

73-76 Eversholt Street, London, NW1

Internal Daylight and Sunlight Report

25 March 2021



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73-76 Eversholt Street, London, NW1

INTERNAL DAYLIGHT AND SUNLIGHT REPORT

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Reviewed by: Luke Wilson

Reference: 1494

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EXECUTIVE SUMMARY

- This is a report into the level of daylight and sunlight achieved within the proposed residential scheme on the basement and ground floors at 73-76 Eversholt Street, London, NW1. This analysis has been based upon scheme drawings provided by The D*Haus Company Limited and a photogrammetric survey of the site and surrounding properties.
- The analysis has been carried out in accordance with the methodologies contained in the Building Research Establishment's *Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice* (2011) (the "BRE Guidelines").
- In our opinion, the units on the basement and ground floors will be well daylit and sunlit overall. Seven of the nine rooms analysed will meet the Average Daylight Factor target values for their room uses. The main living areas of all units will exceed their minimum daylight target values in terms of ADF and, while there are two bedrooms which do not meet the ADF target values, they still attain reasonable levels of daylight when considering the central London development context of the site.
- In sunlight terms, while the basement living rooms will not meet the target values, they still achieve reasonable levels when considering the central London location and given that they are positioned below ground. The ground floor living rooms will meet the sunlight target values.



1 INTRODUCTION

Waldrams have been instructed to provide daylight and sunlight analysis for the proposed development of the site at Silbury Court, Milton Keynes, MK9 2 AF. This analysis is based upon scheme drawings by The D*Haus Company Limited and a photogrammetric survey of the site and surrounding context. The analysis has been carried out in accordance with the methodologies contained in the BRE Guidelines.

The proposed development can be seen on drawings 1494-02-01 to -02-03 in Appendix 1. The numerical results of the quantitative internal daylight and sunlight analysis can be found in Appendix 2. Internal layouts showing the position of rooms analysed in the proposed scheme can be found on drawing 1494-02-04 in Appendix 1.

2 SUMMARY OF HOW DAYLIGHT AND SUNLIGHT ARE CONSIDERED FOR PLANNING

2.1 INTRODUCTION TO THE BRE GUIDELINES

Daylight and sunlight are planning considerations. The main reference used by local planning authorities to determine the acceptability of proposals in terms of their internal daylight and sunlight and the impact on daylight and sunlight to the surrounding properties is the Building Research Establishment (BRE) Guidelines, used in conjunction with British Standard BS8206 Part 2. The BRE Guidelines provide scientific, objective methods for establishing the acceptability of daylight and sunlight internal to the scheme and the surrounding properties. In practice, it is principally the main habitable rooms internal to the scheme and within the surrounding residential properties that are sensitive in terms of daylight and sunlight. This report therefore focuses on the internal daylight and sunlight and sunlight and sunlight and sunlight to habitable rooms in the surrounding residential property.

The BRE Guidelines specify that the daylight and sunlight results be considered flexibly and in the context of the site. Clearly, there would be a higher expectation for daylight and sunlight in a rural or suburban environment than in a dense city centre location. The important factor in all cases is that the levels of daylight and sunlight are appropriate, taking into account all the planning policy requirements of the site. The BRE Guidelines acknowledge this in the introduction where the BRE Guidelines state:

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and thus this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is



only one of the many factors in site layout design. In special circumstances the developer or planning authority may wish to use different target values."

(Page 1, BRE Guidelines)

The numerical figures should not be rigidly applied, but instead used as part of the overall evaluation of the daylight and sunlight to the surroundings in context of the site, its existing massing, and the need for regeneration and local planning policy guidance for the site. In particular, existing local precedents or recent planning consents may provide a good indication as to appropriate levels in the vicinity.

2.2 INTERNAL DAYLIGHT & SUNLIGHT CRITERIA FOR NEW BUILDS

The BRE Guidelines refer to BS8206 Part 2 and CIBSE Lighting Guide LG10 which set out the following criteria for assessing interior daylight:

- Average Daylight Factor
- Position of the no sky line (Daylight distribution)
- Room depth

Analysis of the first two measurements is laid out below. Due to the irregular plan dimensions of rooms within the scheme, such that they are not rectilinear, the room depth is ambiguous and so this calculation has not been carried out.

The ADF measure of daylight takes into account the main factors that affect the actual daylight appearance of a room including the area of the window.

ADF provides an absolute measure of daylight expressed as a ratio of daylight for the room in question as a proportion of the daylight outside at any moment in time. The ADF for a living room should be above 1.5% (i.e. the room should enjoy a minimum of 1.5% of the average external daylight at any moment in time), whilst that for a bedroom and kitchen should be in excess of 1% and 2% respectively. ADF is dependent on the area of sky visibility, which is closely related to VSC, the area of the window serving the room, the glazing transmittance, the total area of the room's surfaces and the internal reflectance of the room.

In relation to the position of the no-sky line (daylight distribution), the BRE Guidelines state in paragraph C16:

"If a significant area of the working plane (normally more than 20%) lies beyond the no-sky line (i.e. it receives no direct skylight) then the distribution of daylight in the room will look poor and supplementary electric lighting will be required."

We have therefore calculated the proportion of each habitable room internally to the



scheme between the window and the no-sky line.

For internal sunlight, the only test put forward in the BRE Guidelines is Annual Probable Sunlight Hours (APSH). The test for sunlight is calculated for each main living room. Bedrooms and kitchens are considered by the BRE Guidelines as less important for sunlight. The BRE Guidelines state that a window may potentially receive up to 1486 hours of sunlight per year on average, representing 100% of the annual probable sunlight hours (APSH). The BRE Guidelines recommend that interiors where the occupants expect sunlight should receive at least 25% APSH, including in the winter months between 21 September and 21 March at least 5% APSH.

Following the BRE Guidelines recommendations, APSH is measured from a point on the inner window wall whilst ADF is measured from the point halfway between the inner and outer window wall.

2.3 METHOD USED FOR CALCULATING THE DAYLIGHT AND SUNLIGHT RESULTS

The analysis provided in this report utilizes state-of-the-art software to calculate in three dimensions the daylight and sunlight following the methods specified in the BRE Guidelines. A three dimensional accurate computer model has been created for the existing site in context of the immediate surrounding properties, based upon a photogrammetric survey of the site and surrounding properties, site photographs and Ordnance Survey information.

Drawings of the proposed building in context of the surrounding properties are shown in Appendix 1.

2.3.1 INTERNAL RESIDENTIAL ROOMS

Daylight and sunlight levels for the proposed daylight (ADF and daylight distribution) and sunlight (APSH) internally to the scheme are then calculated. These results are provided in Appendix 2.

REFERENCES:

BRE Guidelines (BR 209):- Site layout planning for daylight and sunlight: a guide to good practice, by PJ Littlefair (2011).

These Guidelines provide the basis of the analysis described in this report. Please refer to this document for a detailed description as to the approach, methodology, and implementation of the numerical analysis used in this report. A summary of the approach and methods recommended by the BRE Guidelines is included in Section 2 above of this report.



3 ASSUMPTIONS USED IN THE ANALYSIS

The following assumed window transmittance and internal reflectance values have been used in the ADF calculations:

- Transmittance (T): 0.68
- Reflectance (R): 0.65

Please note that we have not applied a maintenance factor in the calculation; we have assumed that the windows are cleaned regularly. The details of the proportion of frame to each window aperture have not yet been finalised and so a frame factor of 9% has been assumed and applied for the ADF calculations internally within the rooms within the scheme.

4 SOURCES OF INFORMATION USED IN THE REPORT

The D*Haus Company Limited 0123_FE_000.pdf 0123_FE_001.pdf Received 08.02.21

Waldrams Chartered Surveyors Photogrammetry



5 INTERNAL DAYLIGHT & SUNLIGHT ANALYSIS

The room layouts within the proposed development are shown on drawing 1494-02-04 in Appendix 1, which reference the results of the internal daylight and sunlight analysis, included in Appendix 2.

The BRE Guidelines make it clear that ADF is a primary measure for daylight for new build accommodation such as this, and APSH is the measure for sunlight. It is important to note that the BRE Guidelines recommend that a kitchen should enjoy daylight levels of 2% ADF, a living room levels of 1.5%, and bedrooms 1% ADF.

Daylight Results

In daylight terms, seven of the nine rooms analysed meet the minimum ADF target values for their room uses as set out in the BRE Guidelines and four meet for daylight distribution. The two rooms which do not meet for ADF are Basement/R4 and Ground/R5 which achieve 0.79% and 0.97% ADF respectively. These rooms are both bedrooms and are part of units which will have well daylit main living areas in terms of ADF. The five basement rooms do not meet for daylight distribution but the four ground floor rooms analysed do meet the target value.

Sunlight Results

In sunlight terms, the two ground floor living rooms will meet the APSH target values while the two basement living rooms will not. The basement living rooms will achieve 17% APSH across the whole year and 3% APSH during the winter months.

Conclusion

In our opinion, the units on the basement and ground floors will be well daylit and sunlit overall. The main living areas of all units will exceed their minimum daylight target values in terms of ADF and the two bedrooms which do not meet still attain reasonable levels of ADF when considering the central London development context of the site with room Ground/R5 being so close to the recommended 1% ADF as to effectively meet the target value in our view. In sunlight terms, while the basement living rooms will not meet the target values, they still achieve reasonable levels when considering the central London location and given that they are positioned below ground.



6 CONCLUSIONS

This is a report into the level of daylight and sunlight achieved within the proposed residential scheme at 73-76 Eversholt Street, London, NW1. This analysis has been based upon scheme drawings provided by The D*Haus Company Ltd and a photogrammetric survey of the site and surrounding properties.

In our opinion, the units on the basement and ground floors will be well daylit and sunlit overall. The main living areas of all units will exceed their minimum daylight target values in terms of ADF and, while there are two bedrooms which do not meet the ADF target values, they still attain reasonable levels of daylight when considering the central London development context of the site.

In sunlight terms, while the basement living rooms will not meet the target values, they still achieve reasonable levels when considering the central London location and given that they are positioned below ground. The ground floor living rooms will meet the sunlight target values.

APPENDIX 1

Drawings





DHAUS IR03 (RECEIVED 08.02.2021)

ACCUCITIES IR04 (RECEIVED 08.03.2021)

WALDRAMS LTD 1494-01

NOTES:

PROPOSED BUILDING SHOWN IN BLUE



PROJECT 72-76 EVERSHOLT STREET LONDON NW1

DRAWING PLAN VIEW PROPOSED SCHEME

SCALE @ A3 1:500 **DATE** 19.03.2021

MODELLED BY ET

project №. 1494 DRAWN BY Et

rel no.- dwg no. 02-01





DHAUS IR03 (RECEIVED 08.02.2021)

ACCUCITIES IR04 (RECEIVED 08.03.2021)

WALDRAMS LTD 1494-01

NOTES:

PROPOSED BUILDING SHOWN IN BLUE

AOD HEIGHTS SHOWN IN METRES

PROJECT 72-76 EVERSHOLT STREET LONDON NW1

DRAWING 3D VIEW PROPOSED SCHEME

SCALE @ A3 NTS **DATE** 19.03.2021

MODELLED BY ET

project no. 1494 DRAWN BY Et

rel no.- dwg no. 02-02





DHAUS IR03 (RECEIVED 08.02.2021)

ACCUCITIES IR04 (RECEIVED 08.03.2021)

WALDRAMS LTD 1494-01

NOTES:

PROPOSED BUILDING SHOWN IN BLUE

AOD HEIGHTS SHOWN IN METRES



PROJECT 72-76 EVERSHOLT STREET LONDON NW1

DRAWING 3D VIEW PROPOSED SCHEME

SCALE @ A3 NTS

DATE 19.03.2021

DRAWN BY

02-03

MODELLED BY ΕT

PROJECT No. 1494

ΕT REL No.- DWG No.





DHAUS IR03 (RECEIVED 08.02.2021)

ACCUCITIES IR04 (RECEIVED 08.03.2021)

WALDRAMS LTD 1494-01



PROJECT 72-76 EVERSHOLT STREET LONDON NW1

DRAWING INTERNAL LAYOUTS

SCALE @ A3 1:125

MODELLED BY

DATE 19.03.2021

ET

DRAWN BY ΕT

PROJECT No. 1494

REL No.- DWG No. 02-04

APPENDIX 2

Internal Daylight & Sunlight Results

Proposed Basement R1 LKD W1-U 0.68 1.00 2.05 24.84 92.91 0.65 0.15 0.10 Basement R2 Bedroom W2-L 0.68 1.00 1.90 25.49 61.63 0.65 0.15 0.14 Basement R2 Bedroom W2-L 0.68 1.00 3.23 43.30 61.63 0.65 0.15 0.14 Basement R3 LKD W3-L 0.68 1.00 4.27 26.17 115.36 0.65 0.15 0.17 W3-U 0.68 1.00 7.29 43.84 115.36 0.65 1.00 3.26 Basement R4 Bedroom W4-L 0.68 1.00 1.13 40.16 72.52 0.65 1.00 0.73 Basement R5 Bedroom W5-L 0.68 1.00 1.02 42.30 52.30 0.65 1.00 0.77 0.79 1.00	Floor Ref.	Room Ref.	Room Use.	Window Ref.	Glass Transmittance	Maintenance Factor	Glazed Area	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Req'd Value
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Basement R5 Bedroom W5-L 0.68 1.00 0.60 37.85 52.30 0.65 0.15 0.08 Ground R1 Bedroom W1 0.68 1.00 1.02 42.30 52.30 0.65 1.00 0.97 Ground R1 Bedroom W1 0.68 1.00 1.74 32.06 67.40 0.65 1.00 0.97 1.00 Ground R2 LKD W2-L 0.68 1.00 1.67 61.54 104.51 0.65 0.15 0.17 W2-U 0.68 1.00 4.67 64.94 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 4.67 64.94 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 4.67 64.94 104.51 0.65 1.00 3.46 W3-U 0.68 1.00 1.82 66.09 137.67 0.65 0.15 0.27 <												0.79	1.00
Ground R1 Bedroom W1 0.68 1.00 1.74 32.06 67.40 0.65 1.00 0.97 Ground R1 Bedroom W1 0.68 1.00 1.74 32.06 67.40 0.65 1.00 0.97 Ground R2 LKD W2-L 0.68 1.00 1.67 61.54 104.51 0.65 0.15 0.17 W2-U 0.68 1.00 1.67 61.54 104.51 0.65 0.15 0.17 W3-U 0.68 1.00 1.68 61.95 104.51 0.65 0.15 0.17 W3-U 0.68 1.00 1.68 61.95 104.51 0.65 1.00 3.46 W3-U 0.68 1.00 1.68 61.95 104.51 0.65 0.15 0.18 Ground R3 LKD W4-L 0.68 1.00 1.82 66.09 137.67 0.65 0.15 0.05 W4-U 0.68 1.00 3.38 63.44 137.67 0.65 0.15 <t< td=""><td>Basement</td><td>R5</td><td>Bedroom</td><td>W5-L</td><td>0.68</td><td>1.00</td><td>0.60</td><td>37.85</td><td>52.30</td><td>0.65</td><td>0.15</td><td>0.08</td><td></td></t<>	Basement	R5	Bedroom	W5-L	0.68	1.00	0.60	37.85	52.30	0.65	0.15	0.08	
Ground R1 Bedroom W1 0.68 1.00 1.74 32.06 67.40 0.65 1.00 0.97 Ground R2 LKD W2-L 0.68 1.00 1.67 61.54 104.51 0.65 0.15 0.17 W2-U 0.68 1.00 4.67 64.94 104.51 0.65 0.15 0.17 W3-L 0.68 1.00 4.67 64.94 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 4.67 64.94 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 4.67 65.42 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 4.70 65.42 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 1.82 66.09 137.67 0.65 1.00 1.03 W4-U 0.68 1.00 3.38 63.44 137.67 <				W5-U	0.68	1.00	1.02	42.30	52.30	0.65	1.00	0.97	1.00
Ground R1 Bedroom W1 0.68 1.00 1.74 52.06 67.40 0.65 1.00 0.97 1.00 Ground R2 LKD W2-L 0.68 1.00 1.67 61.54 104.51 0.65 0.15 0.17 W2-U 0.68 1.00 4.67 64.94 104.51 0.65 0.15 0.17 W3-L 0.68 1.00 1.68 61.95 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 4.67 64.94 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 4.70 65.42 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 4.70 65.42 104.51 0.65 0.15 0.05 Ground R3 LKD W4-L 0.68 1.00 1.82 66.09 137.67 0.65 0.15 0.27 W5-L 0.68 1.00 3.38 63.44 137.67 0.65 0.15 0.27 <td< td=""><td>Cround</td><td>D1</td><td>Padroom</td><td>\\/1</td><td>0.69</td><td>1 00</td><td>1 74</td><td>22.06</td><td>67.40</td><td>0.65</td><td>1.00</td><td>1.05</td><td>1.00</td></td<>	Cround	D1	Padroom	\\/1	0.69	1 00	1 74	22.06	67.40	0.65	1.00	1.05	1.00
Ground R2 LKD W2-L 0.68 1.00 1.67 61.54 104.51 0.65 0.15 0.17 W2-U 0.68 1.00 4.67 64.94 104.51 0.65 1.00 3.41 W3-L 0.68 1.00 1.68 61.95 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 4.67 65.42 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 4.70 65.42 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 4.70 65.42 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 1.82 66.09 137.67 0.65 0.15 0.05 W4-U 0.68 1.00 3.38 63.44 137.67 0.65 0.15 0.27 W5-U 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.20	Ground	KT.	Beuroom	VVI	0.08	1.00	1.74	52.00	07.40	0.05	1.00	0.97	1 00
W2-U 0.68 1.00 4.67 64.94 104.51 0.65 1.00 3.41 W3-L 0.68 1.00 1.68 61.95 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 4.70 65.42 104.51 0.65 0.15 0.18 Ground R3 LKD W4-L 0.68 1.00 1.82 66.09 137.67 0.65 0.15 0.05 W5-L 0.68 1.00 3.38 63.44 137.67 0.65 0.15 0.27 W5-U 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.27 W5-U 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.27 W5-U 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.20 W6-U 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.20 W6-U 0.68 1.00 6.56 68.45 137.67 0.65	Ground	R2	LKD	W2-L	0.68	1.00	1.67	61.54	104.51	0.65	0.15	0.17	1.00
W3-L 0.68 1.00 1.68 61.95 104.51 0.65 0.15 0.18 W3-U 0.68 1.00 4.70 65.42 104.51 0.65 1.00 3.46 Ground R3 LKD W4-L 0.68 1.00 0.65 62.50 137.67 0.65 0.15 0.05 W4-U 0.68 1.00 1.82 66.09 137.67 0.65 1.00 1.03 W5-L 0.68 1.00 3.38 63.44 137.67 0.65 0.15 0.27 W5-U 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.27 W6-L 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.20 W6-U 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.20 W6-U 0.68 1.00 6.56 68.45 137.67 0.65 1.00 3.84				W2-U	0.68	1.00	4.67	64.94	104.51	0.65	1.00	3.41	
W3-U 0.68 1.00 4.70 65.42 104.51 0.65 1.00 3.46 Ground R3 LKD W4-L 0.68 1.00 0.65 62.50 137.67 0.65 0.15 0.05 W4-U 0.68 1.00 1.82 66.09 137.67 0.65 1.00 1.03 W5-L 0.68 1.00 3.38 63.44 137.67 0.65 0.15 0.27 W5-U 0.68 1.00 9.44 67.10 137.67 0.65 1.00 5.42 W6-L 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.27 W6-L 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.20 W6-U 0.68 1.00 6.56 68.45 137.67 0.65 1.00 3.84				W3-L	0.68	1.00	1.68	61.95	104.51	0.65	0.15	0.18	
Ground R3 LKD W4-L 0.68 1.00 0.65 62.50 137.67 0.65 0.15 0.05 W4-U 0.68 1.00 1.82 66.09 137.67 0.65 0.15 0.05 W5-L 0.68 1.00 3.38 63.44 137.67 0.65 0.15 0.27 W5-U 0.68 1.00 9.44 67.10 137.67 0.65 1.00 5.42 W6-L 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.20 W6-U 0.68 1.00 6.56 68.45 137.67 0.65 1.00 3.84				W3-U	0.68	1.00	4.70	65.42	104.51	0.65	1.00	3.46	
Ground R3 LKD W4-L 0.68 1.00 0.65 62.50 137.67 0.65 0.15 0.05 W4-U 0.68 1.00 1.82 66.09 137.67 0.65 1.00 1.03 W5-L 0.68 1.00 3.38 63.44 137.67 0.65 0.15 0.27 W5-U 0.68 1.00 9.44 67.10 137.67 0.65 1.00 5.42 W6-L 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.20 W6-U 0.68 1.00 6.56 68.45 137.67 0.65 1.00 3.84												7.23	1.50
W4-U 0.68 1.00 1.82 66.09 137.67 0.65 1.00 1.03 W5-L 0.68 1.00 3.38 63.44 137.67 0.65 0.15 0.27 W5-U 0.68 1.00 9.44 67.10 137.67 0.65 1.00 5.42 W6-L 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.20 W6-U 0.68 1.00 6.56 68.45 137.67 0.65 1.00 3.84	Ground	R3	LKD	W4-L	0.68	1.00	0.65	62.50	137.67	0.65	0.15	0.05	
W5-L 0.68 1.00 3.38 63.44 137.67 0.65 0.15 0.27 W5-U 0.68 1.00 9.44 67.10 137.67 0.65 1.00 5.42 W6-L 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.20 W6-U 0.68 1.00 6.56 68.45 137.67 0.65 1.00 3.84				W4-U	0.68	1.00	1.82	66.09	137.67	0.65	1.00	1.03	
W5-U 0.68 1.00 9.44 67.10 137.67 0.65 1.00 5.42 W6-L 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.20 W6-U 0.68 1.00 6.56 68.45 137.67 0.65 1.00 3.84				W5-L	0.68	1.00	3.38	63.44	137.67	0.65	0.15	0.27	
W6-L 0.68 1.00 2.35 65.08 137.67 0.65 0.15 0.20 W6-U 0.68 1.00 6.56 68.45 137.67 0.65 1.00 3.84				W5-U	0.68	1.00	9.44	67.10	137.67	0.65	1.00	5.42	
W6-U U.68 1.00 6.56 68.45 137.67 U.65 1.00 3.84				W6-L	0.68	1.00	2.35	65.08	137.67	0.65	0.15	0.20	
				W6-U	0.68	1.00	6.56	68.45	137.67	0.65	1.00	3.84	1 50
Ground R4 Bedroom W7-1 0.68 1.00 2.63 63.59 64.40 0.65 0.15 0.46	Ground	R4	Bedroom	\\/7_I	0.68	1 00	2.63	63 59	64 40	0.65	0 15	0.46	1.30
W7-U 0.68 1.00 7.36 67.38 64.40 0.65 1.00 9.07		117	Dearboilt	W7-U	0.68	1.00	7.36	67.38	64.40	0.65	1.00	9.07	
9.53 1.00												9.53	1.00

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Proposed				
Proposed									
Basement	R1	LKD	Area m2	20.99	6.95				
			% of room		33%				
	R2	Bedroom	Area m2	13.33	7.76				
			% of room		58%				
	R3	LKD	Area m2	29.37	17.98				
			% of room		61%				
	R4	Bedroom	Area m2	14.81	7.04				
			% of room		48%				
	R5	Bedroom	Area m2	10.58	6.17				
			% of room		58%				
Ground	R1	Bedroom	Area m2	11.35	9.74				
			% of room		86%				

LKD

LKD

Bedroom

18.97

29.77

10.46

Area m2

% of room

Area m2

% of room

Area m2

% of room

18.90

100%

29.77

100%

10.44

100%

R2

R3

R4

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Window Orientation	Total Suns per Room Annual	Total Suns per Room Winter			
Proposed									
Basement	R1	234°							
	R2	Bedroom	W2	234°	17.00	3.00			
					13.00	0.00			
	R3	LKD	W3	234°	17.00	3.00			
	R4	Bedroom	W4	62°N	0.00	0.00			
	R5	Bedroom	W5	54°N	0.00	0.00			
	D 4	Delasas		52901	7.00	0.00			
Ground	R1	Bearoom	W1	53°N	0.00	0.00			
	R2	LKD	W2	234°	0.00	0.00			
			W3	234°					
	52			22.48	51.00	16.00			
	K3	LKD	W4	234°					
			W6	254 152°					
					82.00	21.00			
	R4	Bedroom	W7	152°					
					68.00	17.00			

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