Brindley Arms,

Whittle Street, Walkden

Daylight and Sunlight Assessment

Job No: 4634.1

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Contents

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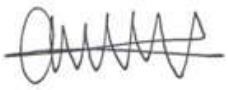
	

1.0 Introduction

1.1 This daylight and sunlight assessment has been prepared to support a planning application for the proposed conversion of the building occupied by the Brindley Arms public house, Whittle Street, Walkden

1.2 The report assesses the proposals in respect of daylight matters within habitable rooms in the proposed dwellings, having regard to industry standard guidance.

1.3 The report concludes that the proposal is acceptable and in accordance with planning policy requirements in relation to daylight and sunlight for those rooms assessed.

1.4 There is no existing specific National Planning Policy relating to the prospective impacts of developments on daylight and sunlight on their surrounding environment.

1.5 However, the BRE Report 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice' (3rd edition, 2022) is the established National guidance to aid the developer to prevent and/or minimise the impact of a new development on the availability of daylight within new proposals.

1.6 It has been developed in conjunction with daylight and sunlight recommendations in BS EN 17037: 2018+A1:2021 (with UK Annexe): 'Daylight in Buildings'

1.7 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.

1.8 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 Project Summary

2.1 The site lies at the junction of Whittle Street and Springside Avenue, Walkden and is currently occupied by the part single, part three storey Brindley Arms public house.

2.2 The proposal is for the conversion of the existing building to form a residential development of 9 new homes

2.3 The design team wish to ensure that habitable rooms in the residential units will receive sufficient daylight and sunlight for their intended uses, in excess of the minimum values prescribed by the BRE guidance and BS EN 17037: 2018+A1:2021

2.4 2D CAD drawings have been provided to us by the design team. These have been used to construct a 3D analysis model in order to assess the internal daylight levels within each room.

2.5 Computer simulation modelling has been used to produce the results, presented below.

Site Location

3.0 Methodology - Daylight

3.1 This BRE and BS EN 17037 guidance allows for two alternative methods to assess daylight within new dwellings. This report uses the following method as it is considered to provide the most detailed analysis of the internal light levels in the dwellings:

- Target Daylight Factor (DF_T)

3.2 The DF_T method is a complex and representative calculation to determine natural internal luminance.

3.3 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.

3.4 The calculations have assumed a white ceiling, cream walls and mid-grey carpet or wooden floor using reflectance values taken from the BS EN 170437 Guidance.

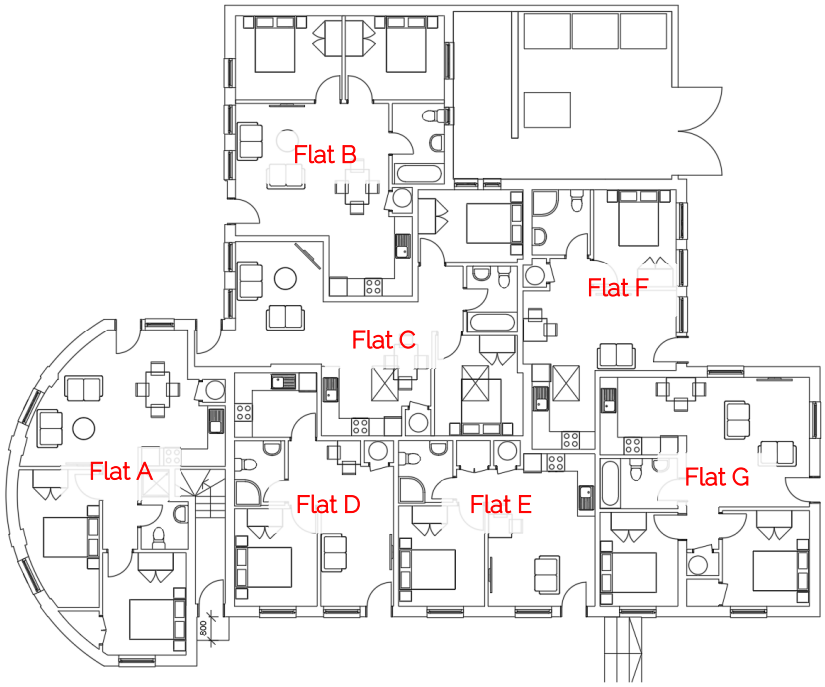
3.5 As this is a conversion scheme, it falls under the category of "hard to light" dwellings and therefore an alternative target can be used. The minimum DF_T values for various UK locations and room types are provided below:

Table C3 – Target daylight factors (D_T) to achieve over at least 50% of the assessment grid in UK domestic habitable rooms with vertical and/or inclined daylight apertures

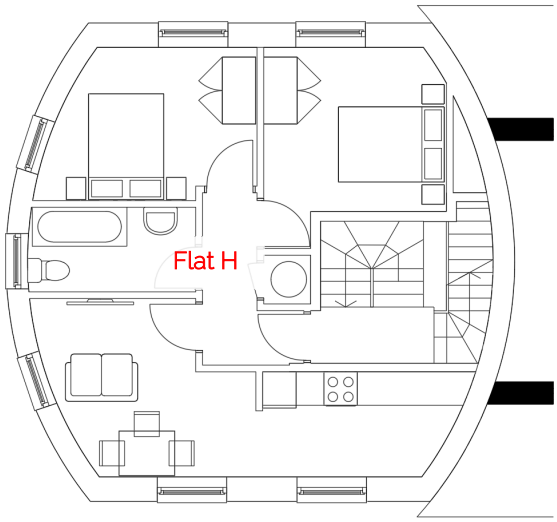
Location	D_T for 100 lx (Bedroom)	D_T for 150 lx (Living room)	D_T for 200 lx (Kitchen)
St Peter (Jersey)	0.6%	0.9%	1.2%
London (Gatwick Airport)	0.7%	1.1%	1.4%
Birmingham	0.6%	0.9%	1.2%
Hemsby (Norfolk)	0.6%	0.9%	1.3%
Finningley (Yorkshire)	0.7%	1.0%	1.3%
Aughton (Lancashire)	0.7%	1.1%	1.4%
Belfast	0.7%	1.0%	1.4%
Leuchars (Fife)	0.7%	1.1%	1.4%
Oban	0.8%	1.1%	1.5%
Aberdeen	0.7%	1.1%	1.4%

3.6 It is deemed by the guidance that if the minimum DF_T criteria are met, then the occupiers of the dwelling will have sufficient daylight. As can be seen from the results below, all assessed habitable rooms meet and exceed the minimum levels of internal daylight.

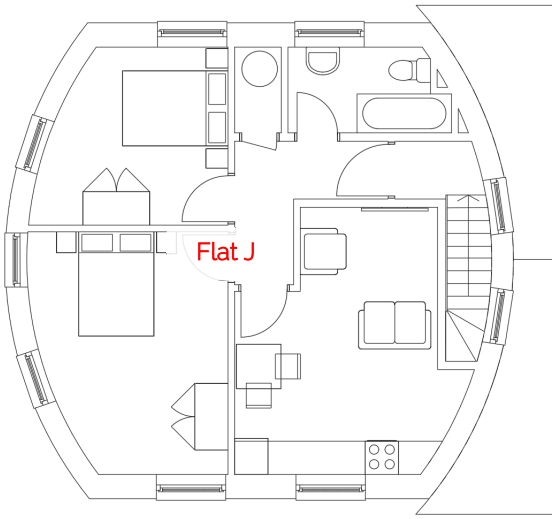
4.0 Room Schedules



Ground Floor as Proposed



First Floor as Proposed



Second Floor as Proposed

5.0 Daylight Results

Minimum Target Daylight Factor				
Unit	Room	Required DF_T Over 50% of Room Area	Area Of Room Receiving Required DF_T	Meets Standards?
A	Kitchen/Living/Dining	1.4%	85.3%	Yes
A	Bedroom 1	0.7%	99.8%	Yes
A	Bedroom 2	0.7%	98.1%	Yes
B	Kitchen/Living/Dining	1.4%	53.5%	Yes
B	Bedroom 1	0.7%	67.3%	Yes
B	Bedroom 2	0.7%	75.8%	Yes
C	Kitchen/Living/Dining	1.4%	83.9%	Yes
C	Bedroom 1	0.7%	100.0%	Yes
C	Bedroom 2	0.7%	100.0%	Yes
D	Living/Dining	1.4%	52.8%	Yes
D	Bedroom 1	0.7%	100.0%	Yes
E	Kitchen/Living/Dining	1.4%	56.7%	Yes
E	Bedroom 1	0.7%	100.0%	Yes
F	Kitchen/Living/Dining	1.4%	79.6%	Yes
F	Bedroom 1	0.7%	100.0%	Yes
G	Kitchen/Living/Dining	1.4%	92.6%	Yes
G	Bedroom 1	0.7%	100.0%	Yes
G	Bedroom 2	0.7%	100.0%	Yes
H	Kitchen/Living/Dining	1.4%	100.0%	Yes
H	Bedroom 1	0.7%	100.0%	Yes
H	Bedroom 2	0.7%	100.0%	Yes
J	Kitchen/Living/Dining	1.4%	81.6%	Yes
J	Bedroom 1	0.7%	100.0%	Yes
J	Bedroom 2	0.7%	100.0%	Yes

6.0 Methodology – Sunlight

6.1 The DF_T test is the most commonly used assessment to understand if new dwellings will have sufficient light. This measures daylight, which is not affected by the orientation of the window.

6.2 Sunlight can also be assessed, although the BRE report gives guidance primarily in relation to new-build scenarios where the design team have more flexibility with building and room positioning, rather than conversions such as this where many parameters are beyond their control.

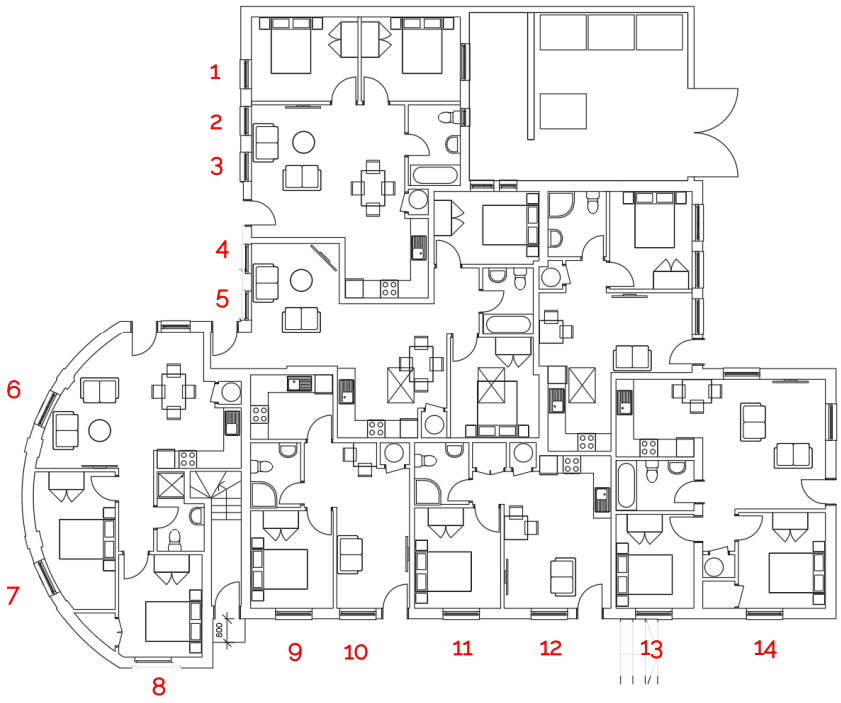
6.3 The Guidance only requires windows which face within 90° of due south to be assessed for sunlight. It would not be right to penalise a scheme for the conversion of an existing building for not meeting the sunlight guidance values, for windows which already face outside of this orientation.

6.4 The windows on this proposal which are to be assessed are identified below, both serving the proposed bedroom. The window which serves the kitchen/living/dining room does not need to be assessed as it faces within 90° of north.

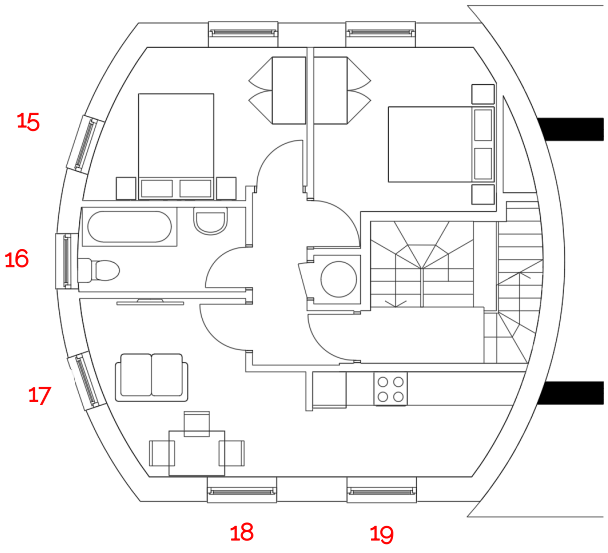
6.5 The guidance recommends that windows should be able to receive 25% of annual predicted sunlight hours and 5% of winter hours (between September 21st and March 21st).

6.6 The tables of results below show that these targets are met for all assessed windows.

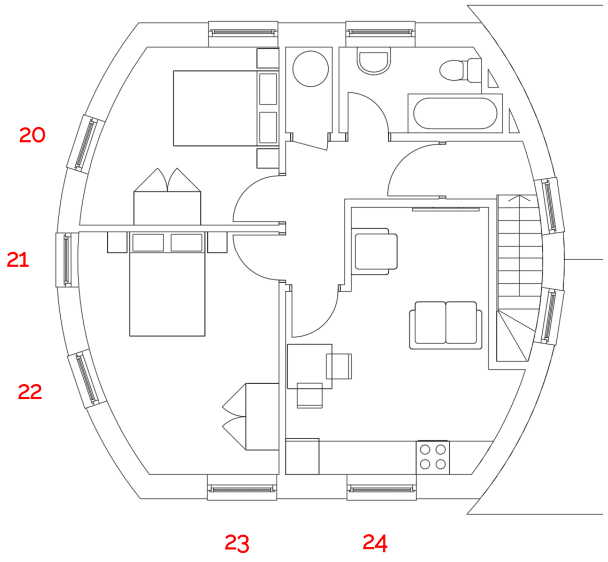
7.0 Sunlight Results



Ground Floor as Proposed



First Floor as Proposed



Second Floor as Proposed

7.0 Sunlight Results

Annual Probable Sunlight Hours				
Window	Room	Target Sunlight Hours	Actual Sunlight Hours	Meets Standards?
1	Bedroom	25.0%	79.418	Yes
2	Kitchen/Living/Dining	25.0%	76.923	Yes
3	Kitchen/Living/Dining	25.0%	74.913	Yes
4	Kitchen/Living/Dining	25.0%	62.578	Yes
5	Kitchen/Living/Dining	25.0%	52.183	Yes
6	Kitchen/Living/Dining	25.0%	70.755	Yes
7	Bedroom	25.0%	77.963	Yes
8	Bedroom	25.0%	50.797	Yes
9	Bedroom	25.0%	43.451	Yes
10	Kitchen/Living/Dining	25.0%	49.411	Yes
11	Bedroom	25.0%	48.441	Yes
12	Kitchen/Living/Dining	25.0%	46.362	Yes
13	Bedroom	25.0%	46.708	Yes
14	Bedroom	25.0%	46.500	Yes
15	Bedroom	25.0%	78.586	Yes
16	Bathroom	25.0%	85.655	Yes
17	Kitchen/Living/Dining	25.0%	86.417	Yes
18	Kitchen/Living/Dining	25.0%	53.638	Yes
19	Kitchen/Living/Dining	25.0%	53.015	Yes
20	Bedroom	25.0%	78.656	Yes
21	Bedroom	25.0%	85.655	Yes
22	Bedroom	25.0%	87.110	Yes
23	Bedroom	25.0%	55.232	Yes
24	Kitchen/Living/Dining	25.0%	54.886	Yes

7.0 Sunlight Results

Annual Probable Sunlight Hours				
Window	Room	Target Sunlight Hours	Actual Sunlight Hours	Meets Standards?
1	Bedroom	25.0%	25.156	Yes
2	Kitchen/Living/Dining	25.0%	23.562	Yes
3	Kitchen/Living/Dining	25.0%	22.523	Yes
4	Kitchen/Living/Dining	25.0%	17.741	Yes
5	Kitchen/Living/Dining	25.0%	13.167	Yes
6	Kitchen/Living/Dining	25.0%	24.116	Yes
7	Bedroom	25.0%	23.701	Yes
8	Bedroom	25.0%	19.681	Yes
9	Bedroom	25.0%	12.266	Yes
10	Kitchen/Living/Dining	25.0%	18.434	Yes
11	Bedroom	25.0%	17.879	Yes
12	Kitchen/Living/Dining	25.0%	16.216	Yes
13	Bedroom	25.0%	16.147	Yes
14	Bedroom	25.0%	15.800	Yes
15	Bedroom	25.0%	28.413	Yes
16	Bathroom	25.0%	29.799	Yes
17	Kitchen/Living/Dining	25.0%	29.591	Yes
18	Kitchen/Living/Dining	25.0%	20.305	Yes
19	Kitchen/Living/Dining	25.0%	19.751	Yes
20	Bedroom	25.0%	28.482	Yes
21	Bedroom	25.0%	29.799	Yes
22	Bedroom	25.0%	29.799	Yes
23	Bedroom	25.0%	20.444	Yes
24	Kitchen/Living/Dining	25.0%	20.166	Yes

8.0 Conclusions

8.1 The proposed conversion of the Brindley Arms public house, Walkden, has been assessed for internal daylight and sunlight levels using the Target Daylight Factor (DF_T) and Annual/Winter Probable Sunlight Hours tests as prescribed by the BRE guidance and BS EN 17037:2018.

8.2 The design team has endeavoured to ensure that the proposed habitable rooms have levels of natural light in excess of the minimum standards prescribed by the standards.

8.3 This has been successfully achieved, as demonstrated by the positive results presented within this report.

8.4 The assessed room meets the recommendations using the DF_T and APSH tests where relevant.

8.5 This means the future occupants will enjoy a well-lit environment, with reduced reliance on artificial lighting.

8.6 It is therefore the conclusion of this report that the proposals meet the guidance levels for daylight and are therefore acceptable in planning terms.

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