

**Sunlight**  
Assessments UK

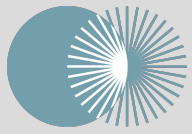
# Scheme Performance

Project address: The Mill Kirklington Bedale, North Yorkshire DL8 2LT

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**Designer/Architects Jonathan Green Architectural Design**





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# 1. Introduction

- 1.1 Sunlight Assessments UK have been instructed to assess the daylight and sunlight of the proposed development of The Mill Kirklington Bedale, North Yorkshire DL8 2LT.
- 1.2 The report relates to the proposed Scheme, the LPA has highlighted a concern regarding daylight in the bedrooms on the ground floor. For the purposes of this report the daylight simulation has been modelled with the surrounding trees in full leaf to provide a worst-case scenario.
- 1.3 The Local Authority will be informed in this by the BRE document entitled 'Site layout planning for daylight and sunlight: a guide to good practice' (BR209 2022). This document is the principal guidance in this area and sets out the methodology for measuring light and recommends what it considers to be permitted or unobtrusive levels of change.
- 1.4 The BRE guidelines are not mandatory, though local planning authorities and planning inspectors will consider the suitability of a proposed scheme for a site within the context of BRE guidance. Consideration will be given to the urban context within which a scheme is located, and the daylight and sunlight will be one of several planning considerations which the local authority will weigh.

## Sources of Information

- 1.5 In the process of compiling this report, the following sources of information have been used:

### **Ordnance Survey Data**

OS Map

**Proposed drawings in Appendix 1**

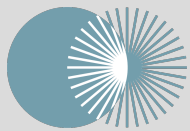


## 2. Methodology

- 2.1 This Daylight and Sunlight Assessments report focuses on the internal scheme performance of which there are several different metrics to assess:

### Interior Daylighting (*Spatial Daylight Autonomy SDA*)

- 2.2 The BRE guide recommends that interior daylighting is checked using the daylight provision test set out in BS EN 17037. The test measures both the amount of daylight, as well as the distribution of daylight within a room. The test is applied to habitable rooms within domestic properties. A kitchen is generally deemed to be a habitable room if it is large enough to accommodate a dining area. If the kitchen is small, or if the property has a separate dining area, then the accepted practice is to treat the kitchen as a non-habitable room. The assessment is carried out using a grid of points on a horizontal reference plane in each room. In accordance with the BRE recommendations, we have set the reference plane at 850mm above the floor and have excluded assessment points from a 0.3m wide band around the perimeter of each room.
- 2.3 The UK National Annex to BS EN 17037 gives UK specific minimum illuminance recommendations which we have set as the targets for this project. The target comprises of 100 lux in bedrooms, 150 lux in living rooms and 200 lux in kitchens to be exceeded over at least 50% of the reference plane. Where a room has a shared use, the highest target should apply. However, the guide states that local authorities could use discretion here. For example, the target for a living room could be used for a combined living/dining/kitchen area if the kitchens are not treated as habitable spaces, as it may avoid small separate kitchens in a design.
- 2.4 The data in Appendix 2 sets out the percentage of the reference plane that meets the relevant lux target for the given room use the median illuminance (lux) achieved for each room is also presented. Where the median illuminance exceeds the lux target, this means the lux target has been achieved over at least 50% of the assessment grid. The daylight provision test may be carried out using either the daylight factor method, or the interior illuminance method. For the purpose of this assessment, we have adopted the daylight factor method. Using the conversion table set out in the BRE guide, we have expressed the results in terms of lux.



- 2.5 Since the assessment is based on a computer simulation, it is necessary to set various surface reflectance values. By example, a 0.6 reflectance means that 60% of the light hitting the surface will be reflected. For the purpose of this assessment, we have assumed the following reflectance's.

Surface	Reflectance
Interior walls	0.7
Window reveals	0.7
Ceilings	0.8
Floors	0.45
Exterior walls and obstructions	0.2
Exterior ground	0.2
Exterior glazing	0.064

### Exposure to Sunlight

- 2.6 The BRE guide states that the main requirement for sunlight is in living rooms, where it is valued at any time of day but especially in the afternoon. Sunlight is also required in conservatories. It is viewed as less important in bedrooms and in kitchens, where people prefer it in the morning rather than the afternoon.
- 2.7 The BRE guide states that, in general, a dwelling will appear reasonably sunlit provided:
- at least one main window wall faces within 90 degrees of due south, and
  - a habitable room, preferably a main living room, can receive a total of at least 1.5 hours of sunlight on 21 March.
- 2.8 Scheme Performance tests in this report:

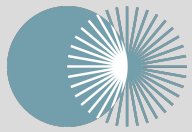
#### Interior Daylighting

Spatial Daylight Autonomy (SDA)

within all habitable rooms of a proposed development.

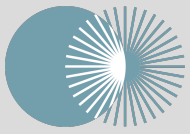
Exposure to Sunlight

*Sunlight Exposure (SE)* for the same rooms tested for daylight access.



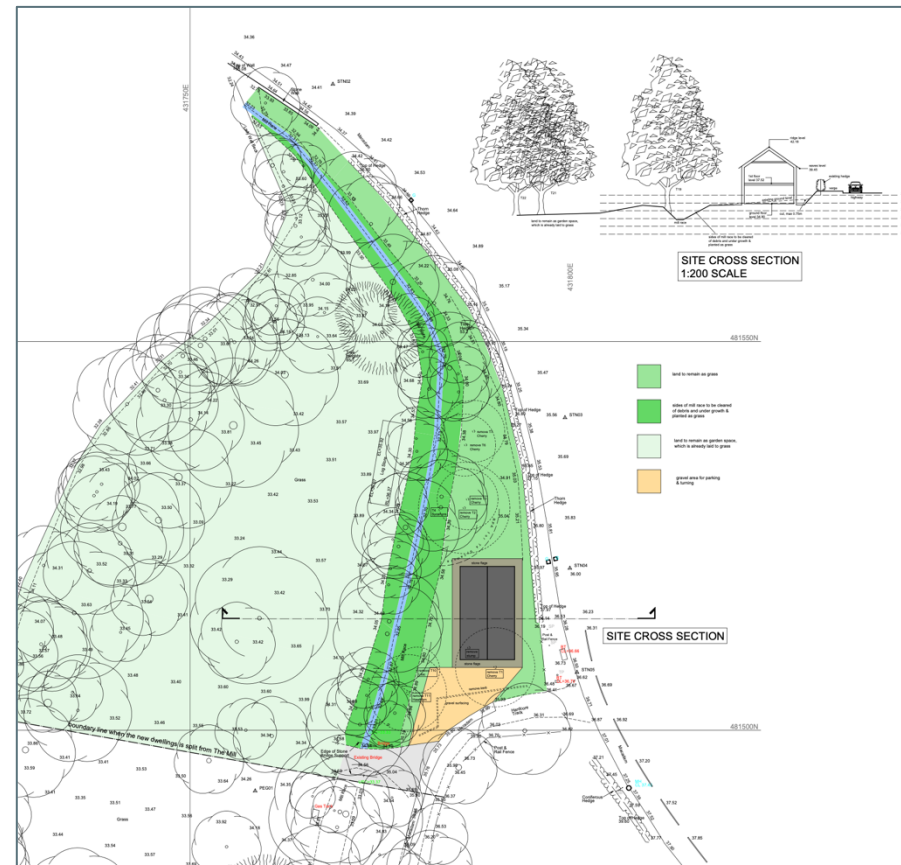
## 3. Standard Survey Limitations

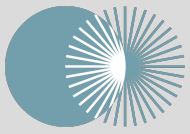
- 3.1 Although we have undertaken as detailed an inspection as possible, we are required by our professional indemnity insurers to notify you that our report is based upon the Standard Terms and Conditions. Our understanding of the proposed development is informed in the drawings in appendix 1 and information supplied by Jonathan Green Architectural Design.



# 4. The Site

4.1 The site is located at The Mill Kirklington Bedale, North Yorkshire DL8 2LT.

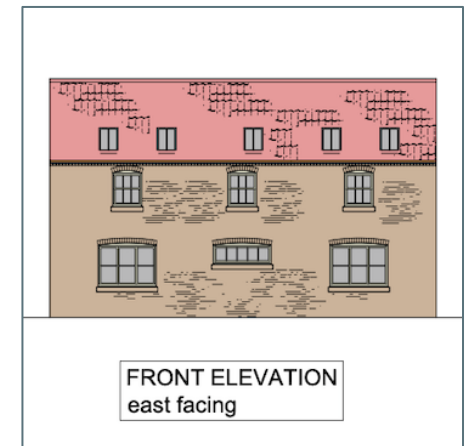
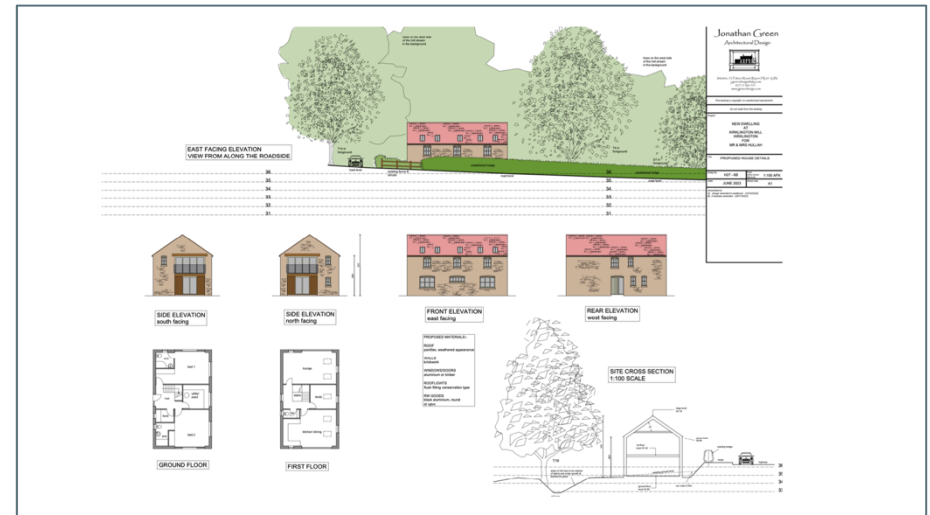




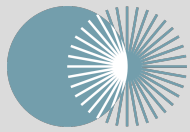
## 5. The Proposal

### To build new 2-bedroom residential house.

- 5.1 Our understanding of the proposed development is illustrated in drawings, located within Appendix 1.
- 5.2 Jonathan Green Architectural Design has provided floorplans and elevations.







## 6. Assessment Results

- 6.1 The proposed house has been internally assessed for SDA and SE.

### Interior Daylighting, Spatial Daylight Autonomy (SDA)

- 6.2 The results show that all rooms comply and are within the BRE (BR209 2022).

### Sunlight Exposure (SE)

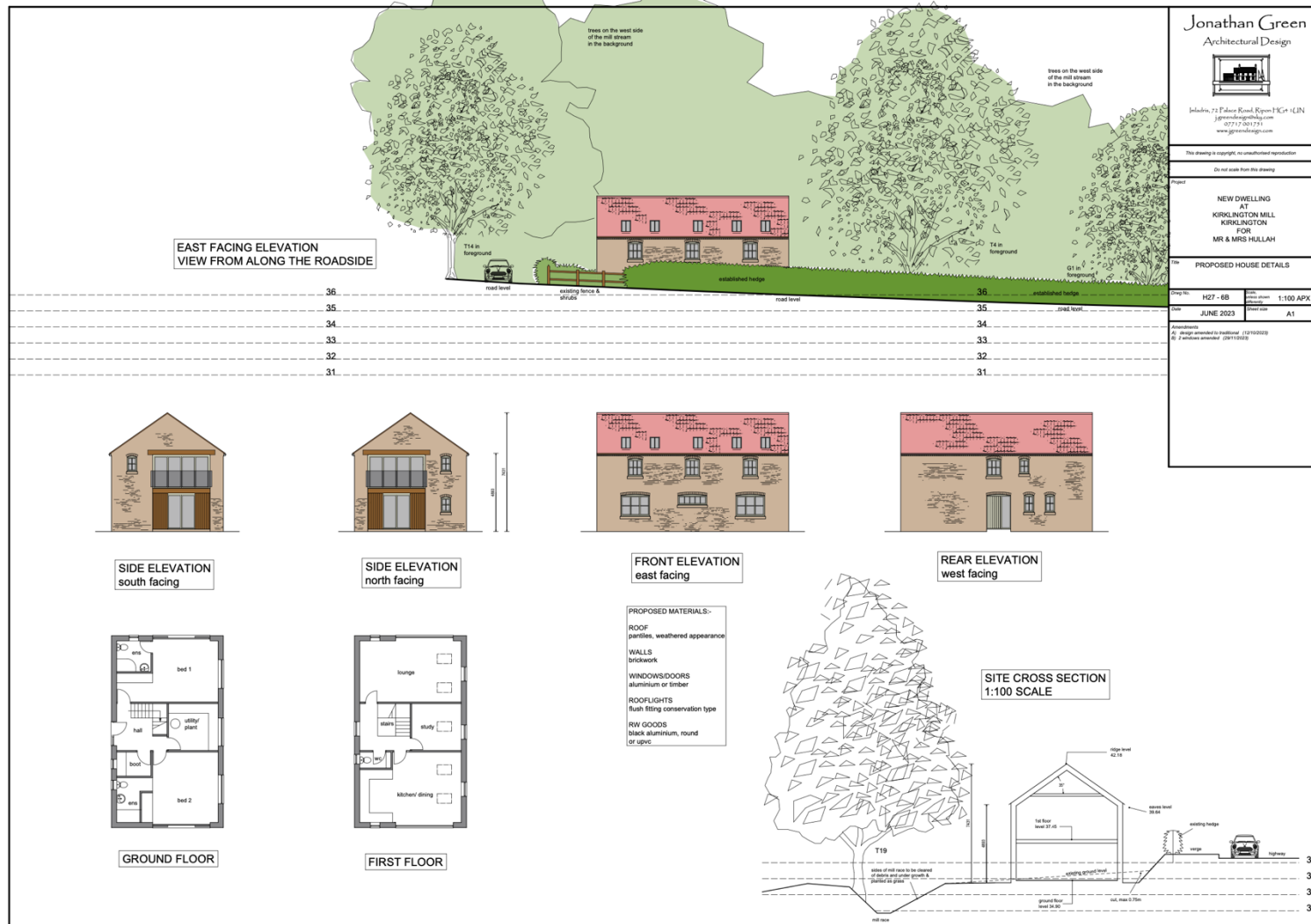
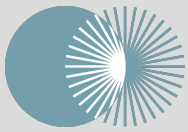
- 6.3 Requirements within BRE (BR209 2022) recommends that at least one habitable room (living room, bedroom, nursery or kitchen) in a whole dwelling should comply with the guidance.
- 6.4 The results show at least one habitable room in the proposed house receives the required level of sunlight exposure and therefore complies with the BRE (BR209 2022) guidance.



## 7. Conclusion

- 7.1 The daylight and sunlight to the bedrooms on the ground floor of the proposed house all comply with the BRE (BR209 2022) guidance.
- 7.2 We therefore conclude that the Proposed Development in relation to daylight and sunlight are BRE (BR209 2022) compliant and we have identified no grounds for rejection of this application in terms of daylight and sunlight to internal habitable rooms.

Drawings



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Project  
**NEW DWELLING  
AT  
KIRKINGTON MILL  
KIRKINGTON  
FOR  
MR & MRS HULLAH**

Site  
**PROPOSED HOUSE DETAILS**

Drawn by  
**MZ7 - GB**

Scale  
**1:100 APX**

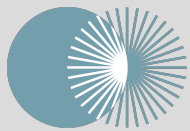
Date  
**JUNE 2023**

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Annotations  
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# Appendix 2:

Technical Analysis

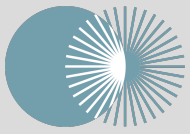


### Interior Daylighting, Spatial Daylight Autonomy (SDA)

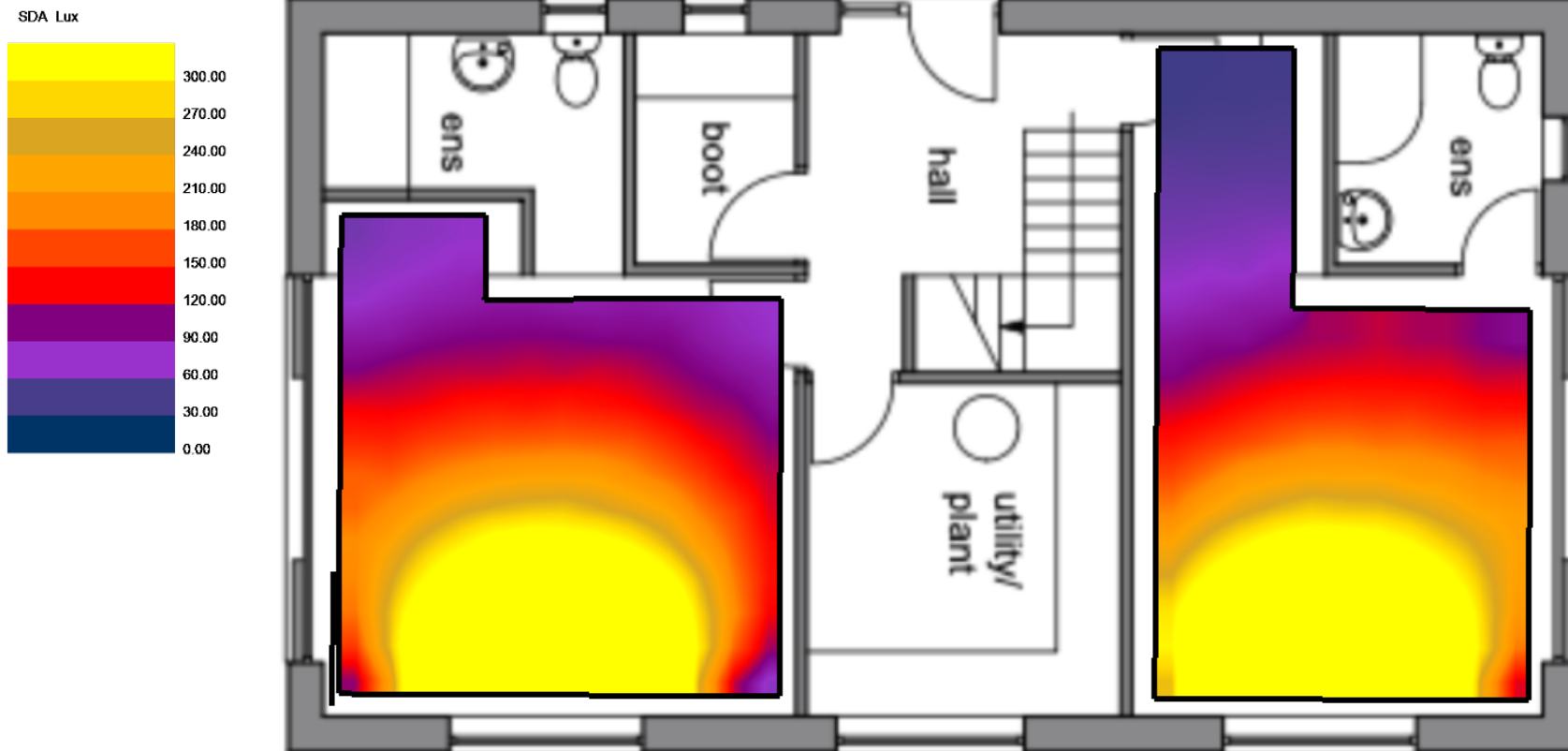
Building Ref	Floor Ref	Room Ref	Room Use	Room Area	Effective Area	Median Lux	Area Meeting Req Lux	% of Area Meeting Req Lux	Req Lux	Req % of Space	Req % of Hours	Occupied Hours	Test
The Mill	Ground	R1	Bedroom	19.295906	14.12	156.00	10.16	72%	100.00	50%	50%	4380	PASS
The Mill	Ground	R2	Bedroom	19.638192	13.89	170.00	10.07	73%	100.00	50%	50%	4380	PASS

### Sunlight Exposure (SE)

Building Ref	Floor Ref	Room Ref	Room Use	Window Ref	Window Orientation	Proposed SE (Hours)	Rating
The Mill	Ground	R1	Bedroom	The Mill_Ground_W1	181°	9.4	
The Mill	Ground	R1	Bedroom	The Mill_Ground_W2	91°	4.8	
						9.4	High
The Mill	Ground	R2	Bedroom	The Mill_Ground_W3	91°	4.8	
The Mill	Ground	R2	Bedroom	The Mill_Ground_W4	1°N	0	
						4.8	High
							PASS



### Proposed Lux levels in ground floor bedrooms (PASS)



Sunlight Assessments UK Ltd

