# 15 Winterton Way, Shoreham-by-Sea

# Daylight Impact Assessment

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**Revision Schedule**

| Revision No. | Date | Details of Change |
|---|---|---|
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## 1.0 Introduction

Impact Sustainability Ltd has been instructed by Mr. C Barnes to prepare a daylight impact assessment for the proposed extension to 15 Winterton Way, Shoreham-by-Sea.

The proposed extension involves an increase to the ridge height of the roof, the addition of a dormer to each side of the pitched roof and single storey extensions to both the East and West elevations.

Directly to the South of the property is the neighboring property at 2 The Marlinspike. This property has a North facing window that faces out onto the side elevation of 15 Winterton Way, with a fence in between the two properties. It is understood there is concern from the Local Authority that the proposed extension works may adversely impact the daylight amenity to the room that this window serves. A daylight impact assessment has therefore been undertaken to determine the likely impact of the proposed extension to daylight levels within this room.

## 2.0 Assessment Method & Criteria

### 2.1 Average Daylight Factor

The Building Research Establishment (BRE) Guide to Site Layout Planning for Daylight and Sunlight 2011 recommends average daylight factors (ADF) that should be achieved in occupied spaces. Section 2.1.8 of this document provides detailed criteria for dwellings and references the BS 8206-2 requirement as follows:

*"The average daylight factor is used as the measure of general illumination from skylight. It is considered good practice to ensure that rooms in dwellings and in most other buildings have a predominantly daylit appearance. In order to achieve this the average daylight factor should be at least 2%.*

The ADF is the ratio of average illuminance on the working plane in a room (0.85m in residential buildings) to the illuminance on an outside, unobstructed horizontal surface, expressed as a percentage. The ADF uses the standard CIE overcast sky and is based upon conditions on 21st September.

Typically, when assessing the potential impact of daylight amenity on the window of an adjacent property the Vertical Sky Component (VSC) method is used. The VSC is the amount of skylight that reaches the window expressed as a percentage of direct sky light that reaches an unobstructed horizontal plane (the ground). In this way it is similar to an ADF assessment, but on the vertical window rather than on the room itself. However, this approach is generally adopted where the dimensions of the room in question cannot be established. In this case architect was previously involved in an extension to 2 The Marlinspike and so as built plan and elevation drawings were available. It has therefore been possible to complete an ADF assessment on the room, which is a better measure of daylight impact than a VSC assessment.

An internal daylight ADF calculations has been undertaken upon the adjacent room for both the existing and proposed scenarios.

## 2.2 3D Model

A 3D model of both the existing and proposed property has been constructed in IES VE and these are shown in figures 2.1 and 2.2. These models have been constructed based upon plan, section and elevation drawings provided by the ABIR Architects. Within the IES Radiance software the location has been set to Brighton, which is the closest location for which sun path data is available. Internal surfaces are assumed to be painted white, with a light grey carpet and all glazing is assumed to have a visible light transmittance factor of 0.7.

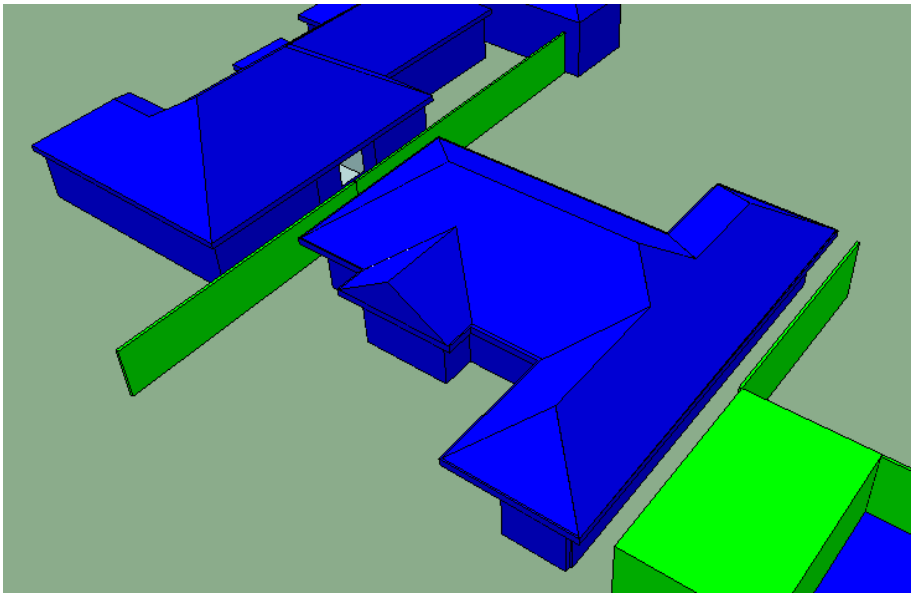


**Figure 2.1 Axonometric view of the existing building**

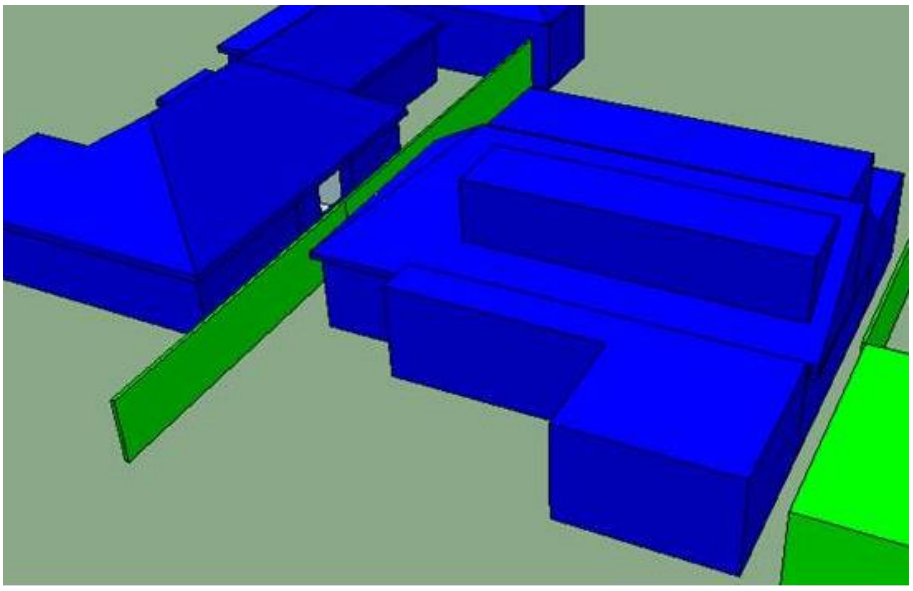


**Figure 3.2 Axonometric view of the proposed building**

## 3.0 Results

The average daylight factors (ADF) within the adjacent living room (thought to be a bedroom) as existing and with the proposed extension in place are presented in Table 3.1. The results clearly show that the existing daylight amenity in the room is just above the recommended minimum level. The change in ADF with the proposed extension in place is less than 1% of the existing value, and the ADFG within the room remains above 2%.

| Property | Existing ADF | Proposed ADF | Recommended ADF | BRE criteria met? | % Reduction in Daylight Amenity (absolute) |
|---|---|---|---|---|---|
| 2 The Marlinspike | 2.06% | 2.04% | 2.00% | YES | 0.97% |

**Table 3.1 Results of internal daylight calculations**

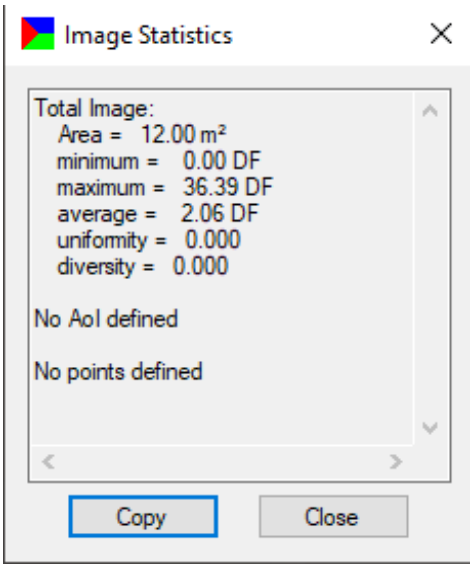
## 4.0 Conclusion

The results of the ADF calculation clearly demonstrate that there will be no noticeable change to the daylight amenity within the adjacent property's living room with the proposed extension in place. The reduction in daylight amenity is on average less than 1% of the existing level, with the ADF remaining above the recommended 2%.

## 5.0 Appendix 1- Daylight calculation image

### 5.1 Existing






### 5.2 Proposed

