



83 Mayes Road, London, N22

Daylight and Sunlight Assessment

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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 redevelopment of the site of the Duke of Edinburgh Public House, 83 Mayes Road, N22.
- 1.2 The report assesses the proposals in respect of daylight, sunlight and overshadowing matters, 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.
- 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 125 (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 Annex): '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 currently occupied by the Duke of Edinburgh public house; a building constructed over 3 storeys.
- 2.2 It sits at the corner of Mayes Road and Coburg Road in the Wood Green area of north London,
- 2.3 The proposal is for a rearward extension rising to a maximum height of 4 storeys, creating residential units, accommodation for the Public House and retaining the pub at ground floor level.
- 2.4 The impacts of the scheme have been assessed, in line with BRE guidance. Generally, it is the impacts on residential neighbours which are of primary concern. The currently vacant parcel of land to the south-west of the site is understood to be allocated for future development and the potential scheme on this site has been modelled as if it were completed.
- 2.5 As such, this assessment considers the *cumulative* impact of both schemes.
- 2.6 Further details on the location of the assessed neighbours and their windows are given in Section 5.0
- 2.7 In addition to assessing the impacts of the scheme on neighbours, daylight within the proposed new dwellings has also been assessed.



Site Location

3.0 Methodology

- 3.1 For this analysis, we have undertaken the most common calculations for the change in daylight and sunlight to existing buildings, as recommended in BRE Digest 209. These are:
- Vertical Sky Component (VSC) for daylight impacts
 - Annual Probable Sunlight Hours and Winter Probable Sunlight Hours (WPSH) (APSH) for sunlight impacts
 - Target Daylight Factor (DF_T) for daylight within the proposal
- 3.2 The VSC method measures the general amount of light available on the outside plane of the window as a ratio (%) of the amount of total unobstructed sky viewable following introduction of visible barriers such as buildings. The maximum value is just under 40% for a completely unobstructed vertical wall.
- 3.3 The VSC is calculated using computer simulation under a CIE overcast sky. This works by simulating the amount of visible sky from the centre point of each window. It is not affected by orientation and so all potentially affected windows are assessed.
- 3.4 Annual Probable Sunlight Hours (APSH) and Winter Probable Sun light Hours (WPSH) are a measure of the amount of potential direct sunlight that is available to a given surface. APSH covers sunlight over the whole year and WPSH from September 21st to March 21st.
- 3.5 The number of total available hours is calculated from a data file in the software, built up over a number of years of actual weather data records.
- 3.6 Only windows which face within 90° of due south need be assessed for sunlight. This is looked at in Section 8.
- 3.7 APSH can also be used to assess the impact on external spaces such as gardens. This is looked at in Section 9.

4.0 Modelling & Data Sources

- 4.1 The first stage of the analysis is to create the analysis model of the existing site condition and the proposal. This allows us to analyse the impact of the proposal when compared to the existing condition.
- 4.2 2D CAD drawings have been provided by the design team. These drawings are used to construct a 3D analysis model which is exported into the specialist daylight software. Calculations are then run, for both existing and proposed scenarios.
- 4.3 Sufficient detail is added to the model for the analysis. In accordance with BRE recommendations, trees and foliage have been omitted from the calculations.
- 4.4 Information on the properties has been provided to us by the design team in the form of drawings giving the site as existing and proposed and photographs of the site and surroundings.
- 4.5 Web-based mapping sources and planning records for neighbouring buildings have also been used.



Architect's 3D Model – as Proposed

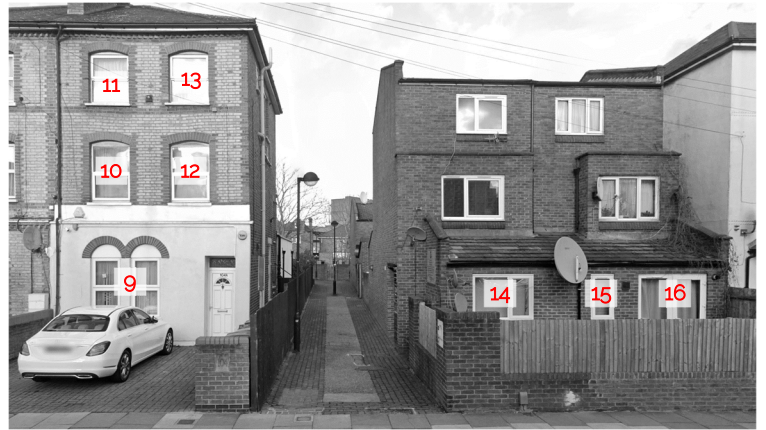
5.0 BRE Guidance Targets

- 5.1 The reference document for this analysis, BRE Digest 209, gives the methodology for undertaking the calculations. It also provides benchmark figures for the acceptable reduction in the daylight on existing properties which might be affected by development.
- 5.2 Specifically, the guidance gives figures for the VSC and APSH, as a percentage reduction that is "permissible" for the effect on existing windows.
- 5.3 It is worth noting the following statement in the Guidance introduction:
- "The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the developer.
 - Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design."
- 5.4 The relevant BRE recommendations for daylight and sunlight are:
- The Vertical Sky Component measured at the centre of a window should be no less than 27%, or if reduced to below this, no less than 0.8 times the former value.
 - The window should receive at least 25% of available annual sunlight hours and more than 5% during the winter months (September 21st to March 21st), or, where this is not the case, 80% of its former value.

6.0 Window Schedules



85-87 Mayes Road



102-104A Mayes Road



81 Mayes Road

7.0 Daylight Impact Results

- 7.1 The Vertical Sky Component has been calculated for each of the 20 assessed windows for both the existing and proposed conditions.
- 7.2 As can be seen in the results below, all windows retain in excess of 80% of their current values.
- 7.3 The scheme is therefore compliant with BRE recommendations in relation to daylight impacts.

Vertical Sky Component				
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?
1	22.259	20.868	93.75%	Yes
2	26.288	24.420	92.89%	Yes
3	20.187	18.912	93.69%	Yes
4	25.158	22.580	89.75%	Yes
5	16.210	15.740	97.10%	Yes
6	19.584	17.405	88.88%	Yes
7	27.872	22.401	80.37%	Yes
8	30.801	27.231	88.41%	Yes
9	29.525	29.246	99.05%	Yes
10	30.137	29.962	99.42%	Yes
11	31.416	31.341	99.76%	Yes
12	30.208	29.968	99.20%	Yes
13	31.454	31.398	99.82%	Yes
14	30.795	30.452	98.89%	Yes
15	30.153	29.897	99.15%	Yes
16	30.646	30.432	99.30%	Yes
17	27.215	24.578	90.31%	Yes
18	30.714	28.301	92.14%	Yes
19	27.413	22.887	83.49%	Yes
20	30.829	27.294	88.53%	Yes

8.0 Sunlight Impact Results

- 8.1 BRE guidance states that only windows which face within 90° of due south need be assessed for sunlight provision. In this instance, 16 windows fall into this category.
- 8.2 The Annual Probable Sunlight Hours has been calculated for these windows for both the existing and proposed conditions using the methodology described previously, both over the whole year, and through the "winter months" (September 21st until March 21st)
- 8.3 The BRE guidance states that the sun lighting may be adversely affected if the centre of the window:
- Receives less than 25% of annual hours or less than 5% of winter hours and
 - Receives less than 80% of its current sunlight hours during either period and
 - Has a reduction in sunlight over the whole year greater than 4% of annual probable sunlight hours
- 8.4 It is clear from the wording of the above that all three clauses need to be met to qualify as an adverse impact. Thus, if the window does not meet any one of these criteria, the impact is acceptable.
- 8.5 The results below show that the assessed windows retain 25% of annual hours and 5% of winter hours, or, where this is not the case, 80% of existing values over both periods.
- 8.6 The scheme is therefore compliant with BRE guidance in relation to sunlight impacts.

8.0 Sunlight Impact Results

	Annual Sunlight Hours			Winter Sunlight Hours			
Window	Ex. Hrs Received (%)	Prop. Hrs Received	% Retained	Ex. Hrs Received	Prop. Hrs Received	% Retained	Meets Guidance?
1	44.837	39.986	N/A	4.089	3.396	83.05%	Yes
2	56.618	50.520	N/A	10.880	6.376	N/A	Yes
3	37.976	32.918	N/A	2.980	2.633	88.37%	Yes
4	52.876	45.530	N/A	7.207	5.128	N/A	Yes
5	25.988	25.988	N/A	1.940	1.940	100.00%	Yes
6	34.997	29.799	N/A	3.257	3.188	97.87%	Yes
7	55.163	39.362	N/A	11.920	5.206	N/A	Yes
8	65.419	53.292	N/A	19.958	8.663	N/A	Yes
9	63.548	62.924	N/A	19.127	18.503	N/A	Yes
10	62.231	62.024	N/A	20.305	20.097	N/A	Yes
11	64.865	64.588	N/A	22.800	22.523	N/A	Yes
12	62.231	61.885	N/A	20.166	19.820	N/A	Yes
13	65.073	64.588	N/A	22.938	22.453	N/A	Yes
14	69.716	69.439	N/A	20.374	20.097	N/A	Yes
15	64.588	64.172	N/A	18.642	18.226	N/A	Yes
16	69.092	68.815	N/A	19.751	19.473	N/A	Yes

9.0 Sunlight to Neighbouring Open Spaces

- 9.1 Gardens and open spaces are generally assessed using the sunlight hours test, on March 21st. The guidance describes a well-lit space as being one which receives at least 2 hours of direct sunlight on this date over 50% of its area.
- 9.2 BRE guidance also uses the "80%" rule for this test, whereby the effects are considered acceptable if the remaining sunlight is in excess of 80% of the existing level. This clause applies if the space is reduced to less than 50% of the area well sunlit.
- 9.3 The garden of the nearest neighbouring property to the site was assessed using this methodology.
- 9.4 As can be seen, the neighbouring garden retains over 80% of its existing areas that receives 2 hours or more of sunlight on March 21st.
- 9.5 The proposal is therefore compliant with the BRE guidance in relation to sunlight to gardens.



Amenity Sunlight Hours				
Garden	Existing Area Receiving 2 Hours	Proposed Area Receiving 2 Hours	% Retained	Meets BRE Guidance?
G1	63.33%	51.25%	80.93%	Yes

10.0 Daylight within the Proposal

- 10.1 The BRE and BS EN 17037 guidance allows for two alternative methods to assess daylight within new dwellings. This report uses the following method:

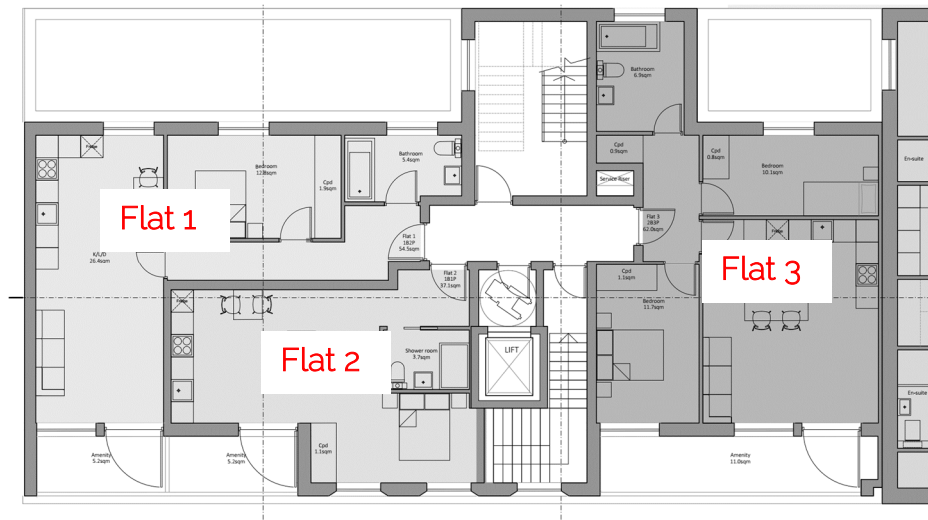
Target Daylight Factor (DF_T)

- 10.2 The DF_T method is a complex and representative calculation to determine natural internal luminance.
- 10.3 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.
- 10.4 Due to the complexity of the daylight entering the proposed rooms, the Target Daylight Factor approach is the most suitable calculation to give a realistic indication of the internal illuminance that will be experienced.
- 10.5 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.
- 10.6 The benchmark values for all habitable rooms which are recommended by the BRE guidance and BS:EN 17037:2018 are:

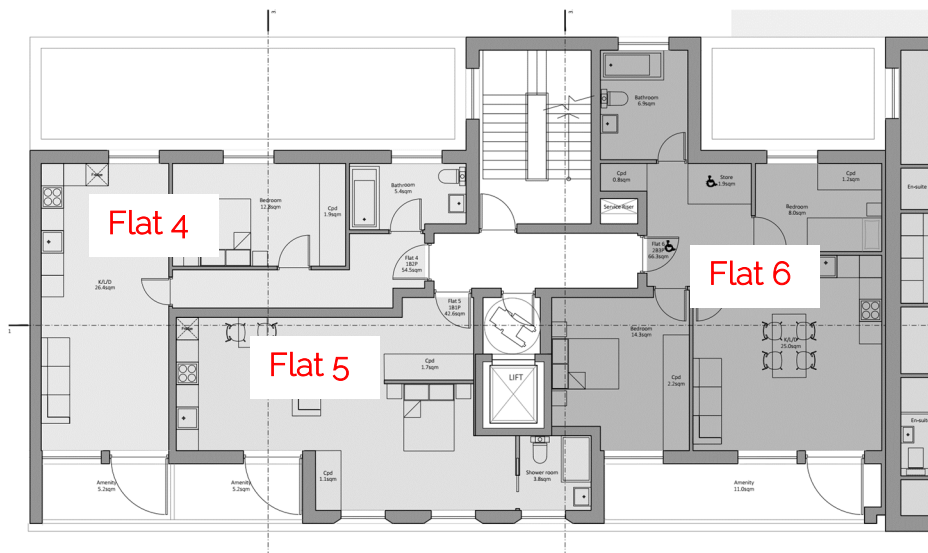
Table C2 – Target daylight factors (D) for London		
Level of recommendation	Target daylight factor D for half of assessment grid	Target daylight factor D for 95% of assessment grid
Minimum	2.1%	0.7%
Medium	3.5%	2.1%
High	5.3%	3.5%

- 10.7 It is deemed by the guidance that if the minimum DF 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.

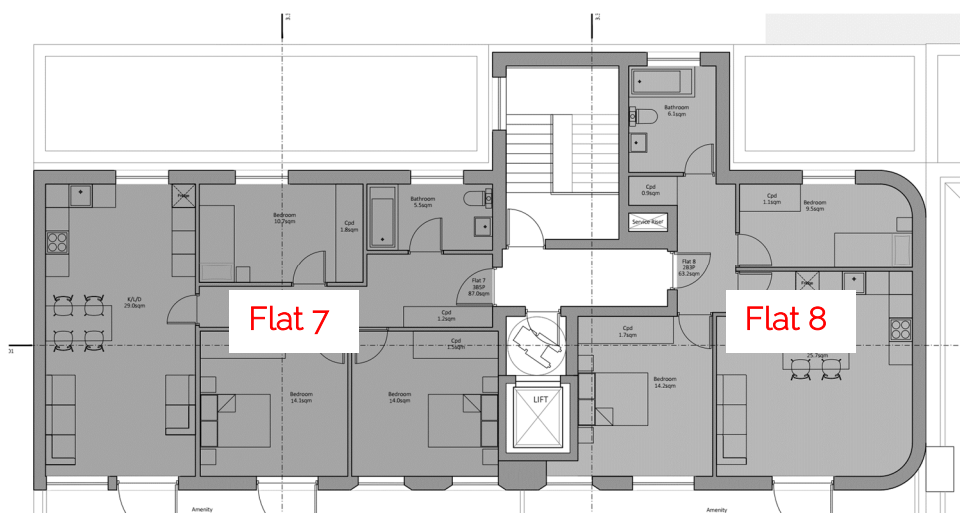
10.0 Daylight within the Proposal



First Floor as Proposed



2nd Floor as Proposed



3rd Floor as Proposed

10.0 Daylight within the Proposal

Minimum Target Daylight Factor						
Unit	Room	0.7% DF Target Area	Area Receiving 0.7% DF	2.1% DF Target Area	Area Receiving 2.1% DF	Meets Standards?
1	K/L/D	95%	100.0%	50%	74.1%	Yes
1	Bedroom 1	95%	100.0%	50%	100.0%	Yes
2	Studio	95%	100.0%	50%	90.6%	Yes
3	K/L/D	95%	100.0%	50%	77.4%	Yes
3	Bedroom 1	95%	100.0%	50%	96.9%	Yes
3	Bedroom 2	95%	100.0%	50%	100.0%	Yes
4	K/L/D	95%	100.0%	50%	77.3%	Yes
4	Bedroom 1	95%	100.0%	50%	100.0%	Yes
5	Studio	95%	100.0%	50%	93.8%	Yes
6	K/L/D	95%	100.0%	50%	78.9%	Yes
6	Bedroom 1	95%	100.0%	50%	95.3%	Yes
6	Bedroom 2	95%	100.0%	50%	100.0%	Yes
7	K/L/D	95%	100.0%	50%	88.6%	Yes
7	Bedroom 1	95%	100.0%	50%	100.0%	Yes
7	Bedroom 2	95%	100.0%	50%	100.0%	Yes
7	Bedroom 3	95%	100.0%	50%	100.0%	Yes
8	K/L/D	95%	100.0%	50%	81.2%	Yes
8	Bedroom 1	95%	100.0%	50%	100.0%	Yes
8	Bedroom 2	95%	100.0%	50%	100.0%	Yes

11.0 Conclusions

- 11.1 Using industry standard methodology, we have made numerical analyses to ascertain the effects of the proposals at 83 Mayes Road, N22 and the levels of change in daylight and sunlight for the windows and gardens of the neighbouring properties.
- 11.2 The main criteria used in this analysis to show compliance are the Vertical Sky Component for daylight impacts and Annual and Winter Probable Sunlight Hours for sunlight impacts
- 11.3 As has been shown, the effect on VSC is within the 80% guidance value in all cases.
- 11.4 There will therefore be no adverse impact on neighbouring residents in terms of daylight.
- 11.5 In terms of sunlight, the assessed windows retain 25% of annual hours and 5% of winter hours, or, where this is not the case, 80% of existing values over both periods.
- 11.6 The neighbouring garden retains over 80% of its existing area that receives 2 hours or more of sunlight on March 21st.
- 11.7 The scheme is therefore compliant with BRE guidance in relation to sunlight impacts.
- 11.8 The new residential dwellings will benefit from daylight levels in excess of the requirements of BS EN 17037:2018 recommendations.
- 11.9 From a planning perspective therefore, it is the conclusion of this report that the proposed development is entirely acceptable for planning, in daylight and sunlight terms.



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