

62 Manchester Road, Reading

Internal Daylight Assessment for Planning

Job No: 2998

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Document Control

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Signature	Signature
	



1.0 Executive Summary

1.1 This assessment has been prepared to support a full planning application for the proposed conversion of the existing commercial basement at 62 Manchester Road, Reading.

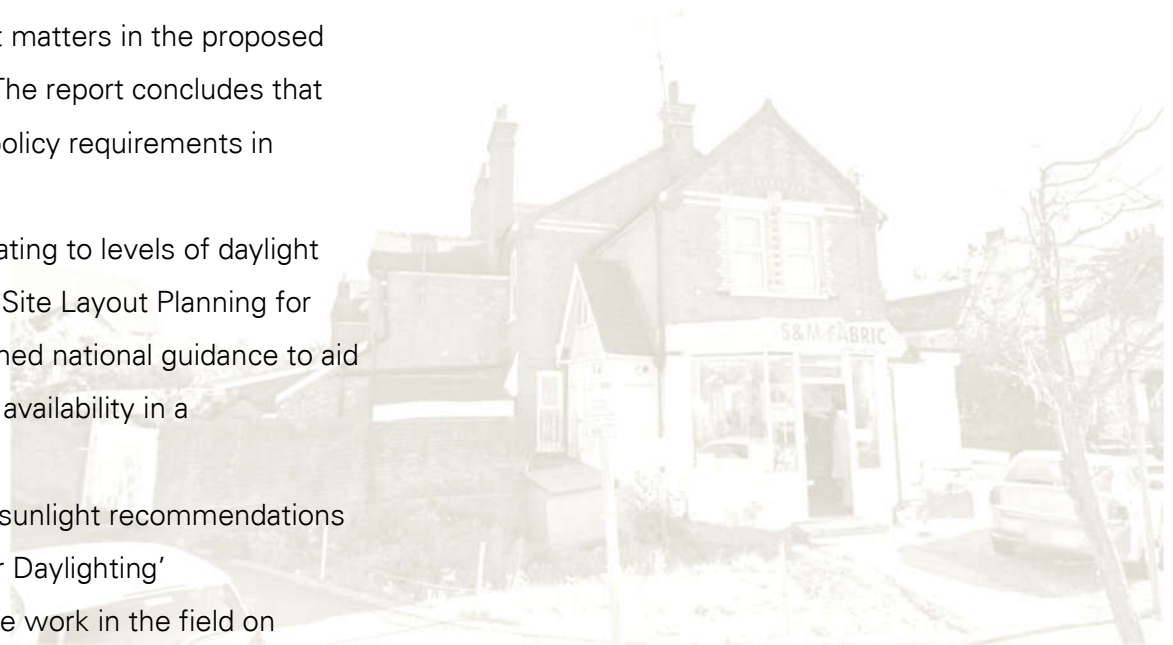
1.2 The report assesses the proposals in respect of daylight matters in the proposed habitable rooms, having regard to industry standard guidance. The report concludes that the proposals are acceptable and in accordance with planning policy requirements in relation to daylight.

1.3 There is no existing specific National Planning Policy relating to levels of daylight and sunlight in proposed dwellings. However, the BRE Report 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice' is the established national guidance to aid the designer to ensure sufficient levels of daylight and sunlight availability in a development.

1.4 It has been developed in conjunction with daylight and sunlight recommendations in BS 8206: Part 2: 'Lighting for Buildings - Code of Practice for Daylighting'

1.5 This reference document is accepted as the authoritative work in the field on daylight, sunlight and overshadowing and is specifically referred to in many Local Authorities' planning policy guidance for daylighting and sunlighting.

1.6 The methodology therein has been used in numerous lighting analyses and the standards of permissible reduction in light are accepted as the industry standards.





2.0 Methodology

2.1 This report looks at the internal daylight levels that the new rooms will receive using the standard methodology as prescribed by BRE and British Standard guidance:

- Average Daylight Factor (ADF) - Daylight availability

2.2 The ADF is derived from British Standard BS 8206 and is a complex and representative calculation to determine natural internal luminance (daylight).

2.3 It takes into account such factors as window size, number of windows available to the room, room size and layout, room surface reflectance, and the angle of visible sky reaching the window. The calculations have been undertaken for the rooms as proposed and as described on the Architect's plans.

2.4 Due to the complexity of the daylight entering the proposed rooms, ADF is the most suitable calculation to give a realistic indication of the internal illuminance that will be experienced.

2.5 The average daylight factor is a measure of the overall amount of daylight in a space as a percentage of the amount that would be available under an unobstructed sky. Thus a room with an ADF of 1% would receive 1/100th of the total daylight available when measured under a standardised overcast sky.

2.6 It is important to understand that the ADF is a measure of daylight available under standardised conditions, defined by BS8206:2 and the Commission Internationale de l'Eclairage (CIE), **not** a "snapshot" of daylight during any particular period. It is also important to note that it is **not** affected by orientation or the time of day.

2.7 Calculations have been undertaken in accordance with BRE methodology, using a CIE overcast sky at an illuminance value of 8500 lux.

2.8 It is understood that the only proposed habitable rooms at basement level need to be assessed for daylight.

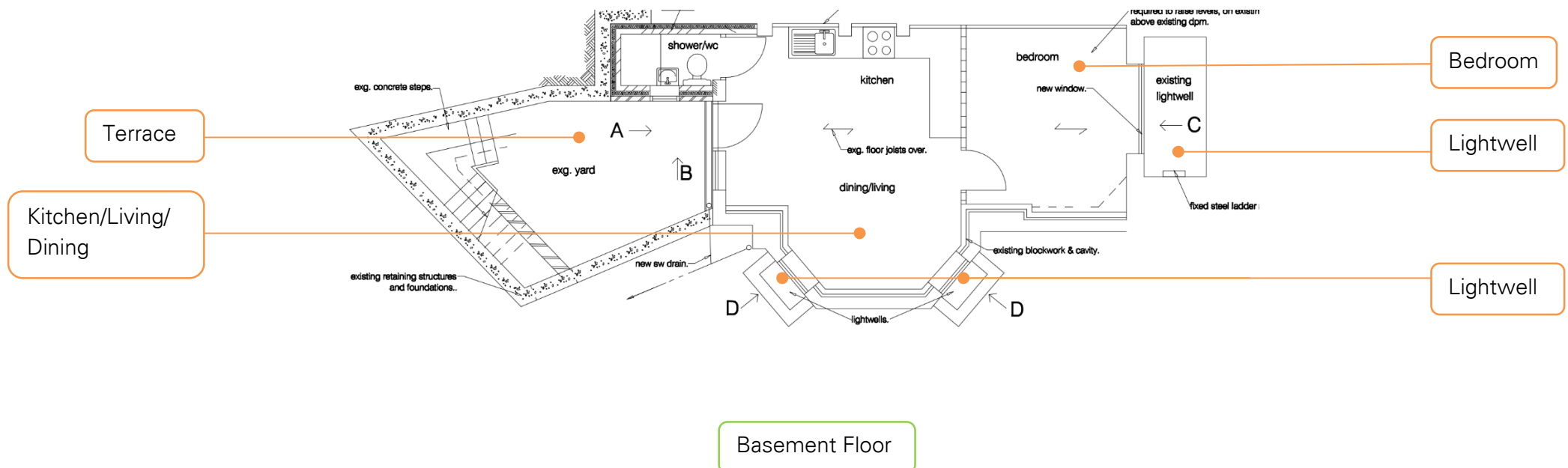


2.0 Methodology

2.9 The internal finishes of the rooms were modelled as:

- Walls - plaster - Reflectance 0.561
- Floor - mid grey finish - Reflectance 0.592
- Ceiling - white finish - Reflectance 0.702

2.10 Daylight levels are then calculated at nodal points across a nodal grid set 850mm above the finished floor level. The rooms to be assessed are shown below:





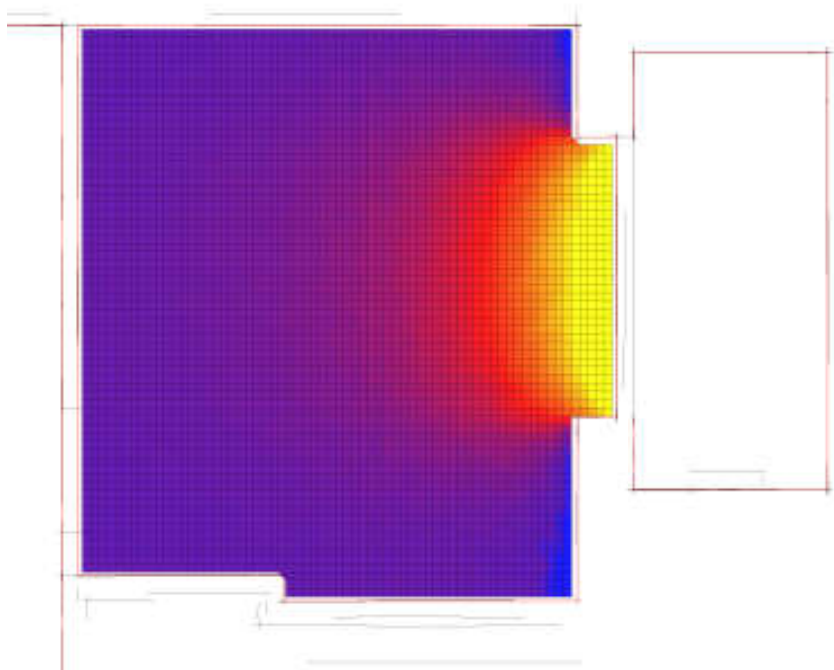
3.0 Daylight Results

- 3.1 The results of the ADF test are given below. It can be seen from the results below that the assessed rooms meet the recommended levels of internal daylight as defined by BS 8206-2:2008 and the BRE guidance. The guidance level is given in the table below under the "Target ADF" column.
- 3.2 Daylight distribution diagrams (not to scale) are also given below to show the spread of daylight in the assessed rooms.

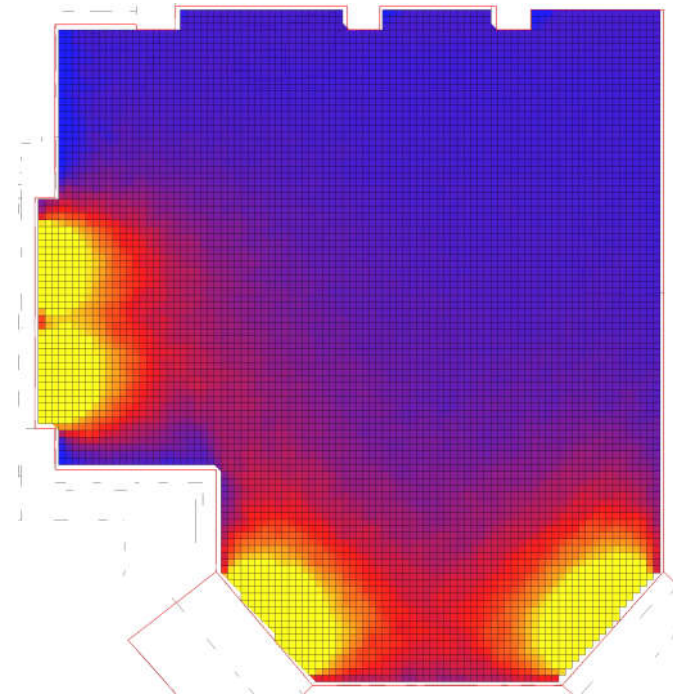
Floor	Room	Target ADF	Actual ADF	Compliant?
Lower Ground	Bedroom	1.0%	5.51%	✓
Lower Ground	Kitchen/Living/Dining	2.0%	2.62%	✓



3.0 Daylight Results



Bedroom



Kitchen/Living/Dining Room

Not to Scale



4.0 Further Commentary

- 4.1 A number of clarifications on the methodology and conclusions of this report have been requested. Some of these are dealt with above, in terms of how daylight is calculated using the ADF method but it is worth reiterating and elaborating on some areas here.
- The ADF is the normal method for assessing daylight in newly created dwellings. The targets for room types are defined in BS8206:2.
 - It is a "snapshot" of the daylight that will be experienced under an overcast sky with a luminance defined by the CIE methodology and proscribed by BS8206:2.
 - It is therefore not affected by orientation or the time of day or year.
 - The BRE guidance also defines a method for assessing sunlight availability for new dwellings. However this is intended for guidance only and represents a "best case" scenario when developments are being planned from scratch.
 - It would be wholly inappropriate to expect a conversion of an existing basement to meet these standards as the subterranean nature of the proposal means that, regardless of how large the lightwells were to be, there is little prospect of meeting them.
 - Only windows with face within 90 ° of south would be assessed for sunlight. In this instance, only the bedroom window faces in this orientation in any case.
 - The BRE guidance states that sunlight "is viewed as less important in bedrooms", and so in this instance it is not considered appropriate or relevant to include sunlight calculations.
 - The ADF is the most appropriate measure of the amenity of the future occupants of the scheme and the report shows clearly that the rooms within the proposal meet and exceed the recommendations of both the BRE guidance and BS8206:2.



5.0 Conclusions

- 5.1 The proposal at the 62 Manchester Road has been assessed for internal daylight levels in the habitable rooms at basement level.
- 5.2 The design team has endeavoured to provide a solution to lighting the rooms within the constraints of the site.
- 5.3 This has been successfully achieved, as demonstrated by the positive results presented within this report.
- 5.4 The assessed rooms meet and exceed the recommendations of BS8206 and the BRE guidance using the ADF test.
- 5.5 This means the future occupants will enjoy a well lit environment, with reduced reliance on artificial lighting.
- 5.6 It is therefore the conclusion of this report that the scheme meets guidance levels for daylight and is acceptable in planning terms.



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