22 Fortess Grove, NW5

Daylight and Sunlight Assessment

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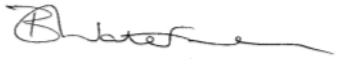
BW	24.08.16	

1.0 Introduction

1.1 T16 Design is engaged to produce this report, which is an analysis of the impact on neighbouring properties, of the proposed extension of 22 Fortess Road, NW5

1.2 Specifically, this report looks at the impacts with regard to the change in daylight and sunlight enjoyed by the neighbouring residential properties.

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', sometimes referred to as BRE Digest 209, 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 interior daylight 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 sunlight and overshadowing. 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 considered the 2 key daylight and sunlight tests as recommended in BRE Digest 209. These are:

- Vertical Sky Component (VSC) - Daylight
- Annual Probable Sunlight Hours (APSH) - 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. It is the primary calculation that is undertaken where the layout of neighbouring dwellings is not known.

2.3 APSH is a measure of the amount of hours of direct sunlight a surface will receive. It is useful as a way of demonstrating the effect of overshadowing numerically. BRE guidance is that only windows with an aspect within 90° of due south need be considered for sunlight.

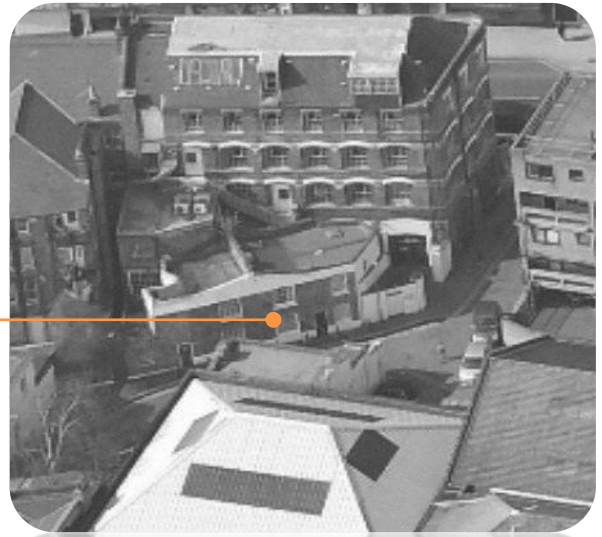
2.4 The APSH method can also used to assess the effects of a proposal on external amenity spaces. In this instance, no amenity spaces are considered to be adversely affected by the proposal.

3.0 Existing Site and Proposal

3.1 The development site is currently occupied by a 2 storey semi-detached residential dwelling in a suburban street. The proposal is to extend this dwelling on the left side of the property in addition to a one storey basement.

3.2 The calculations have been undertaken using drawn information supplied by the design team in the form of 2D drawings of the site as existing and proposed and photographs. Web-based mapping sources have also been used. It is our understanding that the only windows shown in the schedule need to be assessed.

Site Location



4.0 Modelling the Site

4.1 The first stage of the analysis is to model the existing site condition and the proposal in 3 dimensions. This allows the comparison to be made in accordance with BRE recommendations.

4.2 The 3D model, produced from the Architect's drawings, is exported into the specialist daylight analysis software, and calculations are then run, for both existing and proposed. The outputs of those calculations can be exported numerically. Using the BRE guidance which gives absolute figures for the acceptable reduction in lighting value, we can then establish if the proposal will have a significant and measurable impact on the enjoyment of the occupiers of the adjacent dwellings.

4.3 9no. windows have been analysed as being most likely to be affected by the proposal. Where window positions are not known precisely, they have been estimated, so far as the available information allows.

4.4 Other neighbours are more distant from the proposal, and so it can reasonably be inferred that if the assessed windows are compliant with BRE guidance, then the more distant windows will be too.

4.5 BRE guidance recommends that trees are excluded from this kind of analysis as daylight and sunlight are at their most precious when trees are not in leaf.

4.6 The guidance also states that only windows which face within 90° of due south need be assessed for sunlight. In this instance, 4 of the assessed windows are within this orientation.

5.0 Measurement Criteria

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 Vertical Sky Component and Annual Probable Sunlight Hours as a percentage reduction that is allowable for the effect on existing buildings.

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

5.3.1 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 benchmarks used in this study are:

5.4.1 The Vertical Sky Component measured at the centre of a window should be no less than 80% of its former value following development.

5.4.2 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.

5.4.3 Amenity spaces should receive 2 hours of direct sun over 50% of their area to be considered adequately lit.

5.5 In planning terms, it is generally deemed that if these criteria are met, then the occupiers of the affected properties will not notice a measurable loss of light.

6.0 Window Schedule

7.0 Daylight Results

7.1 Using daylight modelling software, the Vertical Sky Component for the assessed windows was calculated for both the existing and proposed conditions.

7.2 The BRE guidelines recommend that VSC should be no less than 80% of its former value, to avoid a noticeable loss of light.

7.3 The results of this analysis are shown below. As can be seen, all windows meet this requirement and so the scheme is compliant with BRE guidelines for daylight.

Window	Existing VSC	Proposed VSC	% Retained
1	31.152	29.877	95.91%
2	27.986	27.986	100.00%
3	31.766	31.766	100.00%
4	25.204	22.453	89.09%
5	36.382	35.437	97.40%
6	37.058	36.718	99.08%
7	38.102	37.969	99.65%
8	39.071	38.743	99.16%
9	39.595	39.567	99.93%
10	17.919	15.355	85.69%

8.0 Sunlight Results

8.1 Annual Probable Sunlight hours is a measure of the number of hours of direct sun falling on a surface over a given period.

8.2 BRE Guidance is that windows should continue to receive in excess of 80% of their pre-development value, or 25% of available hours over the year, and 5% of hours in winter to be considered well sunlit.

8.3 BRE guidance states that only windows which face within 90° of South need be assessed for sunlight.

8.4 As can be seen from the tables below, all of the windows which need to be assessed meet the BRE requirements for sunlight by virtue of retaining in excess of 80% of its current value and in excess of 25% of annual sunlight hours and 5% of winter hours.

8.5 The scheme is therefore compliant with BRE guidelines for sunlight.

8.6 No external residential amenity spaces are considered to be adversely affected by the proposal.

Window	APSH - Whole Year			APSH - Winter Months		
Window Number	Existing % Of Hours	Proposed % Of Hours	% Retained	Existing % Of Hours	Proposed % Of Hours	% Retained
2	58.82%	58.82%	100.00%	26.14%	26.14%	100.00%
3	62.17%	62.17%	100.00%	27.98%	27.98%	100.00%
4	28.51%	28.37%	99.53%	8.83%	8.83%	100.00%
5	40.61%	37.62%	92.65%	13.19%	13.19%	100.00%
10	25.20%	23.11%	91.71%	9.71%	9.71%	100.00%

9.0 Conclusions

9.1 This analysis has examined in detail the potential effects of the proposed development at 22 Fortess Grove on the neighbouring residential dwellings.

9.2 Using industry standard methodology, we have made numerical analyses to ensure compliance with the recommended levels of change in daylight and sunlight for the windows of the neighbouring dwellings. The main criteria used in this analysis to show compliance are the Vertical Sky Component and Annual Probable Sunlight Hours tests.

9.3 As has been shown, the effects on daylight and sunlight are within the recommended limits for those windows assessed.

9.4 From a planning perspective therefore, it is the conclusion of this report that the proposed development meets the recommendations of the BRE guidance and is acceptable in planning terms.