81 – 84 Chalk Farm Road, Camden, NW1

Daylight and Sunlight Assessment

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Contents

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Signed:	**Signed:**

1.0 Introduction

1.1 This daylight and sunlight assessment has been prepared to support a planning application for the proposed development at 81 – 84 Chalk Farm Road, Camden, NW1.

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.

1.5 It has been developed in conjunction with daylight and sunlight recommendations in BS 8206: Part 2: 'Lighting for Buildings - Code of Practice for Daylighting'

1.6 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.

2.0 Project Summary

2.1 The proposal site is to the rear of 81-84 Chalk Farm Road and is currently occupied by a three storey building commercial warehouse.

2.2 The proposal is for an internal refurbishment and extension to provide office and studio commercial spaces.

2.3 The impacts of the scheme on all residential neighbours potentially affected by the scheme have been considered.

2.4 The design has been formulated with consideration of the impacts on the neighbouring dwellings.

2.5 Further details on the location of neighbours and their windows are given in Section 5.0

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

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

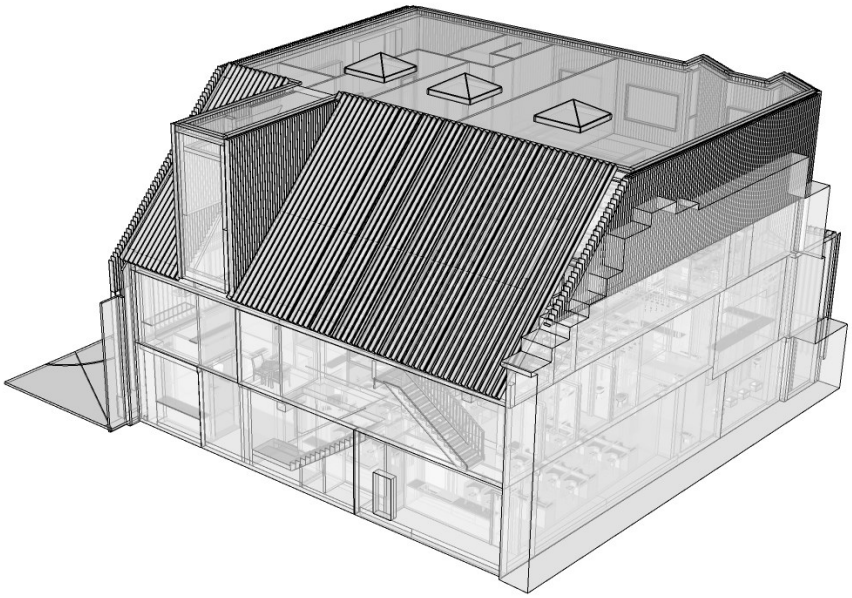
4.1 The first stage of the analysis is to create the analysis model of the existing site condition and the proposal. This allows us to analyse the impact of the proposal when compared to the existing condition.

4.2 2D drawings and a 3D model 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 and a model 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.



Proposed 3D Model

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:

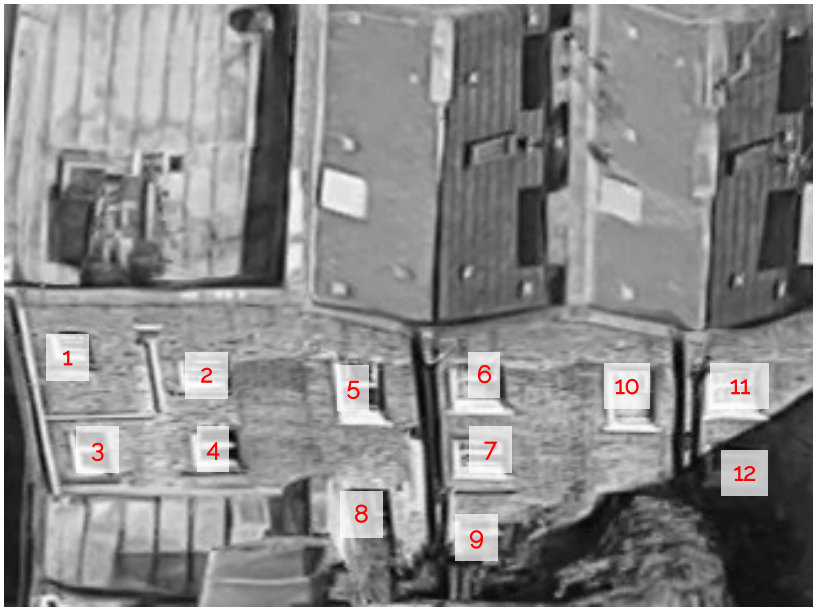
5.4 "The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the developer.

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:

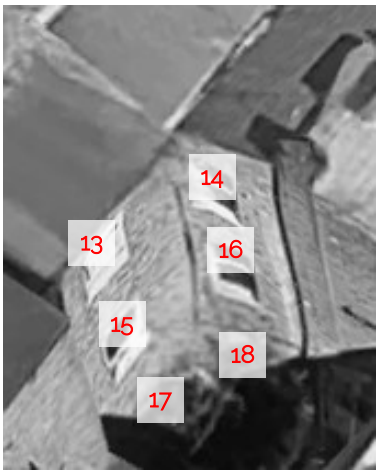
- The Vertical Sky Component measured at the centre of a window should be no less than 27%, or if reduced to below this, no less than 0.8 times the former value.
- The window should receive at least 25% of available annual sunlight hours and more than 5% during the winter months (September 21st to March 21st), or, where this is not the case, 80% of its former value.

6.0 Window Schedules



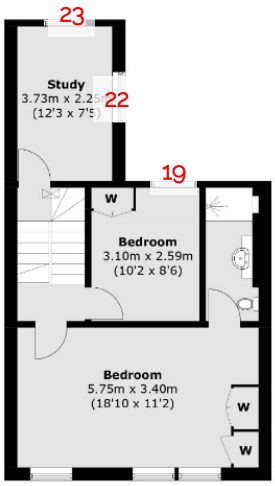
7 – 11 Belmont Street (Back)

NB: Non-habitable rooms not assessed where known

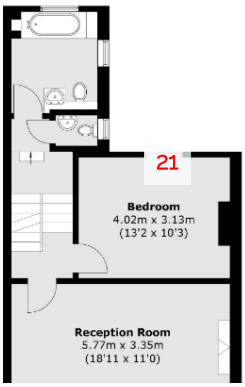


5 Belmont Street (Rear)

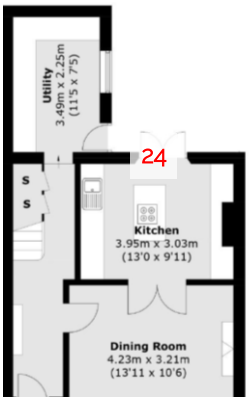
3 Belmont Street (Rear)



3 Belmont Street (2nd Floor)



3 Belmont Street (1st Floor)

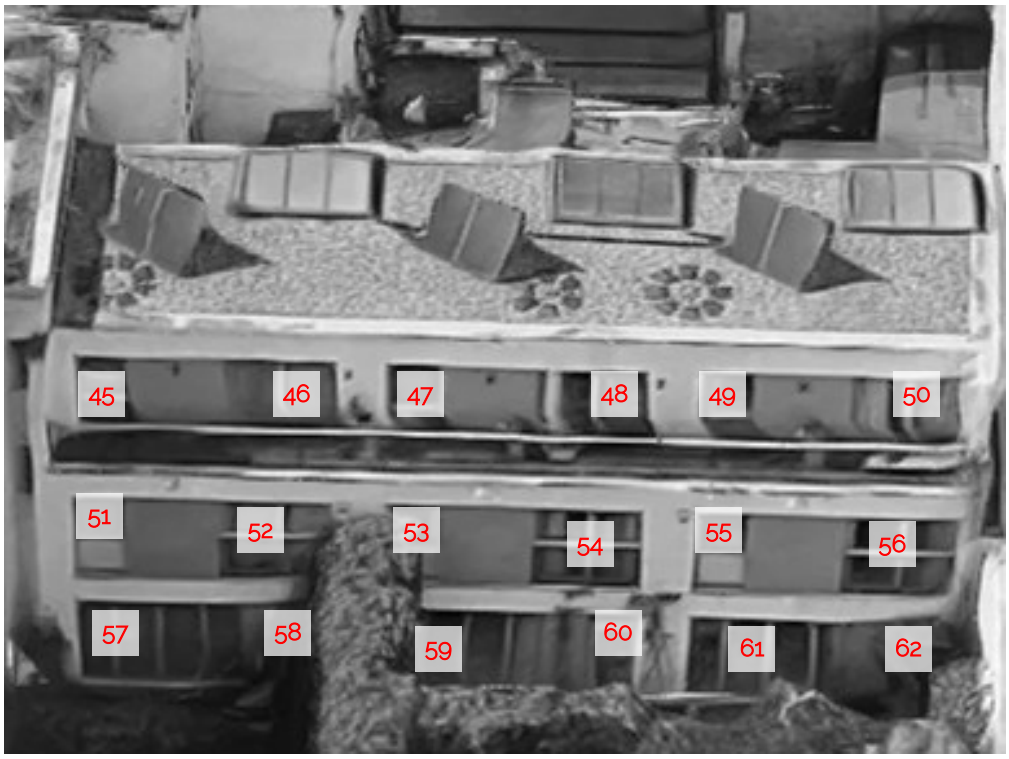


3 Belmont Street (Grd Floor)

1 Belmont Street (Rear)

6.0 Window Schedules

Stockholm Apartments (Rear)



Stockholm Apartments (Rear)

7.0 Daylight Impact Results

7.1 The Vertical Sky Component has been calculated for each of the 62 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	31.48	29.60	94.02%	Yes
2	33.05	30.07	90.99%	Yes
3	28.24	26.89	95.20%	Yes
4	28.25	26.22	92.81%	Yes
5	33.14	28.28	85.34%	Yes
6	32.36	26.32	81.34%	Yes
7	25.07	20.67	82.44%	Yes
8	17.07	14.93	87.46%	Yes
9	15.38	13.57	88.26%	Yes
10	31.12	25.31	81.32%	Yes
11	29.02	24.49	84.38%	Yes
12	19.67	15.95	81.10%	Yes
13	27.48	26.19	95.31%	Yes
14	24.20	19.85	82.04%	Yes
15	17.36	16.01	92.23%	Yes
16	15.31	12.85	83.91%	Yes
17	9.05	8.00	88.37%	Yes
18	6.34	5.23	82.50%	Yes
19	29.48	25.01	84.85%	Yes
20	31.46	27.50	87.39%	Yes
21	12.79	10.39	81.24%	Yes
22	16.82	14.55	86.49%	Yes
23	25.78	20.97	81.34%	Yes
24	7.31	5.98	81.75%	Yes
25	18.86	15.48	82.08%	Yes
26	28.37	23.65	83.38%	Yes
27	22.26	18.63	83.71%	Yes
28	27.81	25.14	90.39%	Yes
29	22.23	19.71	88.67%	Yes
30	37.29	32.75	87.83%	Yes
31	34.12	27.76	81.38%	Yes

7.0 Daylight Impact Results

Vertical Sky Component				
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?
32	28.32	22.91	80.91%	Yes
33	37.53	34.67	92.40%	Yes
34	36.13	30.60	84.68%	Yes
35	30.98	25.50	82.31%	Yes
36	37.93	35.59	93.83%	Yes
37	36.77	32.71	88.97%	Yes
38	31.87	27.66	86.80%	Yes
39	36.94	35.56	96.26%	Yes
40	36.95	35.70	96.62%	Yes
41	36.84	34.47	93.57%	Yes
42	31.16	28.46	91.34%	Yes
43	36.98	36.08	97.55%	Yes
44	36.99	36.18	97.79%	Yes
45	24.51	22.64	92.38%	Yes
46	31.38	28.75	91.62%	Yes
47	32.35	29.24	90.41%	Yes
48	33.56	29.47	87.83%	Yes
49	33.55	29.17	86.95%	Yes
50	30.55	25.86	84.64%	Yes
51	20.80	18.59	89.38%	Yes
52	26.61	23.58	88.60%	Yes
53	27.53	23.92	86.89%	Yes
54	28.53	23.85	83.59%	Yes
55	28.11	23.13	82.28%	Yes
56	22.74	18.49	81.32%	Yes
57	17.69	15.55	87.91%	Yes
58	21.83	19.01	87.10%	Yes
59	22.52	19.21	85.33%	Yes
60	22.55	18.46	81.87%	Yes
61	21.66	17.42	80.43%	Yes
62	14.61	11.85	81.07%	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, 21 windows fall into this category. The Annual Probable Sunlight Hours has been calculated for this window 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 the assessed window retains 25% of annual sunlight hours and 5% of winter hours.

8.5 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?
13	56.34	53.43	94.83%	16.49	16.22	98.32%	Yes
15	33.89	32.29	95.30%	5.89	5.61	95.29%	Yes
17	17.60	17.60	100.00%	1.04	1.04	100.00%	Yes
45	30.42	25.57	84.05%	2.08	2.08	100.00%	Yes
46	44.07	38.53	87.42%	6.93	6.58	95.00%	Yes
47	47.12	41.03	87.06%	10.40	9.77	94.00%	Yes
48	52.67	45.39	86.18%	16.01	14.14	88.31%	Yes
49	53.85	47.40	88.03%	18.36	15.52	84.53%	Yes
50	55.30	47.05	85.09%	20.03	16.18	80.77%	Yes
51	20.03	16.55	82.65%	0.97	0.97	100.00%	Yes
52	34.23	28.55	83.40%	2.70	2.56	94.87%	Yes
53	37.63	30.56	81.22%	4.50	4.16	92.31%	Yes
54	42.20	33.91	80.35%	9.01	8.11	90.00%	Yes
55	40.96	32.85	80.20%	9.29	7.83	84.33%	Yes
56	39.64	32.57	82.17%	11.23	9.13	81.34%	Yes
57	15.45	12.47	80.72%	0.55	0.55	100.00%	Yes
58	26.33	21.57	81.90%	1.46	1.46	100.00%	Yes
59	28.76	23.24	80.80%	2.01	1.66	82.76%	Yes
60	32.16	26.06	81.03%	4.78	4.44	92.75%	Yes
61	31.12	25.36	81.51%	4.71	4.16	88.24%	Yes
62	29.18	25.02	85.75%	6.03	4.94	81.99%	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 As can be seen, the neighbouring garden retains over 80% of its 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	0.00%	0.00%	100.00%	Yes
G2	0.00%	0.00%	100.00%	Yes
G3	0.00%	0.00%	100.00%	Yes
G4	0.00%	0.00%	100.00%	Yes

10.0 Conclusions

10.1 Using industry standard methodology, we have made numerical analyses to ascertain the effects of the proposal at 81 – 84 Chalk Farm Road, Camden 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 Vertical Sky Component for daylight impacts and Annual and Winter Probable Sunlight Hours for sunlight impacts

10.3 As has been shown, the effect on VSC is within the 80% guidance value in all cases.

10.4 There will therefore be no adverse impact on neighbouring residents in terms of daylight.

10.5 In terms of sunlight, the assessed window retains 25% of annual sunlight hours and 5% of winter hours.

10.6 The neighbouring garden retains over 80% of its existing area which receives 2 hours or more of sunlight on March 21st.

10.7 The scheme is therefore compliant with BRE guidance in relation to sunlight impacts.

10.8 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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