

89 Holmes Road, London Borough of Camden
Daylighting, Sunlighting and Overshadowing Report

Version 01

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Contents

- 1 Introduction.....3
- 2 Guidance.....3
 - 2.1 Daylighting.....3
 - 2.2 Sunlighting.....3
 - 2.3 Overshadowing.....4
- 3 Assessment Methodology.....4
 - 3.1 Daylighting.....4
 - 3.2 Sunlighting.....4
 - 3.3 Overshadowing.....4
- 4 Results and Discussion.....4
 - 4.1 Daylighting.....4
- 5 Conclusion.....5
- 6 Appendix.....6

1 Introduction

In this report, the proposed extension of 89 Holmes Road has been evaluated to see if it has an impact on the daylighting, sunlighting or overshadowing of adjacent or nearby buildings.

The site is located in the London Borough of Camden. The site is currently occupied by a vacant public house on the Ground and Lower Ground floors with the remainder of the building operating as an HMO. The proposals consists of the second floor rear (south) extension; and two storey mansard-style roof extension behind retained parapet, comprising 8 HMO room addition, together with kitchen and communal spaces. The site area is shown in Figure 1-1.

The impact of the extension of 89 Holmes Road on nearby buildings has been evaluated using IES Virtual Environment, in line with the guidance provided in the Building Research Establishment (BRE) guide 'Site layout planning for daylight and sunlight: a guide to good practice' (2022).



Figure 1-1 Site area

2 Guidance

2.1 Daylighting

BRE guidance recommends that windows of existing buildings only need to be assessed for daylighting impact if the occupants have a reasonable expectation of light, and the distance to the new development is less than three times the height difference between the highest point of the new development and the height of the centre of the existing window. A reasonable expectation of light is primarily considered a requirement for living rooms, bedrooms and kitchens in domestic properties, although can include some non-domestic buildings, such as schools, hospitals, hotels, hostels, small workshops and some offices. Existing windows within this area only need to be assessed if any part of the new development subtends an angle of more than 25° to the centre of the window, measured on a vertical perpendicular section of the windows.

The amount of daylight reaching a window can be quantified and assessed using the Vertical Sky Component (VSC). The VSC is the ratio of direct sky illuminance falling on a vertical wall at a point (usually the centre of a window) compared to the direct sky illuminance on an unobstructed horizontal plane at a point. It is assessed using the standard CIE unobstructed sky, meaning direction is not accounted for. It is expressed as a percentage, with the maximum value achievable for a completely unobstructed vertical wall being 40%.

The BRE guide outlines criteria for assessing the VSC of windows on existing buildings:

1. The VSC of main windows on existing buildings should be equal or greater than 27%
2. If the VSC of main windows on existing buildings is less than 27%, it should not be reduced to less than 80% of its former value

Where room layouts of existing buildings are known, a further assessment can be done assessing the impact a building can have on area of the working plane in a room which can receive direct skylight. A proposed development will negatively impact a surrounding building if the area of the working plane in a room which can receive direct skylight is reduced to less than 0.80 times its former value.

2.2 Sunlighting

BRE guidance recommends that windows of existing buildings only need to be assessed for sunlighting impact if they are within 90° of due south. Windows within 90° of due south only need to be assessed if any part of the new development subtends an angle of more than 25° to the centre of the window, measured on a vertical perpendicular section of the windows. The guidance recommends that sunlight should be assessed for main living rooms and conservatories, but that for kitchens, bedrooms and other room functions, sunlight levels are less important. It also recommends that non-domestic buildings only need to be assessed where they have a particular requirement for sunlight.

The amount of sunlight reaching a window can be quantified and assessed using the Annual Probable Sunlight Hours (APSH). APSH is the ratio of probable sunlight hours that will reach a point on a building (usually the centre of a window) compared to the total amount that would reach the unobstructed point. It is calculated using the long term average of the number of hours in a year

that direct sunlight reaches the unobstructed ground, when clouds are taken into account. It is expressed as a percentage.

The BRE guide outlines criteria for assessing the APSH of windows on existing buildings:

1. The APSH of main windows on existing buildings should be equal or greater than 25% annually or 5% during winter (21st September – 21st March)
2. If the APSH of main windows on existing buildings is less than 25% annually or 5% during winter, it should not be reduced to less than 80% of its former value during either period
3. The total reduction received in sunlight over a whole year should not be greater than 4% of annual probably sunlight hours

2.3 Overshadowing

BRE guidance recommends that nearby open spaces (gardens, amenity areas, public parks etc.) should be assessed for overshadowing from new developments. Overshadowing can be assessed by quantifying the percentage of an open space that receives sunlight for a given time on a given date.

The BRE guide outlines criteria for assessing overshadowing of open spaces:

1. At least 50% of an open space should receive at least 2 hours of direct sunlight on the 21st March
2. If less than 50% of an open space receives 2 hours of direct sunlight on the 21st March, the area that does receive 2 hours of direct sunlight should not be reduced to less than 80% of its former value

3 Assessment Methodology

The assessment was undertaken using IES Virtual Environment software. A simplified model of the proposed development and the surrounding buildings was created in the IES ModelIT module using the most recent drawings provided by the Architects, as well as satellite information.

3.1 Daylighting

Daylighting was assessed using the IES RadianceIES module under the standard CIE overcast sky.

Windows that do not have a direct view of the development (i.e. they do not face within 180° of the development or are obstructed by other buildings) were not assessed as the development will have no impact. All main windows were assessed, regardless of likely room function. The following buildings were identified as having windows that meet the assessment criteria:

- 65 Willes Road
- 71 & 77 Willes Road
- 83 Willes Road
- 85 Willes Road

A number of windows were identified opposite the light well, which are part of the adjacent school building. An online review was planning documents was conducted and concluded that these

windows likely lead to storage rooms, and as such do not have a reasonable expectation of light. As such they have been excluded from the assessment. As internal layouts of the surrounding building is not known, only VSC was assessed, and no assessment was undertaken on the area of working plane receiving direct skylight.

3.2 Sunlighting

No properties were identified that required assessment for sunlighting, as there no residential building faces that are within 90 degrees of due south and face the development, that have an expectation of direct sunlight.

3.3 Overshadowing

Analysis of the surrounding area showed that there were no open spaces that required assessment under the BRE guidance. Open spaces close to the development are primarily car parking areas.

4 Results and Discussion

4.1 Daylighting

The daylighting results are displayed in Table 4-1. Opening numbers corresponds to Figures 6-1 to 6-4 in the Appendix. Please note that as IES Radiance uses a stochastic method, results can vary slightly every time a simulation is run, which introduces an element of error.

The results show that all openings assessed still have a VSC greater than 27%, or have not have there VSC reduced to less than 80% of its previous value, so the extension will not have an excessive impact on the daylight of these windows.

Opening Number	Proposed VSC (%)	Proposed VSC > 27%?	Existing VSC (%)	Proposed/Existing VSC (%)	BRE Guidance Met
65 Willes Road					
1	30.0	✓			✓
2	30.0	✓			✓
3	28.8	✓			✓
4	27.8	✓			✓
5	27.0	✓			✓
6	25.8	✗	26.7	96.6%	✓
7	32.1	✓			✓
8	32.2	✓			✓
9	31.4	✓			✓
10	31.0	✓			✓
11	30.5	✓			✓
12	29.3	✓			✓
13	28.3	✓			✓
71 & 77 Willes Road					
1	26.8	✗	27.2	98.5%	✓
2	26.7	✗	27.2	98.2%	✓
3	25.2	✗	26.4	95.5%	✓
4	24.7	✗	25.5	96.9%	✓
5	23.3	✗	24.3	95.9%	✓
6	23.3	✗	24.5	95.1%	✓

7	25.5	*	26.4	96.6%	✓
8	26.2	*	27.2	96.3%	✓
9	29.1	✓			✓
10	29.6	✓			✓
11	29.2	✓			✓
12	28.3	✓			✓
13	27.6	✓			✓
14	26.1	*	27.8	93.9%	✓
15	26.0	*	27.7	93.9%	✓
16	26.4	*	28.1	94.0%	✓
17	28.1	✓			✓
18	28.3	✓			✓
19	32.8	✓			✓
20	33.5	✓			✓
21	33.2	✓			✓
22	32.3	✓			✓
23	31.2	✓			✓
24	29.6	✓			✓
25	29.9	✓			✓
26	30.2	✓			✓
27	31.5	✓			✓
28	31.7	✓			✓
83 Willes Road					
1	27.3	✓			✓
2	29.3	✓			✓
3	30.1	✓			✓
4	32.4	✓			✓
5	33.0	✓			✓
85 Willes Road					
1	30.9	✓			✓
2	31.5	✓			✓
3	33.8	✓			✓
4	34.0	✓			✓
Total Passes:					50/50

Table 4-1 Daylighting Results

5 Conclusion

The proposed extension of the 89 Holmes has been evaluated for its impact on daylighting, sunlighting or overshadowing of adjacent or nearby buildings. The impact of the extension on nearby buildings has been evaluated using IES Virtual Environment, in line with the guidance provided in the Building Research Establishment (BRE) guide 'Site layout planning for daylight and sunlight: a guide to good practice' (2022).

The results of the assessment indicate all the of nearby windows meet the BRE guidance for daylighting, demonstrating that the extension will not have an excessive impact on the daylight of these windows. No windows were identified that required assessment for sunlight, and no spaces were identified that required assessment for overshadowing.

6 Appendix

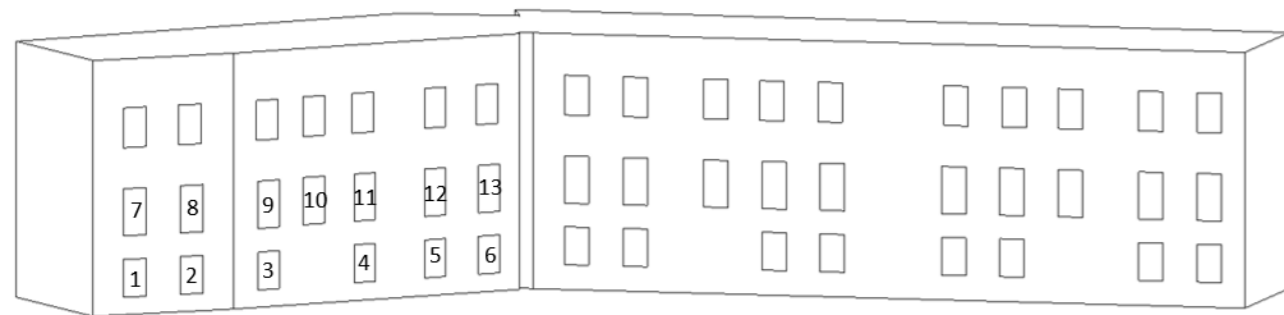


Figure 6-1 – 65 Willes Road opening numbers

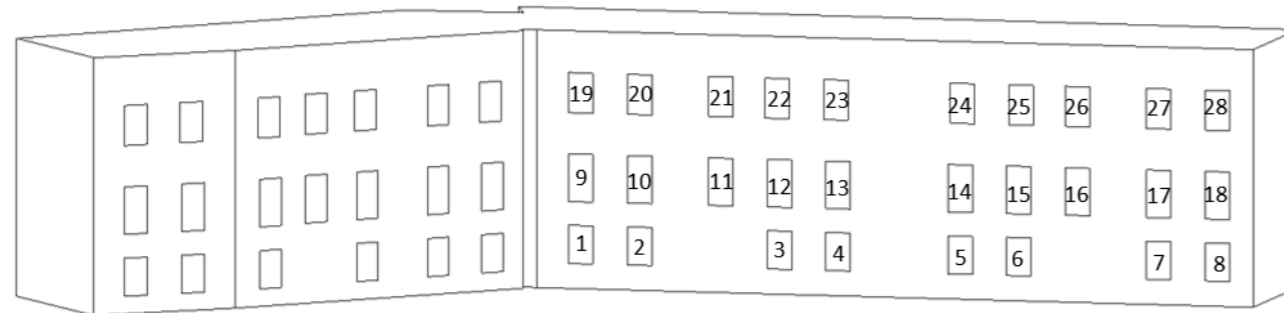


Figure 6-2 – 71 & 77 Willes Road opening numbers

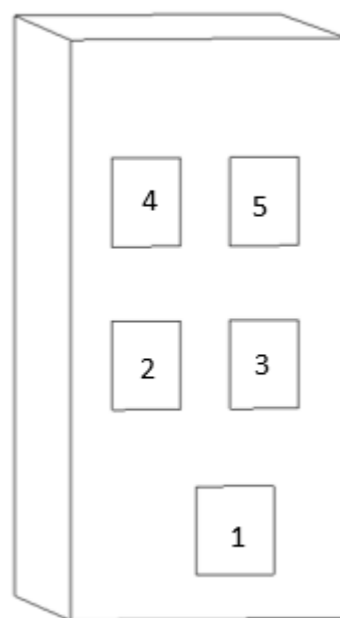


Figure 6-3 – 83 Willes Road opening numbers

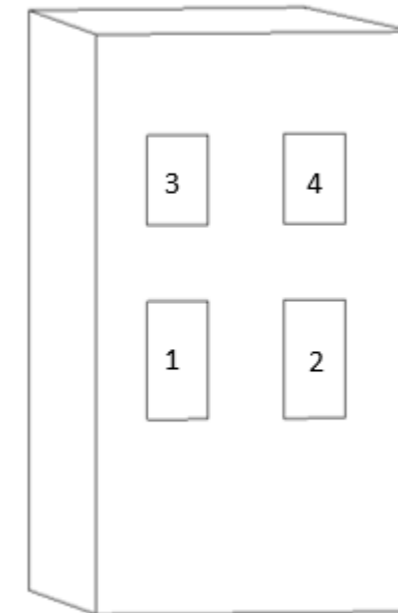


Figure 6-4 – 85 Willes Road opening numbers