ASSESSMENT OF DAYLIGHT PROVISION TO 98 FROGNAL FOLLOWING EXTENSION OF 9 FROGNAL GARDENS, HAMPSTEAD

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10 May 2011

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1. INTRODUCTION

1.1 It is proposed to extend 9 Frognal Gardens to provide living space above the current ground floor garage. The site location is shown in Figure 1. The residential property most likely to be affected by the changes is 98 Frognal, which has a first floor window facing the garage. This report presents an assessment of daylight provision to this window following the changes. The report was prepared for Mrs Goldman, the owner of 9 Frognal Gardens.

1.2 The calculations are based on drawings provided by Sporadic Space. These include the following:

- a location and existing site plan in E001 Rev A, dated February 2011,
- existing ground floor and first floor plans in E002 Rev A and E003 Rev A, dated February 2011,
- existing sections and elevations in 03811S Rev F0, dated February 2011,
- proposed elevations and sections in P102 Rev B and P104 Rev B, dated February 2011, dated February 2011 and revised 5 May 2011
- floor plan of proposed first floor in P003 Rev B, dated February 2011 and revised 5 May 2011,
- detail of north elevation of extension showing 3.2m set back from the existing garage edge, dated 6 May 2011.

They were supplemented by measurements of the existing buildings made during a site visit on Tuesday 3 May 2011.

2. ASSESSMENT OF DAYLIGHT IMPACT - PLANNING ASPECTS

2.1 Guidance on the loss of light to existing buildings following construction of new development nearby is given in our BRE Report 'Site layout planning for daylight and sunlight: a guide to good practice'. This report was approved by the Department of the Environment and is widely used by local authorities to help determine planning applications.

2.2 To assess the impact on the amount of diffuse daylighting entering existing buildings, the Report recommends the calculation of the vertical sky component. This is the ratio of the direct sky illuminance falling on the outside of a window, to the simultaneous horizontal illuminance under an unobstructed sky. The standard CIE Overcast Sky is used and the ratio is usually expressed as a percentage. The maximum value is almost 40% for a completely unobstructed vertical wall. The vertical sky component on a window is a good measure of the amount of daylight entering it.

2.3 A BRE computer program was used to calculate it, which has the same basis as the skylight indicators in the BRE Report.

2.4 The BRE Report sets out the following two guidelines for vertical sky component:

a. Where the vertical sky component at the centre of the existing window exceeds 27% with the new development in place, then enough sky light should still be reaching the existing window.

b. Where the vertical sky component with the new development is both less than 27% **and** less than 0.8 times its former value, then the area lit by the window is likely to appear more gloomy, and electric lighting will be needed for more of the time.

Daylight distribution

2.5 The BRE report also gives guidance on the distribution of light in the existing buildings, based on the areas of the working plane which can and cannot receive direct skylight before and after. This requires a knowledge of room geometry. As access was not available to the interior of 98 Frognal, this calculation could not be carried out.

2.6 The BRE Report states that its own numerical guidelines ‘should be interpreted flexibly since natural lighting is only one of many factors in site layout design. In special circumstances the developer or planning authority may wish to use different target values. For example in a historic city centre a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings’.

3. RESULTS OF DAYLIGHT ANALYSIS

3.1 Figure 1 shows the window at 98 Frognal mostly likely to be affected by the development. It is believed to serve a study.

Figure 1 Window at 98 Frognal facing the existing garage

3.2 The vertical sky component to the window before and after the extension are given in Table 1.

Table 1. Vertical sky component before and after extension.

Vertical sky component before %	Vertical sky component after %	Ratio after/before
30.9	25.2	0.81

3.3 The vertical sky component for the window would remain more than 0.8 times its current value. Accordingly loss of daylight would be small and within the BRE guidelines.

4. SUNLIGHT

4.1 The BRE Report recommends that sunlight should be checked for all main living rooms of existing dwellings, and conservatories, if they have a window facing within 90° of due south. The window is not believed to serve a main living room, and therefore sunlight calculations have not been carried out.

5. CONCLUSION

5.1 Potential loss of light to the window at 98 Frognal most likely to be affected by the proposed extension to 9 Frognal Gardens has been analysed. The results have been compared with the guidance in the BRE Report 'Site layout planning for daylight and sunlight: a guide to good practice'.

5.2 Loss of daylight to the window will be small and within the BRE guidelines.