

Sunlight
Assessments UK

Solar Panel neighbour impact assessment

Impact Assessment

Site address: 16 St Mildreds Rd, Chelmsford

Impact address: 14 St Mildreds Rd, Chelmsford

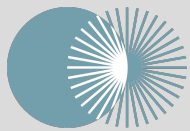
Designer/Architects Agency of Architecture





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1. Introduction

- 1.1 Sunlight Assessments UK have been instructed to assess the daylight and sunlight of the proposed redevelopment of 16 St Mildreds Rd, Chelmsford.
- 1.2 The report relates to the proposed Scheme presented by Agency of Architecture, and provides detailed technical support regarding the potential impact to the daylight and sunlight of 14 St Mildreds Rd, Chelmsford.
- 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.
- 1.5 The neighbour at No. 14 raised objections speculating that the proposed development would impact the viability of solar panels install on the roof of No. 14. The BRE gives guidance on overshadowing of solar panels, in this report we have addressed these concerns and analysed the impact in line with the BRE recommended tests which are: Annual Probable Sunlight Hours, we have also tested the impact on the side windows and rear conservatory.

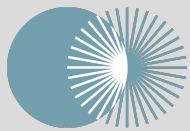
Sources of Information

- 1.6 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

Effect on daylight

Vertical Sky Component (VSC), to surrounding properties.

BRE guidance summary on daylight:

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

- the VSC measured at the centre of an existing main window is less than 27%, and less than 0.80 times its former value.

the area of the working plane in a room which can receive direct skylight is reduced to less than 0.80 times its former value.

Effect on sunlight

Annual probable sunlight hours (APSH), to surrounding properties.

BRE guidance summary on sunlight:

3.2.13 If a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sun lighting of the existing dwelling may be adversely affected. This will be the case if the centre of the window:

- values less than 25% of annual probable sunlight hours and less than 0.80 times its former annual value; or less than 5% of annual probable sunlight hours between 21 September and 21 March and less than 0.80 times its former value during that period.

and also has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

Effect on solar panels

Annual probable sunlight hours (APSH), to surrounding solar panels.

BRE guidance summary on solar panels

4.5.8 Where the Annual Probable Sunlight Hours received by a solar panel with the new development in place is less than 0.90 times the value before, a more detailed calculation of the loss of solar radiation should be undertaken. This is a specialist type of assessment and expert advice should be sought. The assessment should include both direct solar and diffuse sky radiation; over a whole year, around 60% of the radiation received on a horizontal roof comes from the sky. However, reflected radiation from the ground and obstructions need not be included. The modelling should take account of the effects of cloud in reducing direct solar radiation at different times of year and include a realistic simulation of the way that incoming solar radiation varies from different parts of the sky.



3. Standard Survey Limitations

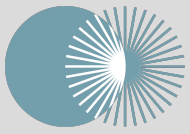
- 3.1 Although we have undertaken as detailed an inspection as possible, we are required by our professional indemnity insurers to notify you that our report is based upon the Standard Terms and Conditions. Our understanding of the proposed development is informed in the drawings in appendix 1 and information supplied by Agency of Architecture.
- 3.2 In addition to our standard limitations the following limitations and assumptions also apply:
- Best estimates were made in establishing building use (residential or commercial) and room uses; generally, these were made from external observations and recourse to planning records where available.
 - Where floor plans of surrounding properties were not available, room depths have been assumed from external observations. Where no indicators of room depth were available a standard of 4m, 6m or 8m depths have been used.



4. The Site

4.1 The site is located at 16 St Mildreds Rd, Chelmsford.

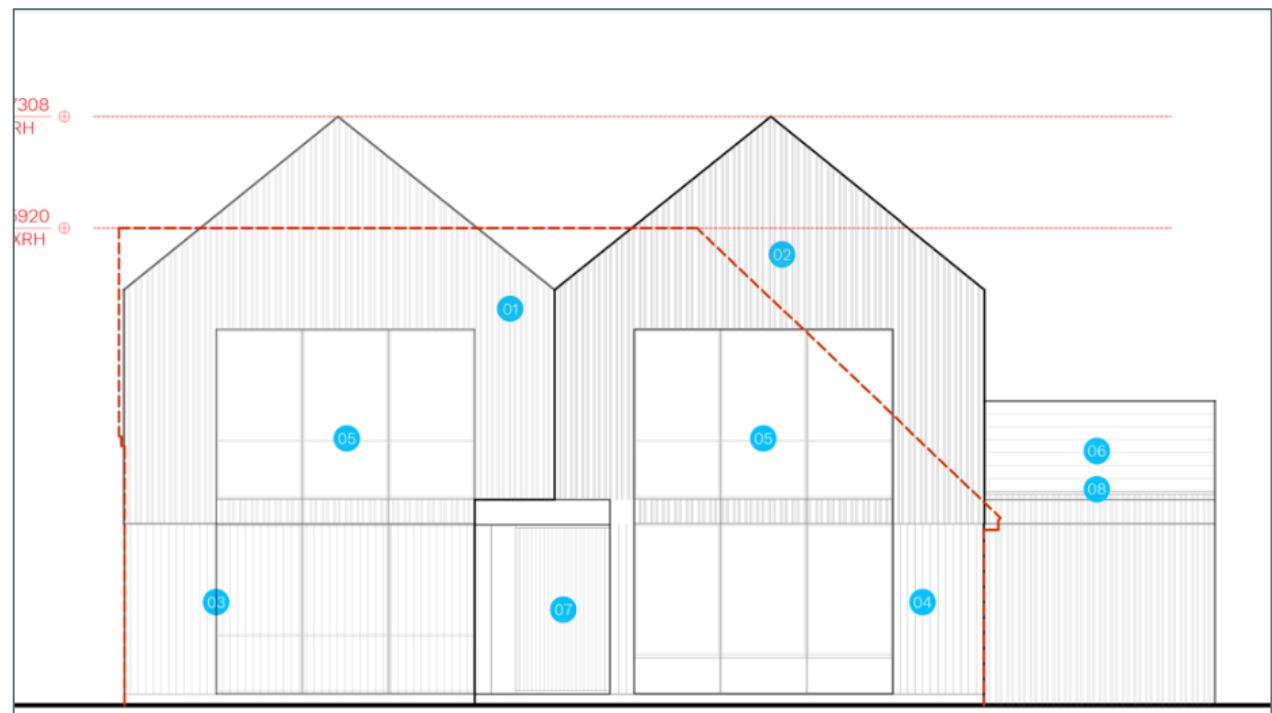




5. The Proposal

PROPOSED DEVELOPMENT

- 5.1 Our understanding of the proposed new build is illustrated in the drawings, located within Appendix 1.
- 5.2 Agency of Architecture has provided floorplans and elevations.

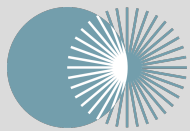




6. Impact on the Surrounding Properties

- 6.1 Due to the proximity to the site, we have assessed the side windows of and roof of 14 St Mildreds Rd, Chelmsford.
- 6.2 This residential property is located adjacent to the Site.
- 6.3 The location of this properties is highlighted in the map:
- 6.4 For the purposes of this report, we have analysed the whole roof for solar panels.





7. Assessment Results

Vertical Sky Component (VSC)

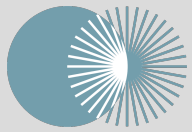
- 7.1 The results show that the windows and associated room will not experience a noticeable reduction in daylight as defined in the BRE guidance.

Annual probable sunlight hours (APSH)

- 7.2 The results show that all windows and associated room will not experience a noticeable reduction in sunlight as defined in the BRE guidance.

Impact on roof for solar panels (APSH)

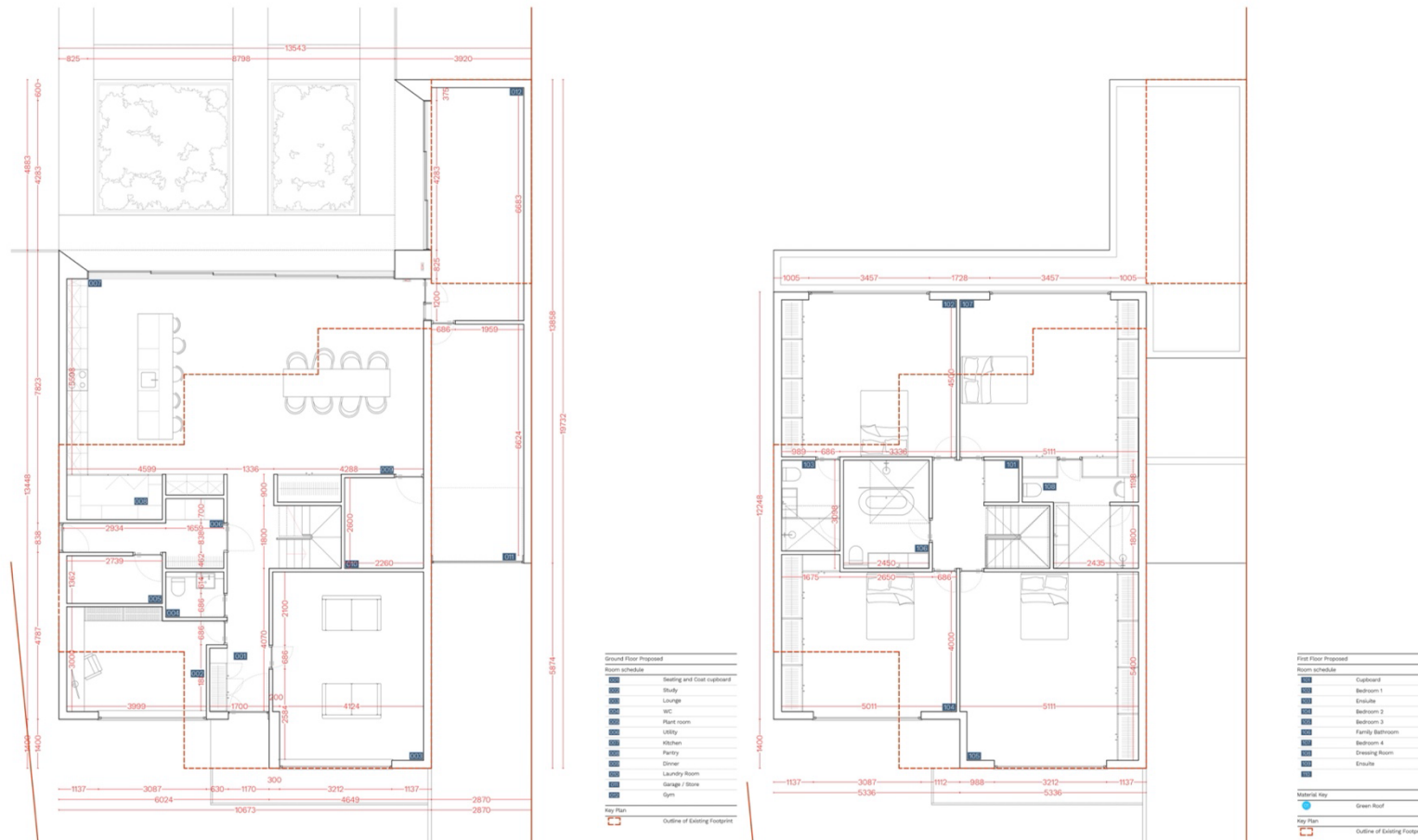
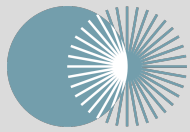
- 7.3 The results show that if the whole roof was covered in solar panels the proposed development would reduce the APSH on average by 0.97 % of its former value - or a drop of 3%, this is well within the BRE guidance which suggests a 0.90% of its former value would require further investigation.



8. Conclusion

- 8.1 The daylight and sunlight to the analysed roof & windows of 14 St Mildreds Rd, Chelmsford will not experience noticeable reduction of daylight and sunlight as set out in the BRE guidelines.
- 8.2 We therefore conclude that the effects of the proposed development in relation to daylight and sunlight are BRE compliant and we have identified no grounds for rejection of a planning application for this proposal.

Drawings



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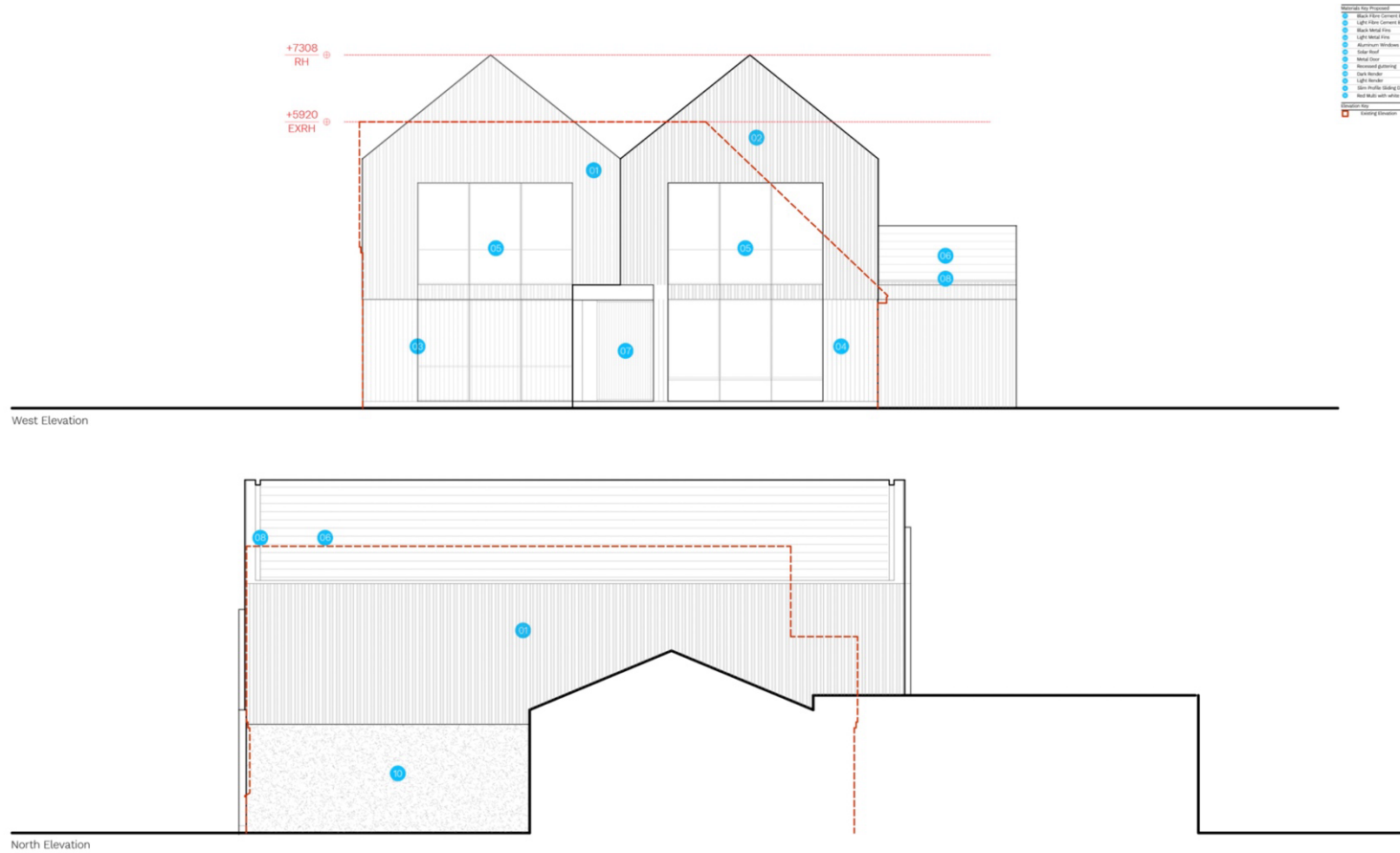
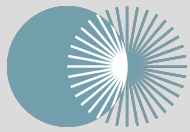
- Do not scale from this drawing directly, use annotated dimensions only.
- This drawing has been prepared based upon a detailed survey and information supplied by others.
- All dimensions and labels are to be checked on site by contractors and inconsistencies reported immediately to AoA prior to commencement of work.
- This drawing is to be read in conjunction with all other supporting documentation, specifications, schedules and consultant details relevant to the named project.
- This drawing does not constitute compliance with the Party Wall Act 1996 responsibilities including notification under the Act are to

- be checked separately and clarified prior to works commencing.
- Contractors are to ensure that all works under their responsibility or of their subcontractors are constructed and/or manufactured to comply with all relevant national and / or local authority Statutory requirements and in accordance with local building control and codes of practice.
- All proprietary products/systems shown on this drawing are to be installed in strict accordance with the manufactures/suppliers recommendations and details.
- These drawings are not prepared or checked by a RIBA qualified Architect. At no point does the drawings and design work by AoA claim to be checked by a RIBA Qualified Architect.

Client	Private	Rev	Date	Description
Address	St Mildreds Road, Chelmsford, CM2			
Drawings	Proposed Plans			
Project ref	STM.01			
Drawing ref	PR.01			
Date	12.09.23			
Scale	1:100			
Paper size	A3			
Revision	-			



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- 1 Do not scale from this drawing directly, use annotated dimensions only
- 2 This drawing has been prepared based upon a detailed survey and information supplied by others
- 3 All dimensions and labels are to be checked on site by contractors and inconsistencies reported immediately to AoA prior to commence of work
- 4 This drawing is to be read in conjunction with all other supporting documentation, specifications, schedules and consultant details, relevant to the named project.
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Client Address	Private St Mildreds Road, Chelmsford, CM2
Drawings Project ref	STM.01 Proposed Elevations
Drawing ref	PR.03
Date	27.09.23
Scale	1:100
Paper size	A4
Revision	-

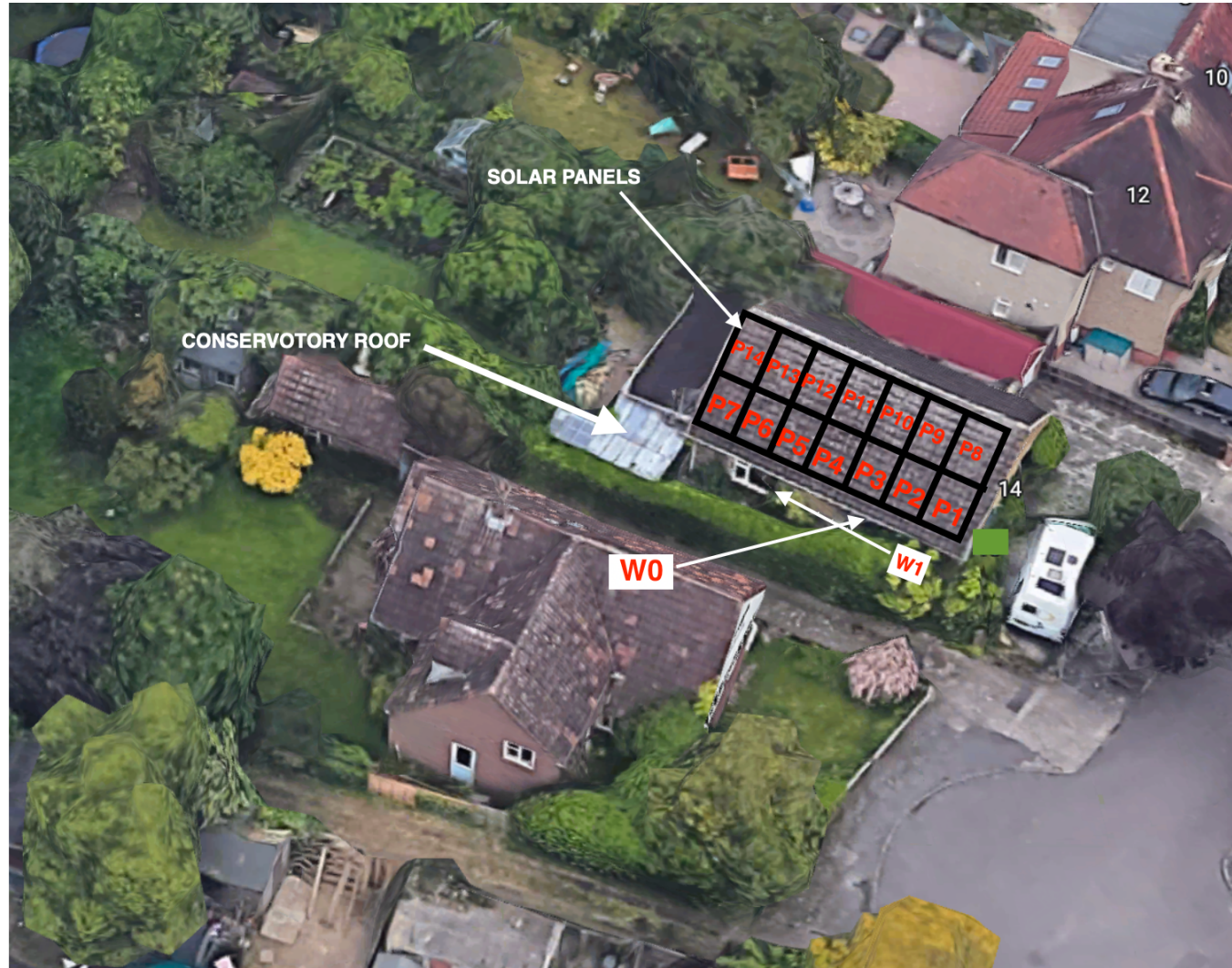
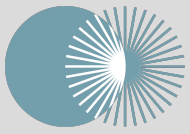
Rev	Date	Description

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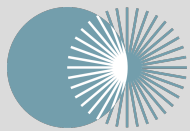
Appendix 2:

Window and solar panel Maps



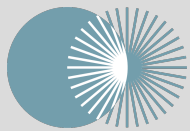
Appendix 3:

Technical Analysis



Vertical Sky Component (VSC)

Building Name	Floor Name	Window Name	Window Orientation	VSC Existing	VSC Proposed	Pr/Ex	Meets BRE Criteria
14 St Mildreds Rd Side window	Ground	W0	211°	25.99	24.06	0.93	PASS
14 St Mildreds Rd Side window	Ground	W1	211°	22.28	17.79	0.8	PASS
14 St Mildreds Rd Conservatory roof	First	W1	211° Inc	93.29	88.26	0.95	PASS
14 St Mildreds Rd Conservatory roof	First	W2	211° Inc	93.66	88.27	0.94	PASS
14 St Mildreds Rd Conservatory roof	First	W3	211° Inc	94.03	88.07	0.94	PASS
14 St Mildreds Rd Conservatory roof	First	W4	211° Inc	94.40	87.66	0.93	PASS
14 St Mildreds Rd Conservatory roof	First	W5	211° Inc	94.77	87.30	0.92	PASS
14 St Mildreds Rd Conservatory roof	First	W6	31°N Inc	92.60	90.33	0.98	PASS
14 St Mildreds Rd Conservatory roof	First	W7	31°N Inc	90.83	88.51	0.97	PASS
14 St Mildreds Rd Conservatory roof	First	W8	31°N Inc	89.40	87.05	0.97	PASS
14 St Mildreds Rd Conservatory roof	First	W9	31°N Inc	86.48	84.09	0.97	PASS
14 St Mildreds Rd Conservatory roof	First	W10	31°N Inc	69.79	67.39	0.97	PASS
14 St Mildreds Rd Conservatory roof	First	W11	211° Inc	94.92	82.48	0.87	PASS
14 St Mildreds Rd Conservatory roof	First	W12	211° Inc	95.44	85.03	0.89	PASS
14 St Mildreds Rd Conservatory roof	First	W13	211° Inc	96.01	91.46	0.95	PASS
14 St Mildreds Rd Conservatory roof	First	W14	211° Inc	95.49	90.40	0.95	PASS



Annual probable sunlight hours (APSH)

Building Name	Floor Name	Window Name	Window Orientation	Annual Ex	Annual Pr	Pr/Ex	Meets BRE Criteria
14 St Mildreds Rd Side window	Ground	W0	211°	63.00	60.00	0.95	PASS
14 St Mildreds Rd Side window	Ground	W1	211°	53.00	46.00	0.87	PASS
14 St Mildreds Rd Conservatory roof	First	W1	211° Inc	81.00	66.00	0.81	
14 St Mildreds Rd Conservatory roof	First	W2	211° Inc	81.00	65.00	0.8	
14 St Mildreds Rd Conservatory roof	First	W3	211° Inc	80.00	65.00	0.81	
14 St Mildreds Rd Conservatory roof	First	W4	211° Inc	81.00	62.00	0.77	
14 St Mildreds Rd Conservatory roof	First	W5	211° Inc	82.00	61.00	0.74	
14 St Mildreds Rd Conservatory roof	First	W6	31°N Inc	82.00	70.00	North	North
14 St Mildreds Rd Conservatory roof	First	W7	31°N Inc	79.00	67.00	North	North
14 St Mildreds Rd Conservatory roof	First	W8	31°N Inc	76.00	65.00	North	North
14 St Mildreds Rd Conservatory roof	First	W9	31°N Inc	73.00	63.00	North	North
14 St Mildreds Rd Conservatory roof	First	W10	31°N Inc	52.00	42.00	North	North
14 St Mildreds Rd Conservatory roof	First	W11	211° Inc	81.00	47.00	0.58	
14 St Mildreds Rd Conservatory roof	First	W12	211° Inc	83.00	55.00	0.66	
14 St Mildreds Rd Conservatory roof	First	W13	211° Inc	85.00	72.00	0.85	
14 St Mildreds Rd Conservatory roof	First	W14	211° Inc	84.00	68.00	0.81	
							PASS



Building Name	Floor Name	Panel Name	Window Orientation	Annual Ex	Annual Pr	Pr/Ex%	Meets BRE Criteria
14 St Mildreds Rd Solar Panel	First	P1	209° Inc	93.00	92.00	0.99%	
14 St Mildreds Rd Solar Panel	First	P2	209° Inc	93.00	91.00	0.98%	
14 St Mildreds Rd Solar Panel	First	P3	209° Inc	92.00	89.00	0.97%	
14 St Mildreds Rd Solar Panel	First	P4	209° Inc	92.00	89.00	0.97%	
14 St Mildreds Rd Solar Panel	First	P5	209° Inc	92.00	88.00	0.96%	
14 St Mildreds Rd Solar Panel	First	P6	209° Inc	92.00	86.00	0.93%	
14 St Mildreds Rd Solar Panel	First	P7	209° Inc	93.00	86.00	0.92%	
14 St Mildreds Rd Solar Panel	First	P8	209° Inc	95.00	93.00	0.98%	
14 St Mildreds Rd Solar Panel	First	P9	209° Inc	95.00	93.00	0.98%	
14 St Mildreds Rd Solar Panel	First	P10	209° Inc	95.00	92.00	0.97%	
14 St Mildreds Rd Solar Panel	First	P11	209° Inc	95.00	92.00	0.97%	
14 St Mildreds Rd Solar Panel	First	P12	209° Inc	95.00	92.00	0.97%	
14 St Mildreds Rd Solar Panel	First	P13	209° Inc	95.00	92.00	0.97%	
14 St Mildreds Rd Solar Panel	First	P14	209° Inc	95.00	92.00	0.97%	
					Average	0.97%	PASS

Sunlight Assessments UK Ltd

