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Planning Design Economics

LAND ADJOINING NO. 1 ESTELLE ROAD LONDON NW3

DAYLIGHT AND SUNLIGHT ASSESSMENT

Prepared on behalf of
Golden Project Management

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CONTENTS

APPENDICES

Plans 1 to 6: Daylight and Sunlight plots for reference points 1, 2 and 3.

1.0 INTRODUCTION

1.1 This report considers the effects of the proposed redevelopment of land to the south of No. 1 Estelle Road, London NW3 on the daylight and sunlight levels experienced at the flank windows to No. 1 Estelle Road. It has been prepared on behalf of Golden Project Management. The proposed development comprises the erection of a four-storey house which partly spans over Hodes Row.

1.2 In undertaking this assessment we have reviewed the sunlight/daylight report prepared by Brooke Vincent and Partners (July 2001) in respect of an earlier planning application for the development of the site. We understand that the proposal was refused by the London Borough of Camden on the grounds of its impact on levels of daylight and sunlight to existing windows in the flank elevation of No. 1 Estelle Road. An appeal against this decision was subsequently dismissed. The current proposal seeks to address this reason for refusal by splaying the plan form of the proposal to allow sufficient levels of natural light to reach the three flank windows to No. 1 Estelle Road.

1.3 The quantitative assessment has been undertaken in accordance with the guidelines set out in the Building Research Establishment (BRE) report "*Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice*" (BR209, 1991). The Guide is intended to be advisory and does not contain mandatory standards. The introduction states:

> *"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 designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design"*

1.4 This assessment considers the impacts of the development in terms of daylight and sunlight. It does not address Rights to Light, which is a legal matter rather than a planning consideration.

1.5 This assessment has been carried out using the following information:

- Ordnance Survey Superplan digital mapping;

- Golden Project Management's planning drawing of the proposal; and,
- Site observations.

1.6 The report is divided into the following five subsequent sections:

- Section 2.0 provides an outline of the scope of the assessment;
- Section 3.0 sets out relevant planning policy considerations;
- Section 4.0 provides an assessment of the impact of the proposal on levels of daylight at the reference points;
- Section 5.0 describes the assessment of the proposal's impact on levels of sunlight at the reference points.
- Section 6.0 provides a summary of the assessment and conclusions are drawn

1.7 The assessment is supported by a set of analytical plots attached in the appendices.

2.0 SCOPE OF ASSESSMENT

2.1 We note that the Brooke Vincent and Partners report (July 2001) demonstrated that the previous proposal for the development of the site had an insignificant effect on the nearest properties on the eastern side of Estelle Road (Nos. 2 and 4). On the basis that the current proposal has a street frontage to Estelle Road of essentially the same as that previously proposed, we do not believe that there is a need to further assess the impact on levels of natural light to Nos. 2 and 4 Estelle Road.

2.2 The windows within the flank wall of No. 1 Estelle Road immediately adjoining the proposal site. An assessment of the impacts on levels of daylight and sunlight to the following windows is therefore required:

- **Reference Point 1:** ground floor window
- **Reference Point 2:** first floor window
- **Reference Point 3:** second floor window

2.3 We understand that the ground and first floor windows serve bedrooms and the second floor window serves a kitchen. We note that the BRE guide states at page 5 that *"main rooms"* (living rooms, dining rooms and kitchens) should be analysed. *"Bedrooms should also be analysed,* ***although they are less important"*** (our emphasis).

3.0 PLANNING POLICY CONTEXT

3.1 The Camden Unitary Development Plan was adopted in March 2000. Policy EN19 *"Amenity for occupiers and neighbours"* states:

> *"In assessing the impact of development, the Council will take into account the following considerations:*
>
> *a. the implications for daylight and sunlight into and between properties".*

3.2 The supporting text to the policy states that the Council will apply the standards recommended in the Building Research Establishment report *"Site Layout Planning for Daylight and Sunlight - A Guide to Good Practice"* (1991).

4.0 DAYLIGHT

4.1 This section assesses the impact of the proposed development on the level of daylight received at the aforementioned reference points.

Methodology

4.2 The window reference points outlined above have been assessed in line with the BRE guidelines. The BRE guide defines consecutive tests relating to daylight impacts.

A. 25 Degree Test

4.3 The first BRE test (page 7) states that:

> *'If any part of a new building or extension measured in a vertical section perpendicular to a main window wall of an existing building from the centre of the lowest window, subtends an angle of more than 25^0 to the horizontal, then the diffuse daylighting of the existing building may be adversely affected".*

4.4 Accordingly, where a new development subtends an angle of less than 25^0 to the horizontal, then the diffuse daylighting at a window reference point will not be noticeably affected and more detailed analyses are not required. If the angle of elevation is greater than 25^0, the daylight level at a reference point should be assessed in terms of its vertical sky component.

B. Vertical Sky Component (VSC)

4.5 The level of daylighting received by a window is quantified in terms of its vertical sky component (VSC), which represents the amount of skylight falling on a vertical window. The plot for the assessment of the vertical sky component is derived from the distance of the physical obstructions from the reference point and their relative height above the reference point. The heights and locations of the surrounding buildings and the proposed development have been taken from Ordinance Survey digital plan data, site observations, and the application drawing. Photographs are attached which illustrate the existing configuration of relevant nearby properties.

4.6 Vertical sky component is calculated using the skylight indicator and guidance provided in Appendix A of the BRE Good Practice Guide. The guidelines provided at Appendix A1 of the BRE guide have been followed for each of the five reference

points. The resultant plots (Plans 1 to 3) graphically depict the impact on the reference points of the existing obstructions to daylight in **green** and the additional obstruction caused by the proposed development in **orange**. The unshaded areas represent the degree of skylight received at the reference point.

4.7 To determine the percentage level of vertical sky component at the reference point, the plot has been overlaid on the Skylight Indicator, as outlined in Appendix A2 of the BRE guide. The percentage figures for the existing situation (areas not shaded green on Plans 4-8) and the situation resulting from the proposed development (areas shaded neither green nor orange) are set out in the table below.

4.8 The Skylight indicator contains 80 crosses, each of which corresponds to 0.5% vertical sky component. The sum of crosses located outside the shaded area provides the total sky component. If situated at the edge of a shaded area, half crosses can also be counted.

4.9 The BRE good practice guide outlines numerical guidelines that represent flexible targets for new developments in relation to the vertical sky component at nearby reference points. The document states that:

> *"If the vertical sky component, with the new development in place, is both less than 27% **and** less than 0.8 times its former value, then the loss of light is likely to be noticeable." (our emphasis)*

4.10 These targets are based on suburban standards. Therefore a lower level than 27% may be expected in urban areas characterised by a higher density of development.

Results

4.11 The following sets out the daylighting results obtained in relation to the three consecutive tests.

25 Degree Test

4.12 In this instance the 25 Degree Test cannot be applied as the proposed development is not parallel to the three reference points: the existing angles will not be affected.

Vertical Sky Component

4.13 The table below contains the existing and resultant VSC levels at reference points 1, 2 and 3. It also sets out the relevant BRE guide levels.

	Existing VSC (%)	Resultant VSC (%)	Change (Resultant/ Existing)
BRE Targets	**27**	**27**	0.8
Reference Point 1	33	29 (21.5)	0.88 (0.65)
Reference Point 2	34.5	30.75 (23.5)	0.89 (0.68)
Reference Point 3	37.5	34 (28.5)	0.91 (0.76)

Table 5.2: Vertical Sky Component at the reference points (the numbers in brackets are the results derived by Brooke Vincent in respect of the previous proposal).

4.14 The plots demonstrate that the BRE target for daylighting (27% Vertical Sky Component) will be achieved at all three of the windows within the flank wall of No. 1 Estelle Road. There is a significant improvement between the previously refused scheme and the current proposal.

5.0 SUNLIGHT

Methodology

5.1 This section assesses the effect of the proposed development on levels of sunlight at the reference points. Obstructions to sunlight may become an issue if some part of the proposal is situated within 90° of due south of main window walls to existing buildings. Therefore, under BRE guidelines, reference points 1, 2 and 3 all require assessment in relation to sunlight availability.

5.2 To determine the sunlight availability at the three reference points, the plots derived for daylighting have been overlaid on a Sun Availability Indicator for London (51.5° N). Again, the area shaded **green** represents the impact of existing obstructions on sunlight availability, whilst those areas shaded **orange** represent the additional impact of the proposed development. The plots provide the percentage year round sun availability, which is quantified by counting the number of dots outside of the shaded areas. There are 100 dots shown on the indicator, each of which represents 1% of the annual probable sunlight hours. The plots also enable the percentage of sunlight availability during the winter months to be derived by counting the number of dots outside the shaded areas and below the equinox line. The plots for reference 1 and 3 are shown on Plan 4-6 respectively.

5.3 The BRE good practice guide notes that:

> *"If [a] window reference point can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months between 21 September and 21 March, then the room should still receive enough sunlight…If the available sunlight hours are* ***both*** *less than the amount given* ***and*** *less than 0.8 times their former value, either over the whole year or just during the winter months (21 September to 21 March), then the occupants of the existing building will notice the loss of sunlight." (page 11, our emphasis)*

Results

5.4 The following results were obtained:

		Existing Sunlight Availability (%)	Resultant Sunlight Availability (%)	Change (Resultant/ Existing)
ANNUAL SUNLIGHT	**BRE Targets**	**25**	**25**	**0.8**
	Reference Point 1	81	65	0.8
	Reference Point 2	84	67	0.82
	Reference Point 3	86	73	0.84
WINTER SUNLIGHT	**BRE Targets**	**5**	**5**	**0.8**
	Reference Point 1	26	25	0.96
	Reference Point 2	28	27	0.96
	Reference Point 3	30	28	0.93

Table 6.1: Sunlight Availability at the reference points

Annual Sunlight Availability

5.8 The three flank windows to No. 1 Estelle Road, will receive in excess of 60% year round sunlight availability. This is far in excess of the BRE target (25%).

Winter Sunlight Availability

5.9 25% of the year round sunlight will occur during the winter months. Again this is far in excess of the BRE target (5%).

6.0 SUMMARY AND CONCLUSIONS

6.1 This assessment has been carried out in accordance with BRE guidelines relating to the analysis of daylight and sunlight. Three window reference points have been assessed in relation to both daylighting and sunlight availability.

6.2 The current proposal involves the splaying of the rear western elevation to allow a greater degree of natural light to reach the three windows in the flank elevation of No. 1 Estelle Road.

6.3 In terms of daylight, this assessment demonstrates that levels of will be achieved that exceed the BRE target. The ground floor window will gain 29% Vertical Sky Component. The BRE target is 27%.

6.4 Sunlight availability throughout the year and during the winter months will be more than double the targets set by the BRE. The three rooms contained by the reference windows will maintain a high level sunlight penetration.

6.5 The assessment demonstrates adherence with the target levels of daylight and sunlight to residential windows as defined by the BRE guide. On this basis we do not believe that the amenity of the residents of No. Estelle Road will be materially affected: UDP Policy EN19 will therefore be complied with.

APPENDIX: Plans 1 to 6: Daylight and Sunlight plots for reference points 1, 2 and 3.