0.82			
Window 118	Domestic	35.6%	27.8%	7.8%	0.78			
Window 119	Non Habitable	29.7%	22.2%	7.5%	0.75			
Second Floor								
Window 120	Domestic	36.2%	31.7%	4.5%	0.88			
Window 121	Domestic	36.4%	30.3%	6.1%	0.83			
5 Lord Edward Street								
Ground Floor								
Window 122	Non Habitable	18.6%	13.5%	5.1%	0.73			
Window 123	Domestic	88.8%	66.5%	22.3%	0.75			
Window 124	Domestic	79.6%	65.3%	14.3%	0.82			

Appendix 2 - Vertical Sky Component Speakers Corner, Lower Careys Rd, Limerick, Ireland

Reference	Room Use	\	Vertical Sky Component				
Neierence	Nooni ose	Before	After	Loss	Ratio		
Window 125	Domestic	62.0%	51.5%	10.5%	0.83		
Window 126 (BW)	Domestic	38.9%	33.0%	5.9%	0.85		
Window 127 (BW)	Domestic	22.0%	22.0%	0.0%	1.0		
Window 128 (BW)	Domestic	69.1%	57.4%	11.7%	0.83		
Window 129 (BW)	Domestic	38.8%	36.0%	2.8%	0.93		
Window 130 (BW)	Domestic	23.2%	23.2%	0.0%	1.0		
Window 131 (BW)	Domestic	30.9%	30.9%	0.0%	1.0		
Window 132 (BW)	Domestic	36.6%	35.9%	0.7%	0.98		
First Floor							
Window 133	Non Habitable	35.8%	26.4%	9.4%	0.74		
Window 134	Domestic	36.2%	23.2%	13.0%	0.64		
Window 135	Domestic	35.8%	19.3%	16.5%	0.54		
Window 136	Domestic	34.0%	18.1%	15.9%	0.53		
Window 137	Domestic	37.1%	35.6%	1.5%	0.96		
Window 138	Domestic	36.4%	35.2%	1.2%	0.97		
Window 139	Domestic	27.3%	25.7%	1.6%	0.94		
Second Floor							
Window 140	Domestic	36.4%	28.6%	7.8%	0.79		
Window 141	Domestic	36.5%	25.5%	11.0%	0.7		
Window 142	Domestic	36.5%	22.1%	14.4%	0.61		
Window 143	Domestic	36.3%	21.0%	15.3%	0.58		
Window 144	Domestic	38.6%	37.2%	1.4%	0.96		

Appendix 2 - Daylight Distribution Speakers Corner, Lower Careys Rd, Limerick, Ireland

Deferre	D		Daylight Distribution					
Reference	Room Use	Before	After	Loss	Ratio			
Mid West Simon Co	mmunity							
Ground Floor								
Window 1	Office	100%	100%	0.0%	1.0			
Window 2	Circulation	96%	96%	0.0%	1.0			
First Floor								
Windows 3 & 4	Bedroom	96%	96%	0.0%	1.0			
Window 5	Living/Kitchen	100%	100%	0.0%	1.0			
Windows 6 & 7	Bedroom	97%	97%	0.0%	1.0			
Window 13	Staircase	9%	9%	0.0%	1.0			
Second Floor								
Window 8	Bedroom	93%	93%	0.0%	1.0			
Window 9	Bedroom	94%	94%	0.0%	1.0			
Window 10	Living/Kitchen	100%	100%	0.0%	1.0			
Window 11	Bedroom	95%	95%	0.0%	1.0			
Window 12	Bedroom	96%	96%	0.0%	1.0			
Window 13	Landing	86%	86%	0.0%	1.0			
11 to 12 Bourke Ave	<u>nue</u>							
Ground Floor								
Windows 32 to 34	Living/Dining	100%	98%	2.0%	0.98			
Windows 35 & 36	Stair	99%	93%	6.0%	0.94			
First Floor								
Windows 37 to 41	Living/Dining	100%	100%	0.0%	1.0			
Window 42	Bathroom/WC	97%	97%	0.0%	1.0			
Second Floor								
Window 43	Bathroom/WC	99%	99%	0.0%	1.0			
9 to 10 Bourke Aven	<u>ue</u>							
Ground Floor								
Windows 44 & 45	Stair	99%	83%	16.0%	0.84			
Window 46	Bathroom/WC	92%	70%	22.0%	0.76			
Window 47	Bedroom	99%	76%	23.0%	0.77			
First Floor								
Window 48	Bathroom/WC	97%	97%	0.0%	1.0			
Windows 49 to 53	Living/Dining	100%	100%	0.0%	1.0			

Second Floor

Appendix 2 - Daylight Distribution Speakers Corner, Lower Careys Rd, Limerick, Ireland

Reference	Room Use		Daylight Dis	stribution	
		Before	After	Loss	Ratio
Window 54	Bathroom/WC	98%	98%	0.0%	1.0
Window 55	Bedroom	94%	94%	0.0%	1.0
7 to 8 Bourke Avenue	<u>9</u>				
Ground Floor					
Window 56	Bedroom	99%	68%	31.0%	0.69
Window 57	Bathroom/WC	92%	67%	25.0%	0.73
Windows 58 & 59	Stair	99%	82%	17.0%	0.83
Wildows 50 & 59	Otali	3370	02 /0	17.070	0.03
First Floor					
Windows 60 to 64	Living/Dining	100%	100%	0.0%	1.0
Window 65	Bathroom/WC	97%	97%	0.0%	1.0
	244	0.75	3. 75	0.070	
Second Floor					
Window 66	Bedroom	93%	93%	0.0%	1.0
Window 67	Bathroom/WC	98%	98%	0.0%	1.0
5 to 6 Bourke Avenue	e.				
	=				
Ground Floor		/			
Windows 68 & 69	Stair	99%	83%	16.0%	0.84
Window 70	Bathroom/WC	93%	67%	26.0%	0.72
Window 71	Bedroom	99%	75%	24.0%	0.76
First Floor					
Window 72	Bathroom/WC	97%	97%	0.0%	1.0
Windows 73 to 77	Living/Dining	100%	100%	0.0%	1.0
Willdows 73 to 77	Living/Diffing	100 70	100 %	0.076	1.0
Second Floor					
Window 78	Bathroom/WC	98%	98%	0.0%	1.0
Window 79	Bedroom	95%	95%	0.0%	1.0
1 to 2 Bourke Avenue					
	=				
Ground Floor	Ctair	750/	2.40/	44.00/	0.45
Window 95	Stair	75%	34%	41.0%	0.45
Window 96	Bathroom/WC	93%	76%	17.0%	0.82
Window 97	Bedroom	99%	96%	3.0%	0.97
First Floor					
Window 98	Bathroom/WC	96%	96%	0.0%	1.0
Windows 99 to 103	Living/Dining	100%	100%	0.0%	1.0
MILITOR 33 TO 103	Living/Diffing	10070	10070	0.076	1.0
Second Floor					
Window 104	Bathroom/WC	98%	98%	0.0%	1.0

Appendix 2 - Sunlight to Windows Speakers Corner, Lower Careys Rd, Limerick, Ireland

				_5	Sunlight to	o Window	/S		
Reference	Room Use	T	otal Sun	light Hou	rs	W	inter Su	nlight Ho	urs
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
Mid West Simon Con	nmunity								
First Floor									
Window 6	Bedroom	81%	81%	0%	1.0	24%	24%	0%	1.0
Window 7	Bedroom	79%	79%	0%	1.0	22%	22%	0%	1.0
Second Floor									
Window 11	Bedroom	82%	82%	0%	1.0	25%	25%	0%	1.0
Window 12	Bedroom	82%	82%	0%	1.0	25%	25%	0%	1.0
176 Hyde Road									
Ground Floor									
Window 14	Domestic	41%	40%	1%	0.98	9%	9%	0%	1.0
Window 15	Domestic	30%	29%	1%	0.97	0%	0%	0%	1.0
First Floor									
Window 16	Domestic	29%	29%	0%	1.0	9%	9%	0%	1.0
Window 17	Domestic	39%	39%	0%	1.0	11%	11%	0%	1.0
Window 18	Domestic	40%	38%	2%	0.95	12%	12%	0%	1.0
174 Hyde Road									
Ground Floor									
Window 19	Domestic	50%	49%	1%	0.98	13%	13%	0%	1.0
Window 20	Domestic	61%	61%	0%	1.0	17%	17%	0%	1.0
Window 21	Domestic	48%	48%	0%	1.0	14%	14%	0%	1.0
Window 22	Domestic	46%	46%	0%	1.0	13%	13%	0%	1.0
First Floor									
Window 23	Domestic	41%	38%	3%	0.93	11%	11%	0%	1.0
Window 24	Domestic	45%	44%	1%	0.98	12%	12%	0%	1.0
Window 25	Domestic	45%	45%	0%	1.0	12%	12%	0%	1.0
172 Hyde Road									
Ground Floor									
Window 26	Domestic	35%	35%	0%	1.0	0%	0%	0%	1.0
First Floor									
Window 29	Domestic	44%	44%	0%	1.0	12%	12%	0%	1.0
Window 30	Domestic	44%	44%	0%	1.0	12%	12%	0%	1.0
Window 31	Domestic	40%	40%	0%	1.0	11%	11%	0%	1.0

Appendix 2 - Sunlight to Windows Speakers Corner, Lower Careys Rd, Limerick, Ireland

				5	Sunlight to	Window	/S		
Reference	Room Use	T	otal Sun	light Hou	rs	W	inter Su	nlight Ho	urs
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
11 to 12 Bourke Aven	<u>uue</u>								
Ground Floor									
Window 32	Living/Dining	53%	53%	0%	1.0	14%	14%	0%	1.0
Window 36	Stair	75%	75%	0%	1.0	20%	20%	0%	1.0
First Floor									
Window 37	Living/Dining	59%	59%	0%	1.0	19%	19%	0%	1.0
Window 39	Living/Dining	76%	76%	0%	1.0	20%	20%	0%	1.0
Window 40	Living/Dining	78%	78%	0%	1.0	22%	22%	0%	1.0
Window 41	Living/Dining	80%	80%	0%	1.0	24%	24%	0%	1.0
9 to 10 Bourke Avenu	<u>ie</u>								
Ground Floor									
Window 45	Stair	77%	77%	0%	1.0	21%	21%	0%	1.0
First Floor									
Window 51	Living/Dining	82%	82%	0%	1.0	27%	27%	0%	1.0
Window 52	Living/Dining	82%	82%	0%	1.0	27%	27%	0%	1.0
Window 53	Living/Dining	82%	82%	0%	1.0	27%	27%	0%	1.0
7 to 8 Bourke Avenue	<u> </u>								
Ground Floor									
Window 59	Stair	83%	83%	0%	1.0	27%	27%	0%	1.0
First Floor									
Window 62	Living/Dining	82%	82%	0%	1.0	27%	27%	0%	1.0
Window 63	Living/Dining	82%	82%	0%	1.0	27%	27%	0%	1.0
Window 64	Living/Dining	82%	82%	0%	1.0	27%	27%	0%	1.0
5 to 6 Bourke Avenue	2								
Ground Floor									
Window 69	Stair	83%	83%	0%	1.0	27%	27%	0%	1.0
First Floor									
Window 75	Living/Dining	82%	82%	0%	1.0	27%	27%	0%	1.0
Window 76	Living/Dining	82%	82%	0%	1.0	27%	27%	0%	1.0
Window 77	Living/Dining	82%	82%	0%	1.0	27%	27%	0%	1.0
3 to 4 Bourke Avenue	2								
Ground Floor									
Window 83	Stair	82%	82%	0%	1.0	27%	27%	0%	1.0
Window 84	Stair	82%	82%	0%	1.0	27%	27%	0%	1.0

Appendix 2 - Sunlight to Windows Speakers Corner, Lower Careys Rd, Limerick, Ireland

					Sunlight to	Window	/S		
Reference	Room Use	T ₁	otal Sun	light Hou	rs	W	inter Su	nlight Ho	urs
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
Window 85	Stair	82%	82%	0%	1.0	27%	27%	0%	1.0
Window 86	Stair	82%	82%	0%	1.0	27%	27%	0%	1.0
First Floor									
Window 89	Living/Dining	82%	82%	0%	1.0	27%	27%	0%	1.0
Window 90	Living/Dining	83%	83%	0%	1.0	28%	28%	0%	1.0
Window 91	Living/Dining	83%	83%	0%	1.0	28%	28%	0%	1.0
1 to 2 Bourke Avenue	<u>e</u>								
First Floor									
Window 101	Living/Dining	83%	83%	0%	1.0	28%	28%	0%	1.0
Window 102	Living/Dining	83%	83%	0%	1.0	28%	28%	0%	1.0
Window 103	Living/Dining	83%	83%	0%	1.0	28%	28%	0%	1.0
8 to 9 Lord Edward S	<u>Street</u>								
Ground Floor									
Window 105	Domestic	42%	39%	3%	0.93	4%	4%	0%	1.0
Window 106	Domestic	54%	53%	1%	0.98	16%	16%	0%	1.0
Window 107	Domestic	44%	44%	0%	1.0	9%	9%	0%	1.0
First Floor									
Window 108	Domestic	61%	55%	6%	0.9	17%	17%	0%	1.0
Window 109	Domestic	62%	57%	5%	0.92	20%	20%	0%	1.0
Second Floor									
Window 110	Domestic	61%	57%	4%	0.93	21%	21%	0%	1.0
Window 111	Domestic	61%	55%	6%	0.9	21%	21%	0%	1.0
6 to 7 Lord Edward S	<u>Street</u>								
Ground Floor									
Window 112	Domestic	11%	7%	4%	0.64	0%	0%	0%	1.0
Window 113	Domestic	35%	32%	3%	0.91	2%	2%	0%	1.0
Window 114	Domestic	47%	41%	6%	0.87	10%	10%	0%	1.0
Window 115	Domestic	75%	65%	10%	0.87	20%	20%	0%	1.0
Window 116	Domestic	34%	22%	12%	0.65	7%	7%	0%	1.0
First Floor									
Window 117	Domestic	61%	53%	8%	0.87	18%	18%	0%	1.0
Window 118	Domestic	62%	53%	9%	0.85	19%	19%	0%	1.0
Window 119	Domestic	40%	29%	11%	0.73	6%	6%	0%	1.0
Second Floor									
Window 120	Domestic	63%	56%	7%	0.89	23%	23%	0%	1.0

Appendix 2 - Sunlight to Windows Speakers Corner, Lower Careys Rd, Limerick, Ireland

		Sunlight to Windows								
Reference	Room Use	Т	Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio	
Window 121	Domestic	63%	53%	10%	0.84	23%	23%	0%	1.0	
5 Lord Edward Street										
Ground Floor										
Window 122	Domestic	44%	36%	8%	0.82	13%	11%	2%	0.85	
Window 123	Domestic	80%	43%	37%	0.54	22%	14%	8%	0.64	
Window 124	Domestic	76%	47%	29%	0.62	22%	16%	6%	0.73	
Window 125	Domestic	70%	44%	26%	0.63	22%	17%	5%	0.77	
Window 128 (BW)	Domestic	63%	31%	32%	0.49	20%	8%	12%	0.4	
First Floor										
Window 133	Domestic	60%	48%	12%	8.0	17%	16%	1%	0.94	
Window 134	Domestic	64%	44%	20%	0.69	21%	17%	4%	0.81	
Window 135	Domestic	65%	38%	27%	0.58	23%	16%	7%	0.7	
Window 136	Domestic	61%	36%	25%	0.59	23%	14%	9%	0.61	
Second Floor										
Window 140	Domestic	63%	51%	12%	0.81	23%	22%	1%	0.96	
Window 141	Domestic	63%	43%	20%	0.68	23%	19%	4%	0.83	
Window 142	Domestic	63%	40%	23%	0.63	23%	17%	6%	0.74	
Window 143	Domestic	63%	37%	26%	0.59	23%	14%	9%	0.61	

Appendix 2 - Overshadowing to Gardens and Open Spaces Speakers Corner, Lower Careys Rd, Limerick, Ireland

Reference	Total Area	Area receiving at least two hours of sunlight on 21st March						
		Before		After		Loss		Ratio
Mid West Simon Comn	nunity							
<u>First Floor</u> Garden 1	18.83 m2	10.07 m2	53%	10.07 m2	53%	0.0 m2	0%	1.0
176 Hyde Road								
Ground Floor Garden 2	12.95 m2	0.69 m2	5%	0.69 m2	5%	0.0 m2	0%	1.0
174 Hyde Road								
Ground Floor Garden 3	102.74 m2	72.53 m2	71%	72.53 m2	71%	0.0 m2	0%	1.0
172 Hyde Road								
Ground Floor Garden 4	74.74 m2	40.08 m2	54%	40.08 m2	54%	0.0 m2	0%	1.0
11 to 12 Bourke Avenu	<u>e</u>							
Ground Floor Garden 5 Garden 6	134.34 m2 87.57 m2	110.47 m2 65.78 m2	82% 75%	110.47 m2 65.78 m2	82% 75%	0.0 m2 0.0 m2	0% 0%	1.0 1.0
9 to 10 Bourke Avenue	!							
Ground Floor Garden 7 Garden 8	69.24 m2 24.77 m2	46.52 m2 0.0 m2	67% 0%	46.52 m2 0.0 m2	67% 0%	0.0 m2 0.0 m2	0% 0%	1.0 1.0
7 to 8 Bourke Avenue								
Ground Floor Garden 9 Garden 10	26.4 m2 49.09 m2	0.0 m2 23.01 m2	0% 47%	0.0 m2 23.01 m2	0% 47%	0.0 m2 0.0 m2	0% 0%	1.0 1.0
5 to 6 Bourke Avenue								
Ground Floor Garden 11 Garden 12	69.51 m2 29.18 m2	46.37 m2 0.0 m2	67% 0%	46.37 m2 0.0 m2	67% 0%	0.0 m2 0.0 m2	0% 0%	1.0 1.0
3 to 4 Bourke Avenue								
Ground Floor Garden 13 Garden 14	24.73 m2 65.36 m2	0.0 m2 42.77 m2	0% 65%	0.0 m2 42.77 m2	0% 65%	0.0 m2 0.0 m2	0% 0%	1.0 1.0
1 to 2 Bourke Avenue								
Ground Floor Garden 15 Garden 16	73.4 m2 45.91 m2	53.74 m2 22.9 m2	73% 50%	53.74 m2 22.9 m2	73% 50%	0.0 m2 0.0 m2	0% 0%	1.0 1.0

	APPENDIX 3				
	OVERSHADOWING TO GARDENS AND OPEN SPACES				
	OVERSITADOWING TO GARDENS AND OF EN SPACES				
AYLIGHT AND SUNLIGHT REPORT					

