

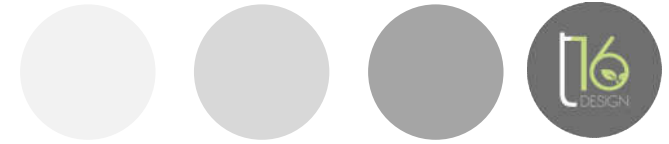
# 40-42 Mill Lane, London

Daylight and Sunlight Assessment for Planning

Job No: 2651

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Issue: 1



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## Document Control

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## 1.0 Executive Summary

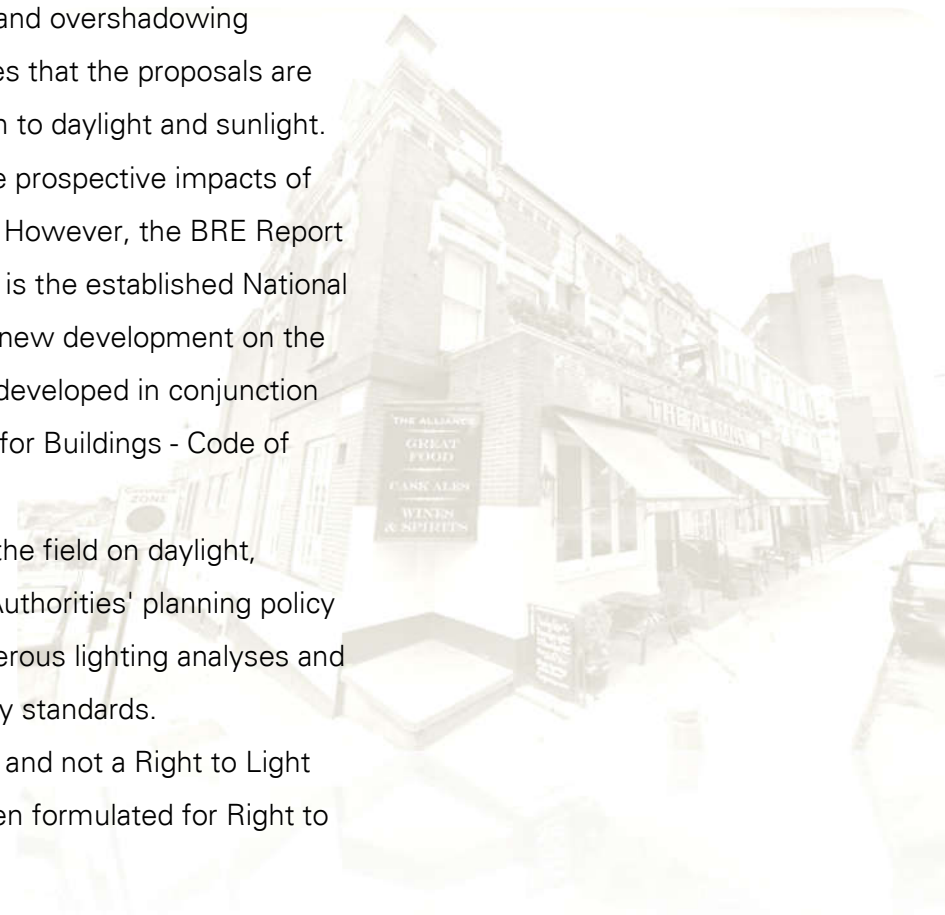
1.1 This daylight and sunlight assessment has been prepared to support a full planning application for the proposed extension of the existing building at 40-42 Mill Lane, London NW6.

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 proposals are 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. However, the BRE Report 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice' 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. It has been developed in conjunction with daylight and sunlight recommendations in BS 8206: Part 2: 'Lighting for Buildings - Code of Practice for Daylighting'

1.4 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. The methodology therein has been used in numerous lighting analyses and the standards of permissible reduction in light are accepted as the industry standards.

1.5 This report has been prepared in support of a planning application, and not a Right to Light dispute. Although the methodology used is similar, this report has not been formulated for Right to Light usage, and must not be used as such.





## 2.0 Methodology

2.1 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) and No Sky Line (NSL) for daylight**
- **Annual Probable Sunlight Hours and Winter Probable Sunlight Hours (WPSH) (APSH) for sunlight**

2.2 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.

2.3 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.

2.4 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. Only windows which face within 90° of due south need be assessed for sunlight.

2.5 APSH covers sunlight over the whole year and WPSH from September 21<sup>st</sup> to March 21<sup>st</sup>. 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.

2.6 APSH can also be used to assess the impact on external spaces such as gardens. In this instance no neighbouring gardens are considered to be close enough to the site as to be affected by the scheme



## 3.0 Existing Site and Proposal

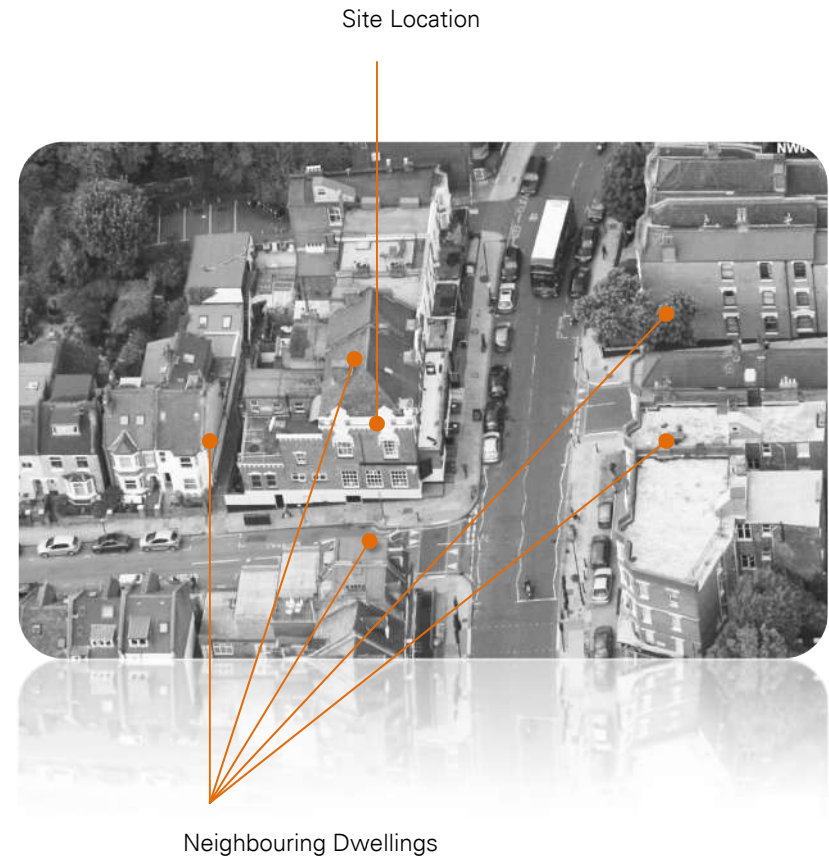
3.1 The proposal site is at 40-42 Mill Lane in the West Hampstead area of north-west London.

3.2 It stands on the corner of Mill Lane and Ravenshaw Street and is currently occupied by the Alliance public house, a 2-3 storey building, addressing Mill Lane.

3.3 The surrounding area is predominantly residential, with shop fronts to some buildings along Mill Lane.

3.4 There are terraces of houses along Ravenshaw Street and residential blocks above commercial units on the opposite side of Mill Lane itself.

3.5 The proposal is to extend the public house to create a number of self-contained apartments whilst retaining the public house at street level.





### 4.0 Modelling the Site

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 current situation, and compare easily with the proposal.

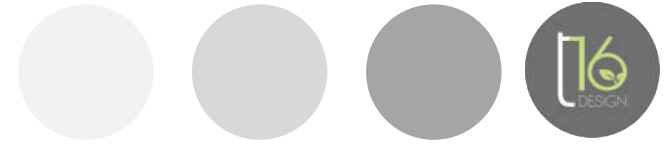
4.2 A 3D model has been produced from 2D drawings provided by the Architect. This model is then exported into the specialist daylight analysis software, and calculations are run, for both existing and proposed.

4.3 The outputs of those calculations can be exported numerically. Using the BRE guidance which gives recommended limits figures for the reduction in daylighting and sunlighting values, we can then establish the degree to which the proposal will impact on the occupiers of the adjacent dwellings.

4.4 Sufficient detail is added to the model for the analysis. In accordance with BRE recommendations, trees and foliage have been omitted from the calculations.

4.5 Drawn information on the properties has been provided to us by the design team in the form of 2D drawings of the site as existing and proposed, OS data and photographs.

4.6 Although a full measured survey of the neighbouring windows and buildings has not been undertaken, a good level of detail on the site and neighbours has been made available for the analysis.



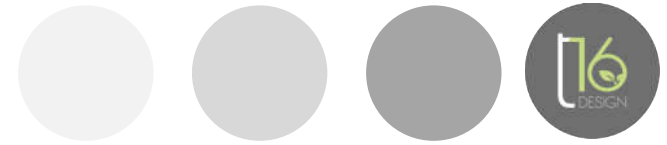
## 5.0 Window Schedules



Rear of 1 Ravenshaw Street



44-46 Mill Lane (including r/o) and 2 Ravenshaw Street



## 5.0 Window Schedules



29-31 Mill Lane







## 6.0 Measurement Criteria

6.1 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.

6.2 Specifically, the guidance gives figures for the VSC and APSH, as a percentage reduction that is "permissible" for the effect on existing windows.

6.3 It is worth noting the following statement in the Guidance introduction:

- *"While this guide supersedes the 1971 Department of the Environment document 'Sunlight and Daylight' which is now withdrawn, the main aim is the same - to help to ensure good conditions in the local environment, considered broadly, with enough sunlight and daylight on or between buildings for good interior and exterior conditions. 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."*

6.4 In this regard, it is noted that the guidance is discretionary and should be applied flexibly, particularly since the BRE guidance applies nationally in both rural and urban areas.

6.5 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 80% of its former value**
- **The window should receive at least 25% of available annual sunlight hours and more than 5% during the winter months (September 21<sup>st</sup> to March 21<sup>st</sup>), and 80% of its former value.**



## 7.0 Daylight Results

7.1 The Vertical Sky Component has been calculated for each of the 6 assessed windows for both the existing and proposed conditions using the methodology described previously. The results of these calculations are given below

7.2 As can be seen, the all of the assessed windows retain over 80% of current levels and the scheme is therefore compliant with BRE recommendations. There will therefore be no significant impact on neighbouring properties in terms of daylight.

Window	Vertical Sky Component			
	Existing	Proposed	% Retained	Compliant?
1	12.923	12.408	96.01%	Yes
2	19.008	17.794	93.61%	Yes
3	26.926	25.48	94.63%	Yes
4	24.01	22.698	94.54%	Yes
5	24.528	23.143	94.35%	Yes
6	22.734	22.037	96.93%	Yes
7	33.96	32.774	96.51%	Yes
8	30.671	29.891	97.46%	Yes
9	34.11	32.983	96.70%	Yes
10	31.492	30.925	98.20%	Yes

Window	Vertical Sky Component			
	Existing	Proposed	% Retained	Compliant?
11	33.58	33.273	99.09%	Yes
12	36.013	35.764	99.31%	Yes
13	30.638	30.334	99.01%	Yes
14	33.098	33.021	99.77%	Yes
15	35.582	35.606	100.07%	Yes
16	30.299	29.917	98.74%	Yes
17	37.938	36.939	97.37%	Yes
18	33.959	32.05	94.38%	Yes
19	39.359	38.116	96.84%	Yes
20	39.132	35.383	90.42%	Yes



## 8.0 Sunlight Results

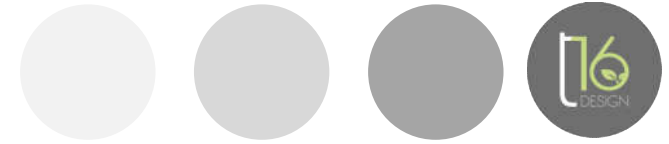
8.1 BRE guidance states that only windows which face within 90° of due south need be assessed for sunlight provision. In this instance, 16 of the assessed windows are very close to this threshold, and so have been assessed for certainty. The Annual and Winter Probable Sunlight Hours have been calculated for each of these windows for both the existing and proposed conditions using the methodology described previously.

8.2 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.

8.3 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.

8.4 The results below show that all windows retain in excess of 80% of current levels. The scheme is therefore compliant with BRE guidance for sunlight and there will be no adverse effect on the sunlight received to neighbouring properties.



## 8.0 Sunlight Results

Window	APSH - Whole Year			WPSH - Winter Months			Compliant?
	Existing %	Proposed %	% Retained	Existing %	Proposed %	% Retained	
3	48.63%	45.59%	<b>93.75%</b>	20.15%	19.65%	<b>97.53%</b>	Yes
4	40.84%	38.71%	<b>94.80%</b>	19.81%	19.76%	<b>99.74%</b>	Yes
5	43.69%	40.69%	<b>93.12%</b>	20.70%	20.58%	<b>99.43%</b>	Yes
6	42.25%	42.01%	<b>99.43%</b>	19.42%	19.42%	<b>100.00%</b>	Yes
7	64.37%	64.01%	<b>99.44%</b>	28.71%	28.71%	<b>100.00%</b>	Yes
8	59.71%	59.50%	<b>99.65%</b>	26.60%	26.60%	<b>100.00%</b>	Yes
9	64.31%	64.31%	<b>100.00%</b>	28.72%	28.72%	<b>100.00%</b>	Yes
10	70.14%	68.86%	<b>98.18%</b>	28.71%	27.44%	<b>95.56%</b>	Yes
11	74.50%	74.03%	<b>99.37%</b>	33.08%	32.61%	<b>98.59%</b>	Yes
12	78.86%	77.96%	<b>98.85%</b>	37.44%	36.54%	<b>97.58%</b>	Yes
13	70.11%	69.36%	<b>98.93%</b>	27.31%	27.04%	<b>99.04%</b>	Yes
14	75.72%	75.72%	<b>99.99%</b>	32.82%	32.81%	<b>99.98%</b>	Yes
15	79.44%	79.44%	<b>100.00%</b>	36.53%	36.53%	<b>99.99%</b>	Yes
16	74.15%	74.15%	<b>100.00%</b>	35.60%	35.60%	<b>100.00%</b>	Yes
17	81.33%	81.33%	<b>100.00%</b>	41.99%	41.99%	<b>100.00%</b>	Yes
18	80.54%	78.41%	<b>97.35%</b>	41.21%	40.48%	<b>98.22%</b>	Yes
19	83.67%	83.67%	<b>100.00%</b>	42.24%	42.24%	<b>100.00%</b>	Yes
20	83.67%	83.67%	<b>100.00%</b>	42.24%	42.24%	<b>100.00%</b>	Yes



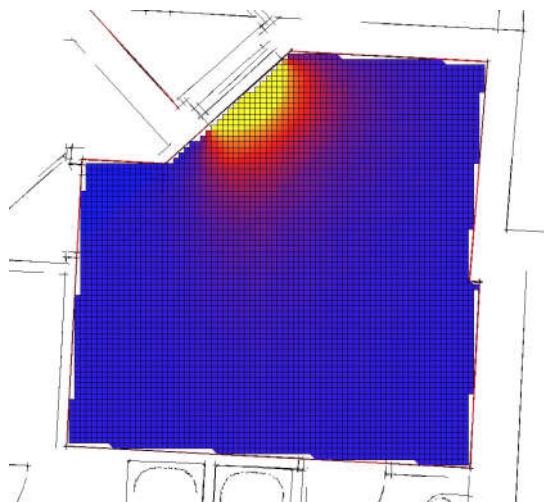
## 9.0 Internal Daylight

9.1 This report looks at the internal daylight levels that a selected room will receive to ensure adequate levels of natural light for the future occupants. The bedroom at first floor level has been assessed using the Average Daylight Factor (ADF) test as prescribed by the BRE guidance and British Standard 8206-2

9.2 The ADF is a complex and representative calculation to determine natural internal luminance (daylight). 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.

9.3 Due to the complexity of the daylight entering the proposed room, ADF is the most suitable calculation to give a realistic indication of the internal illuminance that will be experienced. Calculations have been undertaken in accordance with BRE methodology, using a CIE overcast sky at an illuminance value of 8500 lux.

9.4 The diagram below shows the spread of room within this room. The recommended level for a bedroom is an ADF of 1%. This room is predicted to receive an ADF of 2.37% and thus meets the BRE/British Standard recommendations.





### 10.0 Conclusions

10.1 Using industry standard methodology, we have made numerical analyses to ascertain the effects of the proposal at 40-42 Mill Lane and the levels of change in daylight and sunlight for the windows of the neighbouring properties.

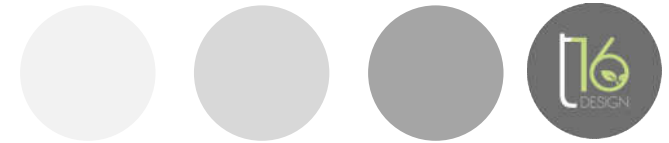
10.2 The main criteria used in this analysis to show compliance are the Annual Probable Sunlight Hours and Vertical Sky Component tests.

10.3 As has been shown, the effect on VSC is within the 80% guidance value in all cases. There will therefore be no adverse impact on neighbouring residents in terms of daylight.

10.4 In terms of sunlight, it has been shown that all windows meet the BRE criteria by virtue of retaining 80% of current sunlight levels and also 35% of whole year and 5% of winter sunlight hours

10.5 There will therefore be no adverse impact on sunlight receipt to neighbouring properties.

10.6 From a planning perspective therefore, it is the conclusion of this report that the effect of the proposed development is entirely acceptable in planning terms, without adverse impact on the neighbours.



## Appendix 1 - Drawings Used

Drawing Number	Drawing Name	Format	Produced By	Revision
17542/11A	Proposed Floor Layout Plans - Scheme One	PDF/DWG	Building Design Consultancy	A
17542/12A	Proposed Elevations and Sections Layout Plans - Scheme One	PDF/DWG	Building Design Consultancy	A



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