44 WILLES RD, LONDON NW5 3DL

RESIDENTIAL DAYLIGHT AND SUNLIGHT STUDY

DECEMBER 2024

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Aerial Photograph

1.0 Introduction

1.1 Overview

This Daylight/Sunlight report has been prepared to support the Planning Application for proposed rear ground and first floor residential extensions to 44 Willes Rd, London NW5 3DL. This assessment should be consulted in conjunction with the accompanied Planning Drawings and Design & Access Statement.

The aim of the study is to assess the impact of the development on the light receivable by the adjacent properties of No. 42 Willes Road and No. 46 Willes Road.

In addition to this the affect of the proposed extensions in terms of overshadowing on the existing amenity space to No. 42 Willes Road and No. 46 Willes Road has also been tested.

1.2 Guidance

Guidance is available from BRE document “Site Layout Planning for Daylight and Sunlight - A Guide to Good Practise” (Littlefair 2022) and BS 8206-2:2008. This guidance has been used to inform the planning process.

1.3 Approach to Analysis

In order to investigate daylight characteristics of the existing and proposed scenarios, analysis software was used to predict daylight availability, by analysis of stereographic sun path diagrams. The assessment is based on drawings and information provided by the client for the proposed development and information from survey drawings and Google street views for the surrounding buildings on site.

1.4 Daylight

The project has been massed to ensure adequate daylight penetration without loss of privacy at all heights. The layouts have been developed to ensure the space is adequately daylit, without compromising security and privacy for both the inhabitants of this dwelling and it’s immediate neighbours.

1.5 Sunlight

Analysis has been undertaken using BRE guidance to inform built form and massing. Overshadowing to private amenity areas such as gardens has been minimised.

2.0 Daylight analysis

2.1 Daylight - BRE Guidance

Existing Buildings - Summary

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 degree to the horizontal, then the diffuse daylighting of the existing building may be adversely affected. This will be the case if either:

(a) the vertical sky component measured at the centre of an existing main window is less than 27%, and less than 0.8 times its former value;

or

(b) the area of the working plane in a room which can receive direct skylight is reduced to less than 0.8 times its former value.

2.2 BRE Targets

Recommended Levels (BRE 2022)
:Site Layout Planning for Daylight and Sunlight - A Guide to Good Practise" (Littlefair 2022)

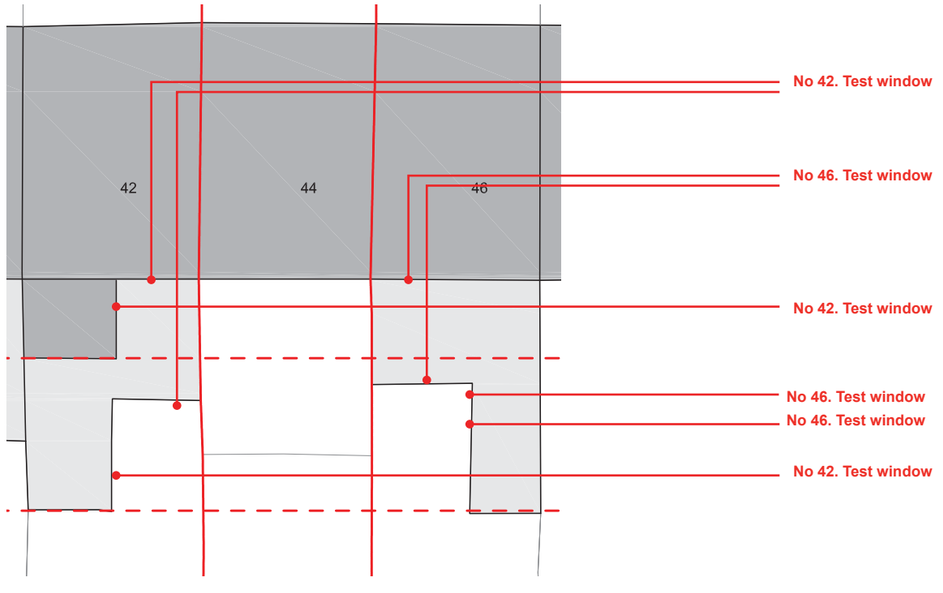
"For a room with non-continuous obstructions there is the potential for good daylighting provided that the vertical sky component, at the window 2m, is not less than the value for a continuous obstruction of 25 degrees. This is equal to a vertical sky component of 27%."

Vertical Sky Component
The percentage of the sky visible from the centre of a window is known as the Vertical Sky Component. Diffuse daylight may be adversely affected if after a development the Vertical Sky Component is both less than 27% and less than 0.8 times its former value.

Photograph - Rear of 46 Willes Road

Photograph - Rear of 42 Willes Road

Photograph - Rear of 42, 44 and 46 Willes Road



Site plan- Rear of 42, 44 and 46 Willes Road

2.0 Daylight analysis

2.3 Daylight to neighbouring windows

The aim of the study is to assess the impact of the proposed development on the light receivable by the neighbouring residential properties.

VSC testing
Habitable windows to the rear of No. 42 and 46 Willes Road have been identified as test points (Vertical Sky Component - VSC) and compared against existing conditions using BRE guidance.

2.4 Stereographic sun path diagrams

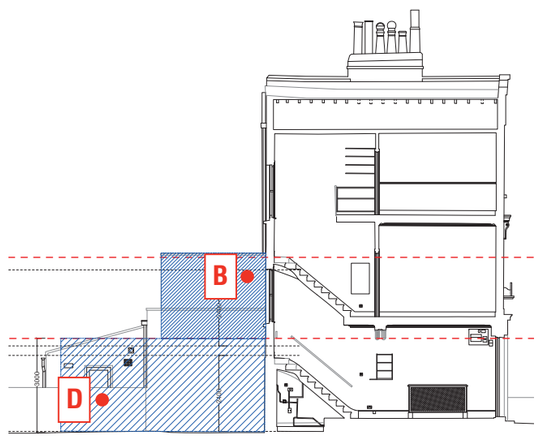
8 No. windows were tested and daylight availability has been predicted by measuring the available unobstructed view of the sky (Vertical Sky Component - VSC) and compared against existing conditions using BRE guidance.

2.5 Existing and Proposed Conditions

The BRE guidance states that diffuse daylight may be adversely affected if after a development the Vertical Sky Component is both less than 27% and less than 0.8 times its former value. The analysis indicates that where the existing daylight levels are below the 27% the proposal does not result in a reduction exceeding 0.8 times its the former value (this is the same as saying a 20% reduction when compared against the existing condition) would not be noticeable and would not therefore be considered material.

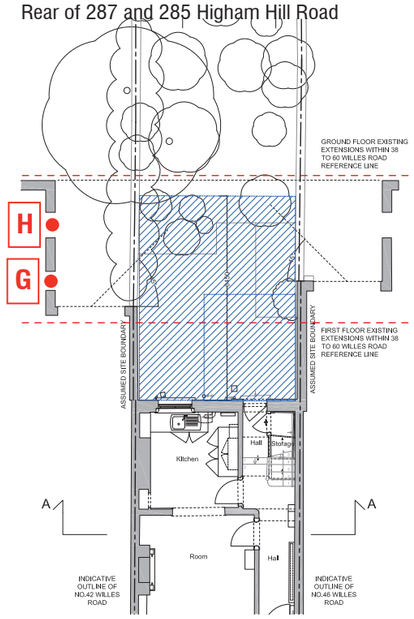
Reference	Use Class	Before	After	Loss	Ratio
Test Point		Vertical Sky Component			
Window A	Habitable	37.2 %	35.6 %	1.6 %	0.95 %
Window B	Habitable	23.6 %	20.1 %	3.5 %	0.85 %
Window C	Habitable	30.9 %	27 %	3.9 %	0.87 %
Window D	Habitable	26.8 %	21.8 %	5 %	0.81 %
Window E	Habitable	39.4 %	37.8 %	1.6 %	0.96 %
Window F	Habitable	25.9 %	22.3 %	3.6 %	0.86 %
Window G	Habitable	25.6 %	21.3 %	4.3 %	0.83 %
Window H	Habitable	25.6 %	22.6 %	3 %	0.88 %

Rear Elevation - 42, 44 and 46 Willes Road

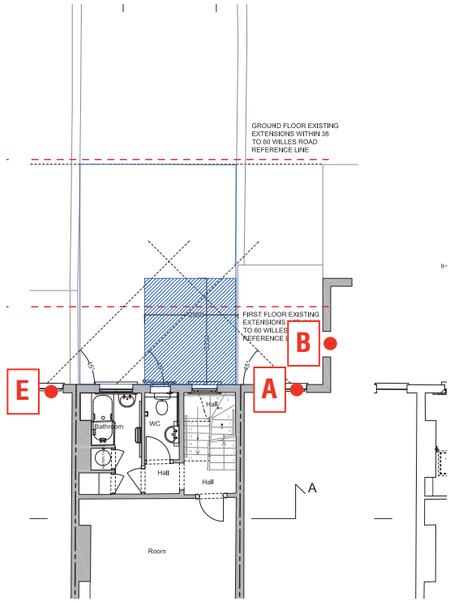


Side Elevation - 42 Willes Road

Rear of 287 and 285 Higham Hill Road



Ground floor plan - 42, 44 and 46 Willes Road



First floor plan - 42, 44 and 46 Willes Road

3.0 Overshadowing analysis

3.1 Overshadowing to Amenity Spaces and Areas of Permanent Shadow

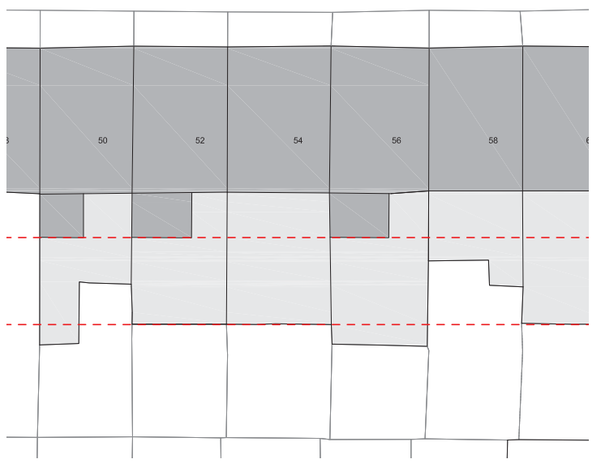
The BRE document, “Site Layout Planning for Daylight and Sunlight” (Littlefair BRE 1991) provides criteria for open spaces. In particular it gives guidance for calculating any areas of open amenity space that may be in permanent shadow on 21 March.

“It is suggested that, for it to appear adequately sunlit throughout the year, no more than two-fifths and preferably no more than a quarter of any garden or amenity should be prevented from receiving any sun at all on 21 March.”

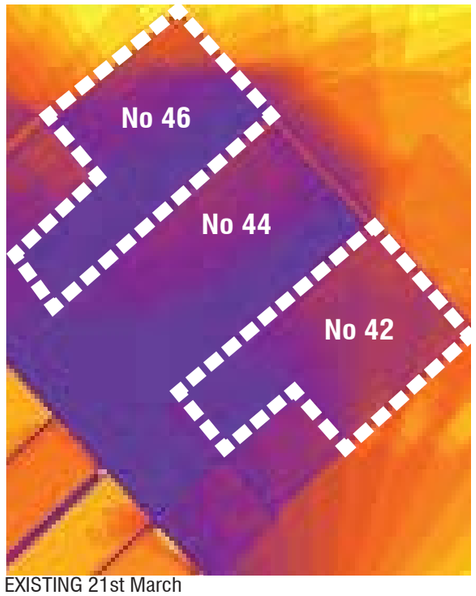
For 21 March shadows have been therefore been plotted at half hour intervals and overlaid to create maps that show total shadow hours. In accordance with BRE guidance, sunlight at an altitude of 10 degrees or less is discounted. Those areas that are in permanent shadow have been plotted within the development to allow analysis of overshadowing to gardens. The impact of the proposed development on the overshadowing of areas outside the site boundary has been considered by establishing where additional shadow hours have been created.

3.2 Shadow Hour Analysis

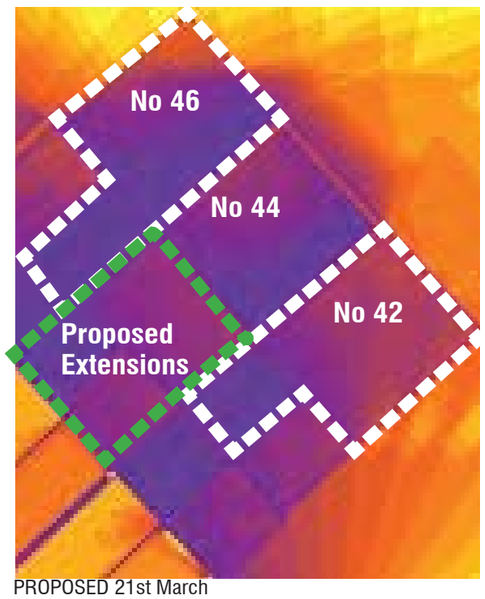
The results of the shadow tests show that the scheme does not harmfully impact on neighbouring amenity and that no additional shadowing is created.



Site Plan - Willes road

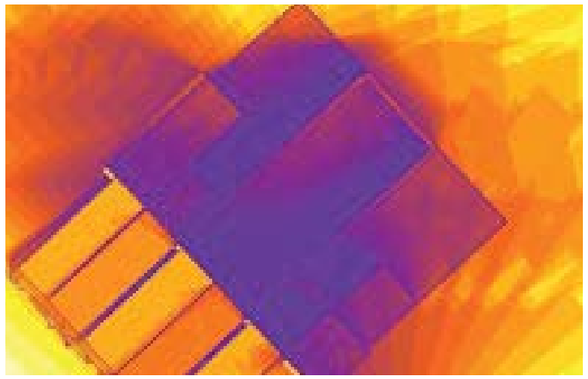


EXISTING 21st March

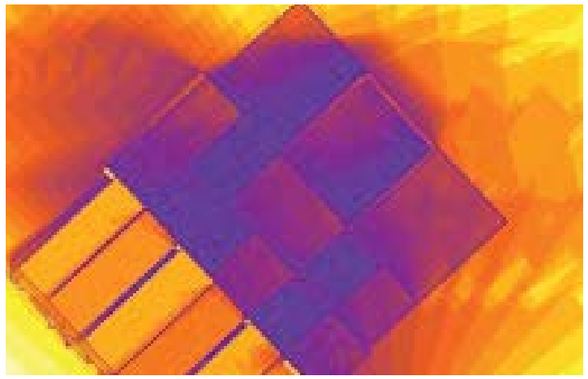


PROPOSED 21st March

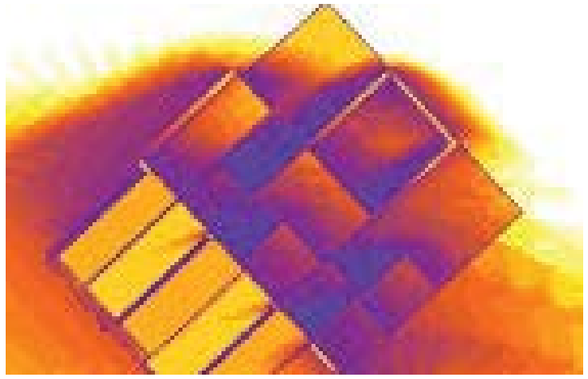
EXISTING



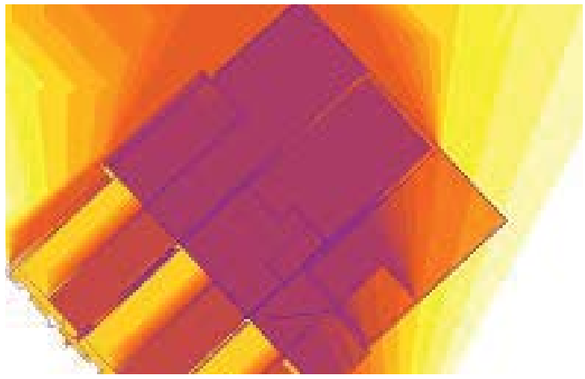
PROPOSED

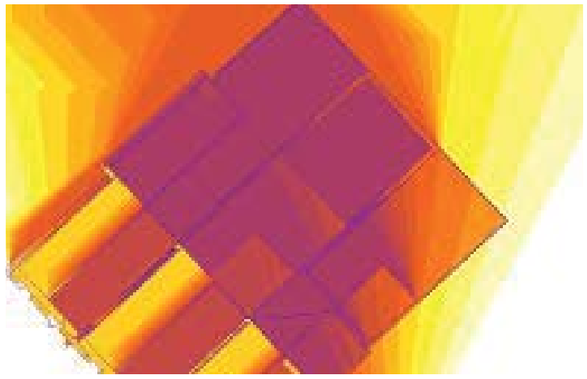


Spring/Autumn Equinox 21st March / 21st Sept



Summer Solstice 21st June





Winter Solstice 21st December