21 John Street, London

Daylight and Sunlight Assessment for Planning

Job No: 2761
Issued: July, 2018
Issue: 1

Contents

Document Control

Author	Checker
S. Westover	B. Waterman
Date	**Date**
05.07.18	05.07.18

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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 development at 21 John Street, London.

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' 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'

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

1.6 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 (APSH, WPSH) 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 21st to March 21st. 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, 1 neighbouring garden is considered close enough to the site to warrant assessment.

3.0 Existing Site and Proposal

3.1 The proposal site is atop the 21 John Street, in Central London. The proposal is to add one extra flat on the 8th floor of the existing building.

3.2 The surrounding area is residential and commercial mix with residential to the South West and North West.

3.3 The primary focus of this report is the effect of the proposal on the neighbouring dwellings.

3.4 The neighbouring dwellings have windows which face the site. The location of these windows is given in the window schedule.

3.5 Care has been taken within the proposal design to limit the massing to the footprint of the existing structure.

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 it with the proposal.

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

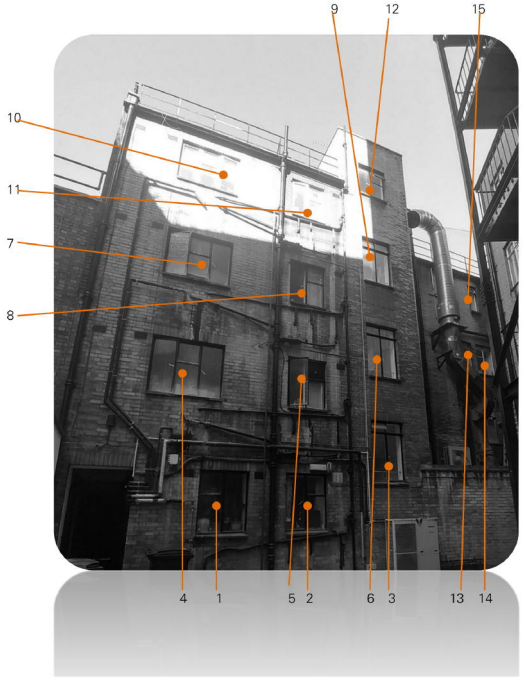
4.3 The outputs of those calculations can be exported numerically. Using the BRE guidance which gives recommended limits figures for the reduction in daylighting and sunlighting values, we can then establish the degree to which the proposal will impact on the occupiers of the adjacent dwellings.

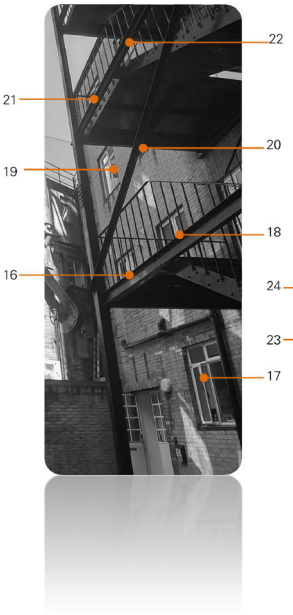
4.4 Sufficient detail is added to the model for the analysis. In accordance with BRE recommendations, trees and foliage have been omitted from the calculations.

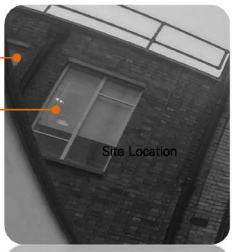
4.5 Drawn information on the properties has been provided to us by the design team in the form of a 3D model of the site as existing and proposed and photographs of the site and surroundings.

4.6 A good level of detail on the site and neighbours has been made available for the analysis.

5.0 Window Schedules







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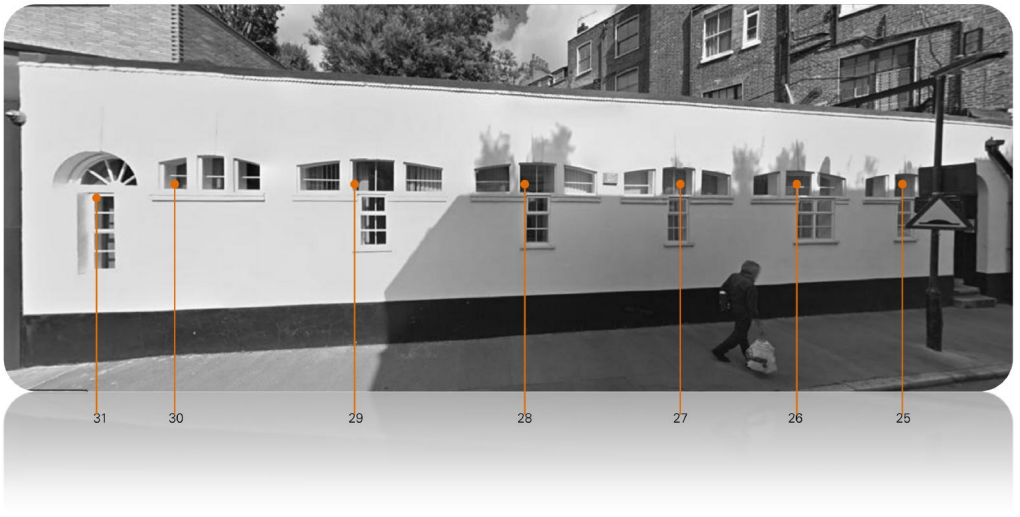

6.0 Measurement Criteria

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 21st to March 21st), and 80% of its former value.

7.0 Daylight Results

7.1 The Vertical Sky Component has been calculated for each of the 31 assessed windows for both the existing and proposed conditions using the methodology described previously.

7.2 The results of these calculations are given below. As can be seen, all of the assessed windows retain over 80% of current levels. There will therefore be no significant impact on neighbouring properties in terms of daylight and the scheme is fully compliant with BRE guidelines.

Window	Vertical Sky Component			
	Existing	Proposed	% Retained	Compliant?
1	3.652	3.509	96.08%	Yes
2	3.289	3.182	96.75%	Yes
3	3.512	3.401	96.84%	Yes
4	5.379	5.193	96.54%	Yes
5	4.925	4.715	95.74%	Yes
6	4.918	4.763	96.85%	Yes
7	8.189	7.796	95.20%	Yes
8	7.772	7.471	96.13%	Yes
9	7.895	7.606	96.34%	Yes
10	11.807	11.297	95.68%	Yes
11	11.501	11.041	96.00%	Yes
12	10.949	10.438	95.33%	Yes
13	3.755	3.648	97.15%	Yes
14	2.942	2.893	98.33%	Yes

7.0 Daylight Results

Window	Vertical Sky Component			
	Existing	Proposed	% Retained	Compliant?
15	4.27	4.048	94.80%	Yes
16	7.573	7.543	99.60%	Yes
17	7.534	7.523	99.85%	Yes
18	11.132	11.117	99.87%	Yes
19	12.512	12.463	99.61%	Yes
20	17.121	17.097	99.86%	Yes
21	22.206	22.179	99.88%	Yes
22	24.945	24.903	99.83%	Yes
23	7.049	6.742	95.64%	Yes
24	6.047	5.813	96.13%	Yes
25	5.395	5.395	100.00%	Yes
26	5.991	5.991	100.00%	Yes
27	6.245	6.245	100.00%	Yes
28	7.051	7.051	100.00%	Yes
29	7.985	7.985	100.00%	Yes
30	10.019	10.019	100.00%	Yes
31	14.714	14.714	100.00%	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, 14 windows fall into this category. The Annual Probable Sunlight Hours has been calculated for each of 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)

8.2 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 greater than 80% of their current sunlight hours. The scheme is therefore compliant with BRE guidance for sunlight and there will be no adverse effect on the sunlight received to the windows.

8.0 Sunlight Results

Window	APSH - Whole Year			WPSH - Winter Months			Compliant?
	Existing %	Proposed %	% Retained	Existing %	Proposed %	% Retained	
16	10.78%	10.78%	100.00%	0.29%	0.29%	100.00%	Yes
17	10.35%	10.35%	100.00%	0.54%	0.54%	100.00%	Yes
18	18.35%	18.35%	100.00%	1.69%	1.69%	100.00%	Yes
19	22.04%	22.04%	100.00%	1.39%	1.39%	100.00%	Yes
20	33.66%	33.66%	100.00%	4.71%	4.71%	100.00%	Yes
21	46.03%	46.03%	100.00%	10.02%	10.02%	100.00%	Yes
22	45.93%	45.93%	100.00%	12.73%	12.73%	100.00%	Yes
25	19.37%	19.37%	100.00%	1.53%	1.53%	100.00%	Yes
26	19.20%	19.20%	100.00%	1.53%	1.53%	100.00%	Yes
27	19.78%	19.78%	100.00%	1.53%	1.53%	100.00%	Yes
28	20.57%	20.57%	100.00%	1.78%	1.78%	100.00%	Yes
29	23.53%	23.53%	100.00%	2.73%	2.73%	100.00%	Yes
30	26.71%	26.71%	100.00%	4.56%	4.56%	100.00%	Yes
31	36.61%	36.61%	100.00%	10.29%	10.29%	100.00%	Yes

9.0 Conclusions

9.1 Using industry standard methodology, this report has undertaken numerical analyses to ascertain the effects of the proposal at 21 John Street and the levels of change in daylight and sunlight for the windows and gardens of the neighbouring properties.

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

9.3 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.

9.4 In terms of sunlight, it has been shown that all windows meet the BRE criteria by virtue of retaining 80% of their existing values.

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

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

Studio 105,
37 Queen Street
Colchester
CO1 2PQ

01206 572452
info@t16design.com

Studio 105,
37 Queen Street
Colchester
CO1 2PQ