



2 Howard
Street,
Reading
RG1 7XS

Internal Daylight Assessment

February
2022



Ref: XX-XXX

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Revision	-
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Prepared by	AG
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1. Executive Summary

Syntegra Consulting Ltd has been appointed by Gravitas Property Group Ltd to prepare an Internal Daylight Assessment in order to examine the levels of daylight received by the front and rear basement bedrooms on 2 Howard Street in Reading.

The following can be concluded based on the studies undertaken:

- Internal daylight (ADF): All rooms are compliant with the minimum standards

Therefore, all rooms are compliant with the minimum internal daylight standards outlined in the (BRE) Guide 'Site Layout Planning for Sunlight and Daylight: A Guide to Good Practice' by P J Littlefair (2011).

2. Introduction

2.1. Background

The following methodology has been proposed in order to examine all required parameters:

- Carry out an internal daylight assessment using the methodologies set out in by BRE and British Standard guidelines to determine the Average Daylight Factor (ADF).

2.2. Methodology – Assessment Criteria

The Internal daylight assessment, analysed in this report, has been carried out in compliance with the methodology outlined in the Building Research Establishment (BRE) Guide ‘Site Layout Planning for Sunlight and Daylight: A Guide to Good Practice’ by P J Littlefair (2011).

Please see below brief description of each criterion assessed.

2.3. Average Daylight Factor (ADF)

The quality and quantity of daylight provision to a space in a new dwelling are both important. The BRE guidance suggests the use of the widely understood average daylight factor (ADF) metric to assess both the quantity and distribution of daylight in new rooms, using a CIE standard overcast sky condition. Referencing BS8206-2 Code of Practice for Daylighting, the guidance recommends values of 5% for a well day lit space and 2% for a partly day lit space.

Table 1 below summarizes all criteria examined.

Parameter	Acceptability Criteria
Average daylight factor (ADF)	Kitchen > or = 2% Living areas > or = 1.5% Bedrooms > or = 1%

Table 1 - Overall Guidance/Methodology Assessment

The IES Virtual Environment modelling software utilised for the compilation of this report has been accredited by CIBSE and acknowledged by the BRE as a suitable software tool for undertaking daylight, sunlight and overshadowing assessments in accordance with the BRE Good Practice guidelines. The specific IES software modules utilised for this assessment are the following:

- ModelIT: enables you to create a 3D "Virtual Environment" model without CAD data, or alternatively allows you to create a 3D model from 2D CAD data. Interfaces with AutoCAD and Google Sketchup.
- FlucsDL: is a detailed 3D simulation tool designed to predict daylight and electric light levels, and the appearance of a space prior to construction. Average Daylight Factors (ADF) can be simulated using FlucsDL.

Figure 1 displays the two basement bedrooms from the drawings received while figure 2 displays the IES VE model construction.

The IES model is based on information received by the client. All surrounding buildings are build based on approximation and on google maps.

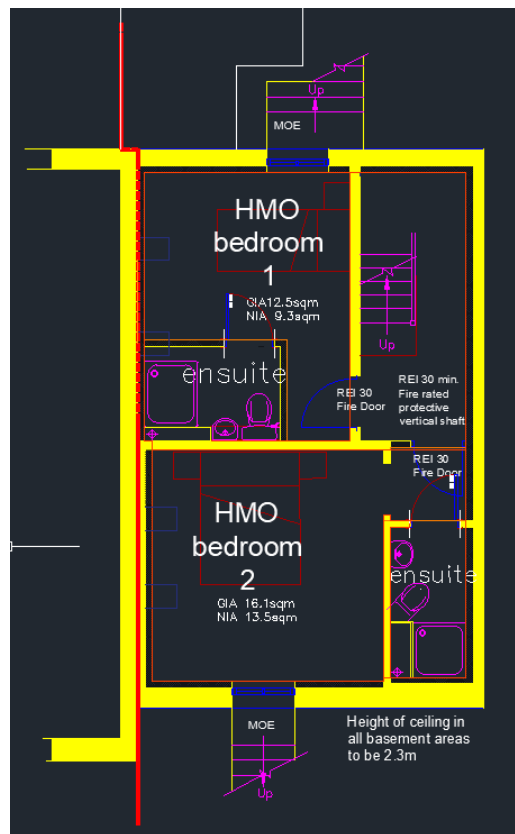


Figure 1 – Room layout

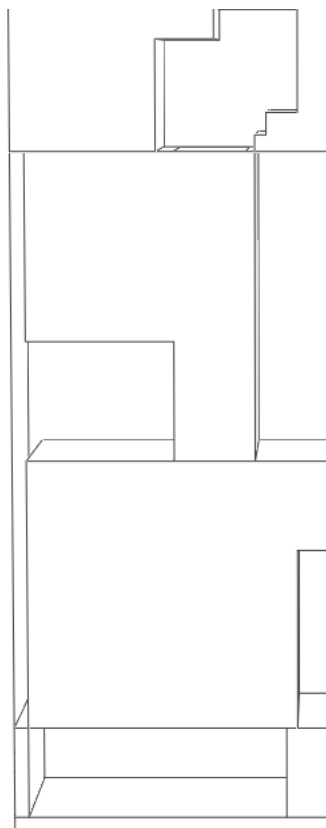


Figure 2 – IES VE model representation

3. Results

Average Daylight Factor

The results of the analysis for the levels of daylight available within the occupied spaces of the proposed development are presented on the table below.

Zone	ADF	Status
Front Bedroom	1.3%	Pass
Rear Bedroom	1.2%	Pass

Table 2 - IDA Results/ Compliance

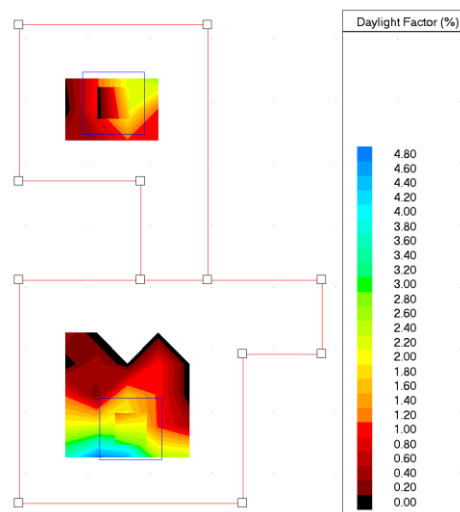


Figure 4 – 2 Howard Street basement bedrooms / IDA graphical representation

4. Conclusion

The results of this assessment with respect to the front and rear basement bedrooms on 2 Howard Street in Reading.

The following can be concluded based on the studies undertaken:

- Internal daylight (ADF): All rooms are compliant with the minimum standards

Therefore, all rooms are compliant with the minimum internal daylight standards outlined in the (BRE) Guide 'Site Layout Planning for Sunlight and Daylight: A Guide to Good Practice' by P J Littlefair (2011).

Analysis calculation summary:

Room ID	Room name	Calculation succeeded
DV000000	Rear bed	OK
FR000001	Front Bedroom	OK

Construction/Material ID	External area (m²)	External reflectance (%)	Internal area (m²)	Internal reflectance (%)
STD_CEIL:ext	0.00	0	222.54	0
STD_FLO1:ext	1762.93	0	275.43	0
STD_PART	0.00	0	131.72	0
STD_ROOF:ext	881.59	0	137.84	0
STD_WALL:ext	1081.38	0	435.97	0

Room DV000000 (Rear bed)

Analysis calculation for room -

Summary results for working planes and floor

Surface	Quantity	Values			Uniformity (Min./Ave.)	Diversity (Min./Max.)
		Min.	Ave.	Max.		
Working plane 1 Reflectance=0% Transmittance=100% Grid size=0.50 m Area=3.238m² Margin=0.50 m	Daylight factor	0.0 %	1.2 %	2.8 %	0.03	0.01
	Daylight illuminance	2.00 lux	52.73 lux	122.80 lux	0.04	0.02
	Sky view	0.00	0.92	1.00	0.00	0.00

Room FR000001 (Front Bedroom)

Analysis calculation for room -

Summary results for working planes and floor

Surface	Quantity	Values			Uniformity (Min./Ave.)	Diversity (Min./Max.)
		Min.	Ave.	Max.		
Working plane 1 Reflectance=0% Transmittance=100% Grid size=0.50 m Area=7.055m² Margin=0.50 m	Daylight factor	0.0 %	1.3 %	4.9 %	0.00	0.00
	Daylight illuminance	0.00 lux	58.96 lux	218.20 lux	0.00	0.00
	Sky view	0.00	0.96	1.00	0.00	0.00