



The Pinnacle,

20 Tudor Road, Reading

Internal Daylight Assessment

Job No: 6440

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1.0 Introduction

- 1.1 This internal daylight assessment has been prepared in relation to an application for the proposed conversion of the building known as The Pinnacle, 20 Tudor Road, Reading.
- 1.2 The report assesses the proposals in respect of daylight matters within habitable rooms in the proposed scheme, 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 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 NPPF (Para 130(c)) does refer to daylight and sunlight in relation to density, encouraging Local Planning Authorities to take a flexible approach to applying policies and guidance relating to the impacts of proposals where they would otherwise inhibit making effective use of the site.
- 1.6 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 and sunlight in the environs of the site and the assessment of light within proposed new dwellings.
- 1.7 It refers in turn to the daylight and sunlight recommendations in BS EN 17037: 2018+A1:2021 (with UK Annexe): 'Daylight in Buildings'
- 1.8 These reference documents are accepted as the authoritative works in the field on daylight, sunlight and overshadowing and the BRE guidance specifically referred to in many Local Authorities' planning policy guidance for daylighting.
- 1.9 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 is located at 20 Tudor Road, Reading, and is occupied by a 6-storey building used as offices
- 2.2 The proposal involves the conversion of the building to residential use, creating 72 new dwellings.
- 2.3 The developer wishes to ensure that the newly created dwellings will receive sufficient daylight for their intended use, in excess of the minimum values prescribed by BS EN 17037: 2018+A1:2021.
- 2.4 As there is a significant amount of repetition through the floor layouts, not all dwellings need to be assessed. In line with BRE guidance, where a layout is repeated, it is sufficient to assess only the lowest unit, on the basis that those above will have levels of light at least as good.
- 2.5 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.
- 2.6 Computer simulation modelling has been used to produce the results, presented below.



Site as Existing

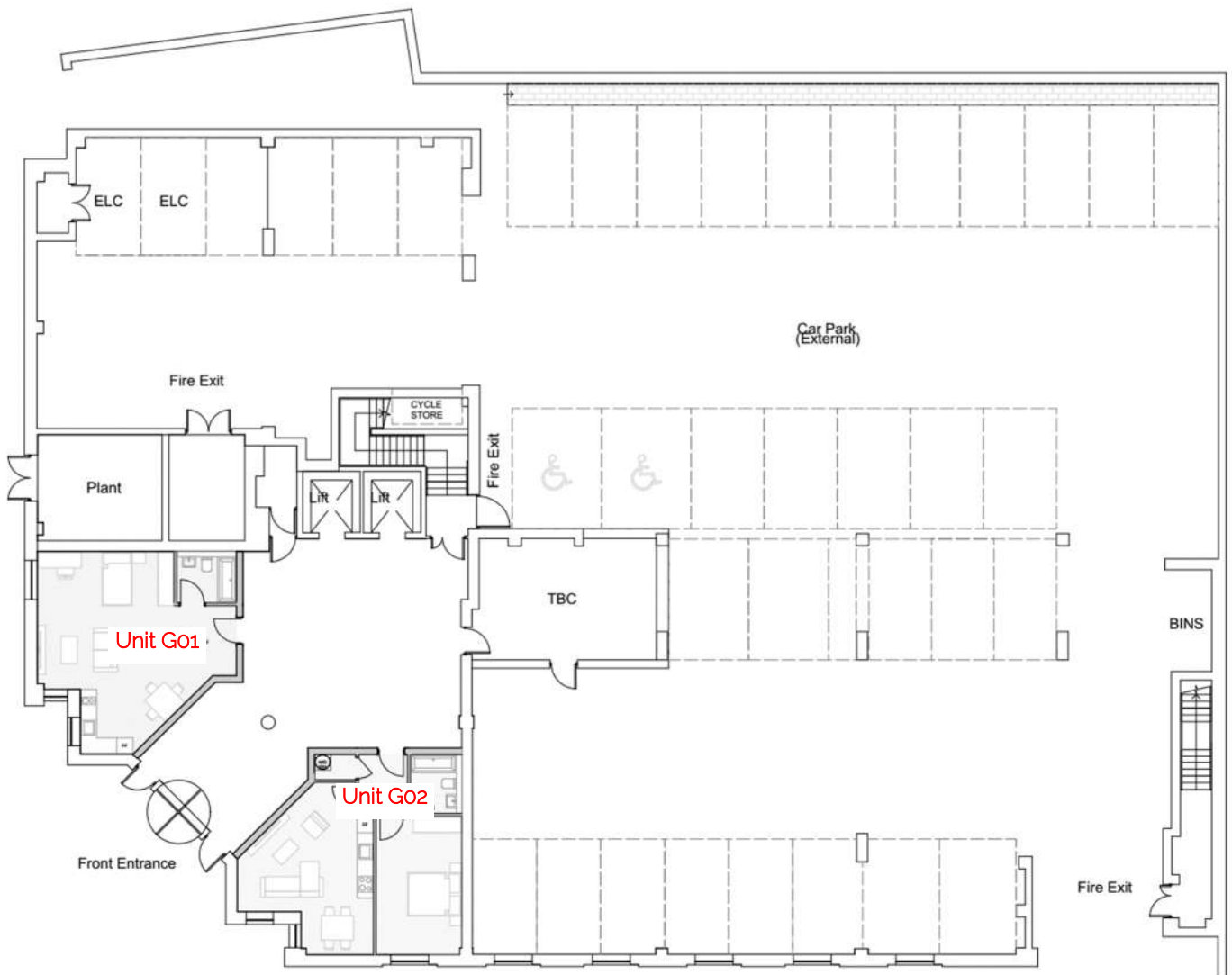
3.0 Methodology

- 3.1 The BRE and BS EN 17037 guidance allows for two alternative methods to assess daylight within new dwellings. This report uses the following method:
- 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 The minimum DF_T values for various UK locations and room types are provided below. The targets for London have been used for this site.

Table C3 – Target daylight factors (D_r) to achieve over at least 50% of the assessment grid in UK domestic habitable rooms with vertical and/or inclined daylight apertures			
Location	D_r for 100 lx (Bedroom)	D_r for 150 lx (Living room)	D_r 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%

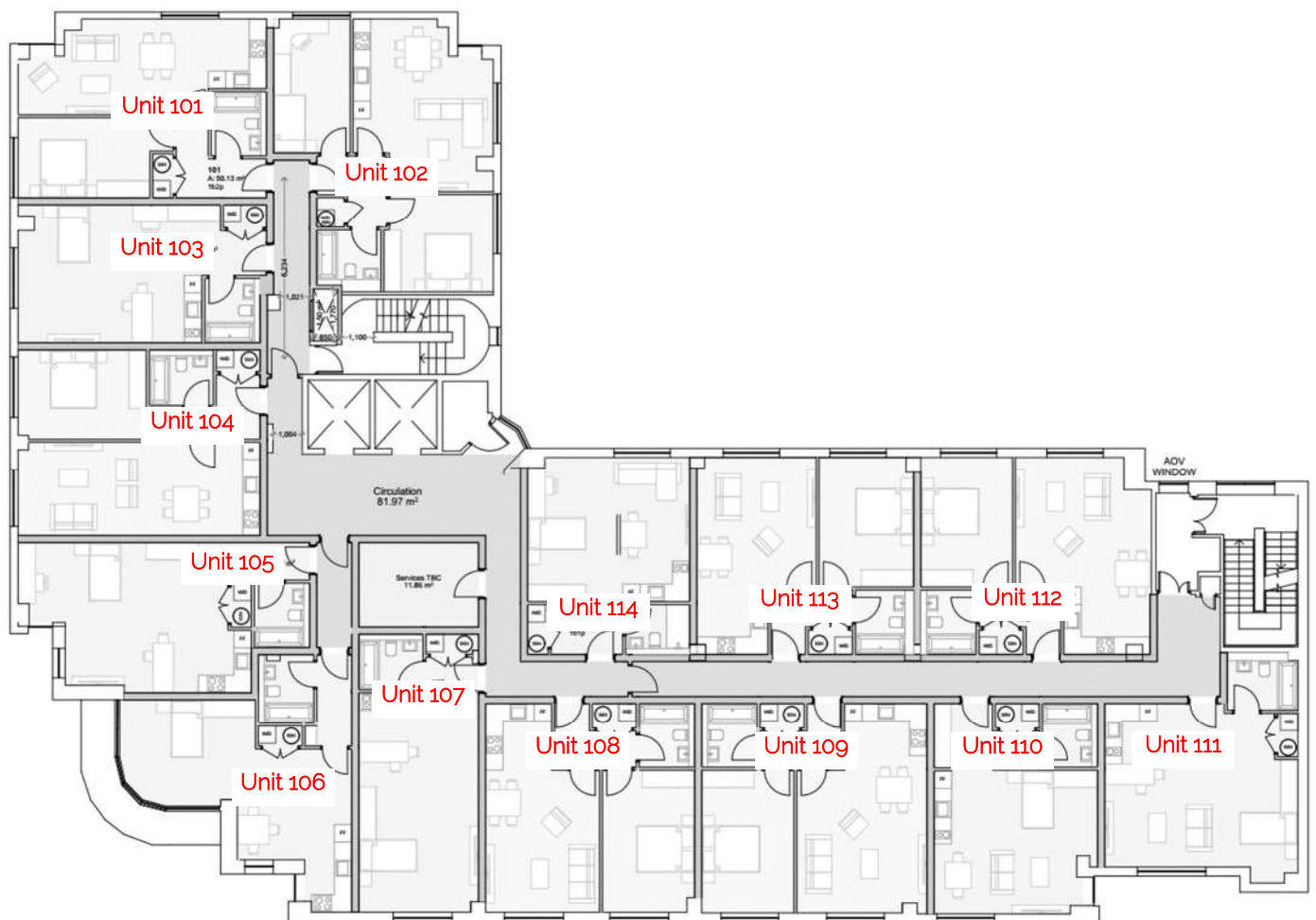
- 3.6 As there is repetition through the floors, it is not necessary to assess every unit – only those shown in the schedule below require assessment to cover all types.
- 3.7 It is deemed by the guidance that if the minimum DF_T criteria are met, then the occupiers of the dwelling will have sufficient daylight. As can be seen from the results below that all assessed habitable rooms meet and exceed the minimum levels of internal daylight.

4.0 Room Schedules



Ground Floor as Proposed

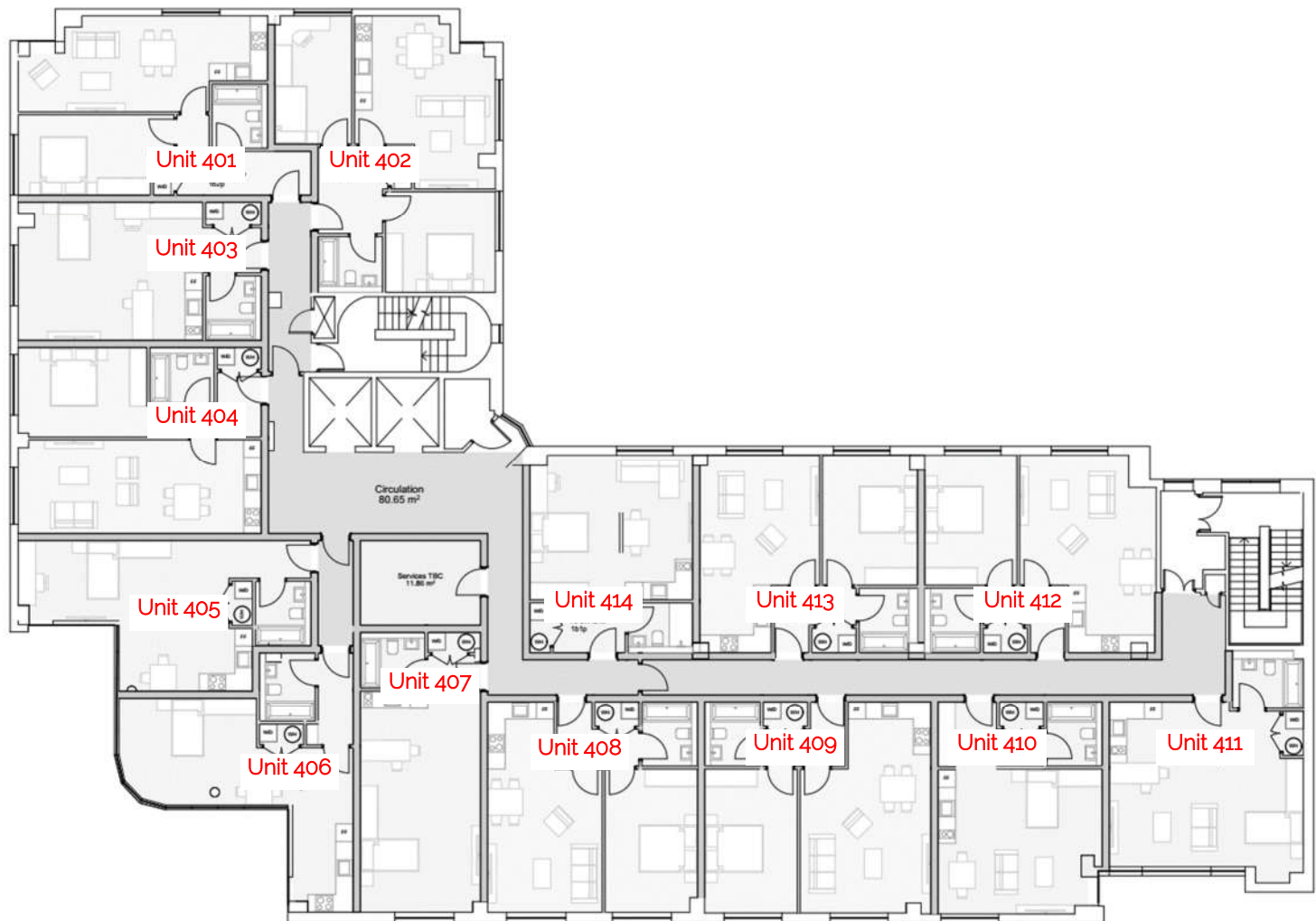
4.0 Room Schedules



First Floor as Proposed

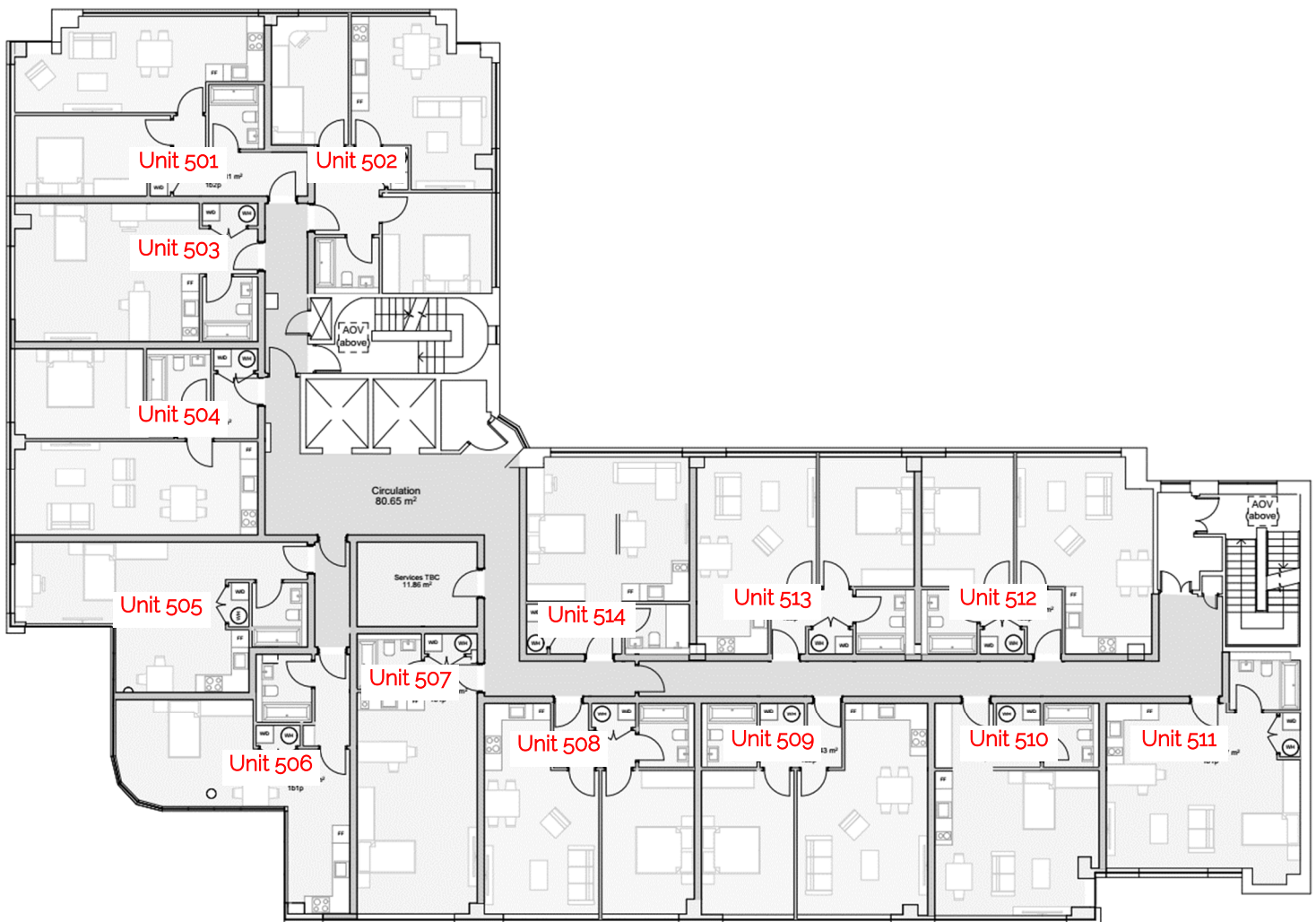
Note: The 2nd and 3rd floors are duplicates of this floor and do not need to be assessed

4.0 Room Schedules



Fourth Floor as Proposed

4.0 Room Schedules



Fifth 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?
G01	Studio	1.4%	61.8%	Yes
G02	Kitchen/Living/Dining	1.4%	62.9%	Yes
G02	Bedroom 1	0.7%	82.6%	Yes
101	Kitchen/Living/Dining	1.4%	66.7%	Yes
101	Bedroom 1	0.7%	100.0%	Yes
102	Kitchen/Living/Dining	1.4%	73.5%	Yes
102	Bedroom 1	0.7%	100.0%	Yes
102	Bedroom 2	1.4%	100.0%	Yes
103	Studio	1.4%	65.8%	Yes
104	Kitchen/Living/Dining	1.4%	64.9%	Yes
104	Bedroom 1	0.7%	100.0%	Yes
105	Studio	1.4%	57.6%	Yes
106	Studio	1.4%	99.1%	Yes
107	Studio	1.4%	66.2%	Yes
108	Kitchen/Living/Dining	1.4%	67.9%	Yes
108	Bedroom 1	0.7%	100.0%	Yes
109	Kitchen/Living/Dining	1.4%	65.8%	Yes
109	Bedroom 1	0.7%	100.0%	Yes
110	Studio	1.4%	64.3%	Yes
111	Studio	1.4%	63.8%	Yes
112	Kitchen/Living/Dining	1.4%	66.1%	Yes
112	Bedroom 1	0.7%	100.0%	Yes
113	Kitchen/Living/Dining	1.4%	68.5%	Yes
113	Bedroom 1	0.7%	100.0%	Yes

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?
114	Studio	1.4%	63.6%	Yes
401	Kitchen/Living/Dining	1.4%	72.2%	Yes
401	Bedroom 1	0.7%	100.0%	Yes
402	Kitchen/Living/Dining	1.4%	79.6%	Yes
402	Bedroom 1	0.7%	100.0%	Yes
402	Bedroom 2	0.7%	100.0%	Yes
403	Studio	1.4%	71.3%	Yes
404	Kitchen/Living/Dining	1.4%	70.3%	Yes
404	Bedroom 1	1.4%	100.0%	Yes
405	Studio	0.7%	79.8%	Yes
406	Studio	1.4%	100.0%	Yes
407	Studio	1.4%	71.7%	Yes
408	Kitchen/Living/Dining	1.4%	73.5%	Yes
408	Bedroom 1	1.4%	100.0%	Yes
409	Kitchen/Living/Dining	0.7%	71.3%	Yes
409	Bedroom 1	1.4%	100.0%	Yes
410	Studio	0.7%	69.6%	Yes
411	Studio	1.4%	100.0%	Yes
412	Kitchen/Living/Dining	1.4%	71.6%	Yes
412	Bedroom 1	1.4%	100.0%	Yes
413	Kitchen/Living/Dining	0.7%	74.2%	Yes
413	Bedroom 1	1.4%	100.0%	Yes
414	Studio	0.7%	68.9%	Yes

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?
501	Kitchen/Living/Dining	1.4%	100.0%	Yes
501	Bedroom 1	1.4%	100.0%	Yes
502	Kitchen/Living/Dining	0.7%	100.0%	Yes
502	Bedroom 1	1.4%	100.0%	Yes
502	Bedroom 2	0.7%	100.0%	Yes
503	Studio	1.4%	89.2%	Yes
504	Kitchen/Living/Dining	1.4%	91.6%	Yes
504	Bedroom 1	1.4%	100.0%	Yes
505	Studio	0.7%	100.0%	Yes
506	Studio	1.4%	100.0%	Yes
507	Studio	1.4%	93.7%	Yes
508	Kitchen/Living/Dining	1.4%	94.2%	Yes
508	Bedroom 1	1.4%	100.0%	Yes
509	Kitchen/Living/Dining	0.7%	93.1%	Yes
509	Bedroom 1	1.4%	100.0%	Yes
510	Studio	0.7%	100.0%	Yes
511	Studio	1.4%	100.0%	Yes
512	Kitchen/Living/Dining	1.4%	90.9%	Yes
512	Bedroom 1	1.4%	100.0%	Yes
513	Kitchen/Living/Dining	0.7%	94.1%	Yes
513	Bedroom 1	1.4%	100.0%	Yes
514	Studio	0.7%	100.0%	Yes

6.0 Conclusions

- 6.1 The proposed conversion of The Pinnacle, 20 Tudor Road, Reading, has been assessed for internal daylight levels using the Target Daylight Factor (DF_T) test as prescribed by the BRE guidance and BS EN 17037:2018.
- 6.2 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.
- 6.3 This has been successfully achieved, as demonstrated by the positive results presented within this report.
- 6.4 The assessed rooms meet the recommendations using the DF_T test.
- 6.5 This means the future occupants will enjoy a well-lit environment, with reduced reliance on artificial lighting.
- 6.6 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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