



**Flat 1, 72 Colham Avenue  
West Drayton**

## **Daylight and Sunlight Assessment**

## Document Issue Record

This document has been revised and issued as below:

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|       |            |          |             |            |

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Calculations are based on the drawings and information provided to us, which have been accepted in good faith as being accurate and valid. The accuracy of this information may have an impact on any daylight, sunlight, or overshadowing assessments carried out.

We have used our best endeavours to ensure that all relevant windows and features of the proposed development and surrounding buildings have been identified.

We can make no guarantee as to the status (successful/unsuccessful) of the planning application following the submission of our report.

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## 1.0 Executive Summary

A daylight and sunlight assessment has been carried out for the proposed new layout of Flat 1, 72 Colham Avenue, West Drayton. This report outlines the results of the assessment in order to assist with the developments planning application.

Calculations have been based on the drawings and information provided to us by the client / architect, internet and OS mapping sources, and publicly available planning records, which have been accepted in good faith as being accurate and valid. The accuracy of this information may have an impact on the daylight and sunlight assessments carried out.

The methodology used for this assessment follows the most recognised guidance document for daylight and sunlight within dwellings and is titled 'Site Layout Planning for Daylight and Sunlight - A Guide to Good Practice' *Second Edition 2011*; by Paul Littlefair and is published by the Building Research Establishment (BRE).

This report has investigated the natural light received by the proposed flats habitable rooms, as well as the amount of direct sunlight received by the main living area. The following daylight and sunlight assessments have been carried out with the use of computer modelling software in order to provide the most accurate results possible.

- Average Daylight Factors
- Annual and Winter Probable Sunlight Hours Received

The average daylight factor results show that the proposed habitable rooms within the flat will meet the minimum required average daylight factor targets. As such, we can say that it would receive a good amount of natural daylight and therefore should be considered as acceptable overall in terms of natural daylight received.

The sunlight assessment results show that the proposed living room will have at least one window that faces within 90° of due south, the room will also receive greater than 25% of the Annual Probable Sunlight Hours and greater than 5% within the winter months. Therefore, the proposed living room will receive a sufficient amount of sunlight and should be considered as acceptable.

## 2.0 Introduction

EEABS (Elmstead Energy Assessments & Building Services) were instructed to undertake a daylight and sunlight assessment for the proposed new layout of Flat 1, 72 Colham Avenue, West Drayton.

The key elements of this report are:

- To review the relevant guidance and methodology with respect to daylight and sunlight that relate to the development.
- Calculate the proposed average daylight factor values within the main habitable rooms of the development.
- Calculate the amount of sunlight to the main living room of the development.
- To summarise and compare the findings against regulation guidelines for daylight and sunlight within new properties.

## 2.1 The Site and Development Proposal

The site is located at 72 Colham Avenue, West Drayton and can be seen outlined in red on the satellite image below.

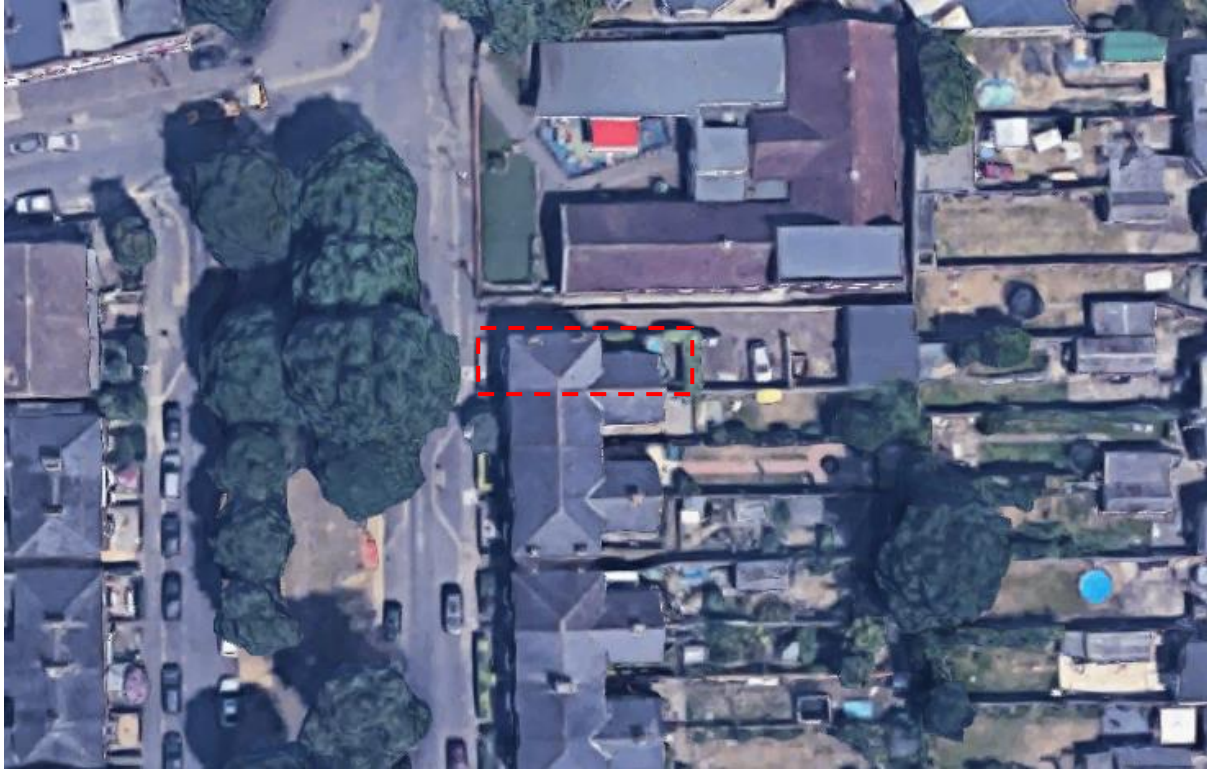


**Figure 1 - Satellite Image of 72 Colham Avenue, West Drayton**

The proposal is for internal configurations to provide a new bedroom area within the basement, and on the ground floor a main living area at the front of the property & dining room to the rear. This assessment has investigated the daylight received within the proposed habitable rooms, as well as the amount of sunlight received by the main living space.

Floor plans, elevations and sections of the existing and proposed schemes can be seen in figures 2 and 3 below.



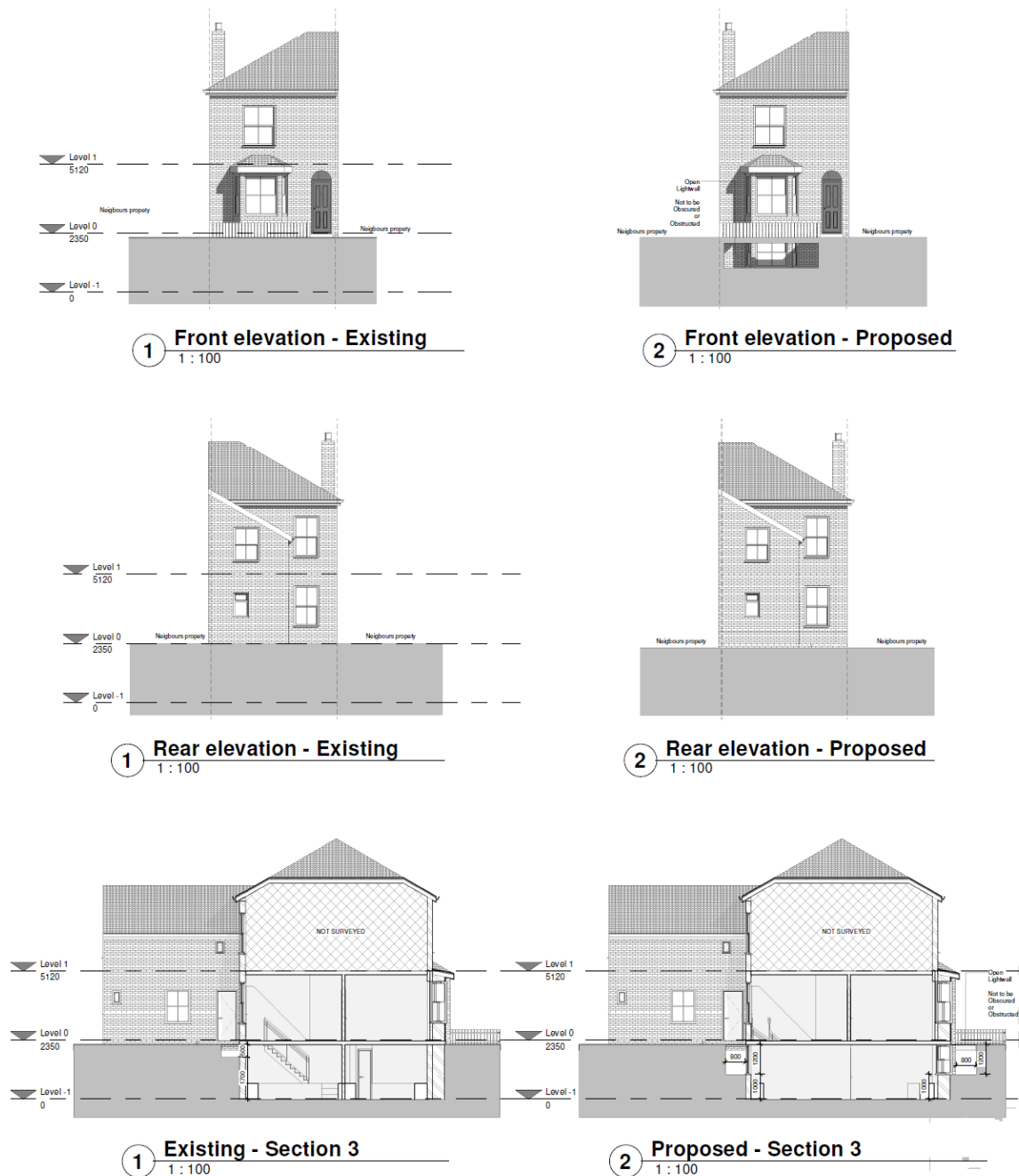


**Figure 3 - Existing and Proposed Elevations & Sections**

This assessment has been based on the drawings and information provided to us by the client / architect, internet and OS mapping sources, and publicly available planning records. A drawing register can be found within Appendix A.

## 2.2 Planning Policy and Guidance

The most recognised guidance document for natural light within dwellings is titled 'Site Layout Planning for Daylight and Sunlight - A Guide to Good Practice' *Second Edition 2011*; by Paul Littlefair and is published by the Building Research Establishment.

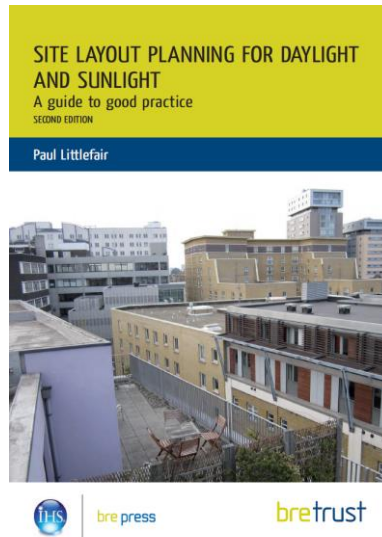


**Figure 4 - BRE: Site Layout Planning for Daylight and Sunlight - A Guide to Good Practice**

Although the BRE guide clearly states that its recommendations are not mandatory and the document should not be considered as an instrument of planning policy, it can be used in conjunction with the British Standard BS 8206-2:2008, Lighting for Buildings - Part 2: Code of Practice for Daylighting.

While the BRE Guidelines are the most recognised document for natural light within dwellings they also do state that:

*"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the guide 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 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."*

Absent of any particular planning requirements for daylight or sunlight, the methodology and target benchmarks set out within the BRE guide have been used to assess the daylight and sunlight received.

Any trees located close to proposed development have been excluded from the model as recommended by the BRE Guide, which states:

*"Normally trees and shrubs need not be included, partly because their shapes are almost impossible to predict, and partly because the dappled shade of a tree is more pleasant than the deep shadow of a building"*

## 2.3 Methodology

The following methodology and calculations set out within the BRE Guide 'Site Layout Planning for Daylight and Sunlight - A Guide to Good Practice' *Second Edition 2011* were used to carry out the daylight and sunlight assessments for the flat.

### 2.3.1 Daylight

#### Average Daylight Factor

The BRE Guidance states that daylight provision for new rooms may be checked using the average daylight factor.

2.1.8 Daylight provision in new rooms may be checked using the average daylight factor (ADF).

Figure 5 - BRE Guidance for Daylight Provision in New Rooms

The average daylight factor is the ratio of the average illuminance on the working plane in a room, divided by the outside illuminance on a horizontal surface under a CIE overcast sky.

The ratio is usually expressed as a percentage and guidance for adequate levels of daylight are laid out within the British Standard BS 8206-2:2008, Lighting for Buildings - Part 2: Code of Practice for Daylighting and referenced within the BRE guide.

| Room type    | Minimum average daylight factor<br>% |
|--------------|--------------------------------------|
| Bedrooms     | 1                                    |
| Living rooms | 1.5                                  |
| Kitchens     | 2                                    |

Figure 6 - BS 8206-2:2008 Minimum Average Daylight Factors

For a room to be considered as having a good average daylight factor it should meet the minimum values stated above.

### 2.3.2 Sunlight

#### Annual Probable Sunlight Hours

To determine if an adequate amount of sunlight is achieved within a room the following criteria needs to be met. At least one main window wall should face within 90° of due south and at least one window should receive at least 25% of annual probable sunlight hours, including at least 5% of annual probable sunlight hours in the winter months between 21<sup>st</sup> September and 21<sup>st</sup> March.

The term Annual probable sunlight hours means the total amount of hours during a year in which direct sunlight will reach the ground. The winter annual probable sunlight hours are the same thing but only during 21<sup>st</sup> September to 21<sup>st</sup> March.

The BRE guide states that the above guidance is to be applied for living room windows only.

### 3.0 Dynamic Simulation Modelling

EDSL TAS Dynamic Simulation Modelling software was used to carry out the daylight calculations, as this can provide a more accurate means of assessment over the 'by hand' indicator methods outlined within the BRE guide.

The daylight calculations are carried out under a standard CIE overcast sky. The sunlight calculations used current CIBSE London Weather Data.

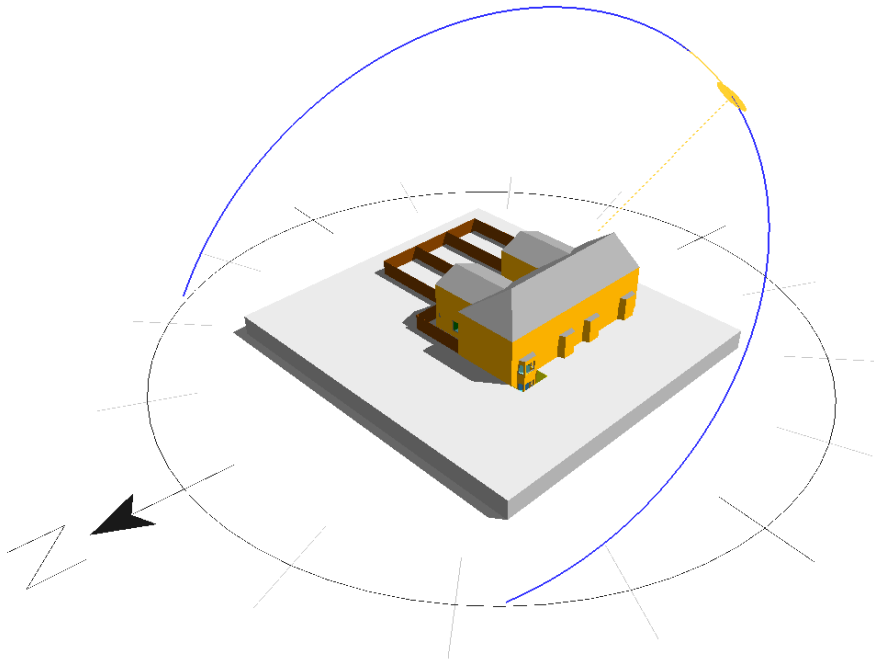


Figure 7 - EDSL TAS Computer Model of the Site

## 4.0 Daylight Assessment

### 4.1 Average Daylight Factor

For the average daylight factor calculation, the windows were assumed to be clear double glazing with a light transmittance value of 0.80. The working plane height was assumed to be 0.85m.

| Floor        | Room        | Minimum Average Daylight Factor (%) | Calculated Average Daylight Factor (%) | Result |
|--------------|-------------|-------------------------------------|----------------------------------------|--------|
| Basement     | Bedroom     | 1.00                                | 1.00                                   | Pass   |
| Ground Floor | Living Room | 1.50                                | 4.23                                   | Pass   |
|              | Kitchen     | 2.00                                | 2.00                                   | Pass   |

The average daylight factor results show that the proposed habitable rooms within the flat will meet the minimum required average daylight factor targets. As such, we can say that it would receive a good amount of natural daylight and therefore should be considered as acceptable overall in terms of natural daylight received.

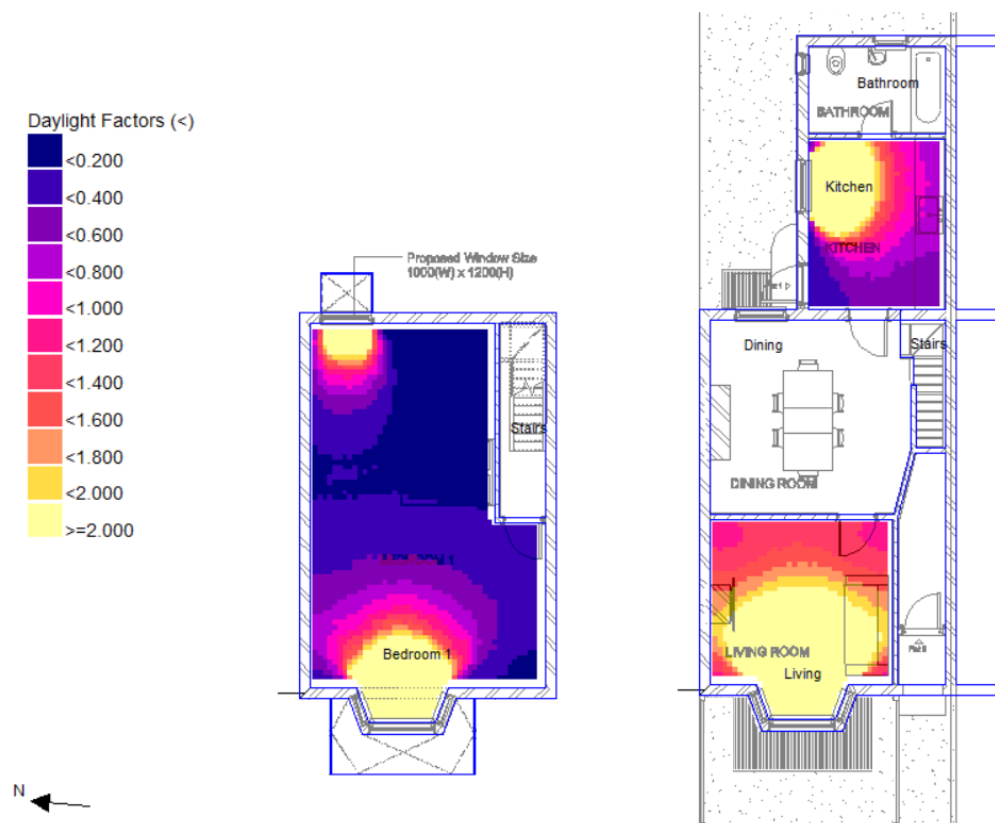


Figure 8 - Average Daylight Factor Plot of the Basement and Ground Floors

## 5.0 Sunlight Assessment

The main living space of the proposed flat has also had its amount of annual and winter sunlight hours received assessed.

### 5.1 Annual Probable Sunlight Hours

The results can be seen in the table below.

| Room        | Annual Probable Sunlight Hours (%) | Result | Winter Probable Sunlight Hours (%) | Result |
|-------------|------------------------------------|--------|------------------------------------|--------|
| Living Room | 48                                 | Pass   | 14                                 | Pass   |

The sunlight assessment results show that the proposed living room will have at least one window that faces within 90° of due south, the room will also receive greater than 25% of the Annual Probable Sunlight Hours and greater than 5% within the winter months. Therefore, the proposed living room will receive a sufficient amount of sunlight and should be considered as acceptable.

## Appendix A - Drawing Register

| Drawing No. | Drawing Title                             |
|-------------|-------------------------------------------|
| A101 + A201 | Existing and Proposed Basement Floor Plan |
| A102 + A202 | Existing and Proposed Ground Floor Plan   |
| A103 + A203 | Existing and Proposed First Floor Plan    |
| A104 + A204 | Existing and Proposed Roof Plan           |
| A105 + A205 | Existing and Proposed Section 1           |
| A106 + A206 | Existing and Proposed Section 2           |
| A107 + A207 | Existing and Proposed Section 3           |
| A108 + A208 | Existing and Proposed Front Elevation     |
| A109 + A209 | Existing and Proposed Rear Elevation      |
| A110 + A210 | Existing and Proposed East Elevation      |
| A111 + A211 | Existing and Proposed West Elevation      |