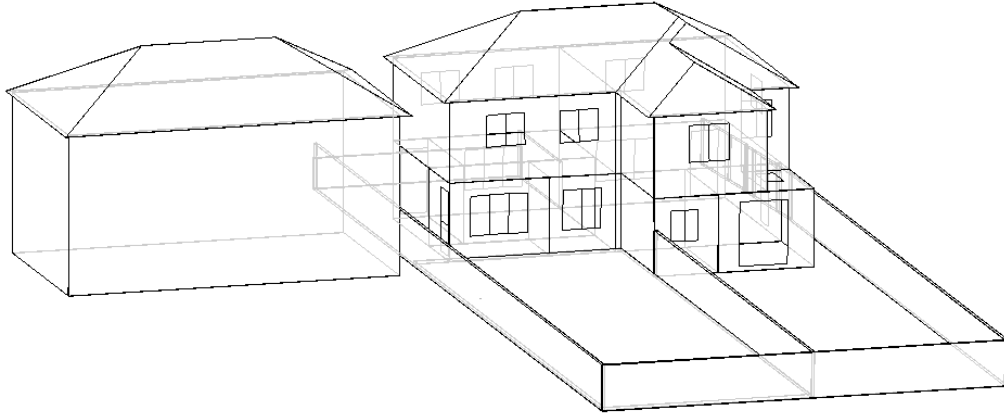




GTREE LTD

DAYLIGHT & SUNLIGHT SURVEY

Ref: SH25106

AT: 3 DOUGLAS HAIG ROAD, SALISBURY, SP1 3NB

17/09/2025

FOR: JORDAN McHALE

Revision: 00

Checked: GH

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APPENDICES

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1. **Summary**

The purpose of this study is to test the semi-detached house 3 Douglas Haig Road, adjoining the proposed development at 1 Douglas Haig Road for daylight levels within the ground floor living spaces, and sunlight levels reaching the outside private amenity space.

- Daylight levels achieve targets for the internal living spaces.
- Sunlight levels achieve targets for the outside private amenity space.

2. **Normative references**

The principle guidance for this report are:

- BRE209: 2022 'Site Layout planning for daylight and sunlight – a guide to good practice' by Paul Littlefair (Building Technology Group 3rd edition)
- BSEN17037:2018 'Daylighting of buildings' (British Standards Institute)
- UK National Annex committee

3. **Instruction received & objective**

Instructions were issued to GTree Ltd, from Jordan McHale, to assess daylight and sunlight implications for the semi-detached house 3 Douglas Haig Road, neighbouring the proposed development at 1 Douglas Haig Road, Salisbury, SP1 3NB. The objective of this study is to test daylight entering ground floor living spaces and solar exposure on the outside private amenity space of number 3, following the proposed two storey extension of number 1 Douglas Haig Road. The impact of local shading and an evaluation of light is considered in relation to recommended guidance.

4. **Information sources**

The following were used to inform the model construction & analysis:

- Architects' drawings: J Pittard Ltd 2504
- IESVE Location Boscombe Down
- IESVE ASHRAE simulation weather file BristolEWY.fwt

5. **Survey limitations**

Understanding of the existing massing of the site was established from information sources detailed above and the client's deduced layout of the neighbouring semi-detached house. The survey is valid for 12 months from the date of publication and is reliant solely upon information supplied by the client unless otherwise detailed. Data has been generated from IESVE software detailed below.

6. **Methodology**

The sunlight and daylight assessment for this proposed development has been created using IESVE ModelIT, SunCast, and Radiance software, which is compliant with CIBSE Applications Manual AM11,1998, Appendix B. The software has been used to generate a model of the development proposal and provides analysis of daylighting, solar exposure and shading.

The proposed development at number 1 Douglas Haig Road and the presumed existing design, including the private amenity space considered as the rear garden of number 3 Douglas Haig Road, have been recreated in the model (see Figure 1).

The adjacent building affecting the shading to the north-east, numbers 5 & 7 Douglas Haig Road, has also been included. Boundary fences have been modelled at a height of 1.5 m and number 3's southerly fence at the front, on the roadside, at 1 m.

Daylight

BSEN17037 and BRE209 suggest two methods of calculating daylight provision, the first being daylight factors and the second using illuminance levels on the reference plane based on climate data. This report uses the second method, using climate data and CIE overcast cloudy conditions, to test how local shading affects the property's light, showing all results in lux and using 21 March as a reference date where necessary.

Minimum requirements of illuminance of 300 lux across 50 % plane are suggested in the recommended documents. However, despite these suggestions, UK National Annex committee have recommended the following target illuminance for different rooms within a dwelling:

Table NA.1

Room type	Target illuminance (lux)
Bedroom	100
Living room	150
Kitchen	200

In response to BSEN17037 they state, *'Even if a predominantly daylight appearance is not achievable for a room in a UK dwelling, the UK committee recommends that the target illuminance values given in Table NA.1 are exceeded over at least 50% of the points on a reference plane 0.85 m above the floor, for at least half of the daylight hours.'*

This report will present daylighting results using illuminance (lux) in the main living spaces, which are the ground floor living room and the kitchen. As recommended above, 150 lux illuminance has been used as a target for the living room and 200 lux for the kitchen. Calculations were made assuming a working (reference) plane of 0.76 m above floor level, with a grid size of 0.5 m.

Sunlight on amenity spaces

BRE209 states *'It is recommended that at least half of the amenity areas...should receive at least two hours of sunlight on 21 March'* for gardens and open spaces of developments. *'If a space is used all year round, the equinox (21 March) is the best date for which to prepare shadow plots as it gives an average level of shadowing.'* For this reason, the date within the solar shading calculation analysis has been set to 21 March.

The results are shown with an annual sunlight table for the existing amenity space, which demonstrates the percentage of sunlight reaching the surface area for each hour throughout the months of the year. The results for March have been selected as these are closest to the spring equinox of 21 March.

7. Results
Quick view matrix

Daylight reaching internal living spaces			
Living space	Lux over 50% working plane (WP) 21 March	Results	Pass/Fail
Living room	Target 150 lux	150 lux over 100% WP Average lux 517.99	Pass
Kitchen	Target 200 lux	200 lux over 100% WP Average lux 983.91	Pass
Sunlight on amenity space			
Number of hours 50 % surfaces in sunlight in March		Results (hours)	Pass/Fail
Target 2 hours		3	Pass

For detailed Daylight and Sunlight Analysis Results, see Appendices 1, 2, 3, 4 and 5

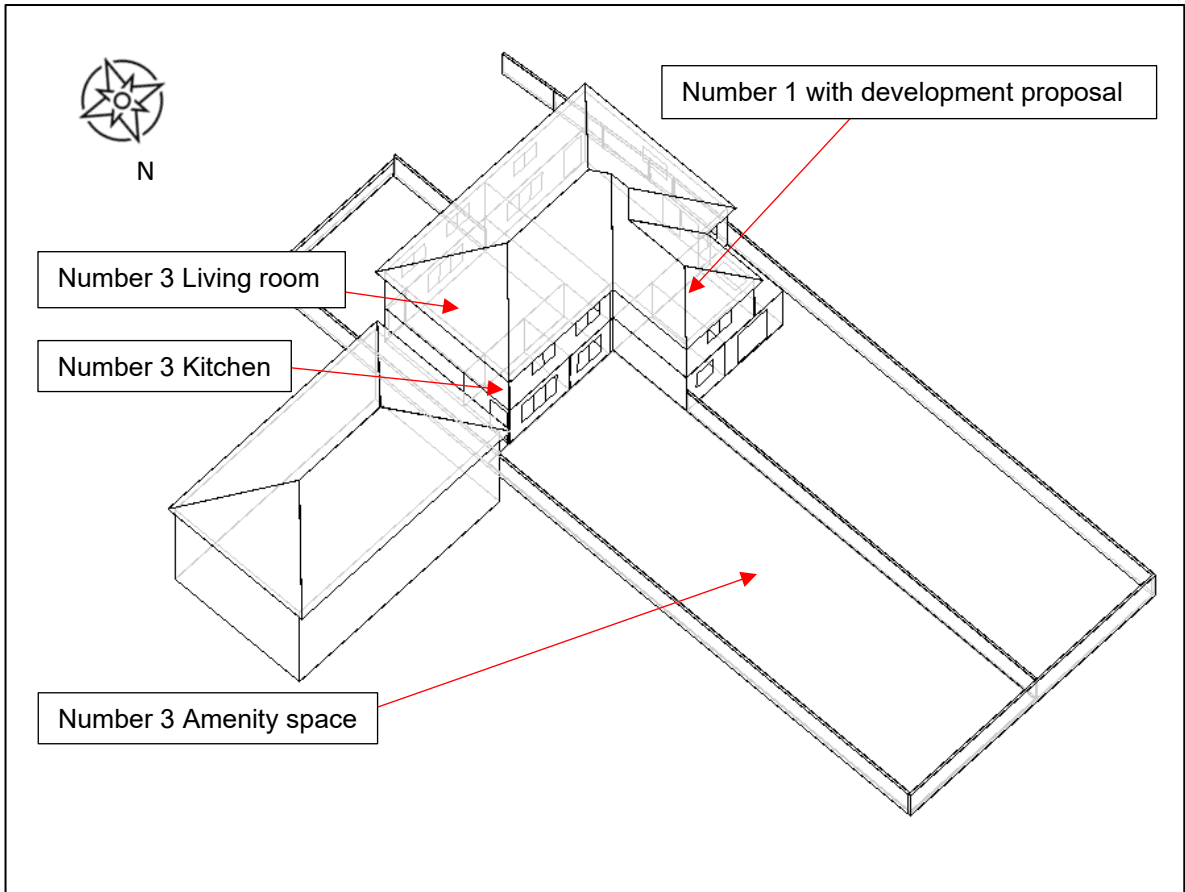


Figure 1 Labelled model image to show relevant zones with indicative north

8. Conclusion

Daylight reaching internal living spaces

Living room: 100% of working plane is 150 lux and average lux is 517.99 on 21 March.

This passes recommendations of 150 lux over 50 % of working plane.

The main living space reaches minimum recommended daylighting target levels, as evidenced in illumination plots in Appendices 2a & 2b. (Appendix 2a includes evidence of annual results: 150 lux achieved for 85.03% hours over 50% of working plane although these are not included in the results quick view matrix to allow clarity.)

Kitchen: 100% of working plane is 200 lux and average lux is 983.91 on 21 March. This passes recommendations of 200 lux over 50 % of working plane.

The main living space reaches minimum recommended daylighting target levels, as evidenced in illumination plots in Appendices 3a & 3b. (Appendix 3a includes evidence of annual results: 200 lux achieved for 90.21 hours over 50% of working plane although these are not included in the results quick view matrix to allow clarity.)

Both living rooms will be adequately lit and comfortable living spaces.

Sunlight on amenity space

Rear garden over 50% sunlight at 10:00, 11:00 and 12:00 (3 hours) in March, which exceeds the recommended minimum threshold target of at least 2 hours of sunlight over 50% surface plane.

The rear garden will be a sunny spot for residents to enjoy sitting outside from mid-morning until early afternoon in March. From April until September, this space receives over 7 hours of sunlight throughout the day, as evidenced in Appendix 4.

Shadow plots (Appendix 5) demonstrate shading for the development proposal throughout the day at 2 hourly intervals on 21 March. Shading on the plot from the buildings and fences can be observed, which has affected the results of analysis for both internal daylight and external solar exposure for number 3 Douglas Haig Road.

Most of the plot is in shade at 08:00 but by 10:00 approximately 60% of the rear garden of number 3 is sunlit. Over 50% of the garden is in sunlight at midday which reduces slightly by 14:00. By 16:00 approximately 30% of this amenity space is sunlit and by 18:00 the plot is entirely shaded.

Final Conclusion

In summary, the proposed development at number 1 Douglas Haig Road, in relation to light, will not adversely impact the adjoining property at number 3, where light levels will be compliant to recommendations in BRE209 and BSEN17037. There are no identifiable grounds for objection of a planning application in terms of daylight and sunlight to internal habitable rooms or private amenity space.

Appendix 1 Daylight illumination plot (21 March) living spaces: working plane 0.76 m above floor level

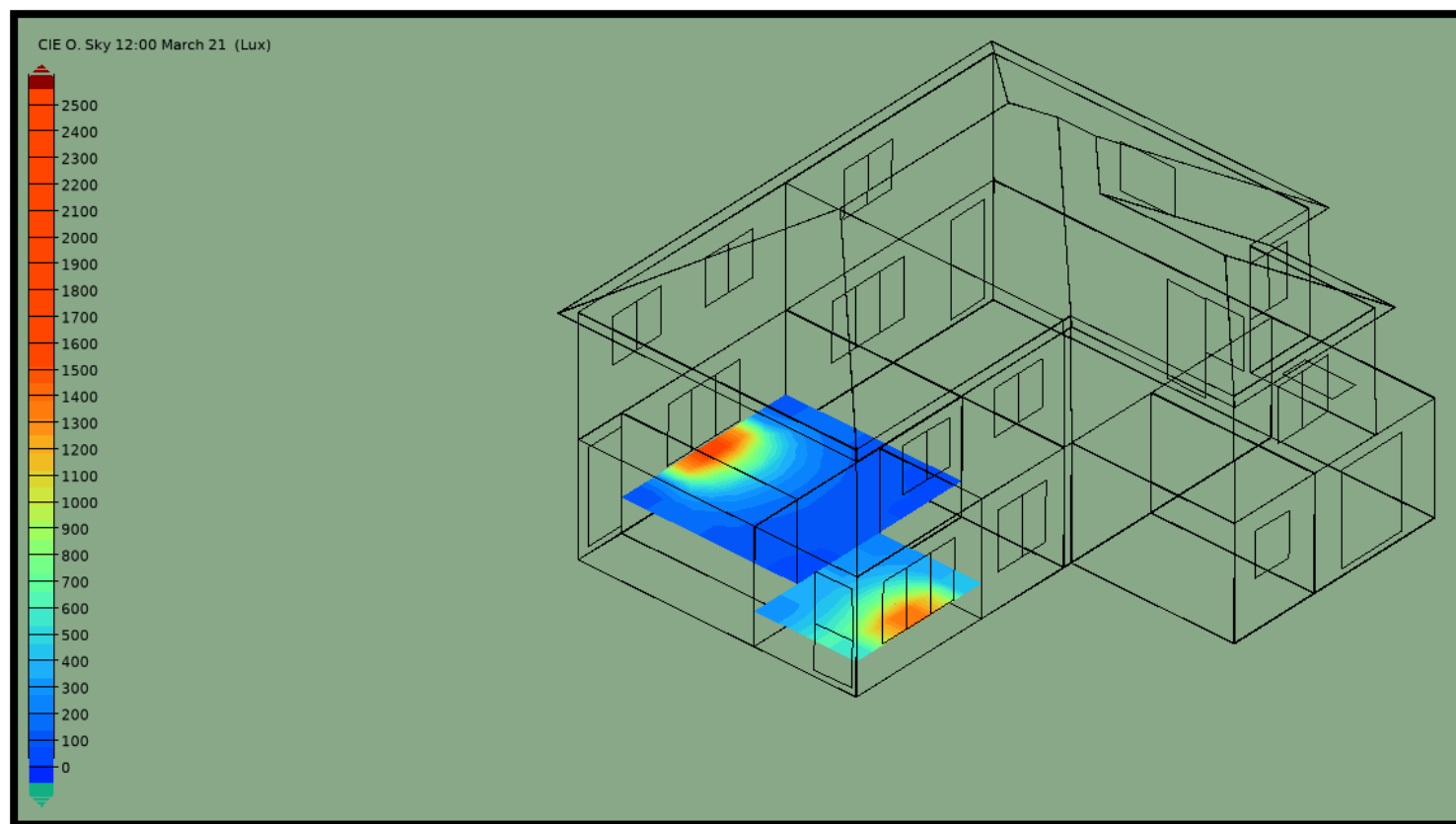


Figure 2 Illuminance variations in lux for both living spaces

This illustrates the location and illumination of both internal living spaces tested at 3 Douglas Haig Road.

Appendix 2a Daylight illumination plots (annual) living room: working plane 0.76 m above floor level

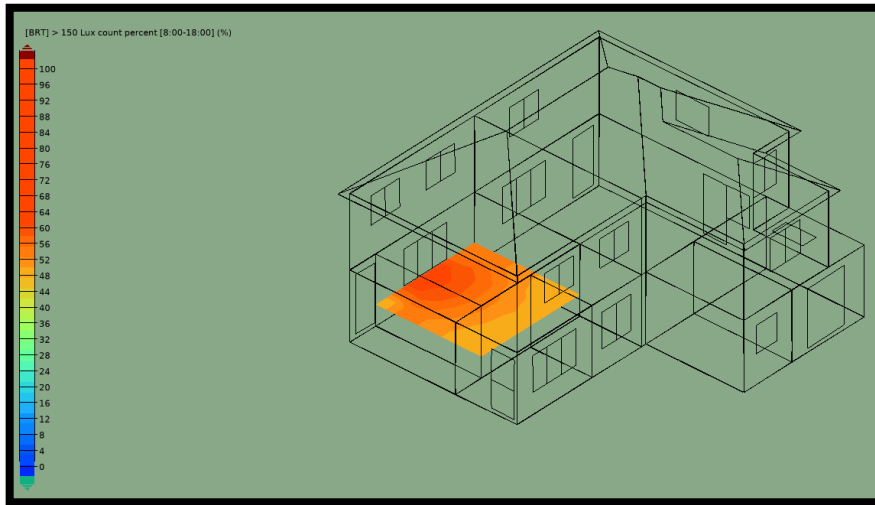


Figure 3 Annual average 85.03 % hours >150 lux

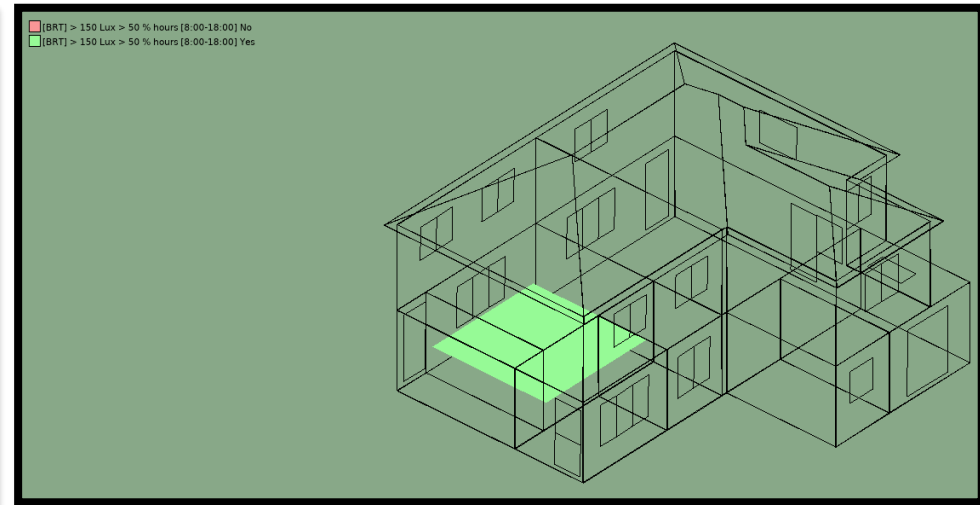


Figure 4 Pass: all points >150 lux over 50% hours

Annual data analysis shows that the main living space for this dwelling exceeds the target of 150 lux over 50% hours over 50% working plane surface.

Appendix 2b Daylight illumination plot (21 March) living room: working plane 0.76 m above floor level

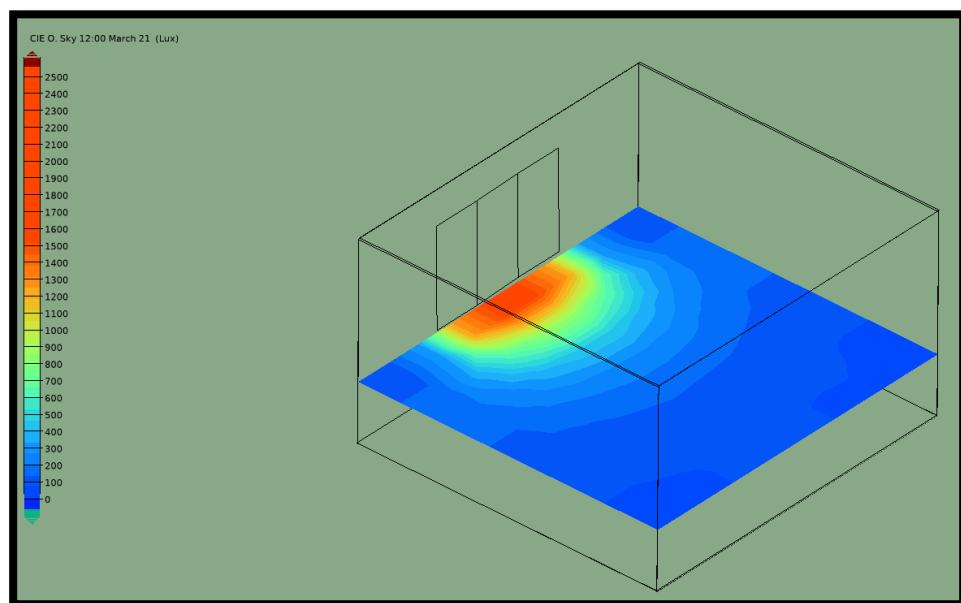


Figure 5 Illuminance variations in lux

Figure 5 displays the range of light levels in this space and average lux of 517.99 on 21 March with a CIE overcast sky. There is 150 lux illuminance over 100% working plane on this date.

This demonstrates the illuminance threshold target is exceeded.

Appendix 3a Daylight illumination plots (annual) kitchen: working plane 0.76 m above floor level

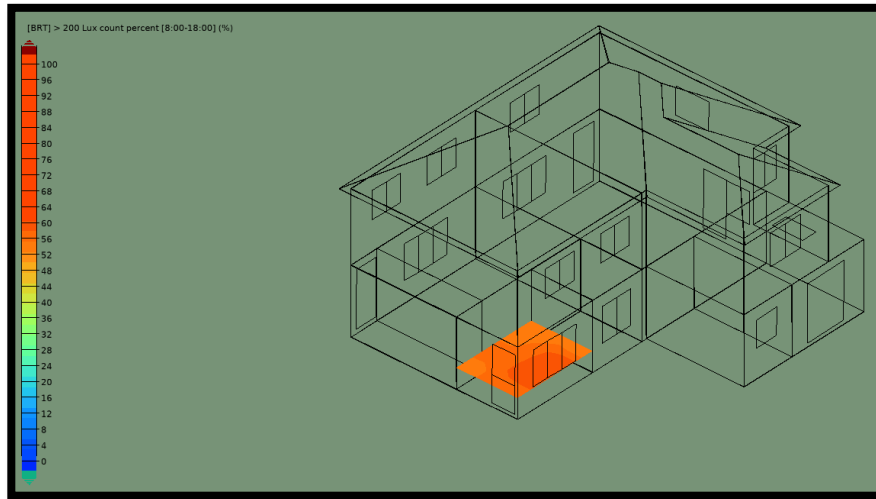


Figure 6 Annual average 90.21 % hours >200 lux

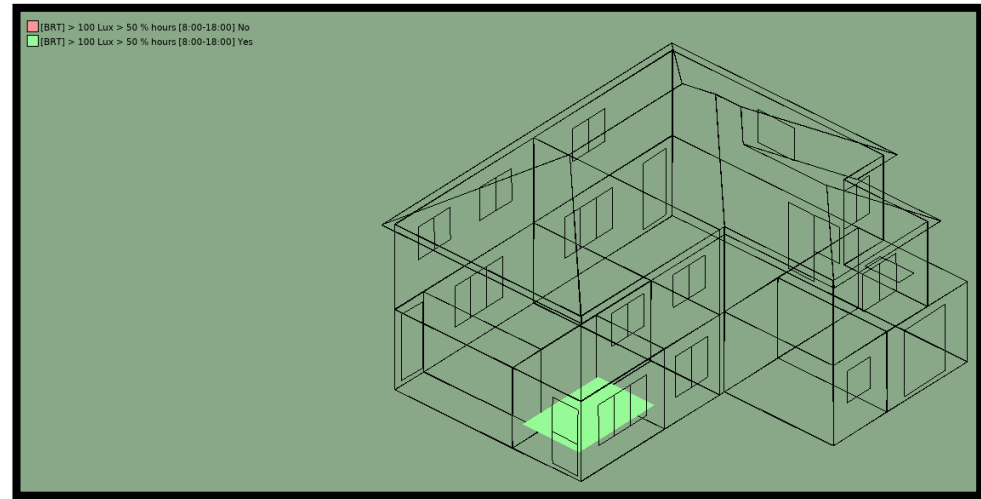


Figure 7 Pass: all points >200 lux over 50% hours

Annual data analysis shows that this living space exceeds the target of 200 lux over 50% hours over 50% working plane surface.

Appendix 3b Daylight illumination plot (21 March) kitchen: working plane 0.76 m above floor level

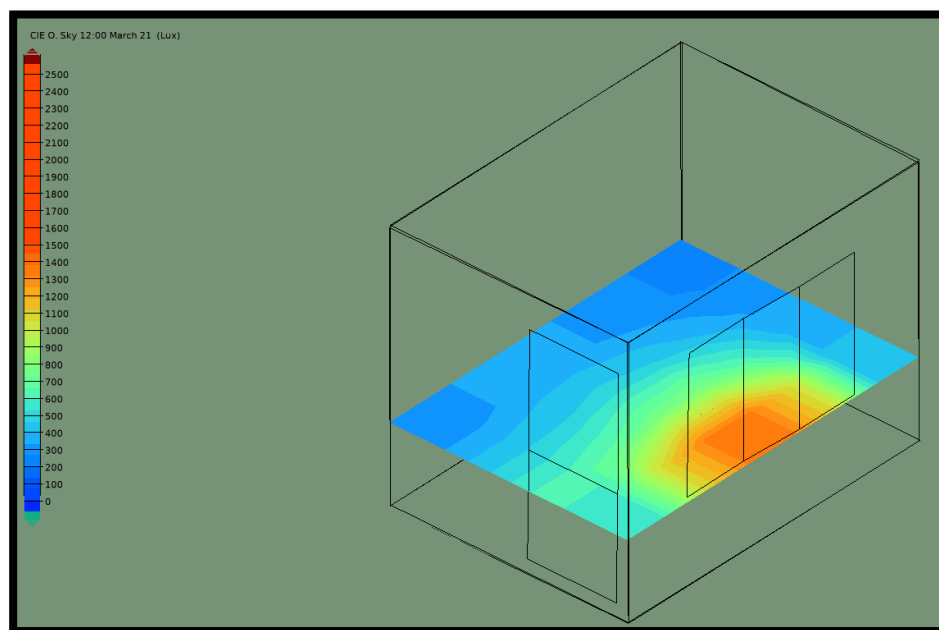


Figure 8 Illuminance variations in lux

Figure 8 displays the range of light levels in this space and average lux of 983.91 on 21 March with a CIE overcast sky. There is 200 lux illuminance over 100% working plane on this date.

This demonstrates the illuminance threshold target is exceeded.

DAYLIGHT & SUNLIGHT SURVEY
AT: 3 DOUGLAS HAIG ROAD, SALISBURY, SP1 3NB
FOR: JORDAN McHALE

Appendix 4

Sunlight on amenity space: Annual table

Rear garden over 50% sunlight at 10:00, 11:00 and 12:00 (3 hours) in March, which passes the recommended threshold target of at least 2 hours of sunlight over 50% surface plane.

Month	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00
Jan									8.8	6.4	0.9	14.8	22.7	17.2	0.0	0.0								
Feb								0.0	8.6	36.0	32.1	33.8	33.5	34.1	25.2	0.0	0.0							
Mar							0.0	0.8	36.3	62.6	57.3	54.1	49.9	46.9	44.7	32.0	0.0	0.0						
Apr						0.0	16.5	39.4	58.8	74.7	72.0	68.4	65.0	61.4	58.4	52.2	37.7	0.0						
May					0.0	14.8	37.9	54.6	67.8	79.7	81.1	76.6	73.8	71.4	67.8	62.6	55.9	39.3	0.0					
Jun				0.0	0.0	24.6	43.9	58.5	70.2	80.7	85.2	80.3	77.7	75.8	72.3	67.4	62.8	52.3	29.4	0.0				
Jul					0.0	17.4	39.8	55.4	68.0	79.1	84.5	79.2	76.5	74.3	71.2	66.0	61.2	49.8	23.5	0.0				
Aug						0.0	25.7	45.5	62.1	76.0	77.4	72.7	69.6	66.6	63.1	58.0	48.8	24.7	0.0					
Sep						0.0	3.4	22.9	52.6	70.5	63.6	60.1	56.0	52.0	50.4	38.7	5.6	0.0						
Oct							0.0	0.0	35.2	44.7	43.9	40.6	39.0	37.7	26.2	0.0	0.0							
Nov								0.0	17.7	0.9	13.7	22.3	26.1	17.2	0.0	0.0								
Dec									10.5	0.7	0.6	14.6	18.7	5.2	0.0									

Figure 8 Percentage solar exposure rear garden

The rear garden will be a sunny spot for residents to enjoy sitting outside from mid-morning until early afternoon in March.

As evidenced in the table, this space will receive over 7 hours of sunlight throughout the day, from April until September.

Appendix 4 Shadow plots at 08:00 & 10:00 from north on 21 March

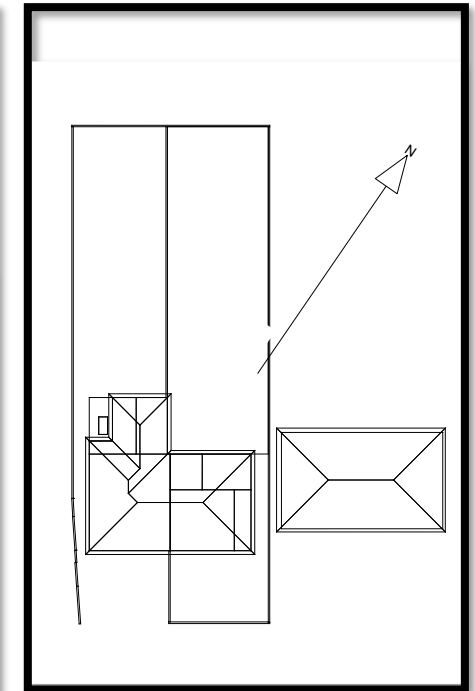
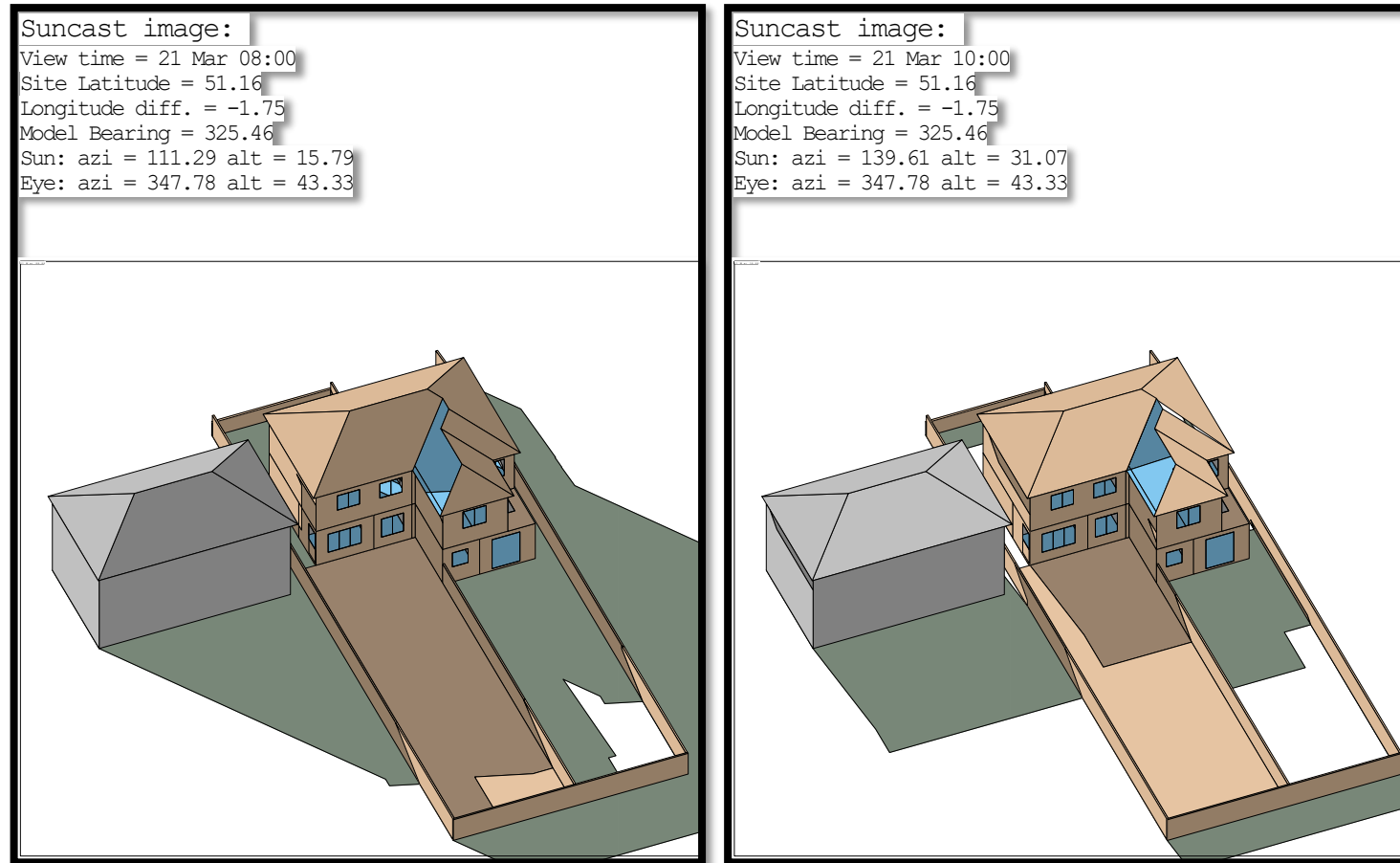
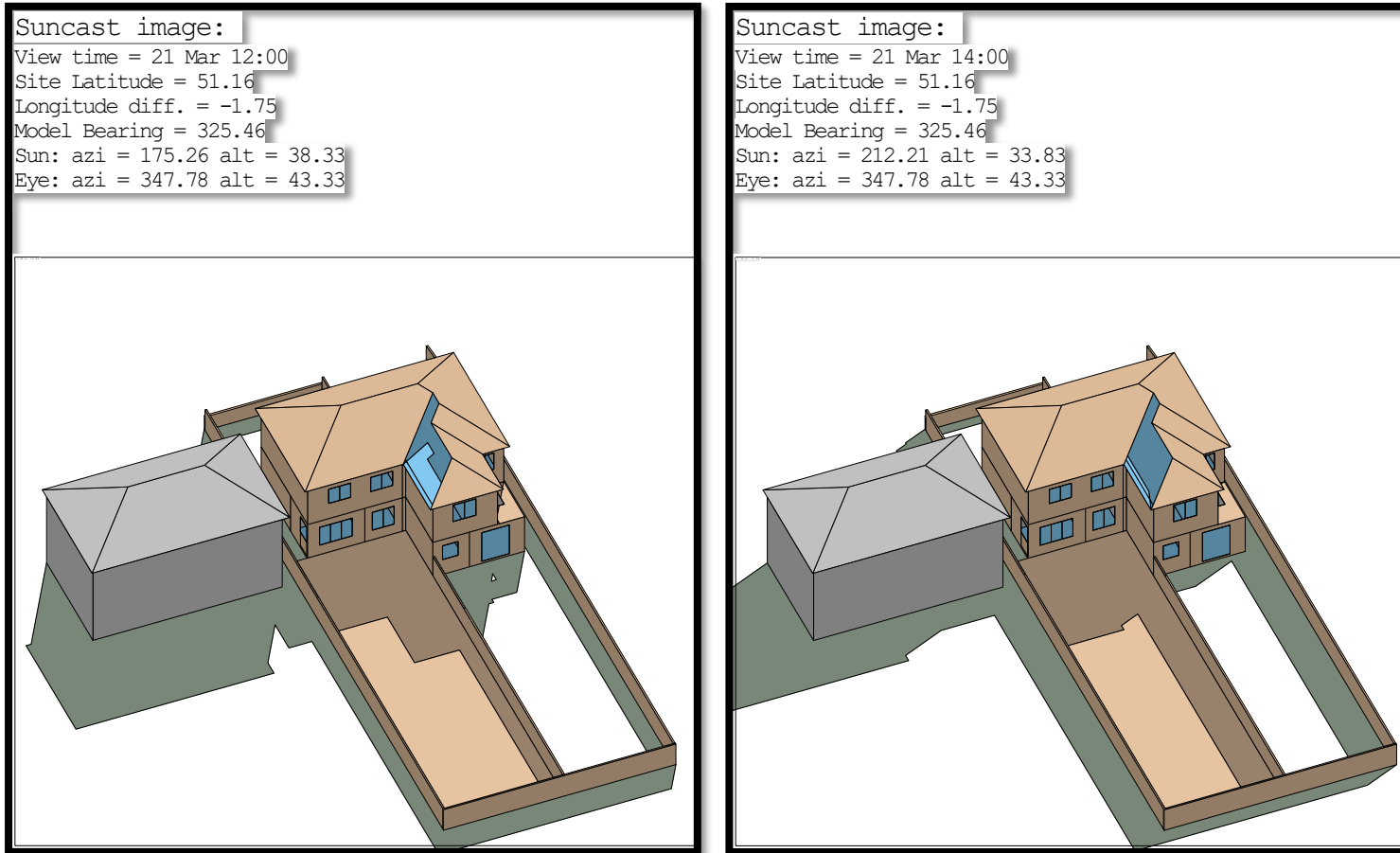


Figure 14 Site plan indicating north

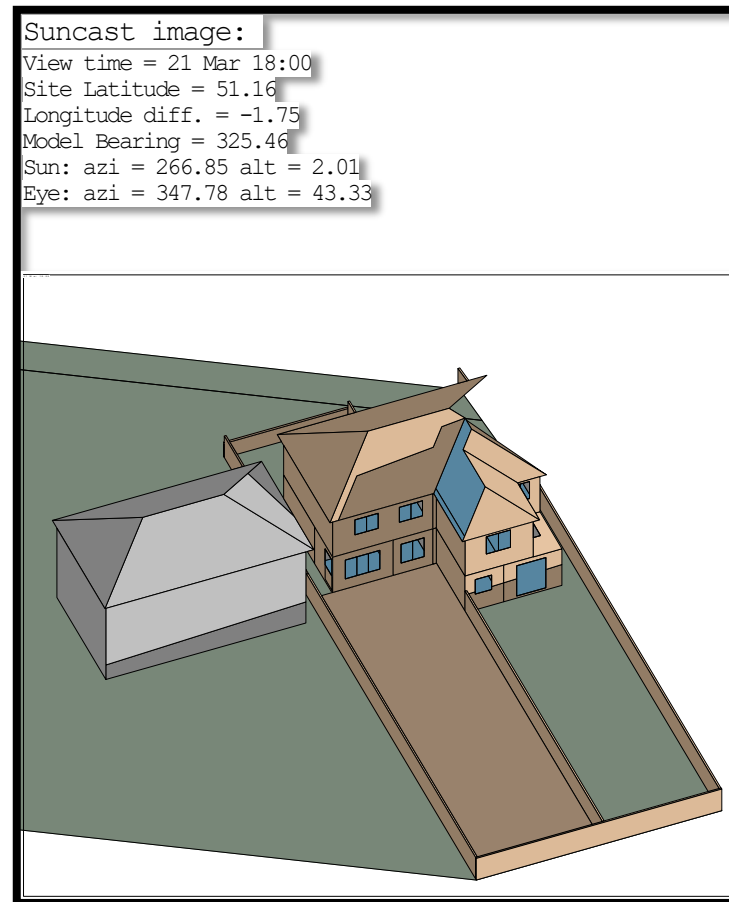
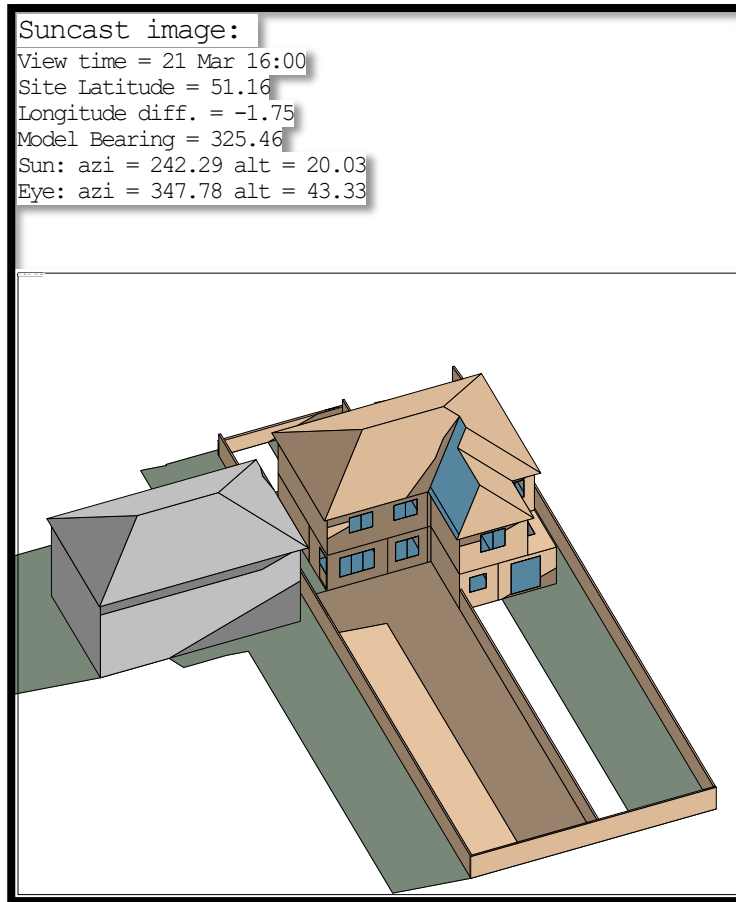
Most of the plot is in shade at 08:00 but by 10:00 approximately 60% of the rear garden of number 3 is sunlit.

Appendix 4 Shadow plots at 12:00 & 14:00 from north on 21 March



Over 50% of the garden of number 3 is in sunlight at midday which reduces slightly by 14:00.

Appendix 4 Shadow plots at 16:00 & 18:00 from north on 21 March



By 16:00 approximately 30% of number 3's amenity space is sunlit and by 18:00 the plot is entirely shaded.