The Coach House,

237 Bexley Road, DA8

Daylight and Sunlight Assessment

(Within the Proposal)

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Contents

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1.0 Introduction

1.1 This internal daylight assessment has been prepared to support a planning application for the proposed conversion of the site known as the Coach House, rear of 237 Bexley Road, Erith, DA8.

1.2 The report assesses the proposals in respect of daylight and sunlight 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 required levels of daylight and sunlight within new residential dwellings.

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 maximise the availability of daylight and sunlight 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 These reference documents are 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 given are accepted as the industry standards.

2.0 Project Summary

2.1 The site is at a 2-storey building lying to the rear of 237 Bexley Road, Erith,

2.2 The proposal comprises conversion of the existing building to residential use, creating two new flats.

2.3 The developer wishes to ensure that the habitable rooms in the new units will receive sufficient daylight, in excess of the minimum values prescribed by 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 and sunlight to windows where relevant.

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

Site As Existing

3.0 Methodology - Daylight

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 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 that all assessed habitable rooms meet and exceed the minimum levels of internal daylight.

4.0 Methodology - Sunlight

4.1 Assessing sunlight within new dwellings is defined by the methodology contained in the BRE guidance

4.2 The SE_T is a detailed calculation that can help determine the amount of sunlight available to dwellings.

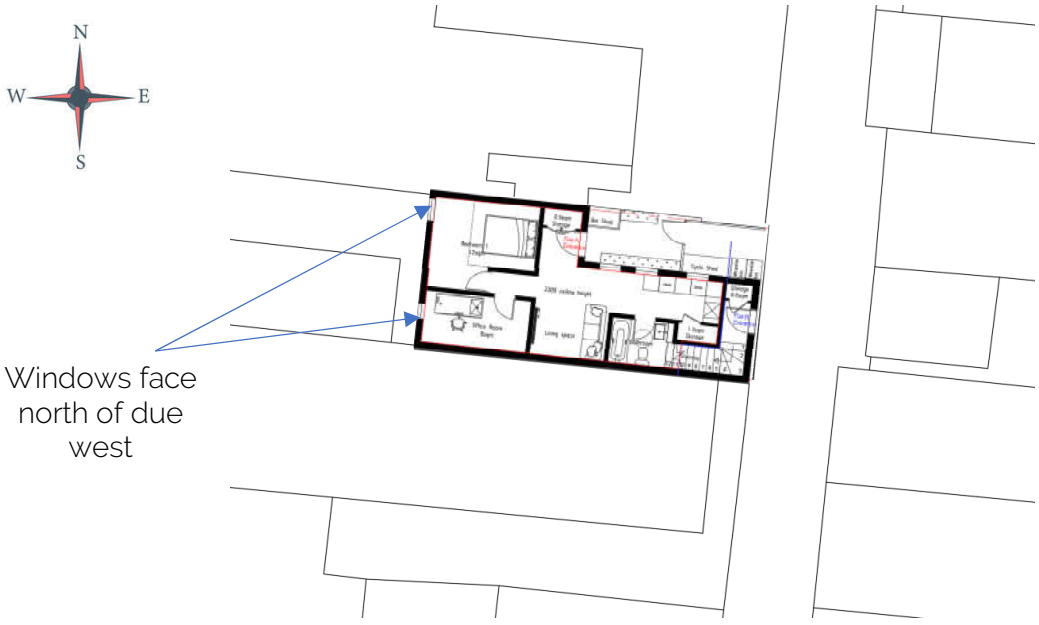
4.3 The Target Sunlight Exposure states that habitable rooms should receive at least 1.5 hours of sunlight on March 21st.

4.4 Only rooms which are served by windows which face within 90° of south need to be assessed. The one window which meets this criterion is noted in the schedule below.

4.5 Other windows on the development face outside of 90° from south, and so do not need to be assessed. This is shown on the diagram below for the avoidance of doubt.

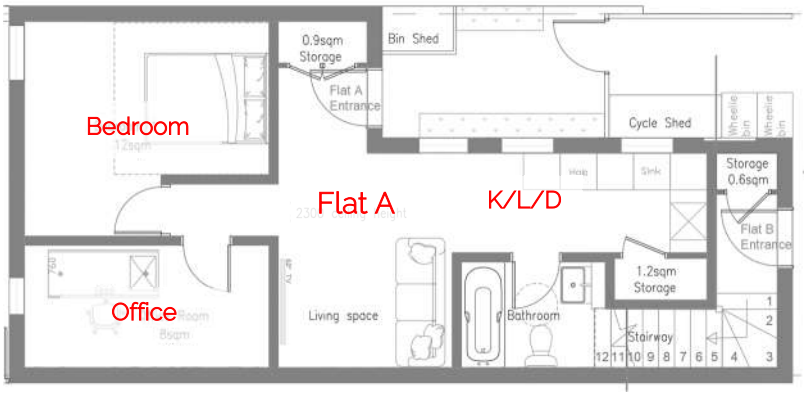
4.6 It is deemed by the guidance that if the minimum criteria are met, then the occupiers of the dwelling will have sufficient sunlight.

4.7 As can be seen from the results below that all assessed relevant habitable rooms meet and exceed the minimum levels of internal sunlight.

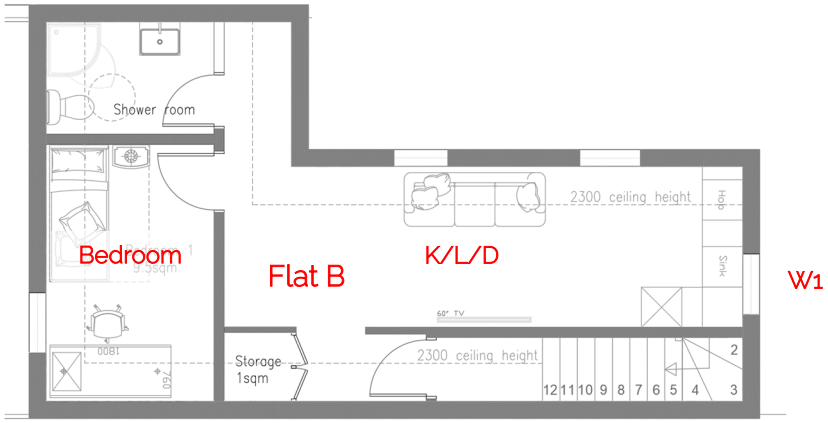


Ground Floor in Site Context

5.0 Room Schedule and Results



Ground Floor as Proposed



First Floor as Proposed

Minimum Target Daylight Factor				
Unit	Room	Required DF_T Over 50% of Room Area	Area Of Room Receiving Required DF_T	Meets Standards?
A	K/L/D	1.4%	82.6%	Yes
A	Office	1.1%	80.6%	Yes
A	Bedroom	0.7%	72.8%	Yes
B	K/L/D	1.4%	78.3%	Yes
B	Bedroom	0.7%	75.7%	Yes

Sunlight Exposure			
Window	Target Sunlight Exposure	Actual Sunlight Exposure	Meets Standards?
1	1.5 hours	8.35 hours	Yes

6.0 Conclusions

6.1 The proposed conversion of the Coach House, rear of 237 Bexley Road, Erith has been assessed for internal daylight levels using the Target Daylight Factor (DF_T) and Sunlight Exposure Target (SET) tests 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 and windows (where relevant for sunlight) meet the recommendations using both tests.

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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