20 Station Road, Hayes

Daylight and Sunlight Assessment

Job No: 4278

Issued: January, 2022

Issue No.: 1

Contents

Document Prepared By:	Document Authorised By:
Samuel Westover	Bernice Waterman
Dated:	Dated:
31.01.22	31.01.22
Signed:	Signed:

1.0 Introduction

1.1 This daylight and sunlight assessment has been prepared to support a planning application for the proposed redevelopment of the site at 20 Station Road, Hayes.

1.2 The report assesses the proposals in respect of daylight, sunlight and overshadowing matters, having regard to industry standard guidance. The report concludes that the proposal is acceptable and in accordance with planning policy requirements in relation to daylight and sunlight.

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.

1.4 However, the BRE Report 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice' 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 daylight and sunlight recommendations in BS 8206: Part 2: 'Lighting for Buildings - Code of Practice for Daylighting'

1.5 This reference document is accepted as the authoritative work in the field on daylight, sunlight and overshadowing and is specifically referred to in many Local Authorities' planning policy guidance for daylighting. The methodology therein has been used in numerous lighting analyses and the standards of permissible reduction in light are accepted as the industry standards.

2.0 Project Summary

2.1 The proposal site is at 20 Station Road, Hayes.

2.2 It is currently occupied by part 2-storey part 3-storey building with a commercial unit at ground floor.

2.3 The proposal is for of a new part 4-storey, part 5-storey building consisting of commercial at ground floor and 6 residential flats.

2.4 The impacts of the scheme have been assessed, in line with BRE guidance. Generally, it is the impacts on residential neighbours which are of primary concern.

2.5 There are residential neighbours to the south, west, and north of the site. The buildings to the east are primarily non-residential.

2.6 Further details on the location of the assessed neighbours and their windows are given in Section 5.0

3.0 Methodology

3.1 For this analysis, we have undertaken the most common calculations for the change in daylight and sunlight to existing buildings, as recommended in BRE Digest 209. These are:

3.2 Vertical Sky Component (VSC) for daylight

3.3 Annual Probable Sunlight Hours and Winter Probable Sunlight Hours (WPSH) (APSH) for sunlight

3.4 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.

3.5 The VSC is calculated using computer simulation under a CIE overcast sky. This works by simulating the amount of visible sky from the centre point of each window. It is not affected by orientation and so all potentially affected windows are assessed.

3.6 The NSL test calculates the distribution of daylight within rooms by determining the area of the room at desk / work surface height (the 'working plane') which can and cannot receive a direct view of the sky and hence 'sky light'. The working plane height is set at 850mm above floor level within residential property.

3.7 The NSL test can be carried out where neighbouring room layouts are known.

3.8 Annual Probable Sunlight Hours (APSH) and Winter Probable Sun light Hours (WPSH) are a measure of the amount of potential direct sunlight that is available to a given surface. APSH covers sunlight over the whole year and WPSH from September 21st to March 21st. The number of total available hours is calculated from a data file in the software, built up over a number of years of actual weather data records.

3.9 Only windows which face within 90° of due south need be assessed for sunlight. In this case no windows fall within in this requirement.

4.0 Modelling & Data Sources

4.1 The first stage of the analysis is to create the analysis model of the existing site condition and the proposal. This allows us to analyse the impact of the proposal when compared to the existing condition.

4.2 2D drawings have been provided by the design team. These drawings are used to construct a 3D analysis model which is exported into the specialist daylight software. Calculations are then run, for both existing and proposed scenarios.

4.3 Sufficient detail is added to the model for the analysis. In accordance with BRE recommendations, trees and foliage have been omitted from the calculations.

4.4 Information on the properties has been provided to us by the design team in the form of drawings and a model giving the site as existing and proposed and photographs of the site and surroundings.

4.5 Web-based mapping sources and planning records for neighbouring buildings have also been used.

5.0 BRE Guidance Targets

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 VSC and APSH, as a percentage reduction that is "permissible" for the effect on existing windows.

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

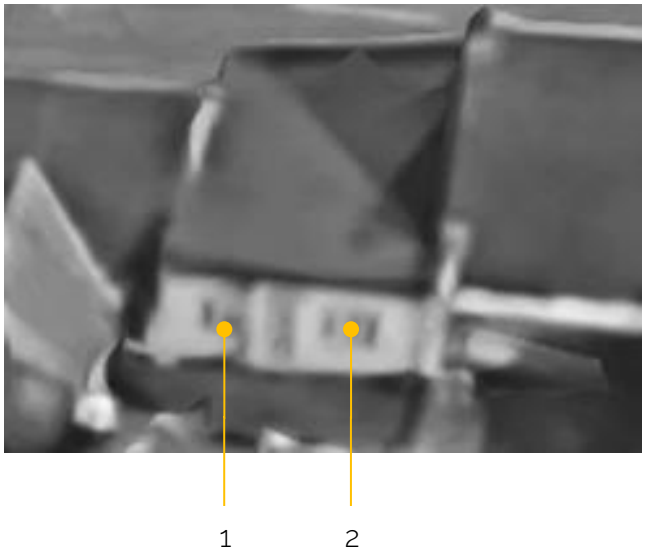
5.4 "The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the developer.

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

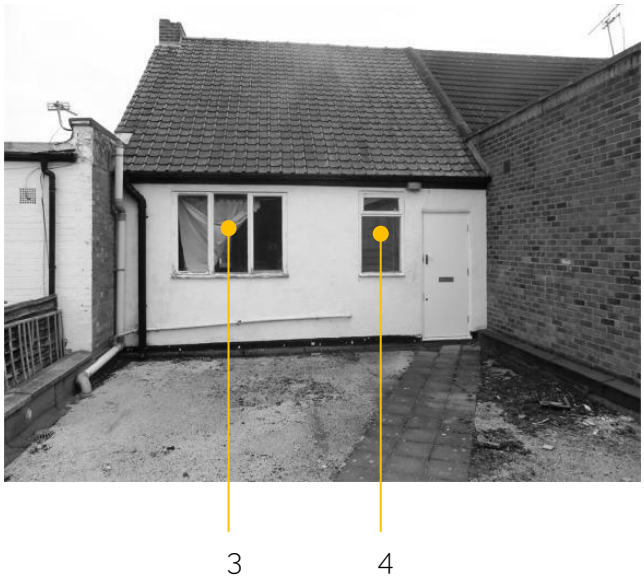
5.6 The relevant BRE recommendations for daylight and sunlight are:

- The Vertical Sky Component measured at the centre of a window should be no less than 27, or if reduced to below this, no less than 0.8 times the former value.

6.0 Window Schedules



16 Station Road, Hayes (Rear)



18a Station Road, Hayes (Rear)

7.0 Daylight Impact Results

7.1 The Vertical Sky Component has been calculated for each of the 40 assessed windows for both the existing and proposed conditions.

7.2 As can be seen in the results below, all windows retain 80% of their current values.

7.3 The scheme is therefore compliant with BRE recommendations in relation to daylight impacts.

Vertical Sky Component				
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?
1	34.47	30.84	89.47%	Yes
2	37.58	31.28	83.23%	Yes
3	36.60	30.29	82.75%	Yes
4	32.38	26.53	81.93%	Yes

8.0 Conclusions

8.1 Using industry standard methodology, we have made numerical analyses to ascertain the effects of the proposal 20 Station Road, Hayes and the levels of change in daylight and sunlight for the windows and gardens of the neighbouring properties.

8.2 The main criteria used in this analysis to show compliance are the Vertical Sky Component for daylight impacts and Annual and Winter Probable Sunlight Hours for sunlight impacts

8.3 As has been shown, the effect on VSC is within the 80% guidance value in all cases.

8.4 There will therefore be no adverse impact on neighbouring residents in terms of daylight.

8.5 From a planning perspective therefore, it is the conclusion of this report that the proposed development is entirely acceptable for planning, in daylight and sunlight terms.

T16 Design Ltd.

T: 01206 572452

E: info@t16design.com

W: www.t16design.com