



Risborough Court,

N10

Daylight and Sunlight Assessment

Job No: 4679

Issued: November, 2022

Issue No.: 1

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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 extension of the site at Risborough Court, London N10.
- 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.
- 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 is known as Risborough Court, and is a 3-storey residential block, located at the corner of Muswell Hill and Alexandra Gardens, London N10.
- 2.2 The proposal is for a single storey rooftop extension along with extensions to the rear, to create additional residential units.
- 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 Where the usage of neighbouring windows is uncertain, they have been included for completeness.
- 2.5 Further details on the location of the assessed 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) and No Sky Line (NSL) for daylight impacts
 - Annual Probable Sunlight Hours and Winter Probable Sunlight Hours (A/WPSH) 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 An additional test that can be undertaken is the No Sky Line (NSL) test, also referred to as Daylight Distribution.
- 3.5 The NSL test calculates the distribution of daylight within rooms by determining the area of the room at desk / work surface height (the 'working plane') which can and cannot receive a direct view of the sky and hence 'sky light'. The working plane height is set at 850mm above floor level within residential property.
- 3.6 The NSL test can be carried out where neighbouring room layouts are known.
- 3.7 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.
- 3.8 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.
- 3.9 Only windows which face within 90° of due south need be assessed for sunlight. This is looked at in Section 9.
- 3.10 APSH can also be used to assess the impact on external spaces such as gardens. This is looked at in Section 10.

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 for 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.

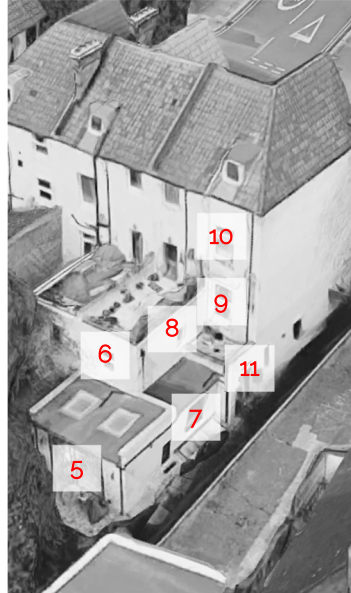
5.0 BRE Guidance Targets

- 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, NSL 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 area of the room beyond the No Sky Line should not be reduced to 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), or, where this is not the case, 80% of its former value.

6.0 Window Schedules



82 Muswell Hill Place



65 Muswell Hill



36 Muswell Hill



34 Muswell Hill



59 Alexandra Gardens

7.0 Daylight Impact Results – VSC Test

- 7.1 The Vertical Sky Component has been calculated for each of the 48 assessed windows for both the existing and proposed conditions.
- 7.2 As can be seen in the results below, the majority of windows (96%) retain in excess of 80% of their current values.
- 7.3 The windows which do not meet this target, are on the flank elevation of the neighbour to the north-west, 65 Muswell Hill.
- 7.4 For these windows, floor plans are available of the affected rooms which allows a more detailed analysis using the No Sky Line test, shown below.
- 7.5 Due to the modest room sizes, served by relatively generous windows, the No Sky Line test, which is a better representation of the daylight levels in the room, show that the actual loss of light in the room is low.

Vertical Sky Component				
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?
1	30.147	29.261	97.06%	Yes
2	36.339	35.767	98.42%	Yes
3	33.341	32.514	97.52%	Yes
4	35.542	34.894	98.17%	Yes
5	32.428	32.428	100.00%	Yes
6	36.715	36.322	98.93%	Yes
7	17.129	11.055	64.54%	No
8	21.207	17.807	83.97%	Yes
9	30.289	29.341	96.87%	Yes
10	38.417	37.611	97.90%	Yes
11	16.637	11.290	67.86%	No
12	31.531	30.861	97.87%	Yes
13	33.669	33.111	98.34%	Yes
14	29.636	28.996	97.84%	Yes
15	32.151	31.600	98.29%	Yes
16	29.999	29.410	98.04%	Yes
17	19.177	18.514	96.54%	Yes
18	34.347	33.738	98.23%	Yes

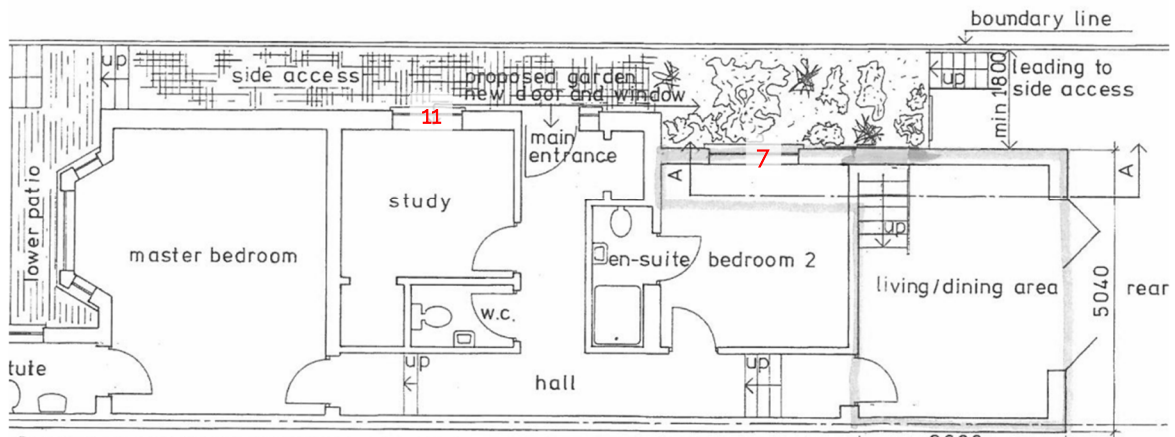
7.0 Daylight Impact Results – VSC Test

Vertical Sky Component				
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?
19	30.300	29.783	98.29%	Yes
20	33.507	33.058	98.66%	Yes
21	33.521	32.823	97.92%	Yes
22	35.426	34.817	98.28%	Yes
23	35.862	35.355	98.59%	Yes
24	29.837	29.627	99.30%	Yes
25	33.838	33.653	99.45%	Yes
26	29.831	29.337	98.34%	Yes
27	33.871	33.369	98.52%	Yes
28	35.548	35.075	98.67%	Yes
29	34.833	34.201	98.19%	Yes
30	36.269	35.658	98.31%	Yes
31	30.136	28.177	93.50%	Yes
32	33.213	31.237	94.05%	Yes
33	37.133	35.776	96.35%	Yes
34	24.852	22.889	92.10%	Yes
35	36.088	34.646	96.00%	Yes
36	18.272	17.487	95.70%	Yes
37	22.249	21.454	96.43%	Yes
38	28.863	26.694	92.49%	Yes
39	33.004	30.793	93.30%	Yes
40	36.230	34.338	94.78%	Yes
41	28.783	26.606	92.44%	Yes
42	32.976	30.758	93.27%	Yes
43	25.116	24.297	96.74%	Yes
44	29.342	28.512	97.17%	Yes
45	31.541	29.578	93.78%	Yes
46	36.948	35.435	95.91%	Yes
47	28.857	26.882	93.16%	Yes
48	33.873	32.058	94.64%	Yes

8.0 Daylight Impact Results – NSL Test

- 8.1 BRE guidance states that the No Sky Line can additionally be calculated "where neighbouring room layouts are known".
- 8.2 In this instance floor plans have been sourced for the neighbouring dwelling to the north of the site, 65 Muswell Hill
- 8.3 The calculations have only been undertaken where windows do not meet the VSC test.
- 8.4 NSL calculations have not been undertaken for other neighbours where floor plans could not be sourced.
- 8.5 The area of the room beyond the No Sky Line has been calculated for all relevant rooms, for both the existing and proposed conditions.
- 8.6 This test is more detailed and represents better the actual impact on a room, as it considers both the size of the room and the window.
- 8.7 As can be seen in the results below, both rooms assessed, retain in excess of 80% of their area within the No Sky Line. These rooms therefore meet the BRE guidance using this more detailed and representative test.
- 8.8 The scheme is compliant with BRE guidance when assessed using the No Sky Line test.

8.0 Daylight Impact Results – NSL Test



65 Muswell Hill - Ground Floor

No Sky Line						
Room	Window Ref	Room Served	Existing NSL (%)	Proposed NSL (%)	% Retained	Meets BRE Guidance?
1	7	Bedroom	92.6%	88.4%	95.46%	Yes
2	11	Study	65.7%	61.2%	93.15%	Yes

9.0 Sunlight Impact Results

- 9.1 BRE guidance states that only windows which face within 90° of due south need be assessed for sunlight provision. In this instance, 28 windows fall into this category.
- 9.2 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)
- 9.3 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
- 9.4 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.
- 9.5 The results below show that all of the assessed windows retain 80% of their sunlight levels both annually and over the winter months.
- 9.6 The scheme is therefore compliant with BRE guidance in relation to sunlight impacts.

9.0 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	51.143	49.896	97.56%	19.473	19.473	100.00%	Yes
2	59.182	58.143	98.24%	21.830	21.830	100.00%	Yes
3	53.846	51.421	95.50%	19.681	19.681	100.00%	Yes
4	57.103	55.925	97.94%	20.929	20.929	100.00%	Yes
5	62.786	61.469	97.90%	17.464	17.256	98.81%	Yes
6	69.092	67.637	97.89%	21.622	20.236	93.59%	Yes
7	37.353	32.225	86.27%	10.949	10.118	92.41%	Yes
8	48.787	42.550	87.22%	15.246	12.405	81.36%	Yes
9	57.727	54.747	94.84%	18.850	16.216	86.03%	Yes
10	72.557	68.954	95.03%	24.948	21.344	85.56%	Yes
11	30.977	18.850	60.85%	6.722	5.505	81.89%	Yes
12	66.875	64.865	96.99%	20.513	18.503	90.20%	Yes
13	69.161	69.161	100.00%	22.800	22.800	100.00%	Yes
14	63.479	61.608	97.05%	22.938	21.067	91.84%	Yes
15	66.459	66.251	99.69%	25.710	25.502	99.19%	Yes
16	62.439	61.123	97.89%	23.701	22.384	94.44%	Yes
17	37.491	36.452	97.23%	19.196	18.157	94.58%	Yes
18	69.161	68.607	99.20%	22.730	22.176	97.56%	Yes
21	69.854	69.369	99.31%	23.770	23.285	97.96%	Yes
22	74.012	73.389	99.16%	26.334	25.710	97.63%	Yes
23	72.280	71.933	99.52%	26.334	25.988	98.68%	Yes
24	59.390	58.559	98.60%	24.948	24.116	96.67%	Yes
25	69.647	69.231	99.40%	27.651	27.235	98.50%	Yes
26	56.480	55.994	99.14%	17.741	17.256	97.27%	Yes
27	71.379	70.963	99.42%	24.186	23.770	98.28%	Yes
28	74.082	73.112	98.69%	26.473	25.502	96.34%	Yes
43	33.472	30.492	91.10%	6.653	6.653	100.00%	Yes
44	39.501	38.947	98.60%	7.692	7.692	100.00%	Yes

10.0 Sunlight To Neighbouring Gardens

- 10.1 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.
- 10.2 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 only applies if the space is reduced to less than 50% of the area well sunlit.
- 10.3 This assessment has been run for the garden of the neighbouring property to the north-west of the site.
- 10.4 As can be seen, the neighbouring garden retains over 80% of its existing values and the scheme is therefore compliant with BRE guidance.



Site Location

Amenity Sunlight Hours				
Garden	Existing Area Receiving 2 Hours	Proposed Area Receiving 2 Hours	% Retained	Meets BRE Guidance?
G1	78.06%	74.25%	95.11%	Yes

11.0 Conclusions

- 11.1 Using industry standard methodology, we have made numerical analyses to ascertain the effects of the proposal at Risborough Court 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 and No Sky Line for daylight impacts and Annual and Winter Probable Sunlight Hours for sunlight impacts
- 11.1 As has been shown, the effect on VSC is within the 80% guidance value for the majority of the assessed windows.
- 11.2 When the more detailed No Sky Line test is run for the rooms that are served by the windows which do not meet the VSC test, the results show that the rooms retain in excess of 80% of current daylight levels.
- 11.3 We conclude that these impacts are acceptable and within the BRE guidance recommendations.
- 11.4 In terms of sunlight, all of the assessed windows continue to receive in excess of 80% of existing sunlight hours, both annually and over the winter months.
- 11.5 The neighbouring garden retains over 80% of its existing sunlight levels on March 21st.
- 11.6 The scheme is therefore compliant with BRE guidance in relation to sunlight impacts.
- 11.7 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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