



145 Golders Green Road, NW1 1

Daylight and Sunlight Assessment

Job No: 5333

Issued: November 2023

Issue No.: 1



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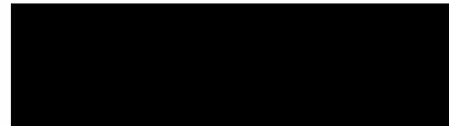
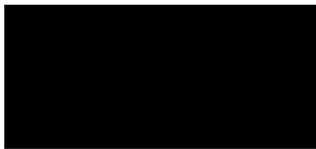
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1.0 Introduction

- 1.1 This daylight and sunlight assessment has been prepared to support a planning application for the proposed redevelopment of the site at 145 Golders Green Road, London NW11.
- 1.2 The report assesses the proposals in respect of daylight, sunlight and overshadowing matters, having regard to industry standard guidance. The report concludes that the proposal is acceptable and in accordance with planning policy requirements in relation to daylight and sunlight.
- 1.3 There is no existing specific National Planning Policy relating to the prospective impacts of developments on daylight and sunlight on their surrounding environment.
- 1.4 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 and sunlight in the environs of the site and the assessment of light levels within newly proposed dwellings.
- 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.
- 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 Project Summary

- 2.1 The proposal site lies at the corner of Golders Green Road and Gainsborough Gardens and is occupied by a 2-storey detached dwelling.
- 2.2 The proposal is for the demolition of the existing building and the construction of a 4-storey (plus basement) residential development creating 8 self-contained flats.
- 2.3 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.
- 2.4 The neighbouring hotel does not fall into a use class that would ordinarily be assessed for daylight and sunlight impacts.
- 2.5 Further details on the location of the assessed neighbours and their windows are given in Section 5.0.
- 2.6 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
 - Target Daylight Factor (DF_T) for daylight within the proposal
 - Annual Probable Sunlight Hours and Winter Probable Sunlight Hours (WPSH) (APSH) for sunlight impacts
- 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.
- 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 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 photos have been used to ascertain the location and size of neighbouring windows.

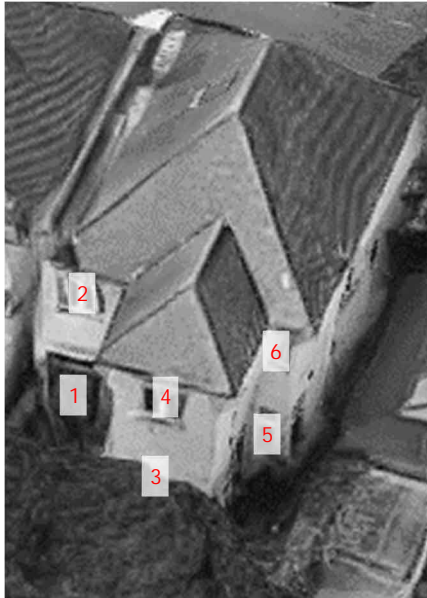


Proposed South-East Elevation

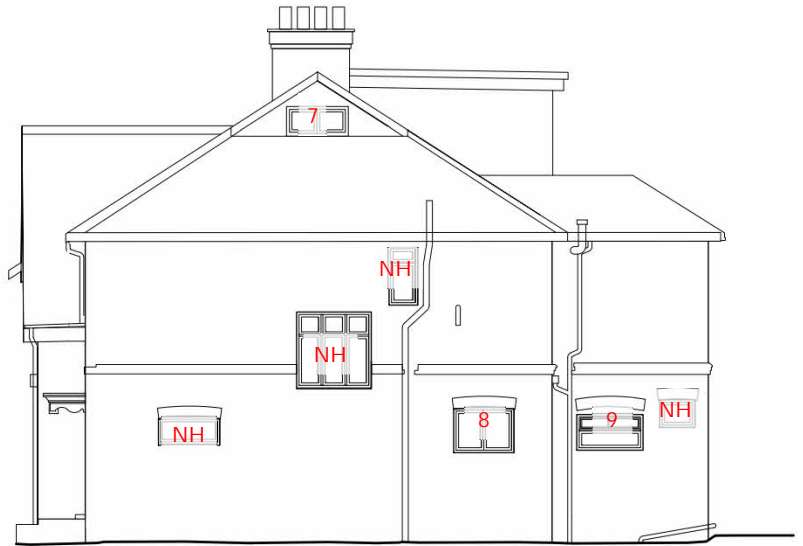
5.0 BRE Guidance Targets

- 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:
- 5.4 "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.
- 5.5 Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design.
- 5.6 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



2 Golders Gardens



2 Gainsborough Gardens – Side Elevation



143 Golders Green Road

7.0 Daylight Impact Results

- 7.1 The Vertical Sky Component has been calculated for each of the 19 assessed windows for both the existing and proposed conditions.
- 7.2 As can be seen in the results below, all windows retain 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	24.072	23.440	97.37%	Yes
2	32.679	32.149	98.38%	Yes
3	32.444	31.457	96.96%	Yes
4	35.919	35.063	97.62%	Yes
5	18.863	18.043	95.65%	Yes
6	25.823	25.072	97.09%	Yes
7	39.245	37.534	95.64%	Yes
8	31.018	26.455	85.29%	Yes
9	23.571	22.106	93.79%	Yes
10	30.689	29.743	96.92%	Yes
11	34.360	33.549	97.64%	Yes
12	32.140	28.844	89.74%	Yes
13	35.323	32.688	92.54%	Yes
14	31.919	28.085	87.99%	Yes
15	35.206	32.195	91.45%	Yes
16	26.671	24.429	91.60%	Yes
17	31.540	29.836	94.60%	Yes
18	36.122	33.232	92.00%	Yes
19	32.695	28.969	88.61%	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, 8 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, 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 in excess of 80% of their existing values, both annually and over the winter months.
- 8.6 The scheme is therefore compliant with BRE guidance in relation to sunlight impacts.



8.0 Sunlight Impact Results

Window	Annual Sunlight Hours			Winter Sunlight Hours			Meets Guidance?
	Ex. Hrs Received (%)	Prop. Hrs Received (%)	% Retained	Ex. Hrs Received (%)	Prop. Hrs Received (%)	% Retained	
1	48.025	47.678	99.28%	15.593	15.246	97.78%	Yes
2	61.885	60.845	98.32%	26.334	25.572	97.11%	Yes
3	62.439	61.192	98.00%	23.423	22.869	97.63%	Yes
4	69.508	67.983	97.81%	26.542	25.572	96.34%	Yes
5	24.879	23.770	95.54%	5.544	4.574	82.50%	Yes
6	41.580	40.610	97.67%	7.138	6.376	89.32%	Yes
16	26.681	25.087	94.03%	2.703	2.703	100.00%	Yes
17	37.422	36.590	97.78%	4.574	4.574	100.00%	Yes

9.0 Sunlight to Neighbouring Gardens

- 9.1 Residential gardens are generally assessed using the sunlight hours test, but only 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 gardens of the nearest neighbouring properties to the site were assessed using this methodology.
- 9.4 As can be seen, the neighbouring gardens retains over 80% of their existing values and the scheme is therefore compliant with BRE guidance.



Amenity Sunlight Hours				
Garden	Existing Area Receiving 2 Hours	Proposed Area Receiving 2 Hours	% Retained	Meets BRE Guidance?
G1	75.56%	75.56%	99.99%	Yes
G2	73.09%	71.60%	97.96%	Yes
G3	67.07%	67.07%	100.00%	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)

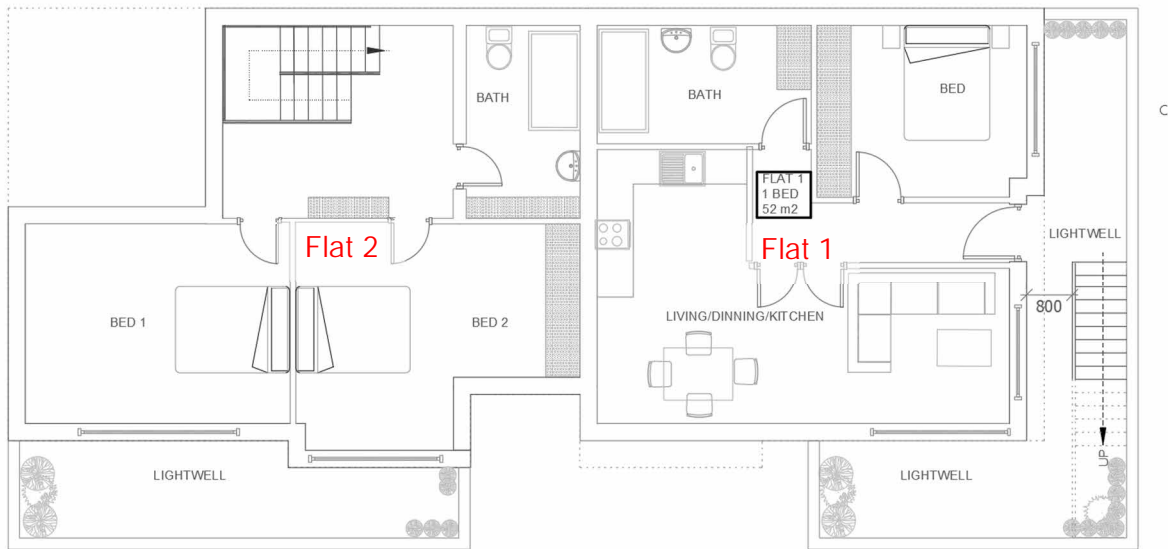
- 10.2 The DF_T method is a complex and representative calculation to determine natural internal luminance.
- 10.3 It takes into account such factors as window size, number of windows available to the room, room size and layout, room surface reflectance, and the angle of visible sky reaching the window.
- 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

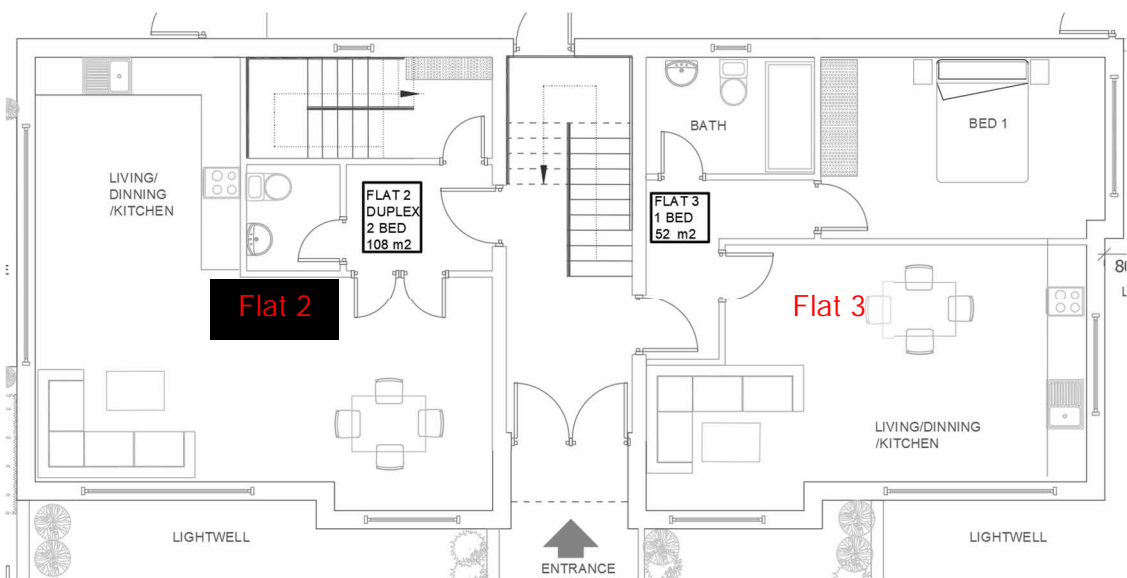
Level of recommendation	Target daylight factor D for half of assessment grid	Target daylight factor D for 95% of assessment grid
Minimum	21%	0.7%
Medium	3.5%	2.1%
High	5.3%	3.5%

- 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

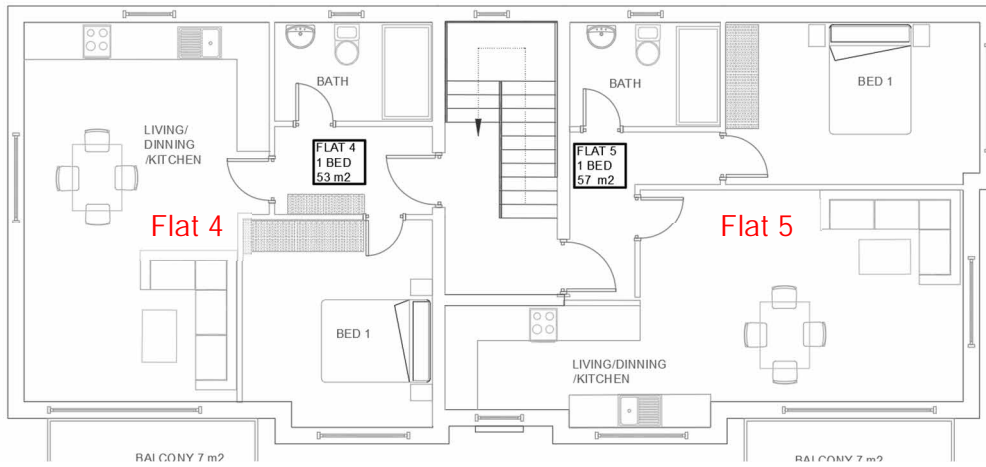


Lower Ground Floor as Proposed

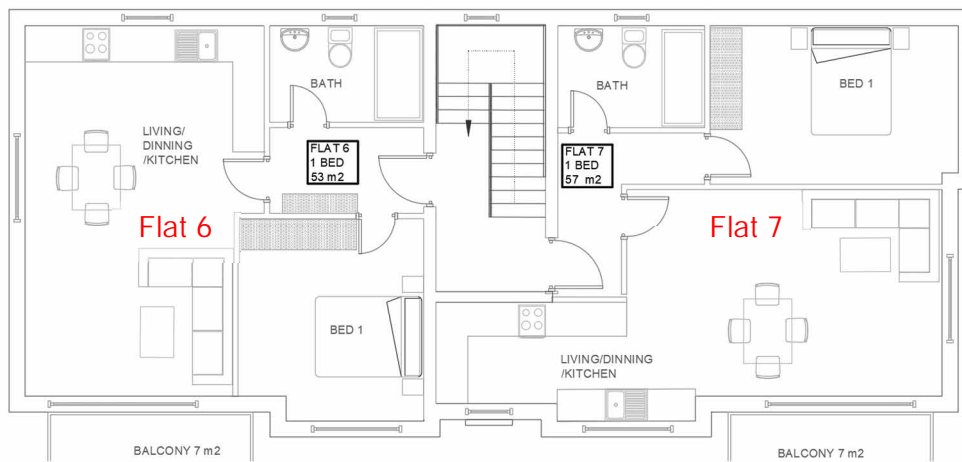


Ground Floor as Proposed

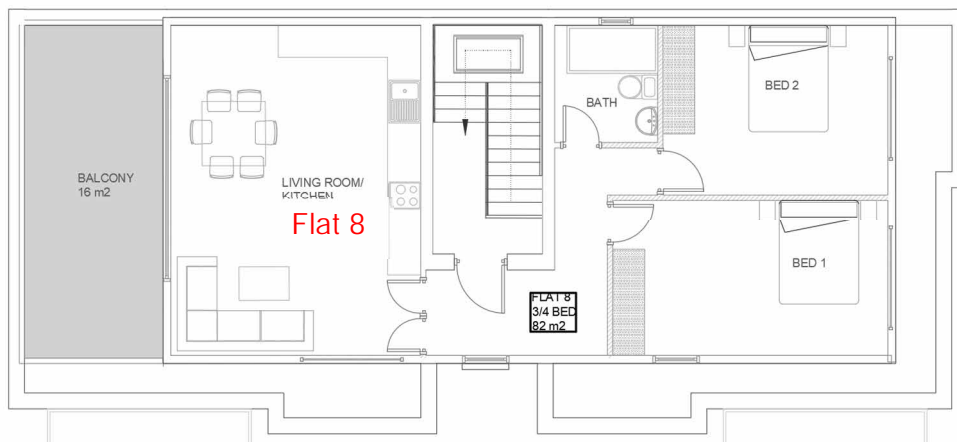
10.0 Daylight within the Proposal



First Floor as Proposed



Second Floor as Proposed



Third 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%	97.3%	50%	65.8%	Yes
1	Bedroom 1	95%	100.0%	50%	92.6%	Yes
2	K/ L/ D	95%	100.0%	50%	100.0%	Yes
2	Bedroom 1	95%	100.0%	50%	89.7%	Yes
2	Bedroom 2	95%	98.9%	50%	78.5%	Yes
3	K/ L/ D	95%	100.0%	50%	100.0%	Yes
3	Bedroom 1	95%	100.0%	50%	100.0%	Yes
4	K/ L/ D	95%	100.0%	50%	100.0%	Yes
4	Bedroom 1	95%	100.0%	50%	100.0%	Yes
5	K/ L/ D	95%	100.0%	50%	100.0%	Yes
5	Bedroom 1	95%	100.0%	50%	100.0%	Yes
6	K/ L/ D	95%	100.0%	50%	100.0%	Yes
6	Bedroom 1	95%	100.0%	50%	100.0%	Yes
7	K/ L/ D	95%	100.0%	50%	100.0%	Yes
7	Bedroom 1	95%	100.0%	50%	100.0%	Yes
8	K/ L/ D	95%	100.0%	50%	100.0%	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 proposal at 145 Golders Green Road, and the levels of change in daylight and sunlight for the windows 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 for all of the assessed windows.
- 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 in excess of 80% of their existing sunlight hours, both annually and over the winter months.
- 11.6 The neighbouring garden retains over 80% of its existing area which 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 units 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.



T16 Design Ltd.

