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1 ALPHA ROAD, HILLINGDON, UB10 0QA
Daylight/Sunlight Impact Assessment

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REGISTRATION OF AMENDMENTS

Revision	Amendment Details	Revision Prepared By	Revision Approved By

EXECUTIVE SUMMARY

It is proposed to demolish the existing bungalow located at 1 Alpha Road to develop a new two storey building which will accommodate four flats. This report assesses the impact upon daylight and sunlight access that the proposed development may have on the neighbouring property and external space at 32 Pole Hill Road.

Results are compared with the guidelines contained within the BRE Report 'Site Layout Planning for Daylight and Sunlight: a Guide to Good Practice'.

The calculations are based on CAD and pdf drawings of the existing property and proposed development received from Ravinder Singh Ghattora (the Client). These include floor plans and elevations.

1.0 INTRODUCTION

1.1 Create Consulting Engineers Ltd has been commissioned by the client, Ravinder Singh Ghattora to undertake a Daylight/Sunlight impact assessment to accompany the planning application for the proposed development at 1 Alpha Road, Hillingdon, UB10 0QA.

1.2 This report assesses the impact of the proposed development on the amount of daylight and sunlight received by the neighbouring building at 32 Pole Hill Road, Hillingdon.

1.3 The provision of daylight and sunlight access has been assessed based upon the guidance and methodologies detailed in the 2011 Building Research Establishment's (BRE) Publication 'Site Layout Planning for Daylight and Sunlight'.

1.4 For the purpose of this report the above 2011 (BRE) publication 'Site Layout Planning for Daylight and Sunlight' will now be referred to as the BRE Guide.

Site Location and Description

1.5 The site is located at 1 Alpha Road within the London Borough of Hillingdon. The existing bungalow is planned to be demolished and a two storey building erected in its place. To the north west, on the corner of Alpha Road and Pole Hill Road is located a two storey converted dwelling containing 1 x two bedroom flat and 1 x 3 bedroom flat. On the south east side of the site are found three terraced properties.



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Figure 1.1: Site Location

Proposed Development

1.6 The proposed building will accommodate four two bedroom flats with car parking at the front and amenity area at the rear. The existing ridge height of the bungalow is 5.5m. This will increase to 7.5 m for the proposed building.

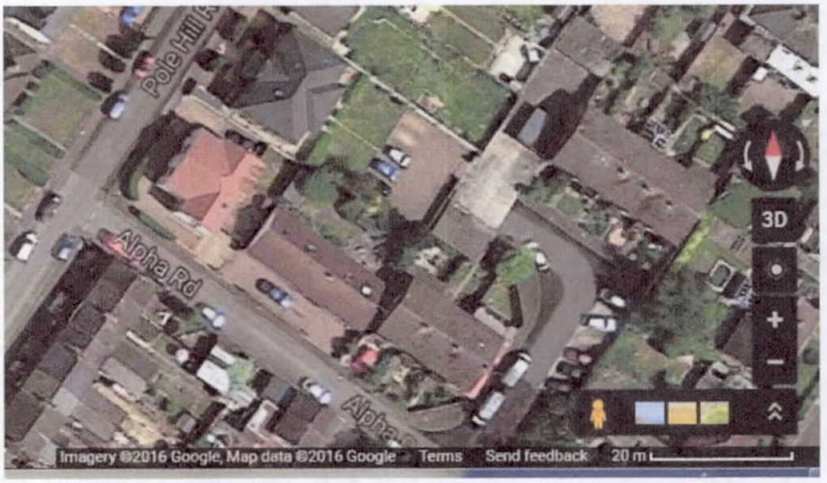

Image 1.1 Aerial photograph of existing bungalow at 1 Alpha Road

Policy Context

1.7 Hillingdon Local Plan – Saved UDP Policies (November 2012) and HDAS: 'Residential Layouts' seek to ensure that new buildings and extensions maintain and allow adequate levels of daylight and sunlight to penetrate into and between them. New developments should comply with the 45 degree principle. Furthermore these policies state that planning permission will not be granted for new buildings and extensions which by reason of their siting, bulk and proximity, would result in a significant loss of residential amenity.

Loss of Light to Existing Dwellings

1.8 Guidance on the loss of light, both daylight and sunlight, to existing buildings following construction of new development nearby is given in the BRE Guide. This guide is widely used by authorities to help determine planning applications. This assessment has been carried out with reference to the second edition of the report, which was published in October 2011.

2.0 CALCULATION METHODOLOGY

2.1 The assessment and methods used to determine daylight access have been based upon geometric information supplied by the client.

Limitations and Assumptions

2.2 The following assumptions and limitations have been made within this assessment.

- In accordance with guidance provided by the BRE guide, the effect of trees and plant life on daylight and sunlight access has not been included within this study.

- Window positions for surrounding properties have been based upon CAD and pdf drawings supplied by the client.

2.3 The BRE Guide suggests measures for determining the impact of new developments upon the daylight and sunlight availability to existing properties. The following measures have been used in this report:

Vertical Sky Component

2.4 The Vertical Sky Component (VSC) is a measure of the amount of skylight incident on a vertical plane. It is most commonly applied to the light incident at the centre of a window, and in this sense is a measure of the potential for good day light. The VSC is calculated by taking the ratio of the skylight incident at a point to the unobstructed skylight available at that same point on a horizontal plane. For a CIE (Commission on Illumination) overcast sky, the maximum value is nearly 40% for a completely unobstructed vertical wall. The VSC calculations have been undertaken using computer based simulation.

Annual Probable Sunlight Hours

2.5 The BRE Guide recommends that loss of sunlight should be checked for main living spaces of dwellings, and conservatories, if they have windows facing within 90° of due south.

2.6 According to the BRE Guide, if the centre of the window can receive more than one quarter of annual probable sunlight hours (APSH), including at least 5% of APSH in the winter months (between 21 September and 21 March), then the room should still receive enough sunlight. If the window already receives less than this, a reduction in lighting to both, less than 0.8 times its current value, and, more than 4% of annual probable sunlight hours over the year, may lead the room it serves to "appear colder and less cheerful and pleasant."

Overshadowing Impact on Garden

2.7 The overshadowing impact has been determined using a 3D computer simulation of the proposed development. As a check, the BRE Guide recommends that at least half of the garden area should receive at least two hours of sunlight on the 21 March. If an existing garden is already heavily obstructed then any further loss of sunlight should be kept to a minimum. If the proposed development reduces the amount of sunlight to less than 0.8 times its former amount the garden will tend to look more heavily overshadowed.

3.0 VERTICAL SKY COMPONENT

3.1 The VSC calculation has been assessed against the guidance given in the BRE guide. VSC calculations produce a value between 0% and 40%. A VSC greater than 27% is typically viewed as having enough skylight reaching the window. If the VSC is reduced to below 27% then it should not be less than 0.8 times its former value.

3.2 The VSC check is used to assess the daylight access to a vertical surface such as a window. VSC checks have been undertaken for the rear windows of 32 Pole Hill Road which provide daylight to living spaces (living rooms, dining rooms and kitchens) on the ground and first floor.

3.3 Image 3.1 below shows the location of the rear windows at 32 Pole Hill Road that have been assessed.

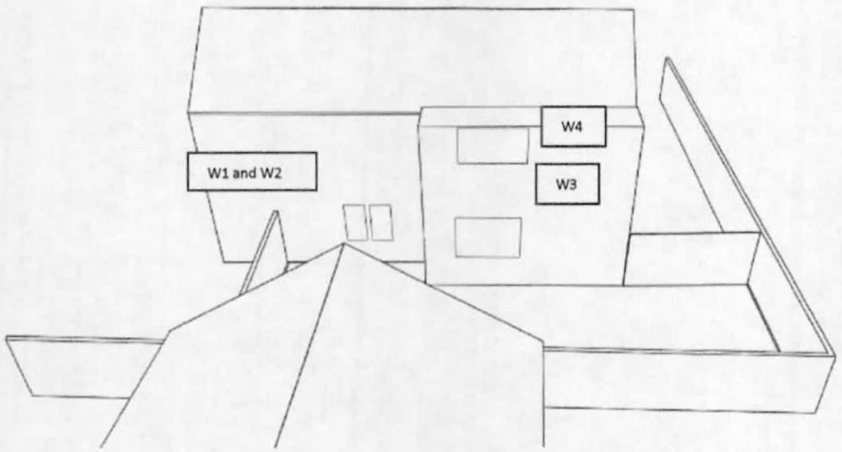

Image 3.1 Location of windows at the rear of 32 Pole Hill Road

3.4 It should be noted that if a room has two or more windows of equal size on the same or adjacent walls the mean of their VSCs should be taken. This would mean that the average value of the living room on the ground floor of 32 Pole Hill Road has been used.

3.5 Table 3.1 shows the results of the VSC calculations for the rear of 32 Pole Hill Road.

Name of space/window	Location	Existing	Proposed	Ratio After/Before
Living room W1 & 2 Average	GF Flat 1	28.72	23.75	0.83
Dining room W3	GF Flat 1	33.22	26.42	0.80
Kitchen W4	FF Flat 2	38.97	34.06	0.87

Table 3.1: Summary of Existing and Proposed VSC Values.

3.6 All windows would meet the BRE guidelines by having a vertical sky component with the proposed building in place of, either more than 27%, or, if less than 27%, more than 0.8 times the former value.

4.0 SUNLIGHT ANALYSIS

4.1 Sunlight is direct light from the sun as opposed to diffused light or daylight.

Window Sunlight

4.2 The BRE Guide states that if the centre of the window can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours in the winter months between 21 September and 21 March, then the room should still receive enough sunlight. If the window already receives less than this, a reduction in sunlight to both, less than 0.8 times its current value (annual and winter) and, more than 4% of annual probable sunlight hours over the year may lead to the room it serves appearing colder and less cheerful and pleasant.

4.3 Software has been used to calculate the annual probable sunlight hours (APSH) for the rear windows of living spaces at 32 Pole Hill Road as it exists and again after the proposed development.

4.4 Table 4.1 below shows the results from the sun path calculations for APSH values for rear windows which serve living spaces (Living rooms, dining rooms and kitchens).

Annual Probable Sunlight Hours								
		Existing		Proposed		Ratio Proposed/Existing		
Window	Room and location	Annual %	Winter %	Annual %	Winter %	Annual	Winter	Comment
W1	Living room Flat 1 GF	50.19	17.68	42.22	16.74	0.8412	0.9468	Highest value
W2	Living room Flat 1 GF	48.34	17.83	41.03	16.92	0.8488	0.949	
W3	Dining room Flat 1 GF	52.68	16.91	43.15	12.75	0.8191	0.754	
W4	Kitchen Flat 2 FF	64.53	36.81	55.05	18.28	0.8531	0.4966	

Table 4.1: Percentage of Probable Solar Hours on the rear windows of 32 Pole Hill Road

4.5 The results show that all windows which serve living spaces at the rear of 32 Pole Hill Road, meet BRE guidelines for sunlight provision by having a value of annual probable sunlight hours with the proposed building in place of greater than 25%, including more than 5% in the winter months.

Overshadowing of Garden

4.6 To allow the overshadowing impact of the proposed building to be evaluated, images using colour coding have been produced to highlight the number of hours of sunlight in the garden space on March 21 both before and after the proposed development.

4.7 The images below show the garden of 32 Pole Hill Road before and after the proposed development.

4.8 Before the proposed development the garden is displayed in a light turquoise blue, depicting an approximate sunlight exposure of 3 hours on March 21. After the proposed development the garden is displayed in a darker turquoise blue, depicting an approximate sunlight exposure of 2 hours on March 21.

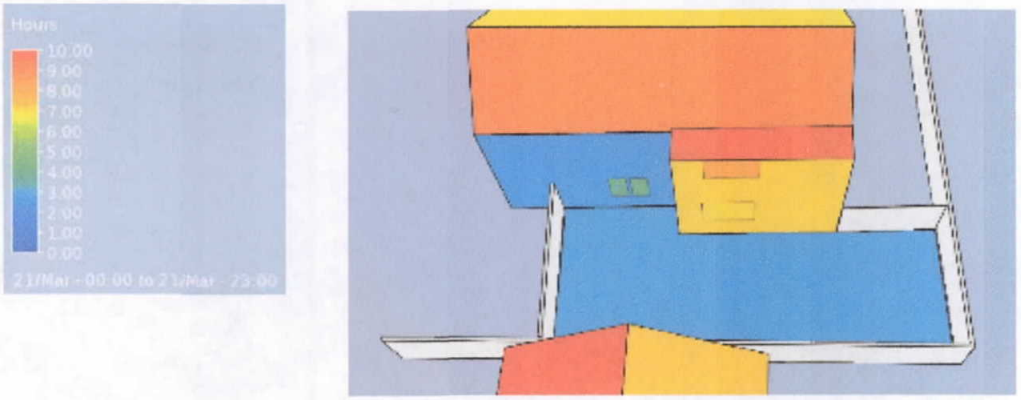

Image 4.1 Garden of 32 Pole Hill Road before the proposed development

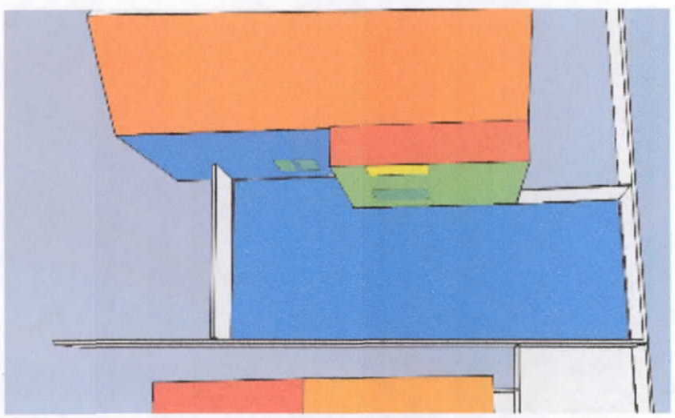

Image 4.2 Garden of 32 Pole Hill Road after the proposed development

4.9 The above images show that the garden space at 32 Pole Hill Road (both before and after the proposed development) has at least 2 hours of sunlight exposure on the 21 March and therefore conforms to the requirements in the BRE Guide.

5.0 CONCLUSION

5.1 This assessment examines the daylight and sunlight impact of the proposed two storey development at 1 Alpha Road on the neighbouring property at 32 Pole Hill Road

5.2 The impact upon daylight and sunlight access is assessed for the rear windows serving living spaces and the external space belonging to 32 Pole Hill Road in accordance with the guidance stipulated in the BRE Guide.

5.3 A Vertical Sky Component calculation has been undertaken. This has allowed the determination of the impact of the proposed development in relation to the existing site layout.

5.4 The report findings show that all windows analysed at the rear of 32 Pole Hill Road meet the BRE guidelines for Vertical Sky Component.

5.5 Direct sunlight access to the windows has been assessed. The results show that all windows analysed at the rear meet BRE guidelines for sunlight provision by having a value of annual probable sunlight hours with the proposed development in place of greater than 25%, including more than 5% in the winter months.

5.6 The overshadowing of the external space at 32 Pole Hill Road has been analysed. The proposed development does create some further shading to the garden space but this is within guidelines as the garden continues to receive at least 2 hours of sunlight exposure on the 21 March.

5.7 The conclusion of this report is that the proposed development at 1 Alpha Road will not significantly affect the daylight or sunlight access of the neighbouring property at 32 Pole Hill Road.

6.0 DISCLAIMER

6.1 Create Consulting Engineers Ltd disclaims any responsibility to the Client and others in respect of any matters outside the scope of this report.

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