

231 Watford Road Harrow HA1 3TU

Daylight/Sunlight Report

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1. Introduction

- 1.1 Daylight Sunlight Consulting Ltd has been instructed to provide daylight and sunlight advice with regard to the redevelopment of 231 Watford Road, Harrow HA1 3TU. The proposed residential development will provide 42 units with associated private and communal amenity space, replacing the existing restaurant, Mumbai Junction, and its car parking facilities. As there is a greater level of massing proposed, there is the potential for light to be affected to the neighbouring surrounding properties.
- 1.2 We have assessed the effects that the proposed development has on the adjacent sensitive receptors, as well as considering the light within the proposed development for the future occupants.
- 1.3 We have been provided with the existing and proposed drawings from Barr Gazetas drawing reference 2111 and attended site to properly understand the relationship between the development site and adjacent properties.
- 1.4 We have also reviewed the Council Tax records in order to locate residential properties around the site. Commercial and retail properties are not be a material planning consideration in terms of daylight/sunlight matters and have not been assessed.
- 1.5 Where possible, we have reviewed plans and layouts provided within the on-line planning portals and estate agent's websites for specific properties to identify the internal configurations and room uses within adjacent properties.

2. Executive Summary

- 2.1 The assessments to the neighbouring properties have demonstrated that a good level of daylight and sunlight will be retained with the proposed development, in accordance with the BRE guidelines.
- 2.2 The future occupants within the proposed development will also obtain good levels of daylight and sunlight, in keeping with the BRE guidelines recommendations.

3. Principles for assessing daylight and sunlight

- 3.1 The main document for testing and evaluating daylight and sunlight effects is the Building Research Establishment (BRE) guidelines – Site Layout Planning for Daylight and Sunlight: A guide to good practice (2011).
- 3.2 It is important to understand that the BRE document is only a guideline, and this is highlighted in the introduction: -

"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 developer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of the many factors in site layout design."

3.3 The guidelines go on to highlight that,

"In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings."

Daylight to existing buildings

- 3.4 The testing methodology and suggested target criteria for the assessment of daylight to existing buildings around a development site are set out in Part 2.2 of the BRE guidelines.
- 3.5 The evaluation of what constitutes a sensitive receptor is essentially where occupants have a reasonable expectation of light. We consider this to be residential, care homes, student accommodation, hostels, educational classrooms, places of worship and hospital properties. Uses such as hotels and commercial properties are

not considered to be of importance for natural lighting. For residential properties, only habitable rooms need to be tested, with bathrooms, toilets, store rooms, circulation areas and garages not requiring assessment.

3.6 There are two types of simplistic tests that are identified in the BRE guidelines, these being a 25° angle test and a 45° angle test. The 25° angle test can be used where there is a continuous obstruction parallel to an affected window. The BRE guidelines state that:

"If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building from the centre of the lowest window, subtends an angle of more than 25° to the horizontal, then the diffuse daylighting of the existing building may be adversely affected."

- 3.7 The 45° angle test is only applicable to the assessment of small side extensions to domestic residential properties. If a proposed development projects out such that a 45° angle subtended back towards a neighbouring property covers the centre point of a habitable window, both in plan and elevation, then the light might be affected and further testing is required.
- 3.8 We have undertaken a preliminary review of the 25° test, as this allows us to focus our assessments on the properties most likely to be affected. We have then considered the more comprehensive daylight assessments identified in the BRE guidelines, these being the Vertical Sky Component (VSC) test and Daylight Distribution (DD) test. A more detailed summary of these tests is set out below.

VERTICAL SKY COMPONENT

3.9 The Vertical Sky Component (VSC) test assesses the amount of daylight obtained at the centre point of the external plane of a window. The guidelines state the following: -

"If this VSC is greater than 27% then enough skylight should still be reaching the window of the existing building. Any reduction below this level should be kept to a minimum. If the vertical sky component with the new development in place, is both less than 27% and less than 0.8 times its former value, occupants of the existing building will notice the reduction in the amount of skylight."

- 3.10 We therefore work on the basis of seeking to achieve 27% VSC in the proposed condition, as it is considered adequate, but where this value is not achieved, reductions of 0.8 times the former value (the same as saying a 20% reduction when compared against the existing condition) is not considered noticeable and therefore not a material effect.
- 3.11 As the VSC test only assesses daylight reaching the external plane of the window, this shows only the potential for light rather than actual. This is because much depends upon the size of the window, its relationship to the room, the size of the room, and whether there are other windows lighting the same room. Therefore, it is prudent to assess the daylight distribution assessment at the same time, reviewing both sets of results before forming an opinion on the overall effect.

DAYLIGHT DISTRIBUTION

3.12 The BRE guidelines suggest that daylight distribution assessments can be undertaken where room layouts are known, but we believe it is better to run tests to all of the affected buildings being run for the VSC test, making assumptions on the room configurations if nothing can be found through research. The daylight distribution test establishes the amount of the sky light entering a room at a working plane height of 850mm above floor level, plotting the 'no sky line' area in both the existing (green contour line) and the proposed (red contour line). There is no test of adequacy in just the proposed condition, rather the reduction in light between the existing and proposed is assessed, and where light is reduced to less than 0.8 times its former value (the same as saying a 20% reduction), this will be noticeable to occupants.

Sunlight to existing buildings

- 3.13 The assessment of sunlight for properties adjacent to a development site are set out in Part 3.2 of the BRE guidelines. As with the daylight assessment, the evaluation of what constitutes a sensitive receptor is essentially where occupants have a reasonable expectation of sunlight. We consider this to be residential accommodation, care homes, student accommodation, hostels, educational classrooms and hospital properties.
- 3.14 As the opportunity to obtain sunlight is dependent on orientation, it is considered only appropriate to test existing windows that face 90° of due south, as occupants with windows facing due north will not have a reasonable expectation of sunlight.
- 3.15 The calculation is taken at the centre of each window and is measured in terms of the percentage of Annual Probable Sunlight Hours (APSH). The guidelines suggest the following targets: -

"If this window reference point can receive more than one quarter of APSH, including at least 5% of APSH in the winter months between 21st September and 21st March, then the room should still receive enough sunlight...Any reduction in sunlight access below this level should be kept to a minimum. If the available sunlight hours are both less than the amount given and less than 0.8 times their former value, either over the whole year or just during the winter months (21 September to 21 March), then the occupants of the existing building will notice the loss of sunlight; if the overall annual loss is greater than 4% of APSH..."

- 3.16 To summarize the above, a good level of sunlight to a window is 25% APSH, of which 5% should be in winter months in the proposed condition. Where sunlight levels fall below the suggested level, a comparison with the existing and proposed is undertaken. A noticeable amount of sunlight will occur if:
 - the reduction is less than 0.8 times its former value (the same as a 20% reduction), for both or one of the annual and winter APSH levels; and
 - has a reduction in sunlight received over the whole year greater than 4% APSH

Sunlight to existing amenity areas

- 3.17 The assessment of sunlight for amenity areas, such as gardens and open spaces adjacent to a development site are set out in Part 3.3 of the BRE guidelines. A sensitive receptor is considered a garden (generally the more private back garden area), parks, playing fields, playgrounds, outdoor swimming/paddling pools and public open spaces used for sitting/key focal points.
- 3.18 The assessment considers the amount of sunlight an amenity area can achieve on 21st March, as this represents the mid-point between the height of summer and depths of winter. The BRE guidelines state,

"It is recommended that for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21 March. If as a result of a new development an existing garden or amenity area does not meet the above, and the area which can receive two hours of sun on 21 March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable."

3.19 Fences lower than 1.5m do not need to be included as an obstruction in the assessment model, and sunlight at an altitude of 10° is also excluded.

Daylight to new developments

- 3.20 The assessment of daylight within new properties is set out in Part 2.1 of the BRE guidelines, whilst sunlight is set out in Part 3.1. The BRE guidelines are still being used as the main assessment document, even though a new British Standard EN 17037:2018 has been brought out. The British Standard recommends different testing methodology and results based on radiance assessments, but for the purposes of this report we have maintained the BRE guideline assessment methodology, as the statistical results will be comparable to those reviewed by planning authorities previously.
- 3.21 Appendix C of the BRE guidelines sets out a mathematical formula to assess the ADF level, this being: -

$$ADF = \frac{TMA_{w}\theta}{A(1-R^{2})} \quad \%$$

- 3.22 The variables in this equation are explained below: -
 - T is the diffuse visible transmittance of the glazing
 - M is a maintenance factor, allowing for the effects of dirt
 - Aw is the net glazed area of the window
 - heta is the angle of visible sky
 - A is the total area of all the room surfaces: ceilings, floors, walls and windows
 - R is the average reflectance for the room surfaces.
- 3.23 The BRE guidelines suggest the following ADF levels for the specific room uses, these being 2% for kitchens, 1.5% for living rooms and 1% for bedrooms.
- 3.24 However, the BRE guidelines also state, "Non-daylit internal kitchens should be avoided where possible, especially if the kitchen is used as a dining area too. If the layout means that a small internal galley-type kitchen is inevitable, it should be

directly linked to a well daylit living room." Where rooms have living/kitchen/dining areas, the assessment has excluded the kitchen area from the assessment, working on the basis of evaluating whether the living/dining area is a well lit space for the kitchen to be adjacent to. By excluding the kitchen, it is possible to evaluate the quality of the living/dining area on its own, taking the ADF target of 1.5%.

Sunlight to new developments

3.25 The assessment of sunlight for new developments is set out in Part 3.1 of the BRE guidelines, stating: -

"In housing, the main requirement for sunlight is in living rooms, where it is valued at any time of day but especially in the afternoon. Sunlight is also required in conservatories. It is viewed less important in bedrooms and in kitchens, where people prefer it in the morning rather than the afternoon."

- 3.26 The opportunity to design for sunlight to residential properties is very dependent on orientation and site layout. As highlighted in the introduction of the BRE guidelines, the advice is not mandatory and should not be seen as an instrument of planning policy. This is particularly relevant for sunlight design as a building's location, height and orientation should be guided more by town planning considerations and aesthetics. The adherence rates for more denser residential design are going to be lower than for more suburban houses.
- 3.27 Therefore, when considering the BRE summary for reasonably well sunlit rooms in new dwellings, this should be treated more as an advisory set of criteria: -

"...at least one main window wall faces within 90° of due south

...the centre of at least one window to a main living room can receive 25% of annual probable sunlight hours, including 5% in winter months between 21 September and 21 March

Where groups of dwellings are planned, site layout design should aim to maximise the number of dwellings with a main living room that meets the above recommendations"

3.28 For the technical assessments, all room uses have been tested, whatever the orientation of the window.

Sunlight to new amenity areas

- 3.29 The assessment of sunlight for amenity areas, such as gardens and open spaces adjacent to a development site are set out in Part 3.3 of the BRE guidelines. A sensitive receptor is considered a garden (generally the more private back garden area), parks, playing fields, playgrounds, outdoor swimming/paddling pools and public open spaces used for sitting/key focal points.
- 3.30 The assessment considers the amount of sunlight an amenity area can achieve on 21st March, as this represents the mid-point between the height of summer and depths of winter. The BRE guidelines state,

"It is recommended that for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21 March."

3.31 Fences lower than 1.5m do not need to be included as an obstruction in the assessment model, and sunlight at an altitude of 10° is also excluded.

4. Properties Considered

4.1 Having attended site and reviewed the sensitive receptors we have considered the effects of the proposed development, of which are set out in more detail below. We have also undertaken assessments of the daylight and sunlight levels for the future occupants within the proposed scheme (please see the existing and proposed layout plans at Appendix 1).

Neighbouring affected properties

4.2 135 Sudbury Court Drive is located to the south of the development site and is a residential property. There are windows on the side elevation facing towards the development site, so a review of the property was considered appropriate. However, having obtained the 2016 planning application for the property, it was evident that the windows on the north facing elevation served non-habitable rooms.



(Extract of the proposed ground floor plan from the 2016 application that has been implemented from an aerial photography review)

4.3 The BRE guidelines are clear that the effects on daylight and sunlight to nonhabitable rooms are not required for testing. The front and rear facing windows serve habitable rooms, which will be unaffected by the proposed works due to the proposed layout and stepping down of the massing adjacent to 135 Sudbury Court Drive. Therefore, we can conclude that 135 Sudbury Court Drive will adhere to the BRE guidelines. 4.4 To the west of the site are a number of residential properties on Amery Road. Having undertaken a review of the 25 degree angle test, it is clear that due to the proposed building layout, and the distance between the buildings, that the proposed development adheres to the test. This demonstrates that the occupants within the Amery Road properties will maintain high levels of daylight and sunlight with the proposed development in place.

Future residential occupants

- 4.5 As the works contain new residential accommodation, an assessment of the quality of daylight and sunlight to the habitable rooms has been undertaken, as well as looking at the quality of sunlight to the external amenity areas. The assessments have reviewed the effects to the ground, first and second floor levels, as they represent the areas in the development where light levels would be at their lowest. For the sunlight quality to the proposed amenity areas, the ground floor gardens have been assessed.
- 4.6 The Average Daylight Factor (ADF) results show that of the 78 rooms tested, 74 (95%) adhere to the BRE guidelines, obtaining ADF levels that either meet or exceed the target levels for the room use. Of the 4 rooms falling below, these are bedrooms with ADF levels ranging between 0.78% and 0.94%, which are just below the target level of 1.0%. In addition, each bedroom is within a flat with two other bedrooms and a living/dining rooms meeting or exceeding the guidelines.
- 4.7 The Annual Probable Sunlight Hours (APSH) results show that of the 78 rooms tested, 45 rooms (58%) adhere to the BRE guidelines, obtaining annual sunlight levels in excess of the 25% APSH. This is a good level of adherence given the proposed development has windows facing in all direction, including the north where sunlight is limited.

4.8 The assessment of the sun-on-ground has been undertaken to two amenity areas at ground level. The results of the assessment can be seen on the ground floor plan at Appendix 2, which shows Area A1 and A2 will obtain at least 50% of the garden sunlit in the assessment month of March. Areas A1 and A2 both obtain levels of 99.7%, which are well above the target set out in the BRE guidelines.

5. Summary and conclusions

- 5.1 The assessments of the effects from the proposed development regarding daylight and sunlight have been undertaken in line with the Building Research Establishment (BRE) guidelines – Site Layout Planning for Daylight and Sunlight: A guide to good practice (2011).
- 5.2 The assessments to the neighbouring properties have demonstrated that a good level of daylight and sunlight will be maintained in the proposed condition, in accordance with the BRE guidelines.
- 5.3 The assessment of the daylight and sunlight for the future occupants demonstrates a high level of adherence (95%) for the daylight assessment, with only 4 secondary bedrooms falling below the suggested target. The assessment also demonstrates a good level of sunlight will be achieved for the future occupants, in keeping with a development that has windows facing in all directions. The sunlight to the proposed amenity areas will greatly exceed the BRE guidelines targets, ensuring occupants will have a high level of access to sunlight throughout the year.
- 5.4 We therefore conclude that the proposed development satisfies the requirements set out in the BRE guidelines, and is therefore acceptable.

Appendix 1

Plan and 3D views of the development site









Floor Ref.	Room Ref.	Room Use.	Window Ref.	ADF Proposed	Req'd Value
Ground	R1	LD	W1-L	0.33	
			W1-U	3.22	
			W15-L	0.01	
			W15-U	0.90	
				4.46	1.50
Ground	R2	Bedroom	W2-L	0.01	
			W2-U	3.09	
				3.11	1.00
Ground	R3	Bedroom	W3-L	0.01	
			W3-U	1.90	
				1.90	1.00
Ground	R4	Bedroom	W4-L	0.01	
			W4-U	1.39	
				1.40	1.00
Ground	R6	LD	W5-L	0.00	
			W5-U	0.81	
			W6-L	0.18	
			W6-U	2.32	
				3.32	1.50
Ground	R7	Bedroom	W7-L	0.03	
			W7-U	1.84	
				1.87	1.00
Ground	R8	LD	W8-L	0.18	
			W8-U	2.31	
				2.49	1.50
Ground	R9	LD	W9-L	0.21	
			W9-U	2.19	
				2.39	1.50
Ground	R10	Bedroom	W10-L	0.01	
			W10-U	1.01	
				1.01	1.00
Ground	R11	Bedroom	W11-L	0.02	
			W11-U	1.36	
				1.38	1.00
Ground	R12	Bedroom	W12-L	0.02	
			W12-U	1.68	
				1.70	1.00
Ground	R13	LD	W13-L	0.28	
			W13-U	2.79	
			W14-L	0.02	

Floor Ref.	Room Ref.	Room Use.	Window Ref.	ADF Proposed	Req'd Value
			W14-U	1.26	
				4.35	1.50
Ground	R14	Bedroom	W16-L	0.01	
			W16-U	0.99	
				1.00	1.00
Ground	R17	Bedroom	W17-L	0.25	
			W17-U	3.27	
				3.52	1.00
First	R1	LD	W1-L	0.38	
			W1-U	4.01	
			W38-L	0.01	
			W38-U	1.63	
				6.03	1.50
First	R2	Bedroom	W2-L	0.01	
			W2-U	2.60	
				2.61	1.00
First	R3	Bedroom	W3-L	0.01	
			W3-U	2.18	
				2.19	1.00
First	R4	LD	W4-L	0.15	
			W4-U	1.63	
				1.78	1.50
First	R5	Bedroom	W5-L	0.01	
			W5-U	2.26	
				2.27	1.00
First	R6	Bedroom	W6-L	0.01	
			W6-U	2.26	
				2.27	1.00
First	R7	LD	W7-L	0.15	
			W7-U	1.64	
				1.79	1.50
First	R8	Bedroom	W8-L	0.01	
			W8-U	1.82	
				1.83	1.00
First	R9	Bedroom	W9-L	0.01	
			W9-U	2.48	
				2.50	1.00
First	R10	LD	W10-L	0.25	
			W10-U	2.61	
				2.86	1.50

Floor Ref.	Room Ref.	Room Use.	Window Ref.	ADF Proposed	Req'd Value
First	R11	Bedroom	W11-L	0.01	
			W11-U	2.40	
				2.41	1.00
First	R12	Bedroom	W12-L	0.01	
			W12-U	2.65	
				2.66	1.00
First	R13	LKD	W13-L	0.30	
			W13-U	3.15	
			W26-L	0.02	
			W26-U	1.32	
				4.79	2.00
First	R14	LD	W14-L	0.01	
			W14-U	2.01	
			W15-L	0.15	
			W15-U	1.51	
				3.68	1.50
First	R15	Bedroom	W16-L	0.01	
			W16-U	1.64	
				1.65	1.00
First	R16	Bedroom	W17-L	0.01	
			W17-U	1.36	
				1.37	1.00
First	R17	LD	W18-L	0.14	
			W18-U	1.40	
				1.54	1.50
First	R18	Bedroom	W19-L	0.02	
			W19-U	0.92	
				0.93	1.00
First	R19	Bedroom	W20-L	0.01	
			W20-U	1.57	
				1.57	1.00
First	R20	Bedroom	W21-L	0.01	
			W21-U	1.65	
				1.65	1.00
First	R21	Bedroom	W22-L	0.01	
			W22-U	2.08	
				2.09	1.00
First	R22	Bedroom	W23-L	0.01	
			W23-U	2.20	
				2.21	1.00

Floor Ref.	Room Ref.	Room Use.	Window Ref.	ADF Proposed	Req'd Value
First	R23	LKD	W24-L	0.01	
			W24-U	1.23	
			W25-L	0.21	
			W25-U	1.45	
				2.89	2.00
First	R24	LKD	W27-L	0.16	
			W27-U	1.48	
			W28-L	0.01	
			W28-U	1.39	
				3.03	2.00
First	R25	Bedroom	W29-L	0.01	
			W29-U	2.40	
				2.41	1.00
First	R26	Bedroom	W30-L	0.01	
			W30-U	1.94	
				1.95	1.00
First	R27	Bedroom	W31-L	0.01	
			W31-U	1.03	
				1.03	1.00
First	R28	Bedroom	W32-L	0.01	
			W32-U	1.11	
				1.12	1.00
First	R29	Bedroom	W33-L	0.01	
			W33-U	0.77	
				0.78	1.00
First	R30	LD	W34-L	0.12	
			W34-U	1.37	
				1.50	1.50
First	R31	Bedroom	W35-L	0.01	
			W35-U	1.66	
				1.67	1.00
First	R32	LD	W36-L	0.26	
			W36-U	2.82	
			W37-L	0.01	
			W37-U	1.74	
				4.83	1.50
Second	R1	LD	W1-L	0.35	
			W1-U	3.60	
			W38-L	0.02	
			W38-U	2.08	
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Floor Ref.	Room Ref.	Room Use.	om Use. Window Ref.		Req'd Value
				6.06	1.50
Second	R2	Bedroom	W2-L	0.01	
			W2-U	2.51	
				2.52	1.00
Second	R3	Bedroom	W3-L	0.01	
			W3-U	2.14	
				2.15	1.00
Second	R4	LD	W4-L	0.15	
			W4-U	1.58	
				1.72	1.50
Second	R5	Bedroom	W5-L	0.01	
			W5-U	2.12	
				2.13	1.00
Second	R6	Bedroom	W6-L	0.01	
			W6-U	2.29	
				2.30	1.00
Second	R7	LD	W7-L	0.15	
			W7-U	1.59	
				1.74	1.50
Second	R8	Bedroom	W8-L	0.01	
			W8-U	1.79	
				1.80	1.00
Second	R9	Bedroom	W9-L	0.01	
			W9-U	2.40	
				2.42	1.00
Second	R10	LD	W10-L	0.24	
			W10-U	2.56	
				2.80	1.50
Second	R11	Bedroom	W11-L	0.01	
			W11-U	2.32	
				2.33	1.00
Second	R12	Bedroom	W12-L	0.01	
			W12-U	2.56	
				2.58	1.00
Second	R13	LKD	W13-L	0.30	
			W13-U	3.11	
			W25-L	0.02	
			W25-U	1.38	
				4.81	2.00
Second	R14	LD	W14-L	0.01	

Floor Ref.	Room Ref.	Room Use.	Window Ref.	ADF Proposed	Req'd Value
			W14-U	1.98	
			W15-L	0.16	
			W15-U	1.60	
				3.75	1.50
Second	R15	Bedroom	W16-L	0.01	
			W16-U	2.06	
				2.07	1.00
Second	R16	Bedroom	W17-L	0.01	
			W17-U	1.41	
				1.42	1.00
Second	R17	LD	W18-L	0.14	
			W18-U	1.42	
				1.56	1.50
Second	R18	Bedroom	W19-L	0.02	
			W19-U	0.93	
				0.94	1.00
Second	R19	Bedroom	W20-L	0.01	
			W20-U	1.66	
				1.66	1.00
Second	R20	Bedroom	W21-L	0.01	
			W21-U	1.75	
				1.76	1.00
Second	R21	Bedroom	W22-L	0.01	
			W22-U	2.14	
				2.15	1.00
Second	R22	Bedroom	W23-L	0.01	
			W23-U	2.21	
				2.22	1.00
Second	R23	LKD	W24-L	0.01	
			W24-U	1.22	
			W26-L	0.20	
			W26-U	3.05	
				4.47	2.00
Second	R24	LKD	W27-L	0.21	
			W27-U	2.87	
			W28-L	0.01	
			W28-U	1.37	
				4.46	2.00
Second	R25	Bedroom	W29-L	0.01	
			W29-U	2.41	

Floor Ref.	Room Ref.	Room Use.	Window Ref.	ADF Proposed	Req'd Value
				2.42	1.00
Second	R26	Bedroom	W30-L	0.01	
			W30-U	2.36	
				2.37	1.00
Second	R27	Bedroom	W31-L	0.01	
			W31-U	1.02	
				1.03	1.00
Second	R28	Bedroom	W32-L	0.01	
			W32-U	1.21	
				1.22	1.00
Second	R29	Bedroom	W33-L	0.01	
			W33-U	0.79	
				0.80	1.00
Second	R30	LD	W34-L	0.13	
			W34-U	1.39	
				1.51	1.50
Second	R31	Bedroom	W35-L	0.01	
			W35-U	1.70	
				1.71	1.00
Second	R32	LD	W36-L	0.27	
			W36-U	2.86	
			W37-L	0.03	
			W37-U	2.18	
				5.33	1.50

Appendix 2

Average Daylight Factor Results







Appendix 3

Annual Probable Sunlight Hours Results

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Annual	Winter	Total Suns per Room Annual	Total Suns per Room Winter
Ground	R1	LD	W1	32.00	15.00		
			W15	45.00	12.00		
						68.00	20.00
	R2	Bedroom	W2	61.00	21.00		
						61.00	21.00
	R3	Bedroom	W3	60.00	21.00		
						60.00	21.00
	R4	Bedroom	W4	63.00	22.00		
						63.00	22.00
	R6	LD	W5	16.00	4.00		
			W6	70.00	23.00		
						71.00	23.00
	R7	Bedroom	W7	65.00	21.00		
						65.00	21.00
	R8	LD	W8	57.00	19.00		
						57.00	19.00
	R9	LD	W9	36.00	15.00		
						36.00	15.00
	R10	Bedroom	W10	19.00	9.00		
						19.00	9.00
	R11	Bedroom	W11	32.00	7.00		
						32.00	7.00
	R12	Bedroom	W12	32.00	7.00		
						32.00	7.00
	R13	LD	W13	16.00	5.00		
			W14	52.00	4.00		
						56.00	7.00
	R14	Bedroom	W16	38.00	3.00		
						38.00	3.00
	R17	Bedroom	W17	1.00	0.00	1.00	0.00
First	D1		\\/1	22.00	14.00	1.00	0.00
FIISL	K1	LD	VV 20	35.00 75.00	22.00		
			VV 30	75.00	22.00	01.00	24.00
	כם	Bodroom	\ M/2	64.00	22.00	91.00	24.00
	NZ	Bedroom	VV Z	04.00	22.00	64 00	22.00
	R3	Bedroom	W/3	63.00	22 00	01.00	22.00
		Dearboin		00.00	22.00	63.00	22.00
	R4	LD	W4	18.00	6.00		
						18.00	6.00
	R5	Bedroom	W5	61.00	20.00		
		-	-		-	61.00	20.00

Floor Ref.	Room Ref.	Room Use.	Window	Annual	Winter	Total Suns per Room	Total Suns per Room
			Rel.			Annual	Winter
	R6	Bedroom	W6	61.00	20.00		
		15		40.00	6.00	61.00	20.00
	R7	LD	W7	18.00	6.00	10.00	C 00
	DQ	Podroom	14/0	42.00	10.00	18.00	6.00
	NO	Beuroom	VVO	42.00	10.00	42.00	10.00
	R9	Bedroom	W/9	54.00	15.00	42.00	10.00
		200.00		0	_0.00	54.00	15.00
	R10	LD	W10	34.00	12.00		
						34.00	12.00
	R11	Bedroom	W11	48.00	14.00		
						48.00	14.00
	R12	Bedroom	W12	48.00	14.00		
						48.00	14.00
	R13	LKD	W13	22.00	5.00		
			W26	12.00	0.00	20.00	5.00
	D14		14/1 /	12.00	0.00	29.00	5.00
	K14	LD	VV14 \\/15	12.00	0.00		
			VV 15	10.00	0.00	15.00	0.00
	R15	Bedroom	W16	11.00	0.00	13.00	0.00
						11.00	0.00
	R16	Bedroom	W17	4.00	0.00		
						4.00	0.00
	R17	LD	W18	1.00	0.00		
						1.00	0.00
	R18	Bedroom	W19	0.00	0.00		
	540	. .				0.00	0.00
	R19	Bedroom	W20	0.00	0.00	0.00	0.00
	R20	Bedroom	\\\/21	0.00	0.00	0.00	0.00
	K20	Bedroom	VVZI	0.00	0.00	0.00	0.00
	R21	Bedroom	W22	0.00	0.00	0.00	0.00
						0.00	0.00
	R22	Bedroom	W23	4.00	0.00		
						4.00	0.00
	R23	LKD	W24	10.00	0.00		
			W25	14.00	2.00		
						23.00	2.00
	R24	LKD	W27	21.00	8.00		
			VV 28	//.00	27.00	70 00	27.00
				I		70.00	27.00

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Annual	Winter	Total Suns per Room Annual	Total Suns per Room Winter
	R25	Bedroom	W29	68.00	23.00		
	R26	Bedroom	W30	57.00	19.00	68.00	23.00
	R27	Bedroom	W31	20.00	10.00	57.00	19.00
	R28	Bedroom	W32	11.00	9.00	11.00	9.00
	R29	Bedroom	W33	8.00	6.00	8.00	6.00
	R30	LD	W34	24.00	7.00	24.00	7.00
	R31	Bedroom	W35	32.00	7.00	32.00	7.00
	R32	LD	W36 W37	10.00 77.00	0.00 24.00		
						78.00	24.00
Second	R1	LD	W1 W38	26.00 80.00	11.00 28.00		
	R2	Bedroom	W2	63.00	22.00	95.00	30.00
	R3	Bedroom	W3	62.00	22.00	63.00	22.00
	R4	LD	W4	18.00	6.00	18.00	6.00
	R5	Bedroom	W5	60.00	20.00	60.00	20.00
	R6	Bedroom	W6	63.00	22.00	63.00	22.00
	R7	LD	W7	18.00	6.00	18.00	6.00
	R8	Bedroom	W8	43.00	10.00	43.00	10.00
	R9	Bedroom	W9	58.00	17.00	58.00	17.00
	R10	LD	W10	32.00	12.00	32.00	12.00
	K11	Bedroom	W11	47.00	13.00	47.00	13.00
	KIZ	Dearoom	VVIZ	47.00	13.00	47.00	13.00

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Annual	Winter	Total Suns per Room Annual	Total Suns per Room Winter
	R13	LKD	W13	21.00	5.00		
			W25	12.00	0.00	28.00	5.00
	R14	LD	W14	12.00	0.00		0.00
			W15	12.00	0.00	17.00	0.00
	R15	Bedroom	W16	24.00	0.00	17.00	0.00
	D1C	Deducers	14/17	7.00	0.00	24.00	0.00
	RID	Bearoom	VV1/	7.00	0.00	7.00	0.00
	R17	LD	W18	1.00	0.00		
	R18	Bedroom	W19	0.00	0.00	1.00	0.00
		200.00		0.00		0.00	0.00
	R19	Bedroom	W20	0.00	0.00	0.00	0.00
	R20	Bedroom	W21	0.00	0.00	0.00	0.00
	D01	Dodroom	14/22	2.00	0.00	0.00	0.00
	KZ1	Beuroom	VVZZ	2.00	0.00	2.00	0.00
	R22	Bedroom	W23	8.00	0.00		
	R23	LKD	W24	12.00	0.00	8.00	0.00
			W26	31.00	6.00		
	R24	I KD	W27	32.00	7.00	42.00	6.00
			W28	78.00	27.00		
	R25	Bedroom	\ <u>\</u> /29	72.00	25.00	79.00	27.00
	1125	bedroom	1125	72.00	23.00	72.00	25.00
	R26	Bedroom	W30	57.00	20.00	57.00	20.00
	R27	Bedroom	W31	22.00	12.00	57.00	20.00
	020	Deducers	W22	11.00	0.00	22.00	12.00
	R28	Bearoom	VV32	11.00	9.00	11.00	9.00
	R29	Bedroom	W33	9.00	7.00		
	R30	LD	W34	24.00	7.00	9.00	7.00
				_	-	24.00	7.00
	R31	Bedroom	W35	32.00	7.00	32.00	7.00

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Annual	Winter	Total Suns per Room Annual	Total Suns per Room Winter
	R32	LD	W36	13.00	2.00		
			W37	80.00	28.00		
						81.00	28.00

Project Name: base model - LW Project No.: 1 Report Title: Two hours Sunlight to Amenity - Proposed Scheme Analysis Date: 09/09/2021

Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Proposed
Ground	A1	Area m2	138.27	137.84
Ground		Percentage		99.7%
Ground	٨٥	Area m2	556.98	554.41
Ground	AZ	Percentage		99.7%



Contact Daylight Sunlight Consulting Ltd

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