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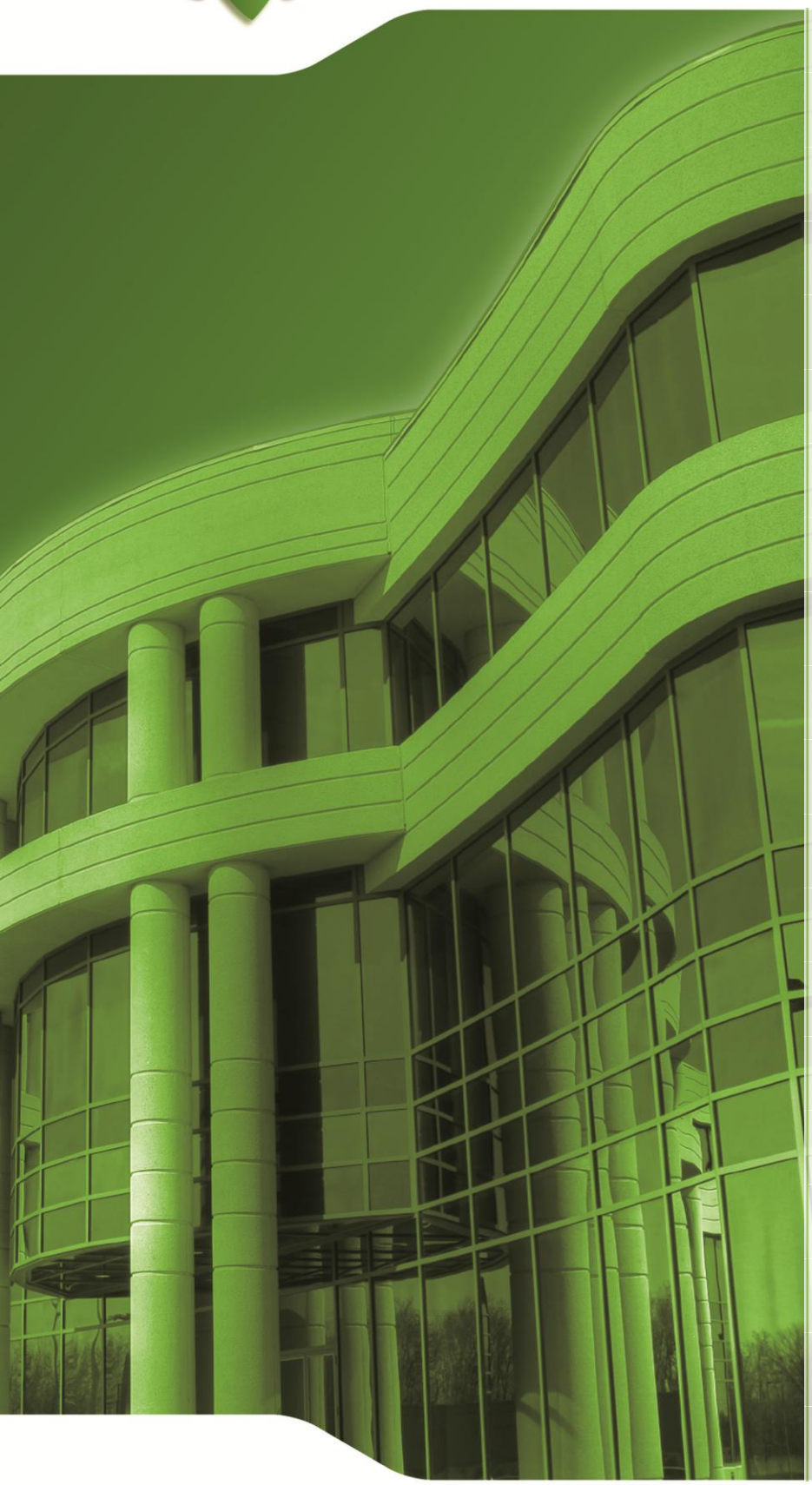

Daylight, Sunlight & Overshadowing Report

March 2014

61-63 Holmes Road, London NW5 3AN

Quality Standards Control

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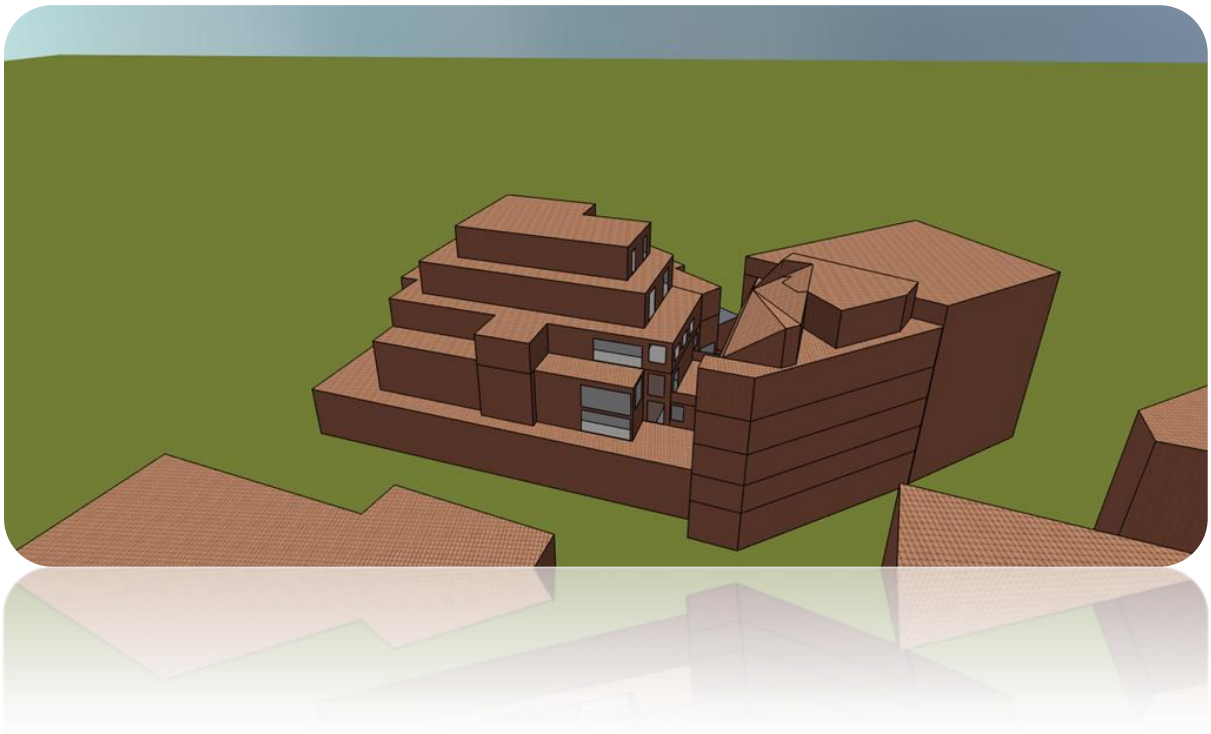
This document must only be treated as a draft unless it is has been signed by the originators and approved by a director.

DATE	PRODUCED BY	APPROVED BY
13.03.2014	FC	AWK



Revision	
Date Prepared by Checked by Authorised by	

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The conclusions and recommendations contained in this report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by SC has not been independently verified by SC, unless otherwise stated in the report.

The methodology adopted and the sources of information used by SC in providing its services are outlined in this report. The work described in this report was undertaken in **March 2014** and is based on the conditions encountered and the information available during the said period of time. The scope of this report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

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No allowance has been made for changes in prices or exchange rates or changes in any other conditions which may result in price fluctuations in the future. Where assessments of works or costs necessary to achieve compliance have been made, these are based upon measures which, in SC's experience, could normally be negotiated with the relevant authorities under present legislation and enforcement practice, assuming a pro-active and reasonable approach by site management.

Forecast cost estimates do not include such costs associated with any negotiations, appeals or other non-technical actions associated with the agreement on measures to meet the requirements of the authorities, nor are potential business loss and interruption costs considered that may be incurred as part of any technical measures.

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1. Executive summary

This report demonstrates the impact of the proposed development **on the surrounding buildings and amenity areas/gardens/open spaces**.

The results of the assessment show that in terms of:

- Daylight, **none of the surrounding buildings (55-57 Holmes Road)** will be adversely impacted by the proposed development.
- Sunlight, **none of the surrounding buildings (55-57 Holmes Road)** will be adversely impacted by the proposed development.
- Overshadowing, no existing amenity areas/gardens/open spaces have been identified on the drawings and/or site plan.

On balance, it can be concluded that the surrounding buildings (55-57 Holmes Road) will not be adversely impacted by the proposed development.

In conclusion the proposed scheme is considered acceptable.

2. Introduction

This report has been prepared to support the planning application for the proposed development at 61-63 Holmes Road, London NW5 3AN. Planning permission has been granted for development on the site consisting of commercial space on ground floor and 8 residential units over the upper four floors. The proposed scheme specified in this report includes the potential for an floor extension at roof level (fifth floor) including a new additional space.

The report assesses the daylight, sunlight and overshadowing effect of the proposed development on the surrounding buildings and specifically focuses on the windows of the residential buildings at 55-57 Holmes Road. The assessment is undertaken in accordance with ***"BRE 209 Digest: Site Layout Planning For Daylight and Sunlight – A Guide to Good Practice".***

The existing & proposed drawings (in AutoCAD format) of the project were provided by **Norton Mayfield Architects** on the **28th February 2014** and have been used in preparing this report.

The study has been undertaken by constructing a 3D IES model of the existing and proposed site and surrounding buildings in order to analyse the daylight, sunlight and overshadowing impact of the new development on the affected buildings. The assessment is based on 2D AutoCAD drawings (floor plans, sections and elevations).

3. Planning policy

There are no national or local policies specifically relating to daylight, sunlight and overshadowing.

4. Guidance document

4.1. Building Research Establishment (BRE) report (BRE 209): "Site layout planning for daylight and sunlight: A guide to good practice" Second Edition (2011)

The Second Edition of the report replaces the 1991 document of the same name and came into effect from October 2011.

It is important to note that the introduction to the report stresses that the document is provided for guidance purposes only and it is not intended to be interpreted as a strict and rigid set of rules. It also recommends that it may be appropriate to adopt a flexible approach and alternative target values in dealing with *"special circumstances"* for example *"in a historic city centre, or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings".* This is amplified by the following extracts from the introduction (p1, para. 6) and Section 2.2:

"The advice given here is not mandatory and this document 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 because natural lighting is only one of many factors in site layout design". (p1, para. 1.6)

"In special circumstances the Developer or Planning Authority may wish to use different target values". (p1, para. 1.6)

"Note that numerical values given here are purely advisory. Different criteria may be used, based upon the requirements for daylight in an area viewed against other site layout constraints. Another important issue is whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light". (p7 para. 2.2.3)

The examples given in the report can be applied to any part of the country: suburban, urban and rural areas. The inflexible application of the target values given in the report may make reaching the BRE criteria difficult in a tight, urban environment where there is unlikely to be the same expectation of daylight and sunlight amenity as in a suburban or rural environment.

5. Assessment methodology

5.1. General

When assessing any potential effects on the surrounding properties, the BRE guidelines suggest that only those windows that have a reasonable expectation of daylight or sunlight need be assessed. In particular the BRE guidelines at paragraph 2.2.2 state:

"The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. The guidelines may also be applied to any existing non-domestic buildings where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels and hostels, small workshops and some offices."

Further to the above statement, it is considered that the vast majority of commercial properties do not have a reasonable expectation of daylight or sunlight. This is because they are generally designed to rely on electric lighting rather than natural daylight or sunlight.

This report assesses the potential impact of the proposed development in relation to daylight, sunlight and overshadowing on the residential buildings at 55-57 Holmes Road. Specifically, it takes into consideration the possible effect and influence that the new development would have on the properties.

14 target surfaces (S1 to S14) for external levels of daylight VSCs (Vertical Sky Components) and sunlight availability, as shown in section 9.4 in Appendix, have been selected based on anticipated worse case impact judged from professional experience and also following guidance within the BRE guidelines *"Site layout planning for daylight and sunlight".*

No existing amenity areas/gardens/open spaces have been identified on the drawings and/or site plan.

The IES Virtual Environment modelling software utilised for the compilation of this report has been accredited by CIBSE and acknowledged by the BRE as a suitable software tool for undertaking daylight, sunlight and overshadowing assessments in accordance with the BRE Good Practice guidelines. The specific IES software modules utilised for this assessment are the following:

- ☐ ModelIT: enables you to create a 3D "Virtual Environment" model without CAD data, or alternatively allows you to create a 3D model from 2D CAD data. Interfaces with AutoCAD and Google Sketchup.

- ☐ Radiance: is a detailed 3D simulation tool designed to predict daylight and electric light levels, and the appearance of a space prior to construction. Vertical Sky Components (VSC) and Average Daylight Factors (ADF) can be simulated using Radiance.

- ☐ SunCast: produces visual, graphical and numerical information that can be used to explain to colleagues, clients and planning authorities how the sun impacts on and inside the building, and on the site.

If a property is considered to have a reasonable expectation of daylight or sunlight the following methodology to assess the impacts has been used.

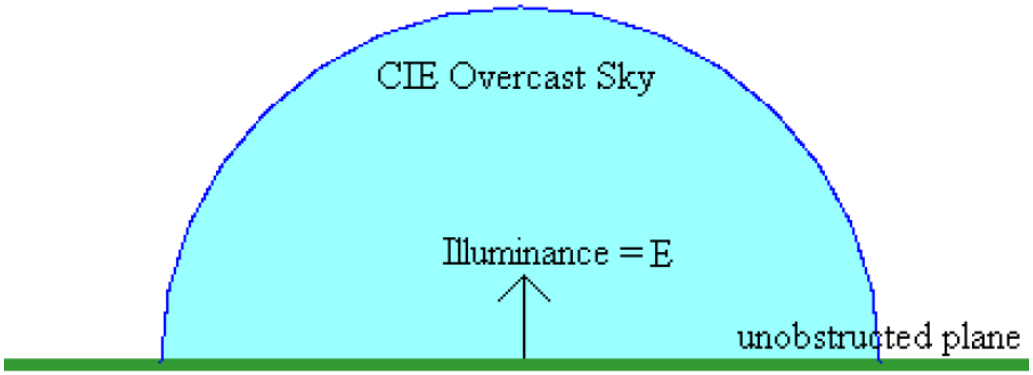
5.2. BRE Digest 209: "Site layout planning for daylight and sunlight"

This section provides a brief description of the calculating methods for the daylight, sunlight and overshadowing to gardens and open spaces criteria presented in BRE Digest 209.

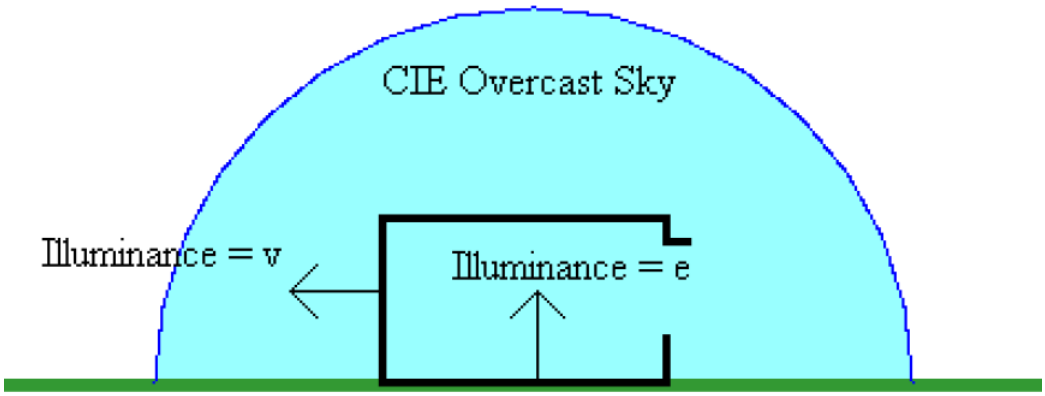
5.2.1. Daylight

The BRE guidelines *"Site layout planning for daylight and sunlight"* incorporate two main methods of calculating daylight: the Vertical Sky Component (VSC) method and the Average Daylight Factor (ADF) method.

The VSC method measures the amount of light available on the outside plane at the centre of a window, as a ratio (expressed as a percentage) of the amount of total unobstructed sky visible following the introduction of visible barriers such as buildings.



E = Illuminance on unobstructed plane



e = Illuminance at point in interior

Sky component = e/E (often expressed as a percentage %)

Vertical Sky Component (VSC) = v/E %

In this assessment, VSC is selected and more details on the numerical criteria for the VSC method are presented in section 9.6.

5.2.2. Sunlight

The BRE guidelines "*Site layout planning for daylight and sunlight*" recommend that access to sunlight is assessed with a development proposal. Potential impacts on available sunlight were assessed using the BRE's Annual Probable Sunlight Hours (APSH) method. This method involves the forecasting of sunlight availability throughout the year and in the winter months, for the main window of each habitable room that faces within 90° of due south. The buildings surrounding the site that do not contain windows that face within 90° of due south has been excluded from the sunlight assessment.

To provide a concise and comprehensive indicative analysis, the closest surfaces within the surrounding properties were analysed for both daylight and sunlight. Their locations are shown in section 9.4.1 in Appendix.

More details on the numerical criteria for the APSH method are presented in section 9.7.

5.2.3. Overshadowing to gardens and open spaces

The BRE guidelines *"Site layout planning for daylight and sunlight"* provide sunlight availability criteria for open spaces. In particular it gives guidance for calculating any areas of open space that may be in permanent shadow on 21st March.

In summary the BRE document states:

"It is suggested that, for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21st March. If as a result of new development, an existing garden or amenity area does not meet these guidelines, and the area which can receive two hours of sun on 21st March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable".

For this assessment the IES "Virtual Environment" SunCast software package has been used. A 3D model of the proposed and surrounding buildings was first modelled and the sunlight-tracking feature within the software used to view the shadow results. The study illustrated the extent of the shadow on one key date:

- March 21 (Spring Equinox)

More details on the numerical criteria for the overshadowing method are presented in section 9.8.

6. BRE Digest 209: Significant criteria

6.1. Daylight

The daylight criteria given within the BRE guidelines have been used as a basis to assess the potential impacts of the development:

"The daylighting is not considered to be substantially affected when the Vertical Sky Component (VSC) measured at the centre of a window is >27%. A window may be adversely affected if the VSC measured at the centre of the window is less than 27% and less than 0.8 times its former value".

In the assessment, the reduction between existing and proposed situations is expressed as a percentage, where a change in daylight levels above 20% equates to a figure of less than 0.8 times its former value.

Assessment points that do not meet the above criteria require further considerations to show the level of impact likely to be incurred.

6.2. Sunlight

The sunlight criteria given within the BRE guidelines have been used as a basis to assess the potential impacts of the development:

"A window may be adversely affected if a point at the centre of the window receives in the year less than 25% of the Annual Probable Sunlight Hours (APSH) including at least 5% of the APSH during the winter months (21st October to 21st March)".

Assessment points that do not meet the above criteria require further considerations to show the level of impact likely to be incurred.

6.3. Overshadowing to gardens and open spaces

The sunlight criteria given within the BRE guidelines have been used as a basis to assess the potential impacts of the development:

"It is suggested that, for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21st March. If as a result of new development, an existing garden or amenity area does not meet these guidelines, and the area which can receive two hours of sun on 21st March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable".

Assessment points that do not meet the above criteria require further considerations to show the level of impact likely to be incurred.

6.4. Criteria for assessing daylight, sunlight and overshadowing effects

The table 1 is a summary of the criteria to assess daylight, sunlight and overshadowing impacts:

Magnitude of effect	Criteria		
Major beneficial	An improvement ratio > 1.3 of the baseline value		
Moderate beneficial	An improvement ratio ≤1.3 and > 1.1 of the baseline value		
Minor beneficial	An improvement ratio ≤1.1 and > 1.0 of the baseline value		
Negligible	Daylight A VSC of 27% or above in the proposed scenario with adequate daylight distribution Or A reduction ratio <1.0 and ≥ 0.8 of the baseline value	Sunlight An APSH of 25%, of which 5% are in the winter months Or A reduction ratio <1.0 and ≥ 0.8 of the baseline value	Overshadowing 50% of any amenity areas receiving at least 2 hours of direct sunlight on 21st March Or A reduction ratio <1.0 and ≥ 0.8 of the baseline value
Minor adverse	A reduction ratio <0.8 and ≥ 0.7 of the baseline value		
Moderate adverse	A reduction ratio <0.7 and ≥ 0.6 of the baseline value		
Major adverse	A reduction ratio <0.6 of the baseline value		

Table 1: Criteria for assessing daylight, sunlight and overshadowing effects

7. Assessment

7.1. BS 8206-2: 1992

The foreword to BS 8206-2: 1992 states that:

"The aim of the standard is to give guidance to architects, builders and others who carry out lighting design. It is recognised that lighting is only one of many matters that influence fenestration. These include other aspects of environmental performance (such as noise, thermal equilibrium and the control of energy use), fire hazards, constructional requirements, the external appearance and the surroundings of the site. The best design for a building does not necessarily incorporate the ideal solution for any individual function. For this reason, careful judgement should be exercised when using the criteria given in the standards for other purposes, particularly town planning control."

7.2. Daylight

The daylight results are presented in section 9.6 in Appendix. The images and results show and compare the external levels of daylight (VSC – Vertical Sky Components) on the surfaces of 55-57 Holmes Road with and without the proposed development.

A summary of results is displayed in the table 2 below:

Daylight assessment (Surrounding buildings)				
Building / Target surface	**VSC (existing) >27%**	**VSC (proposed) >27%**	**Ratio**	**Result**
Surface 1 - 55-57 Holmes Road - FF	37.95	37.65	0.99	Negligible
Surface 2 - 55-57 Holmes Road - SF	38.55	38.45	0.99	Negligible
Surface 3 - 55-57 Holmes Road - FF	25.08	25.00	0.99	Negligible
Surface 4 - 55-57 Holmes Road - SF	20.85	20.65	0.99	Negligible
Surface 5 - 55-57 Holmes Road - SF	27.55	27.25	0.99	Negligible
Surface 6 - 55-57 Holmes Road - SF	17.65	17.75	1.01	Minor beneficial
Surface 7 - 55-57 Holmes Road - FF	11.76	11.72	0.99	Negligible
Surface 8 - 55-57 Holmes Road - SF	18.05	18.05	1.00	No impact
Surface 9 - 55-57 Holmes Road - TF	41.50	41.40	0.99	Negligible
Surface 10 - 55-57 Holmes Road - TF	26.30	26.02	0.99	Negligible
Surface 11 - 55-57 Holmes Road - FoF	44.25	41.90	0.95	Negligible
Surface 12 - 55-57 Holmes Road - FoF	43.90	41.85	0.95	Negligible
Surface 13 - 55-57 Holmes Road - FiF	46.35	46.55	1.00	No impact

Surface 14 - 55-57 Holmes Road - FiF	46.05	46.00	0.99	Negligible

Table 2: Daylight results

Note: For location of target surfaces, see Appendix section 9.4 "Site plan and location"

As can be seen in the above table, none of the surfaces will be adversely impacted by the proposed development.

- ✓ **The slight loss in daylight for the surfaces are not considered of concern as the VCS levels are either above 27% or more than 0.8 times their former values and will provide adequate levels of daylight.**

→ **In terms of daylight the proposed scheme is considered acceptable.**

It should be noted that the values provided in the BRE 209 are for guidance purposes only.

7.3. Sunlight

Where necessary (as defined in the Assessment Methodology section of this report) Annual Probable Sunlight Hours (APSH) tests have been undertaken with the results presented in section 9.7 in the appendix.

The table below indicates the likely levels of sunlight on the surfaces of 55-57 Holmes Road with and without the proposed development.

A summary of results is displayed in the table 3 below:

Sunlight assessment (Surrounding buildings)						
Building / Target surface	Total APSH >25%		Winter APSH >5%		Ratio	Result
	Existing	Proposed	Existing	Proposed		
Surface 1 - 55-57 Holmes Road - FF	N/A	N/A	N/A	N/A	N/A	N/A
Surface 2 - 55-57 Holmes Road - SF	N/A	N/A	N/A	N/A	N/A	N/A
Surface 3 - 55-57 Holmes Road - FF	N/A	N/A	N/A	N/A	N/A	N/A
Surface 4 - 55-57 Holmes Road - SF	1.18	1.15	0.00	0.00	0.97	Negligible
Surface 5 - 55-57 Holmes Road - SF	N/A	N/A	N/A	N/A	N/A	N/A
Surface 6 - 55-57 Holmes Road - SF	12.86	12.81	11.22	11.22	0.99	Negligible
Surface 7 - 55-57 Holmes Road - FF	11.68	11.68	12.83	12.83	1.00	No impact
Surface 8 - 55-57 Holmes Road - SF	14.86	14.86	16.62	16.62	1.00	No impact
Surface 9 - 55-57 Holmes Road - TF	N/A	N/A	N/A	N/A	N/A	N/A
Surface 10 - 55-57 Holmes Road - TF	20.24	19.72	19.48	19.48	0.97	Negligible

Surface 11 - 55-57 Holmes Road - FoF	37.44	33.00	32.83	32.73	0.88	Negligible
Surface 12 - 55-57 Holmes Road - FoF	36.22	33.81	34.99	34.99	0.93	Negligible
Surface 13 - 55-57 Holmes Road - FiF	44.21	42.18	39.59	39.36	0.95	Negligible
Surface 14 - 55-57 Holmes Road - FiF	43.77	42.20	39.55	39.55	0.96	Negligible

Table 3: Sunlight results

Note: For location of target surfaces, see Appendix section 9.4 "Site plan and location"

The table above demonstrates that, none of the surfaces will be adversely impacted by the proposed development.

- ✓ **The slight loss in sunlight for the surfaces are not considered of concern as the total APSH are either above >25% of which more than 5% are in winter months or more than 0.8 times their former values. Adequate levels of sunlight will therefore be obtained on these surfaces.**

→ **In terms of sunlight the proposed scheme is considered acceptable.**

It should be noted that the values provided in the BRE 209 are for guidance purposes only.

7.4. Overshadowing

No existing amenity areas/gardens/open spaces have been identified on the drawings and/or site plan.

8. Conclusion

8.1. Daylight

This report demonstrates that the levels of daylight at the surrounding buildings (55-57 Holmes Road) are adequate for 100% of the surfaces.

8.2. Sunlight

This report demonstrates that the levels of sunlight at the surrounding buildings (55-57 Holmes Road) are adequate for 100% of the surfaces.

8.3. Overshadowing

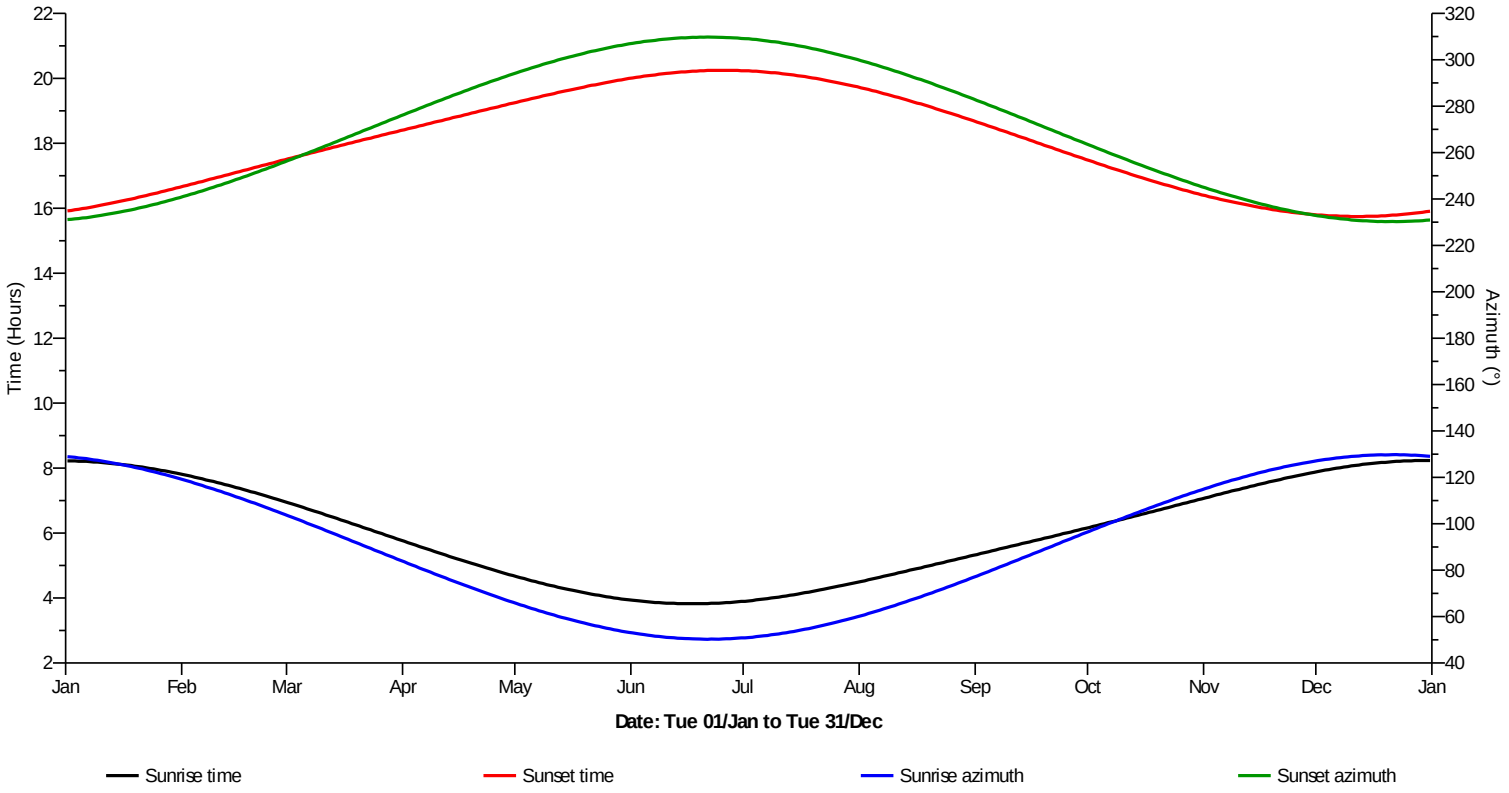
No existing amenity areas/gardens/open spaces have been identified on the drawings and/or site plan.

On balance, it can be concluded that the surrounding buildings (55-57 Holmes Road) will not be adversely impacted by the proposed development.

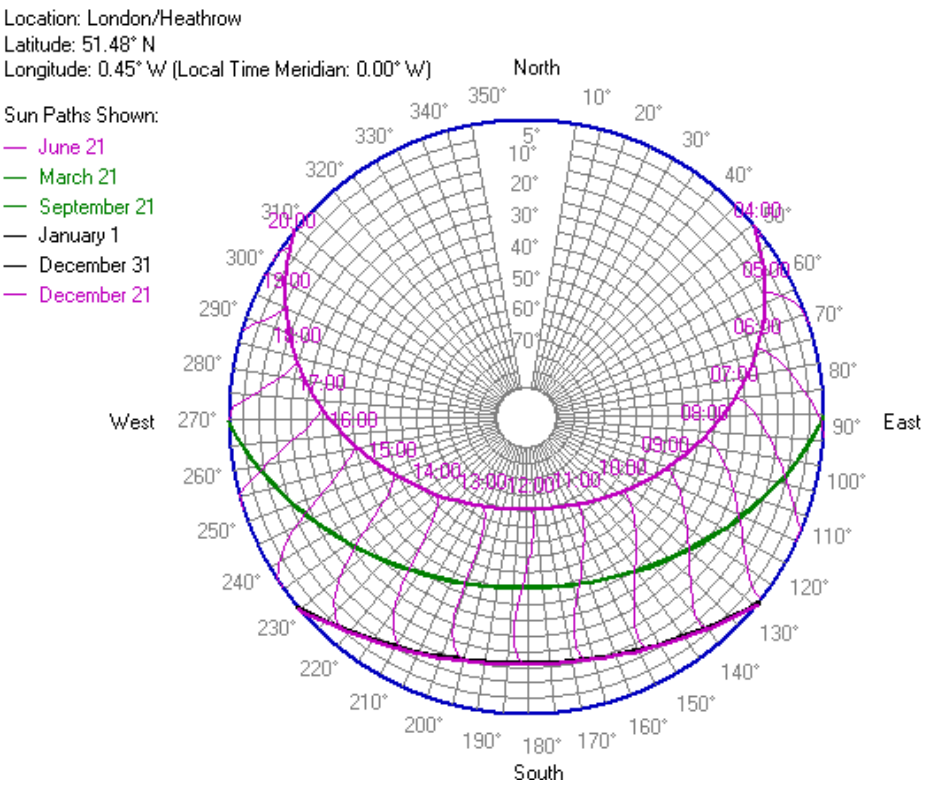
In conclusion the proposed scheme is considered acceptable.

9. Appendix

9.1. Sunrise and sunset time

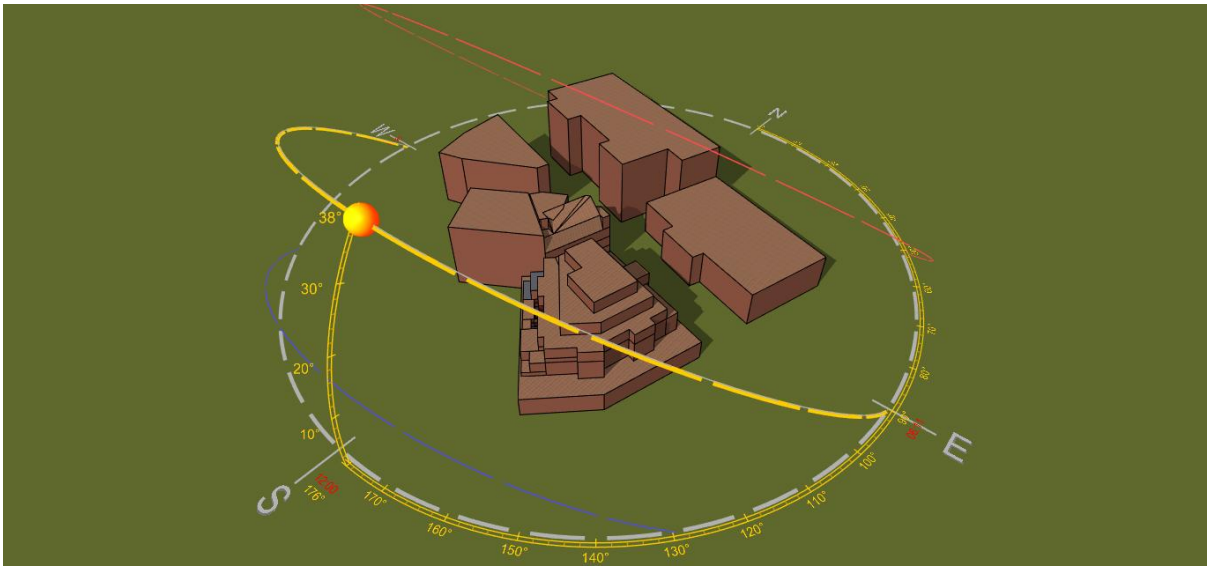


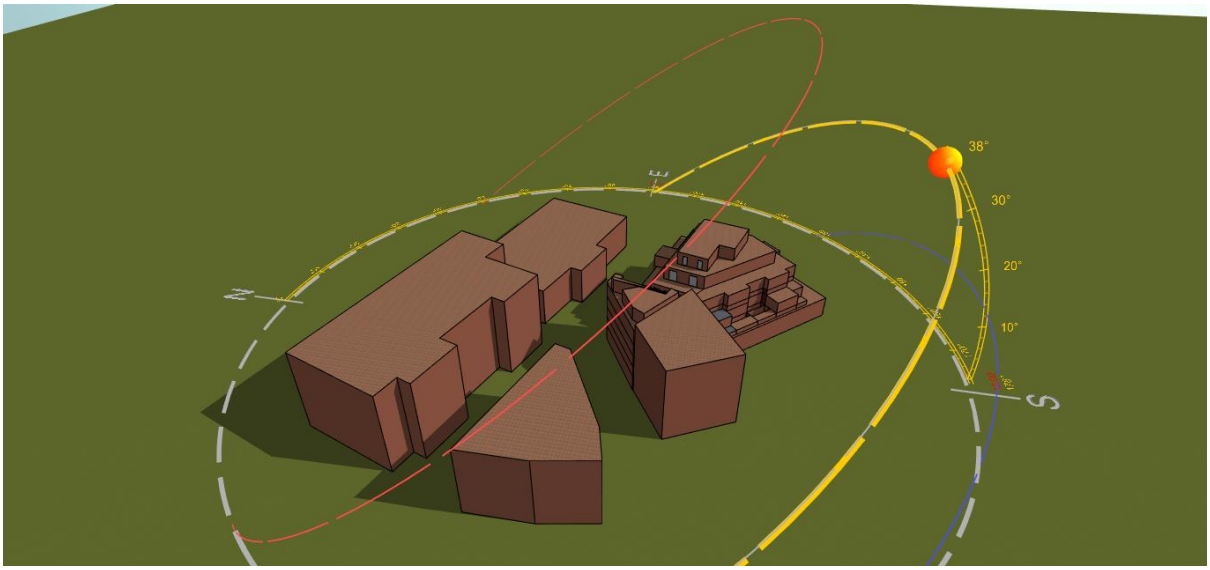
9.2. Sun path



9.3. Suntrace

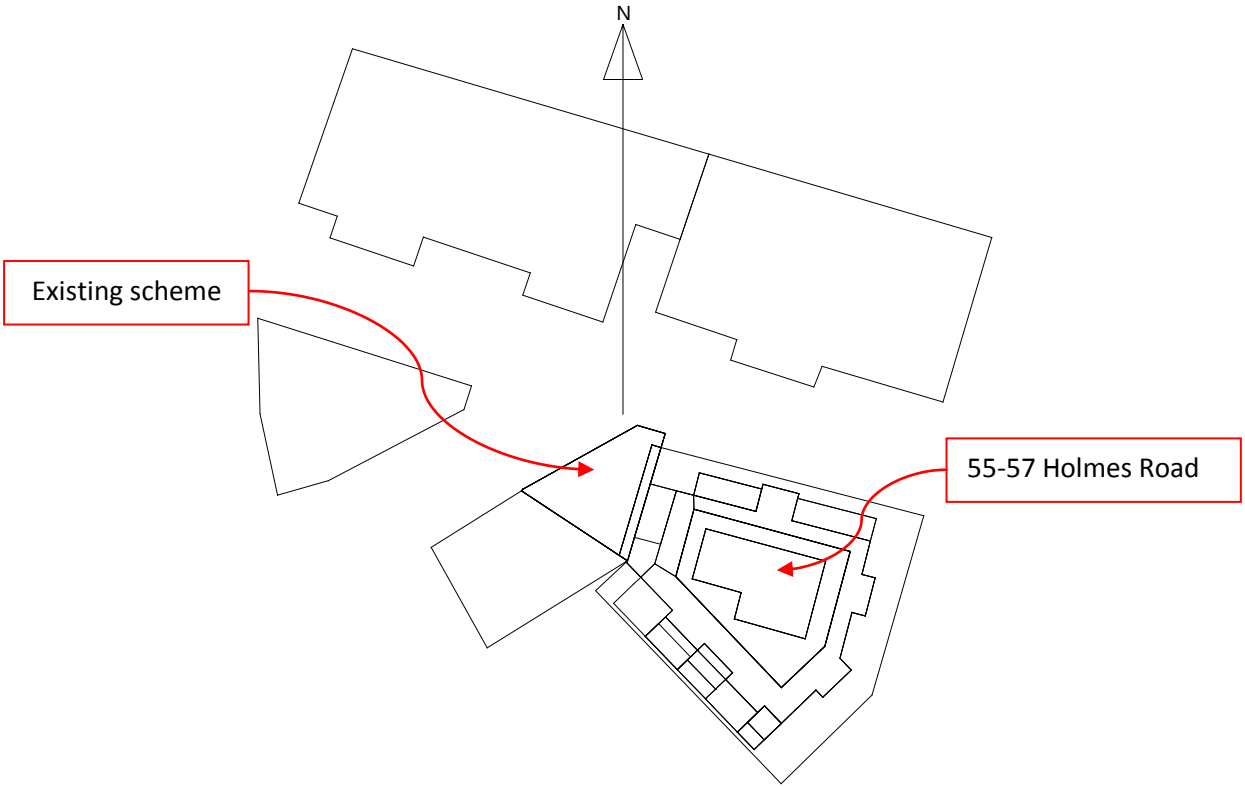
- The red line represents the sun's path during June.
- The yellow line represents the sun's path during March/September.
- The blue line represents the sun's path during December.



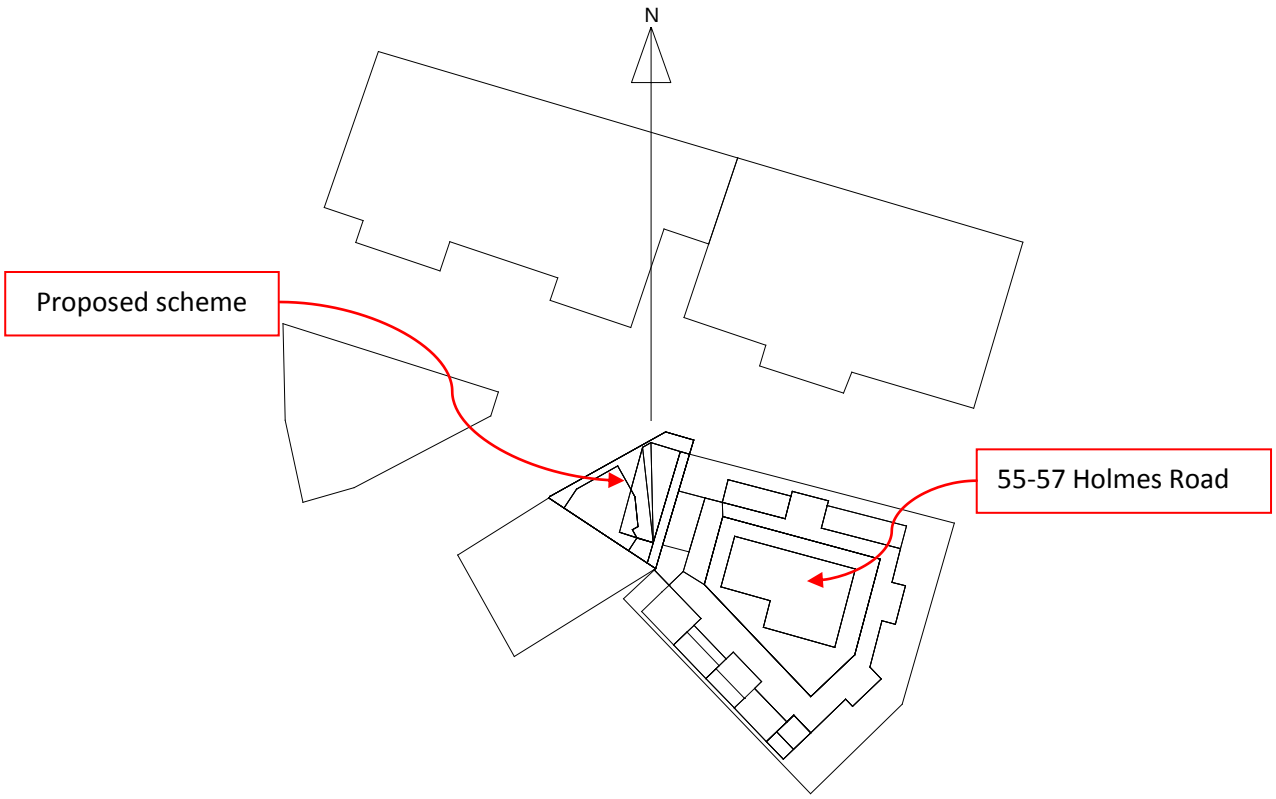


9.4. Site plan and location

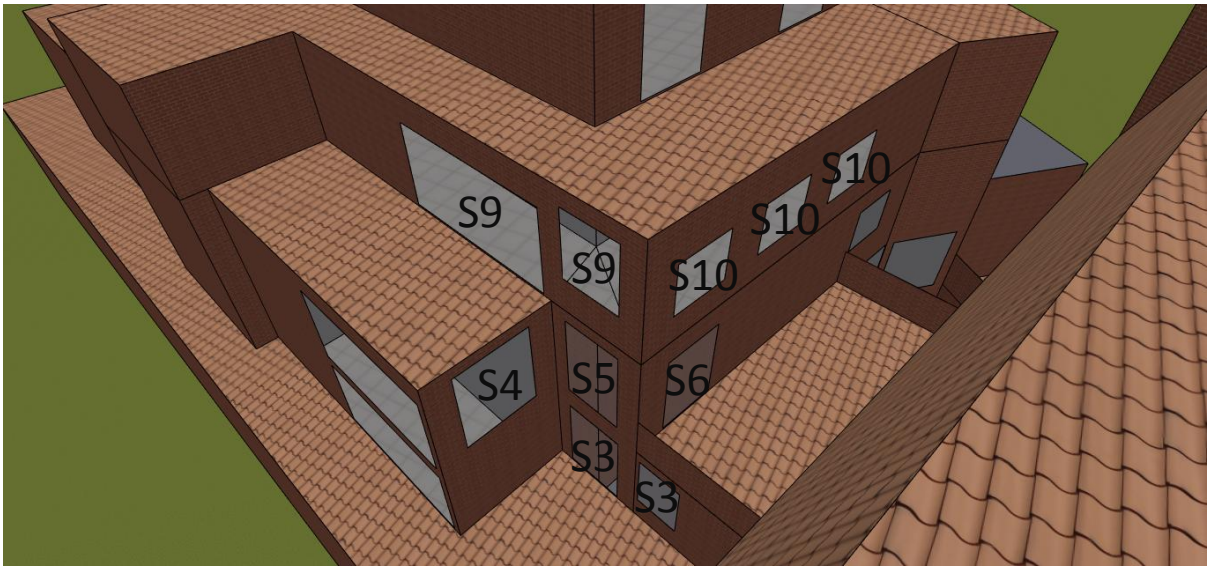
9.4.1. Existing site layout



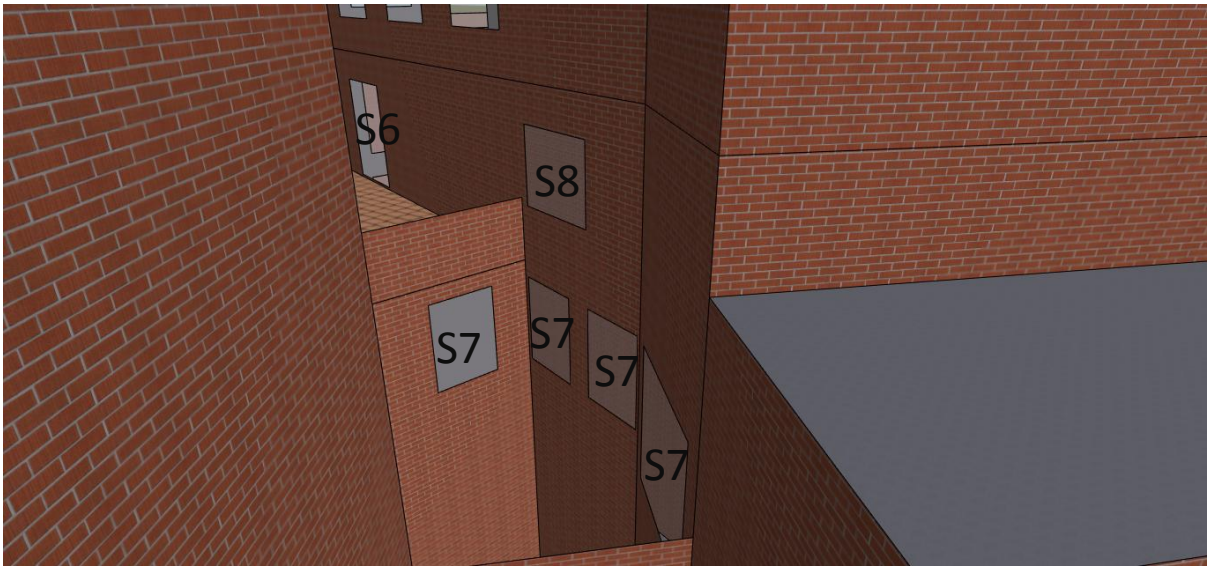
9.4.2. Proposed site layout



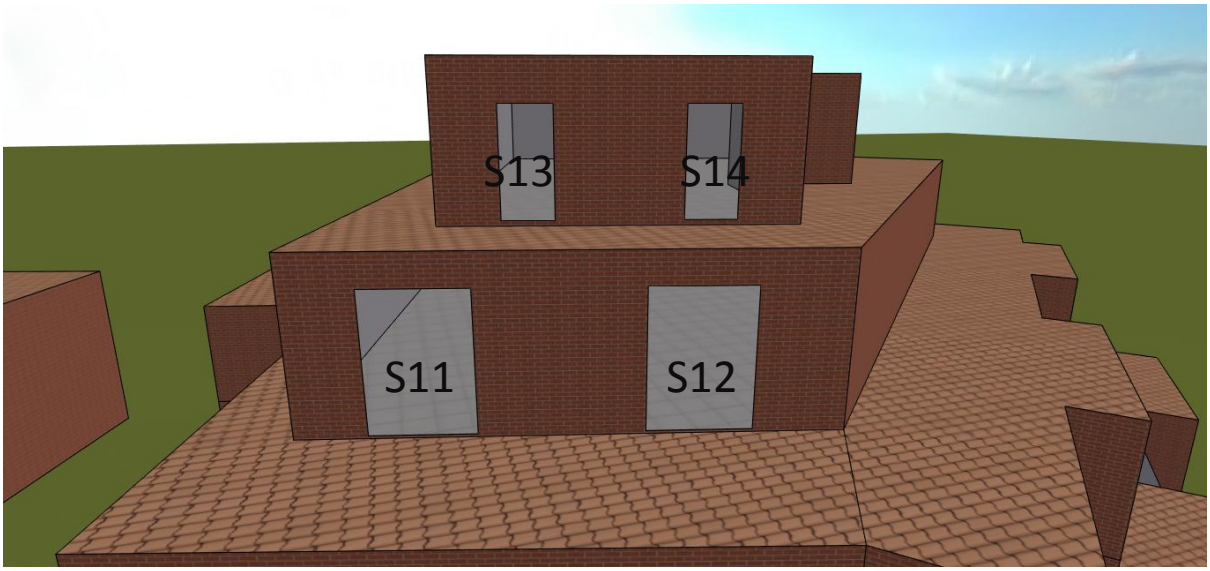
55-57 Holmes Road



55-57 Holmes Road



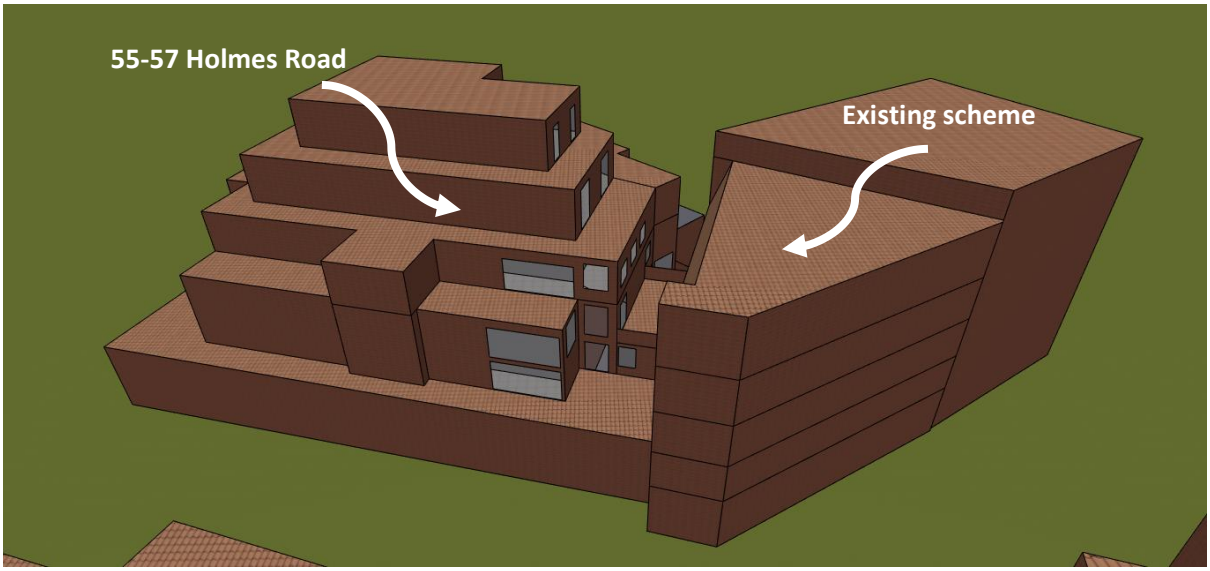
55-57 Holmes Road



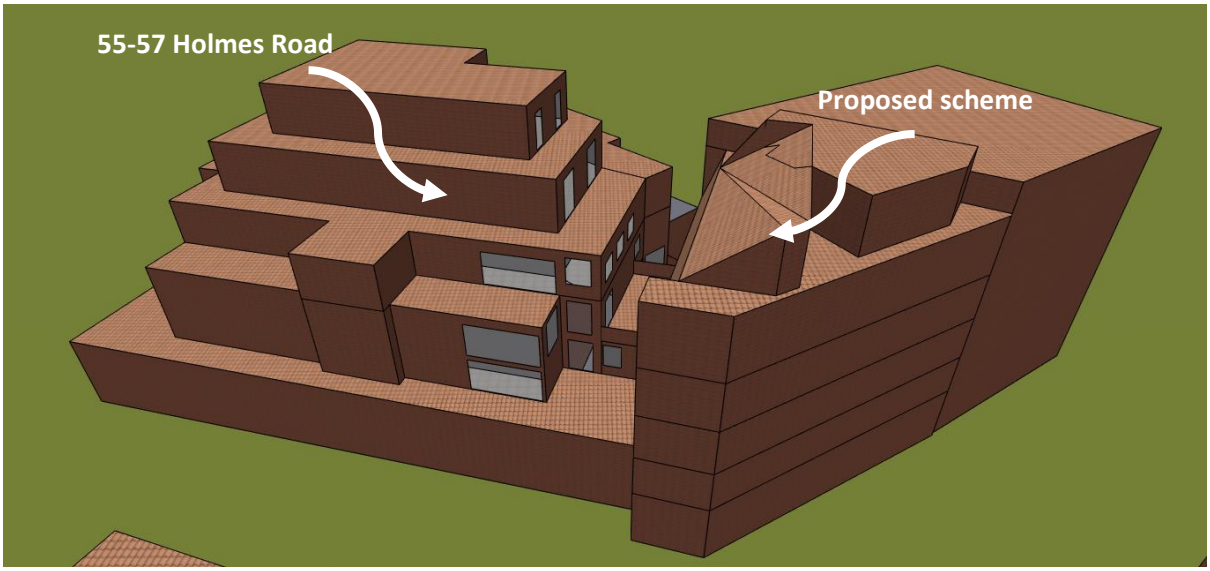
55-57 Holmes Road

Location	61-63 Holmes Road, London NW5 3AN
Latitude (°)	51.55 N
Longitude (°)	0.14 W

9.5. Model images



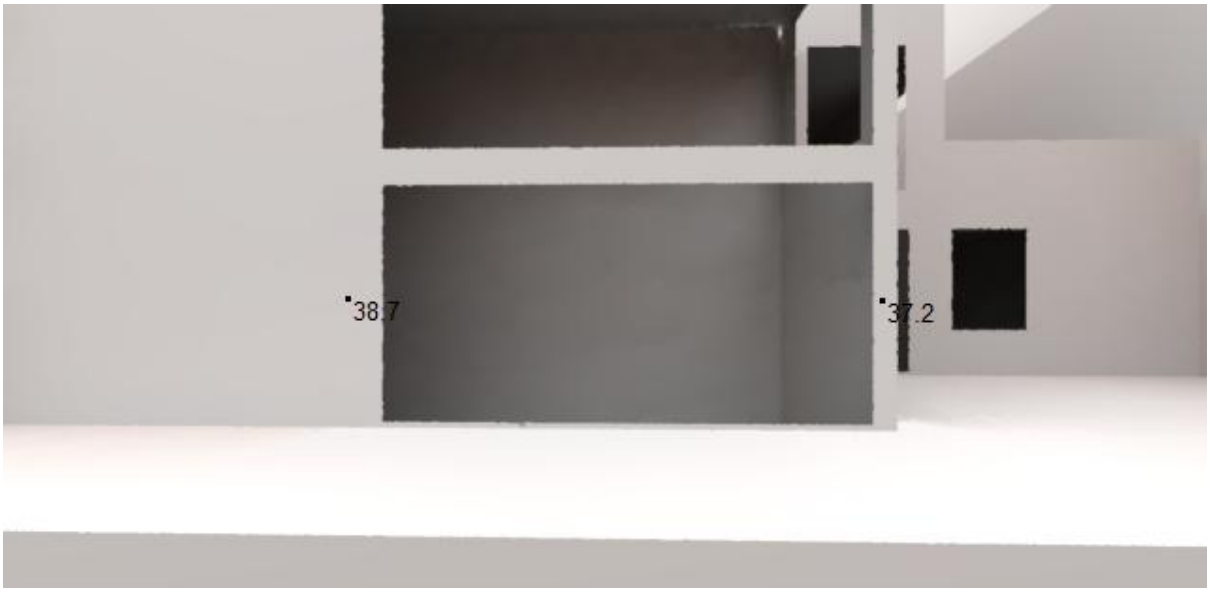
Existing scheme



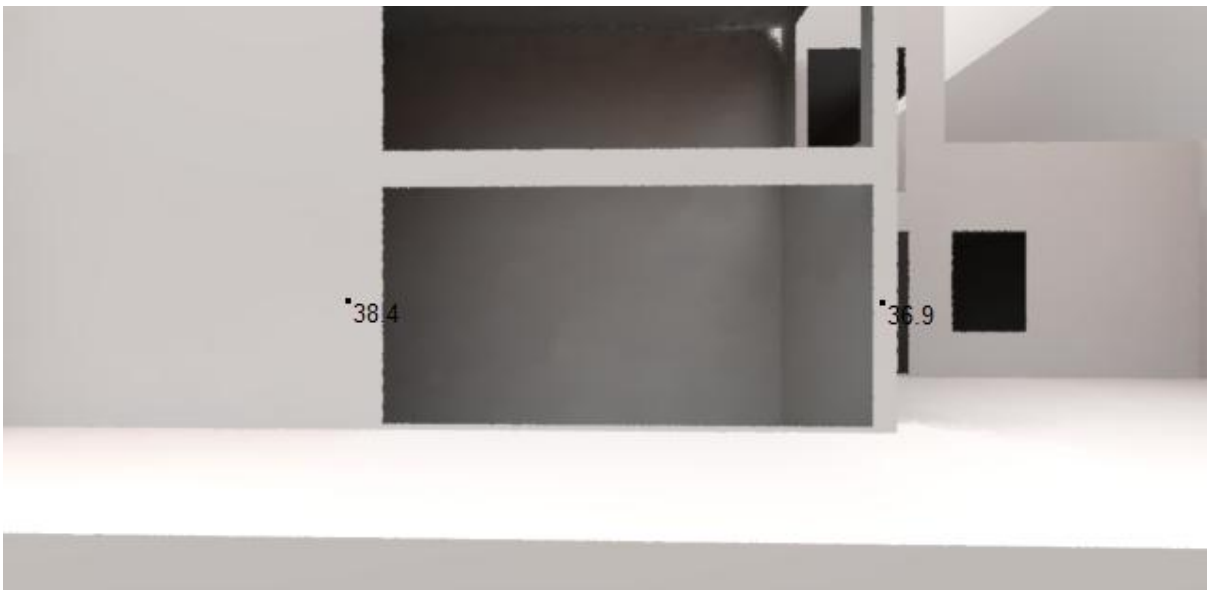
Proposed scheme

9.6. Daylight results

Surface 1 - 55-57 Holmes Road - FF

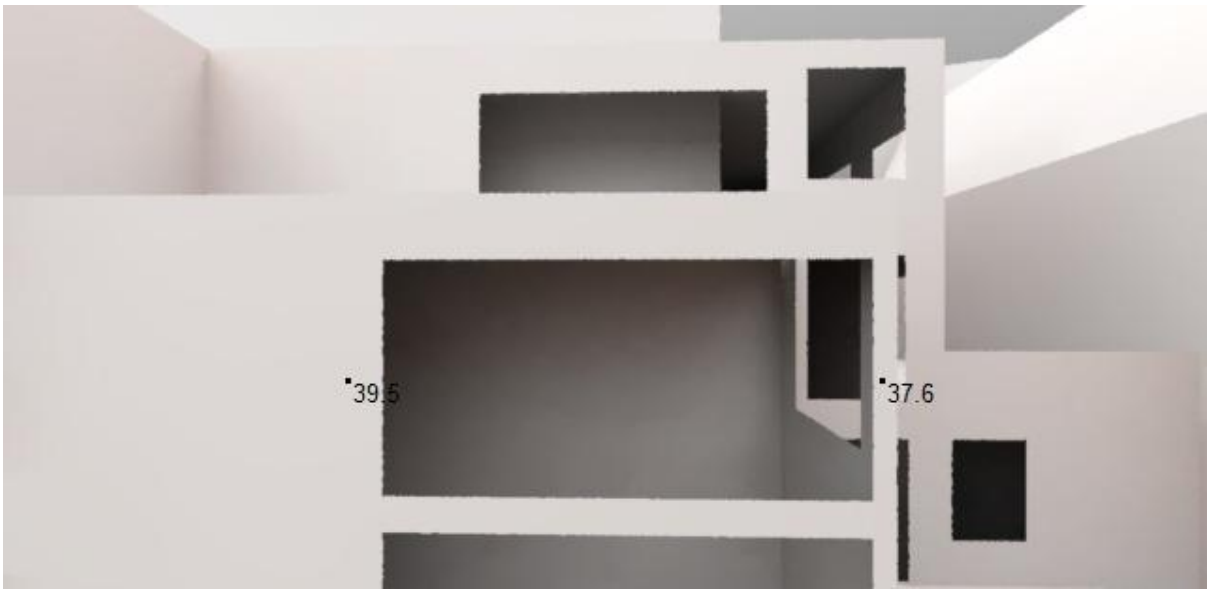


	Existing		
	Sample of VSC		Average
S1	38.7	37.2	37.95

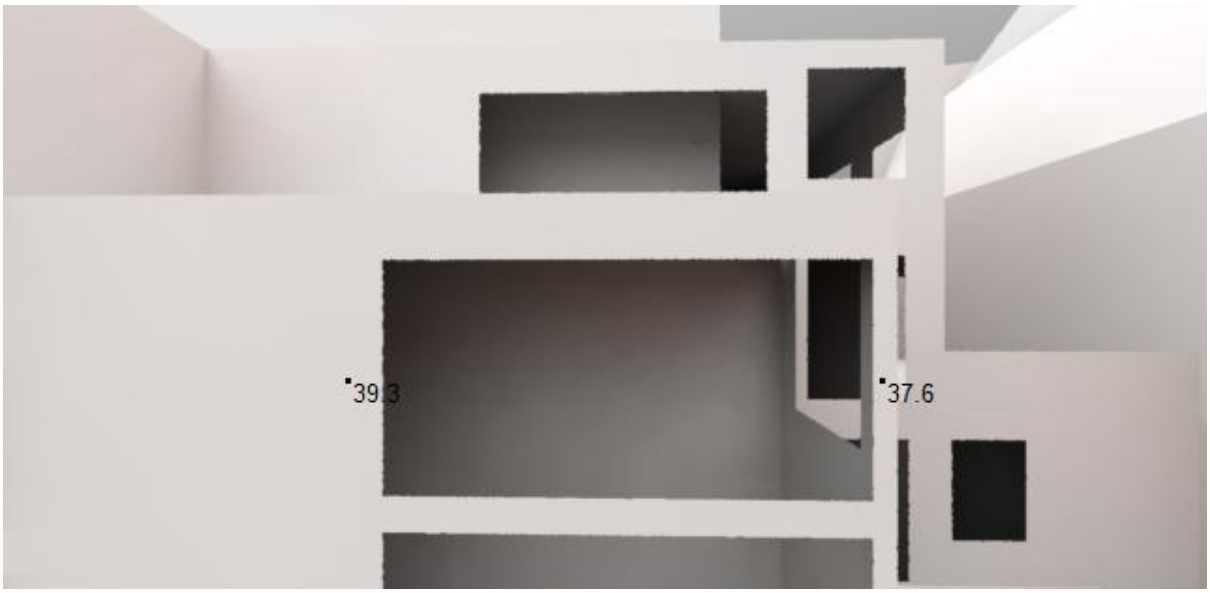


	Proposed				
	Sample of VSC		Average	VSC >27%	Ratio
S1	38.4	36.9	37.65	YES	0.99

Surface 2 - 55-57 Holmes Road - SF

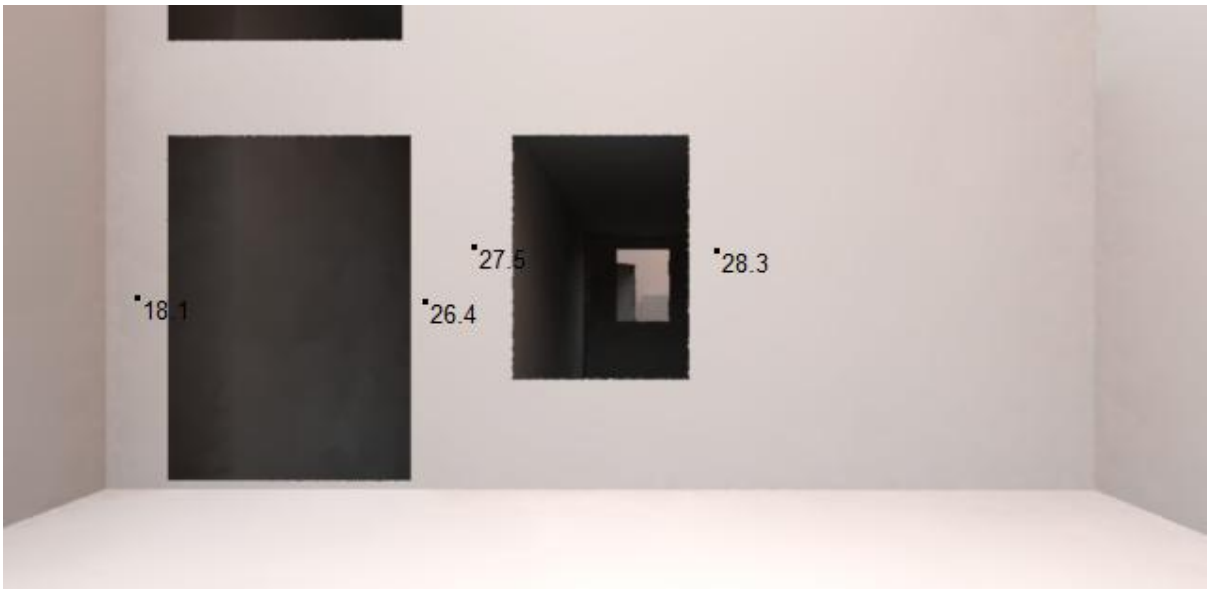


	Existing		
	Sample of VSC		Average
S2	39.5	37.6	38.55

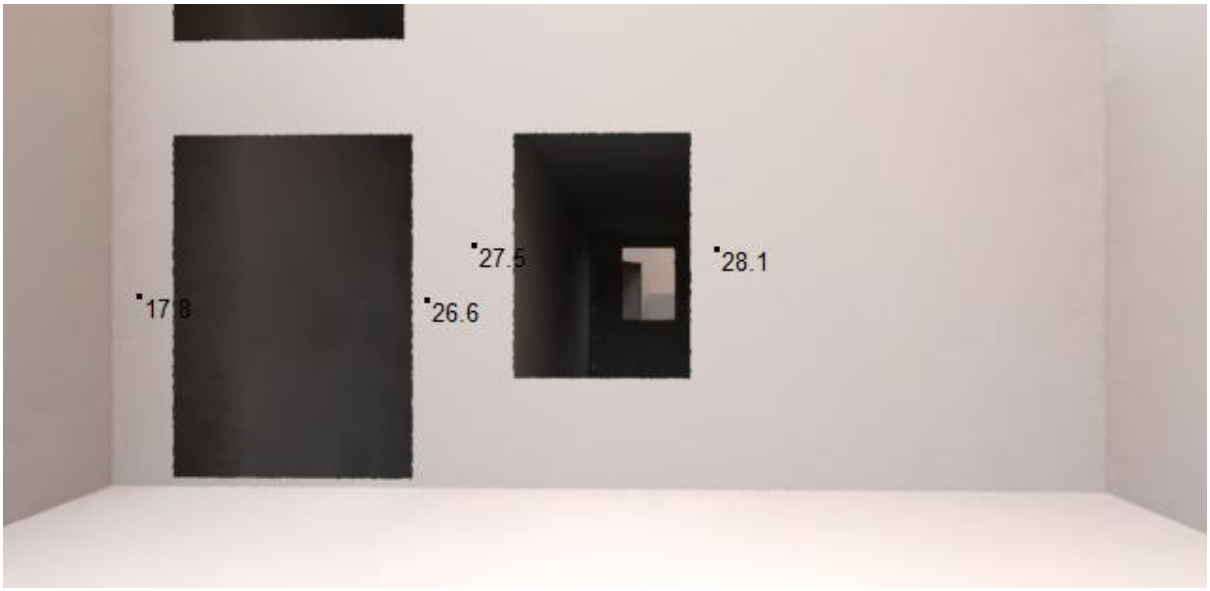


	Proposed				
	Sample of VSC		Average	VSC >27%	Ratio
S2	39.3	37.6	38.45	YES	0.99

Surface 3 - 55-57 Holmes Road - FF

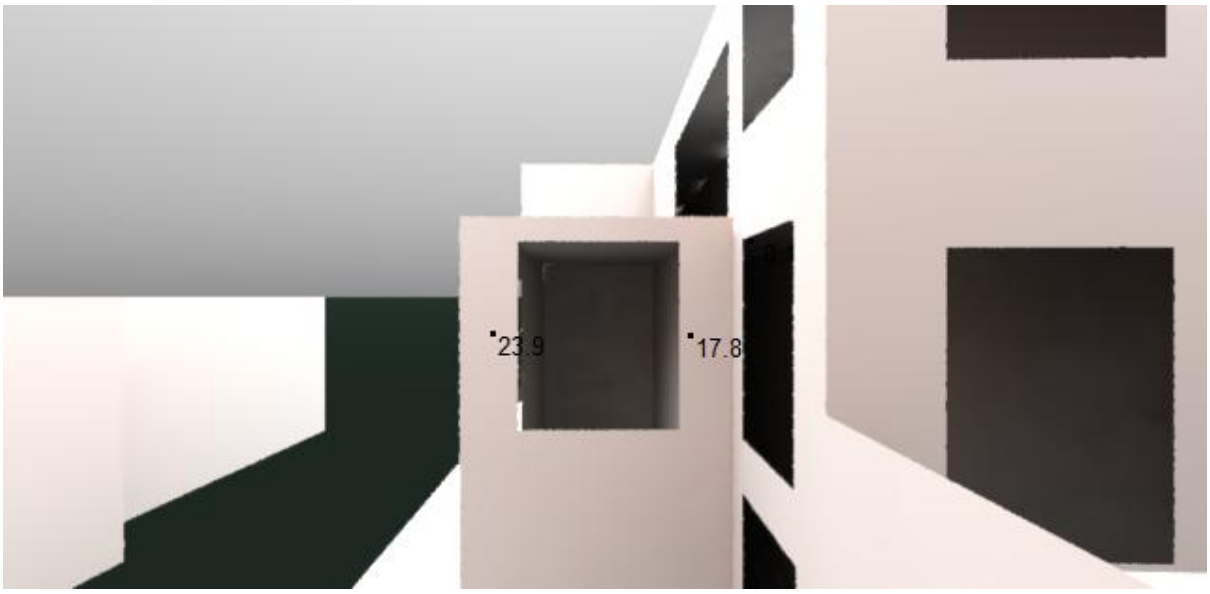


	Existing				
	Sample of VSC				Average
S3	18.1	26.4	27.5	28.3	25.08

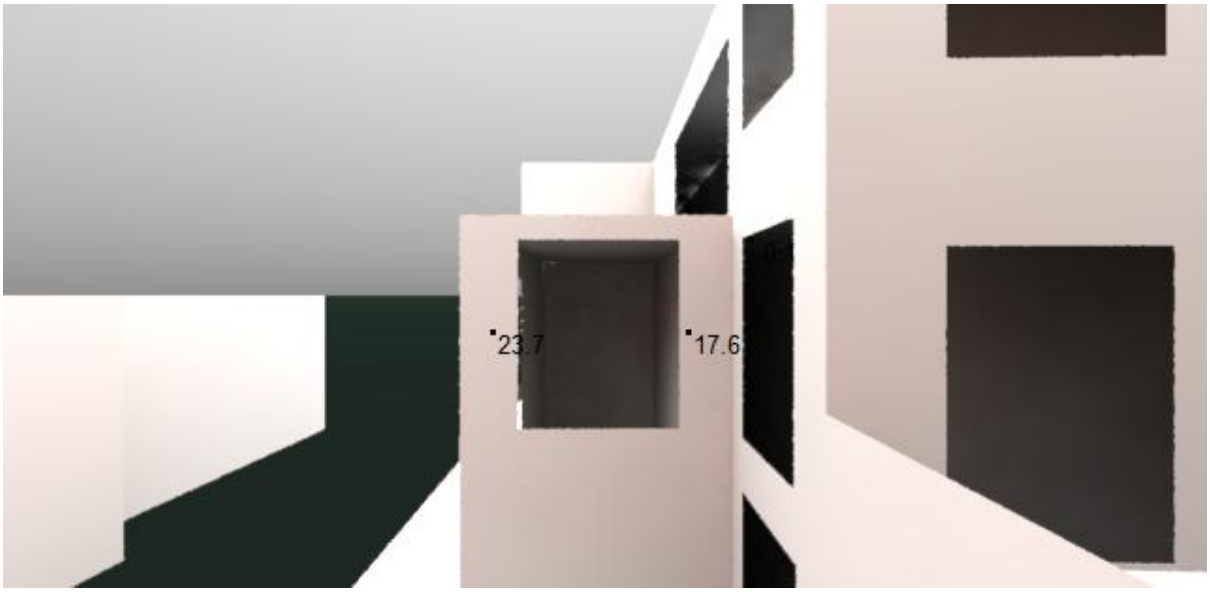


	Proposed						
	Sample of VSC				Average	VSC >27%	Ratio
S3	17.8	26.6	27.5	28.1	25.00	NO	0.99

Surface 4 - 55-57 Holmes Road - SF

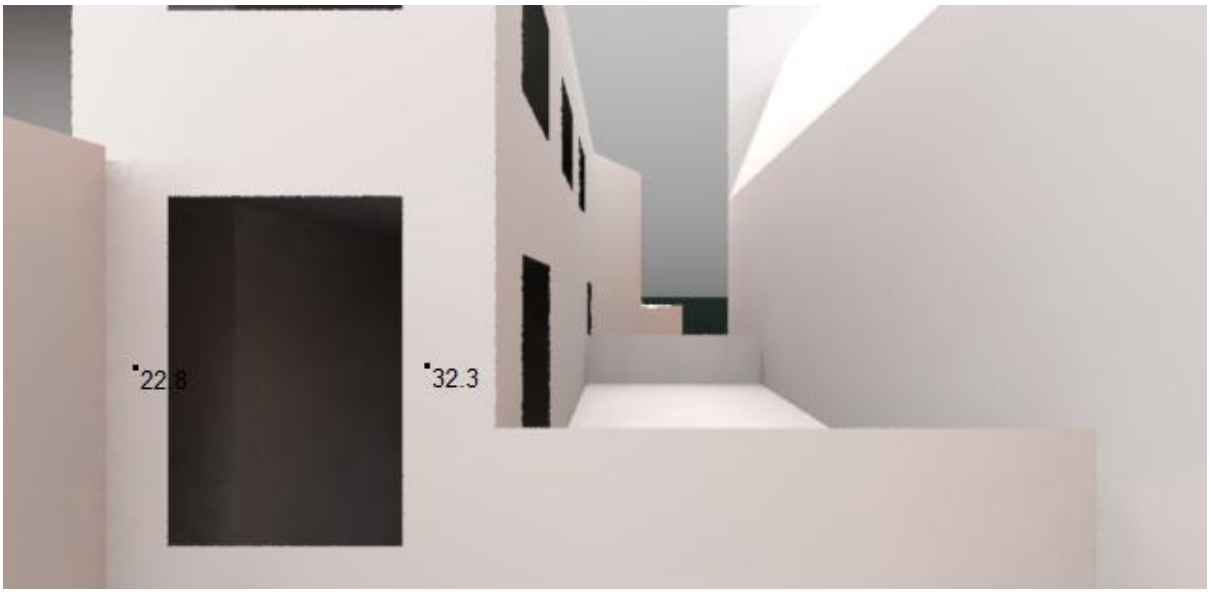


	Existing		
	Sample of VSC		Average
S4	23.9	17.8	20.85

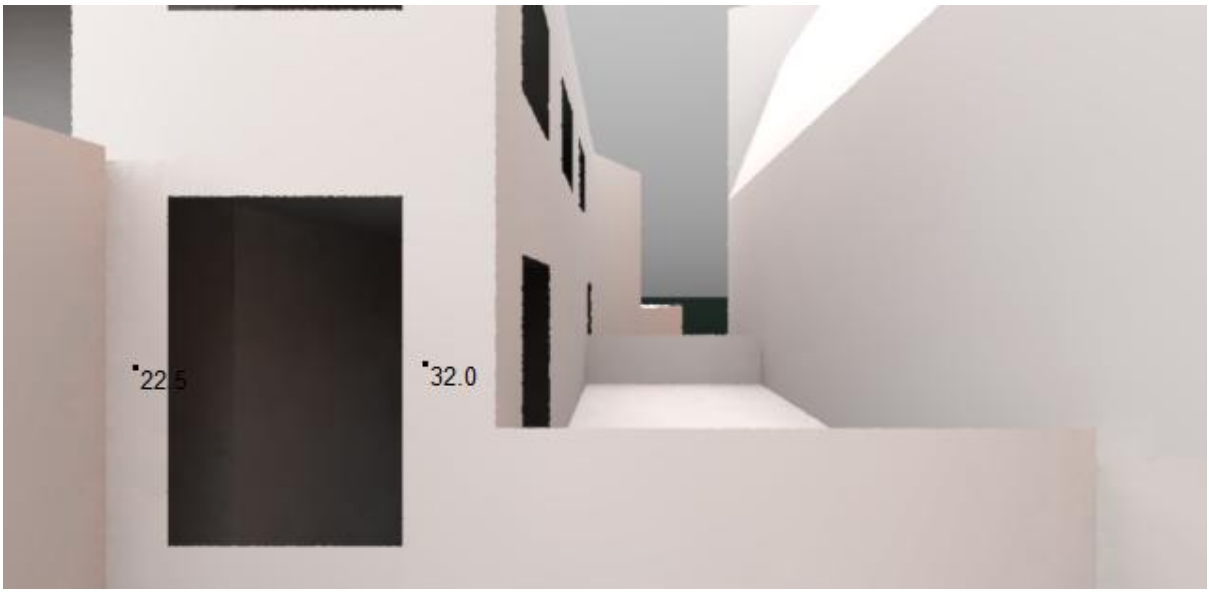


	Proposed				
	Sample of VSC		Average	VSC >27%	Ratio
S4	23.7	17.6	20.65	NO	0.99

Surface 5 - 55-57 Holmes Road - SF

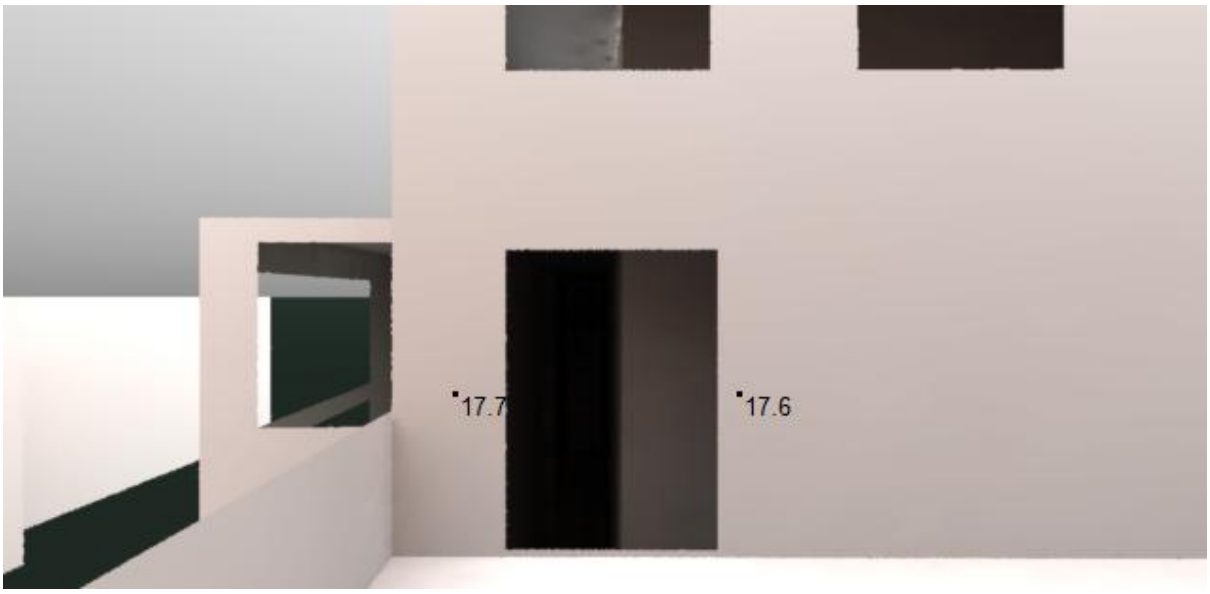


	Existing		
	Sample of VSC		Average
S5	22.8	32.3	27.55

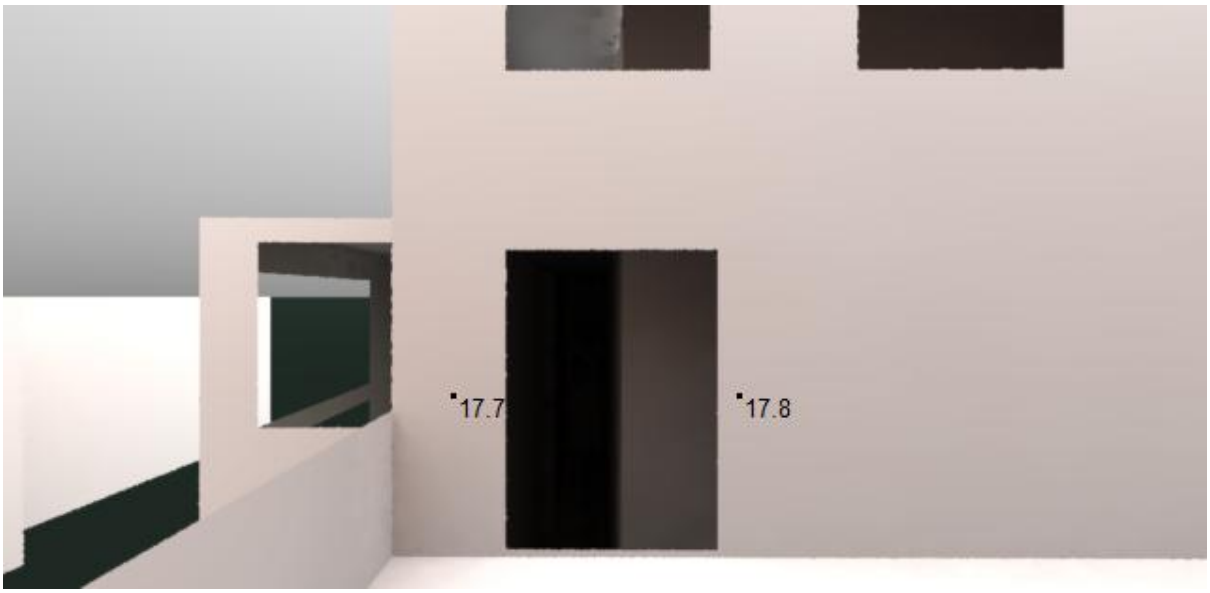


	Proposed				
	Sample of VSC		Average	VSC >27%	Ratio
S5	22.5	32.0	27.25	YES	0.99

Surface 6 - 55-57 Holmes Road - SF

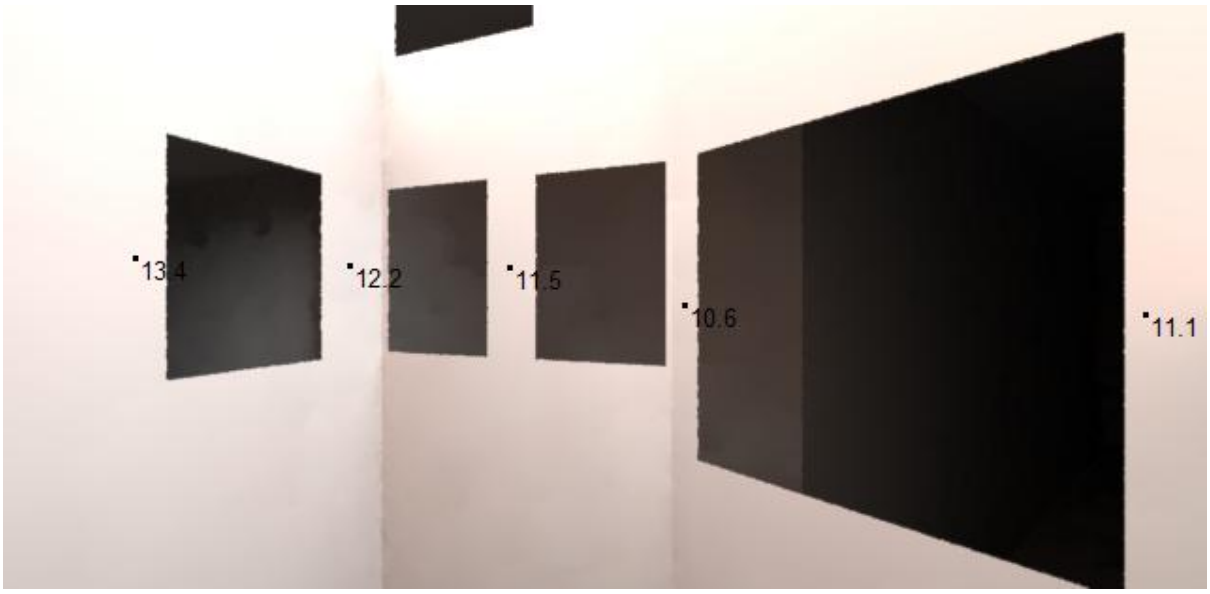


	Existing		
	Sample of VSC		Average
S6	17.7	17.6	17.65



	Proposed				
	Sample of VSC		Average	VSC >27%	Ratio
S6	17.7	17.8	17.75	NO	1.01

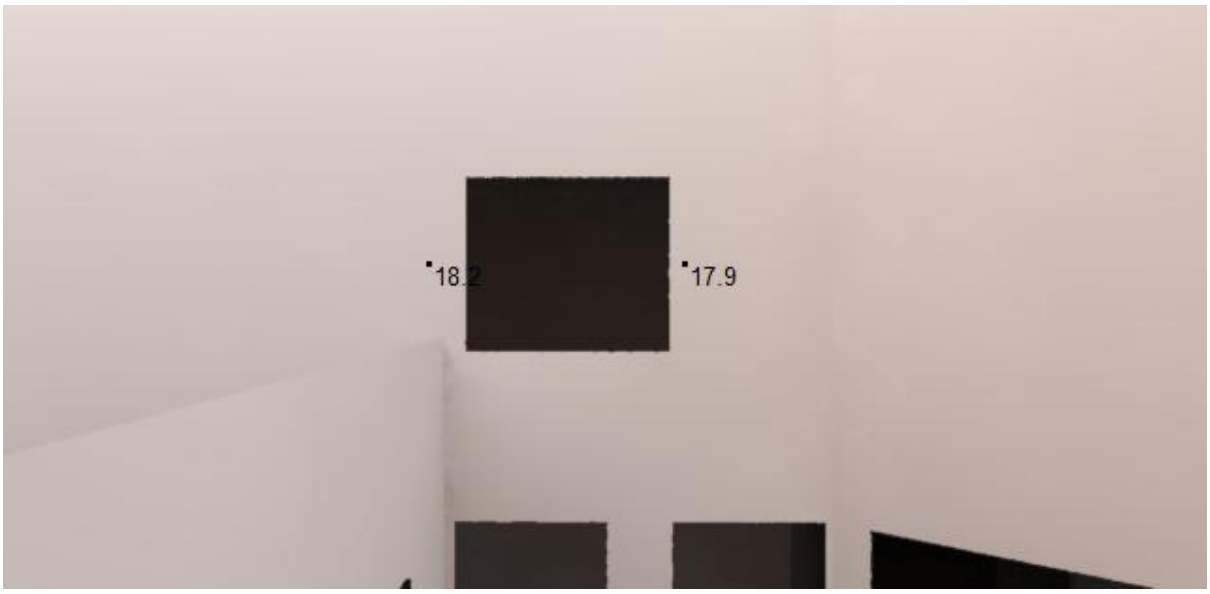
Surface 7 - 55-57 Holmes Road - FF



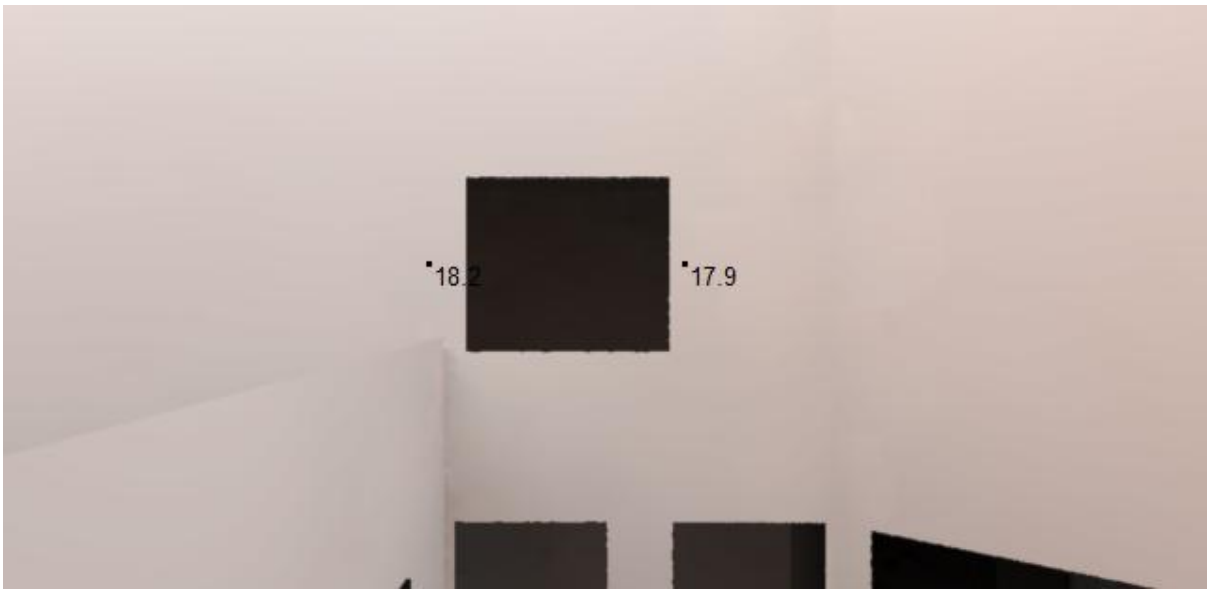
	Existing					
	Sample of VSC					Average
S7	13.4	12.2	11.5	10.6	11.1	11.76

	Proposed							
	Sample of VSC					Average	VSC >27%	Ratio
S7	13.4	12.4	11.3	10.5	11.0	11.72	NO	0.99

Surface 8 - 55-57 Holmes Road - SF



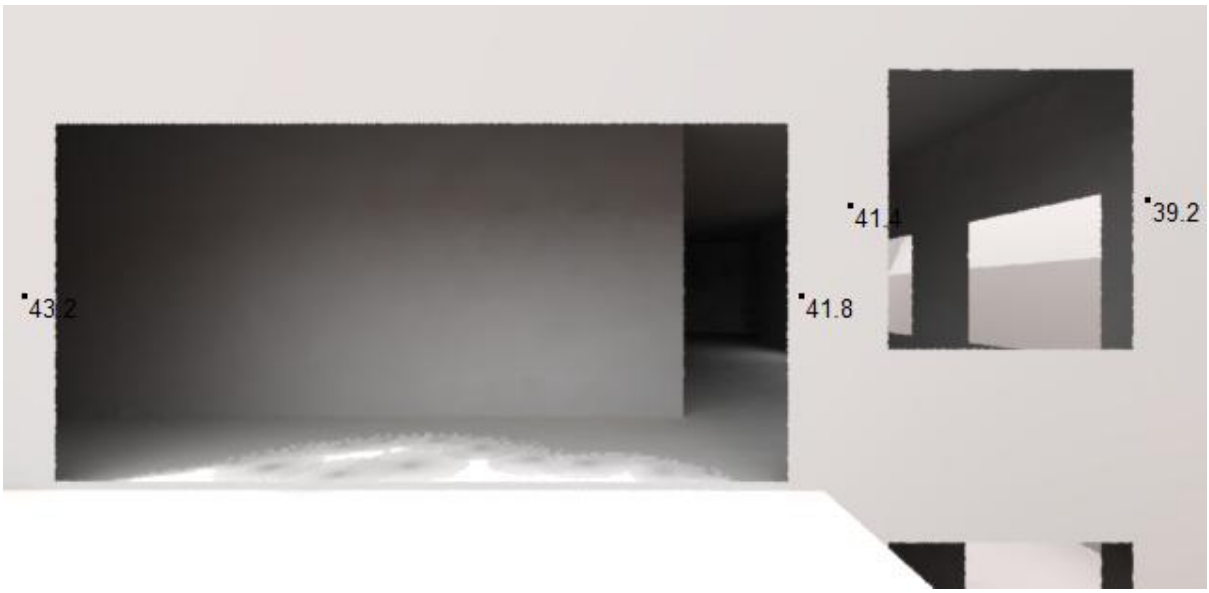
	Existing		
	Sample of VSC		Average
S8	18.2	17.9	18.05



	Proposed				
	Sample of VSC		Average	VSC >27%	Ratio
S8	18.2	17.9	18.05	NO	1.00

Surface 9 - 55-57 Holmes Road - TF

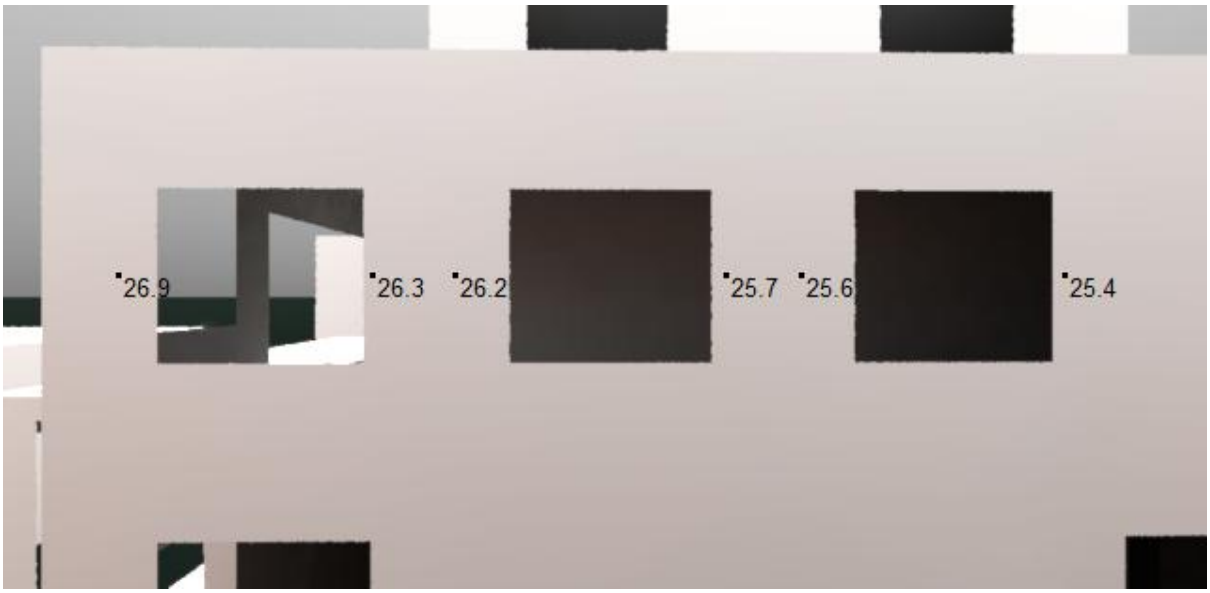
	Existing				
	Sample of VSC				Average
S9	43.5	41.7	41.4	39.4	41.50



	Proposed						
	Sample of VSC				Average	VSC >27%	Ratio
S9	43.2	41.8	41.4	39.2	41.40	YES	0.99

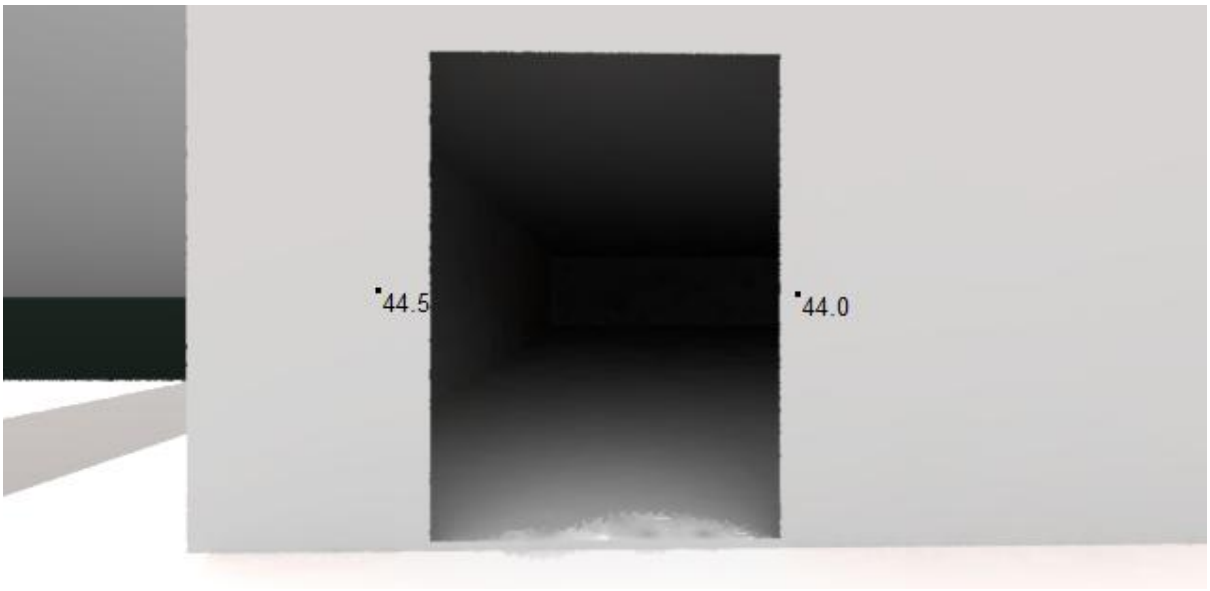
Surface 10 - 55-57 Holmes Road - TF

	Existing						
	Sample of VSC						Average
S10	27.0	26.7	26.5	25.9	25.9	25.8	26.30

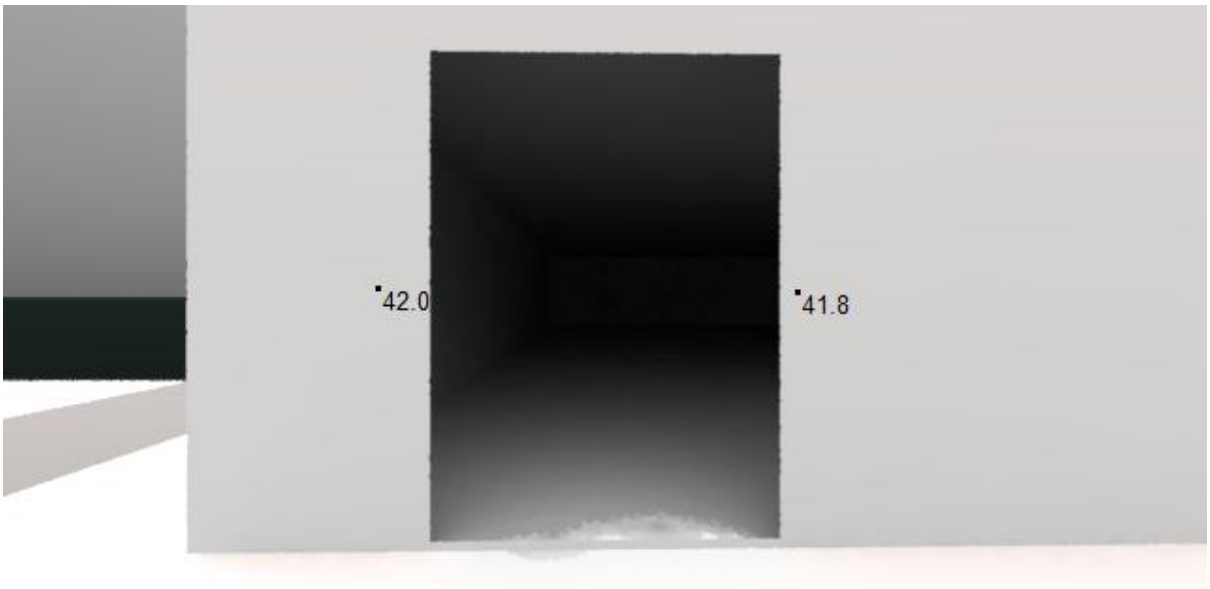


	Proposed								
	Sample of VSC						Average	VSC >27%	Ratio
S10	26.9	26.3	26.2	25.7	25.6	25.4	26.02	NO	0.99

Surface 11 - 55-57 Holmes Road - FoF

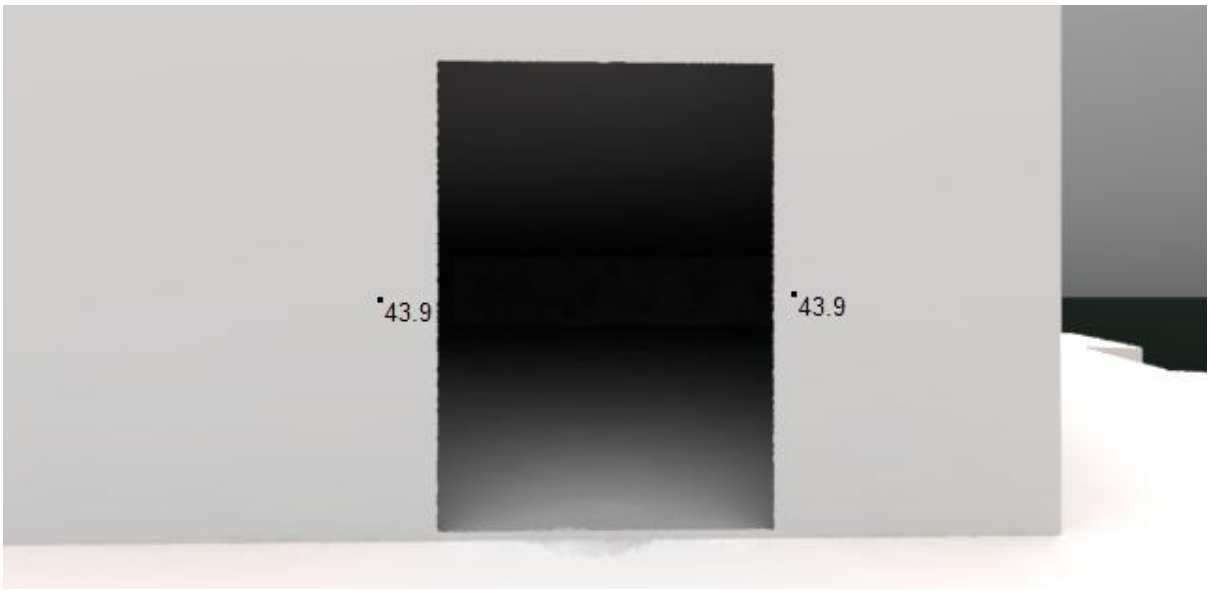


	Existing		
	Sample of VSC		Average
S11	44.5	44.0	44.25

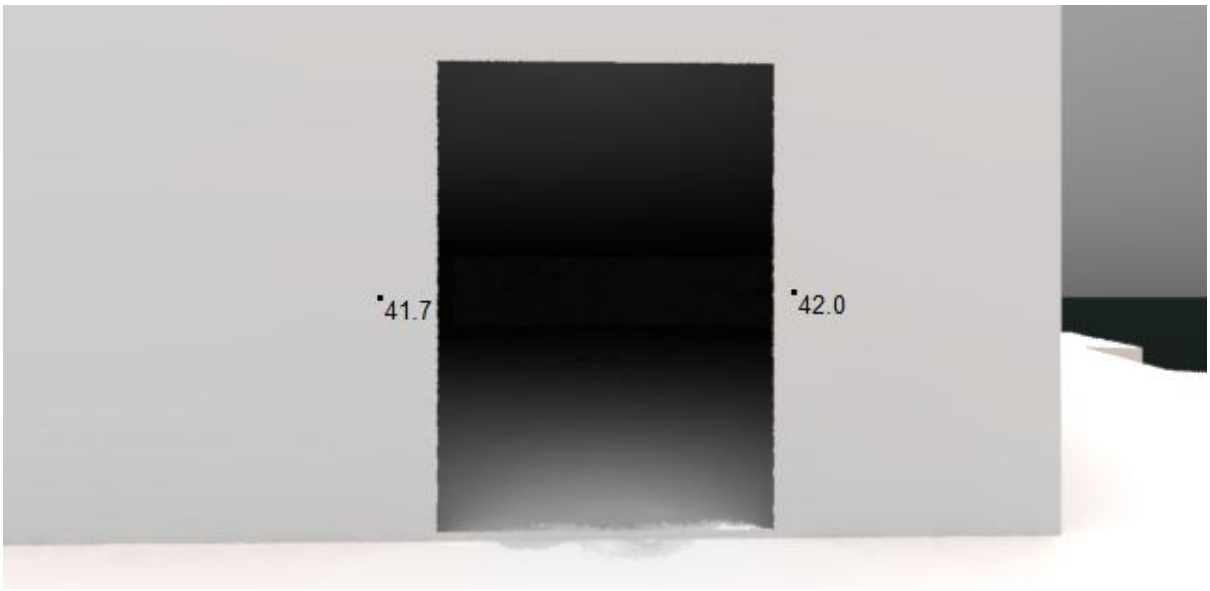


	Proposed				
	Sample of VSC		Average	VSC >27%	Ratio
S11	42.0	41.8	41.90	YES	0.95

Surface 12 - 55-57 Holmes Road - FoF

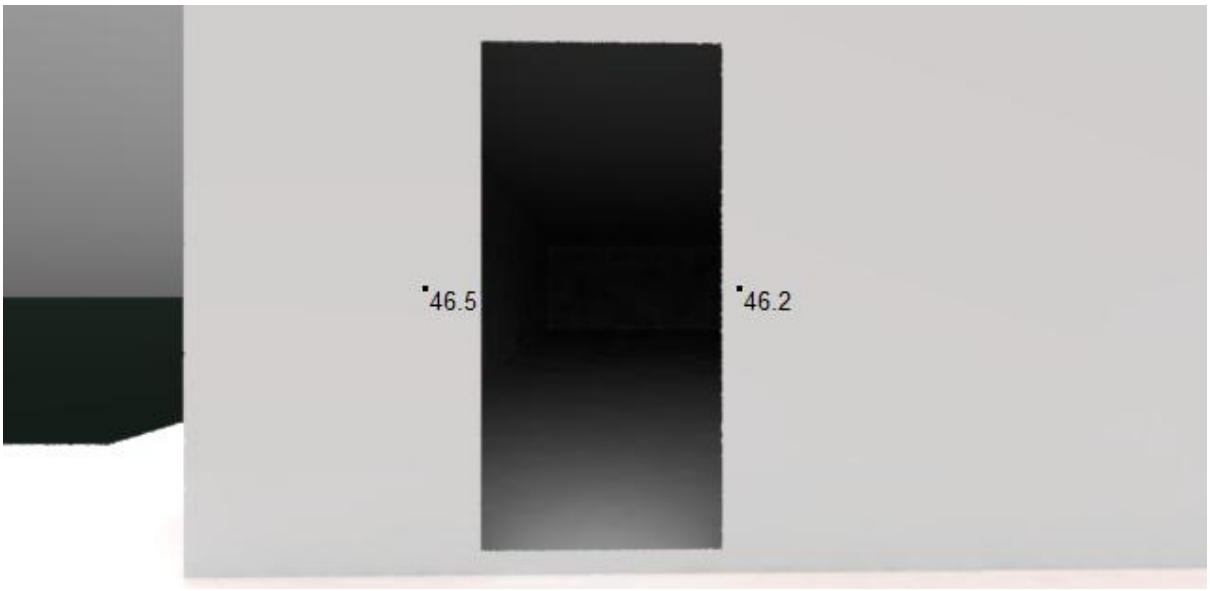


	Existing		
	Sample of VSC		Average
S12	43.9	43.9	43.90

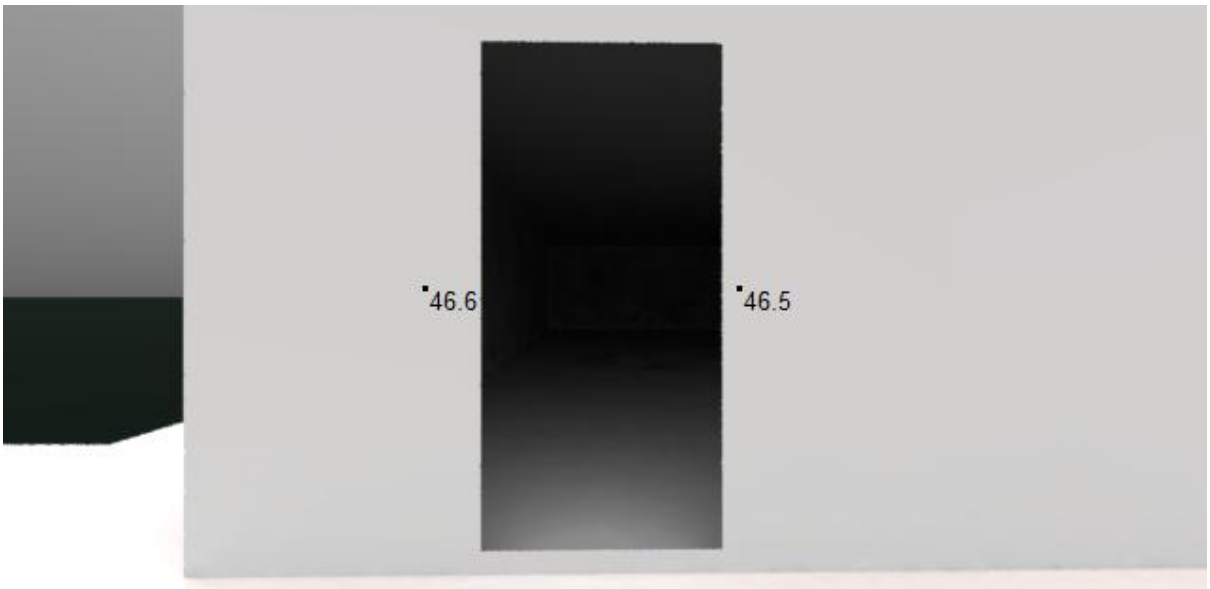


	Proposed				
	Sample of VSC		Average	VSC >27%	Ratio
S12	41.7	42.0	41.85	YES	0.95

Surface 13 - 55-57 Holmes Road - FiF

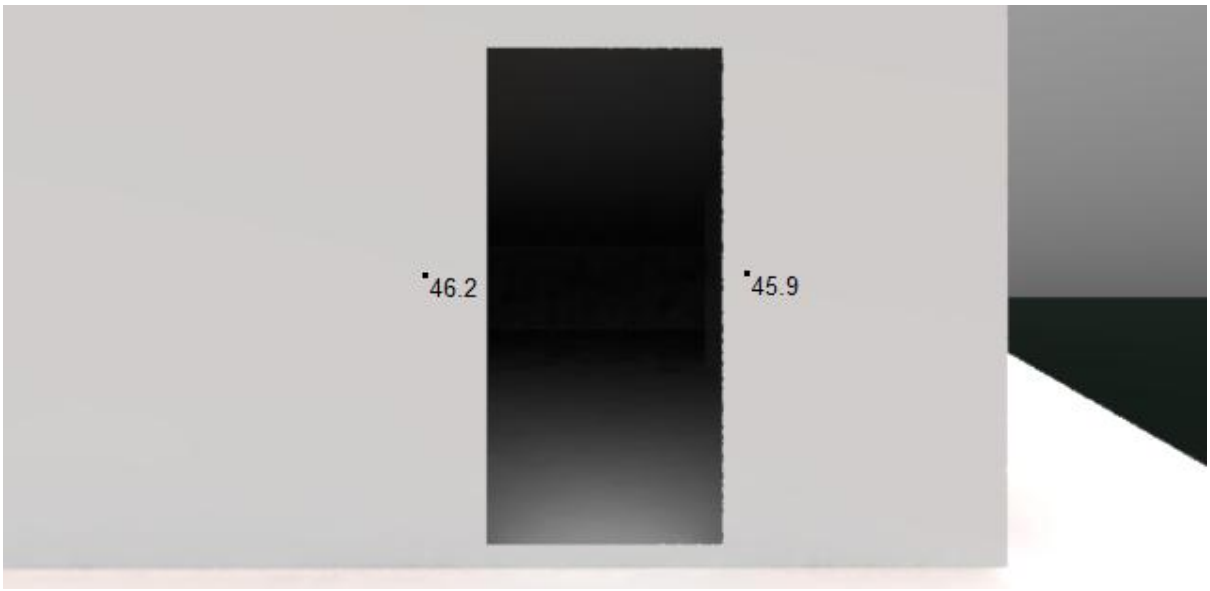


	Existing		
	Sample of VSC		Average
S13	46.5	46.2	46.35

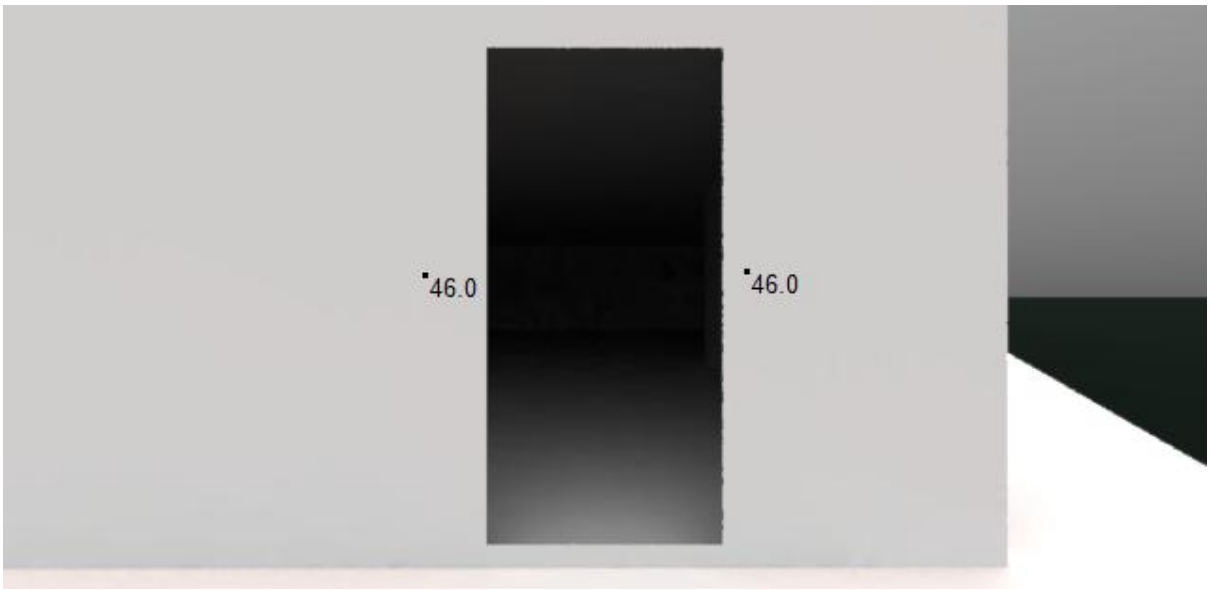


	Proposed				
	Sample of VSC		Average	VSC >27%	Ratio
S13	46.6	46.5	46.55	YES	0.92

Surface 14 - 55-57 Holmes Road - FiF



	Existing		
	Sample of VSC		Average
S14	46.2	45.9	46.05



	Proposed				
	Sample of VSC		Average	VSC >27%	Ratio
S14	46.0	46.0	46.00	YES	0.99

9.7. Sunlight results

Surface 4 - 55-57 Holmes Road - SF

The results are expressed as a percentage of area receiving direct sunlight on the 21st of each month.

Existing

Month	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
Jan						0	0	0	0	0	0	0	0				
Feb					0	0	0	0	0	0	0	0	0	0			
Mar				0	0	0	0	0	0	0	0	0	0	0	0		
Apr			0	0	0	0	0	0	0	0	0	1.1	0	0	0	0	
May		0	0	0	0	0	0	0	0	2.9	1.8	29.8	0	0	0	0	
Jun	0	0	0	0	0	0	0	0	0	10	7.4	35.5	20.3	0	0	0	0
Jul		0	0	0	0	0	0	0	0	4.1	2.3	21.3	12.7	0	0	0	
Aug			0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sep			18.1	0	0	0	0	0	0	0	0	0	0	0			
Oct				0	0	0	0	0	0	0	0	0	0				
Nov					0	0	0	0	0	0	0	0					
Dec						0	0	0	0	0	0	0					

Proposed

Month	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
Jan						0	0	0	0	0	0	0	0				
Feb					0	0	0	0	0	0	0	0	0	0			
Mar				0	0	0	0	0	0	0	0	0	0	0	0		
Apr			0	0	0	0	0	0	0	0	0	0.9	0	0	0	0	
May		0	0	0	0	0	0	0	0	2.9	1.8	29.8	0	0	0	0	
Jun	0	0	0	0	0	0	0	0	0	6.9	7.4	35.5	20.3	0	0	0	0
Jul		0	0	0	0	0	0	0	0	4.1	2.3	21.3	12.7	0	0	0	
Aug			0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sep			18.1	0	0	0	0	0	0	0	0	0	0	0			
Oct				0	0	0	0	0	0	0	0	0	0				
Nov					0	0	0	0	0	0	0	0					
Dec						0	0	0	0	0	0	0					

Sunlight assessment				
Total APSH (%)			Winter months APSH (%)	
Existing	Proposed	Ratio	Existing	Proposed
1.18	1.15	0.97	0.00	0.00

Surface 6 - 55-57 Holmes Road - SF

The results are expressed as a percentage of area receiving direct sunlight on the 21st of each month.

Existing

Month	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
Jan						0	0	0	0	0	100	0	0				
Feb					0	0	0	0	0	0	100	0	0	0			
Mar				0	0	0	0	0	0	0	100	0	0	0	0		
Apr			0	0	0	0	0	0	0	100	89.9	0	0	0	0	0	
May		0	0	0	0	0	0	0	0	100	100	10.3	0	0	0	0	
Jun	0	0	0	0	0	0	0	0	0	100	100	38.4	0	0	0	0	0
Jul		0	0	0	0	0	0	0	0	100	100	37.5	0	0	0	0	
Aug			0	0	0	0	0	0	0	100	93.7	0	0	0	0	0	
Sep			0	0	0	0	0	0	0	100	39.4	0	0	0			
Oct				0	0	0	0	0	0	50.1	67.2	0	0				
Nov					0	0	0	0	0	0	100	0					
Dec						0	0	0	0	0	100	0					

Proposed

Month	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
Jan						0	0	0	0	0	100	0	0				
Feb					0	0	0	0	0	0	100	0	0	0			
Mar				0	0	0	0	0	0	0	100	0	0	0	0		
Apr			0	0	0	0	0	0	0	100	89.9	0	0	0	0	0	
May		0	0	0	0	0	0	0	0	100	100	4.1	0	0	0	0	
Jun	0	0	0	0	0	0	0	0	0	100	100	37.9	0	0	0	0	0
Jul		0	0	0	0	0	0	0	0	100	100	36.2	0	0	0	0	
Aug			0	0	0	0	0	0	0	100	93.7	0	0	0	0	0	
Sep			0	0	0	0	0	0	0	100	39.4	0	0	0			
Oct				0	0	0	0	0	0	50.1	67.2	0	0				
Nov					0	0	0	0	0	0	100	0					
Dec						0	0	0	0	0	100	0					

Sunlight assessment				
Total APSH (%)			Winter months APSH (%)	
Existing	Proposed	Ratio	Existing	Proposed
12.86	12.81	0.99	11.22	11.22

Surface 7 - 55-57 Holmes Road - FF

The results are expressed as a percentage of area receiving direct sunlight on the 21st of each month.

Existing

Month	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
Jan						0.00	0.00	0.00	0.00	0.00	3.58	45.43	60.55				
Feb					0.00	0.00	0.00	0.00	0.00	0.30	22.28	57.25	69.30	0.00			
Mar				0.00	0.00	0.00	0.00	0.00	0.00	8.20	40.48	88.48	16.93	0.00	0.00		
Apr			0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.08	65.78	71.73	0.00	0.00	0.00		
May		0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.45	25.03	94.35	46.90	0.00	0.00	0.00	0.00	
Jun	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.68	27.45	92.50	44.23	0.00	0.00	0.00	0.00	0.00
Jul		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	25.00	75.00	54.95	0.00	0.00	0.00	0.00	
Aug			0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.35	62.68	72.15	0.00	0.00	0.00	0.00	
Sep			0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.08	50.85	79.78	0.00	0.00			
Oct				0.00	0.00	0.00	0.00	0.00	0.00	9.55	30.23	84.75	29.75				
Nov					0.00	0.00	0.00	0.00	0.00	0.00	20.90	64.05					
Dec						0.00	0.00	0.00	0.00	0.00	8.40	45.18					

Proposed

Month	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
Jan						0.00	0.00	0.00	0.00	0.00	3.58	45.43	60.55				
Feb					0.00	0.00	0.00	0.00	0.00	0.30	22.28	57.25	69.30	0.00			
Mar				0.00	0.00	0.00	0.00	0.00	0.00	8.20	40.48	88.48	16.93	0.00	0.00		
Apr			0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.08	65.78	71.73	0.00	0.00	0.00		
May		0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.45	25.03	94.35	46.90	0.00	0.00	0.00	0.00	
Jun	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.68	27.45	92.50	44.23	0.00	0.00	0.00	0.00	0.00
Jul		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	25.00	75.00	54.95	0.00	0.00	0.00	0.00	
Aug			0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.35	62.68	72.15	0.00	0.00	0.00	0.00	
Sep			0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.08	50.85	79.78	0.00	0.00			
Oct				0.00	0.00	0.00	0.00	0.00	0.00	9.55	30.23	84.75	29.75				
Nov					0.00	0.00	0.00	0.00	0.00	0.00	20.90	64.05					
Dec						0.00	0.00	0.00	0.00	0.00	8.40	45.18					

Sunlight assessment				
Total APSH (%)			Winter months APSH (%)	
Existing	Proposed	Ratio	Existing	Proposed
11.68	11.68	1.00	12.83	12.83

Surface 8 - 55-57 Holmes Road - SF

The results are expressed as a percentage of area receiving direct sunlight on the 21st of each month.

Existing

Month	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
Jan						0	0	0	0	0	0	100	100				
Feb					0	0	0	0	0	0	0	100	100	0			
Mar				0	0	0	0	0	0	0	43	100	0	0	0		
Apr			0	0	0	0	0	0	0	0.1	100	100	0	0	0	0	
May		0	0	0	0	0	0	0	0	53.2	100	36.1	0	0	0	0	
Jun	0	0	0	0	0	0	0	0	0	68.2	100	27.3	0	0	0	0	0
Jul		0	0	0	0	0	0	0	0	34.8	100	76.6	0	0	0	0	
Aug			0	0	0	0	0	0	0	0	100	100	0	0	0	0	
Sep			0	0	0	0	0	0	0	0	100	100	0	0			
Oct				0	0	0	0	0	0	0	71.1	100	0				
Nov					0	0	0	0	0	0	0	100					
Dec						0	0	0	0	0	0	99.9					

Proposed

Month	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
Jan						0	0	0	0	0	0	100	100				
Feb					0	0	0	0	0	0	0	100	100	0			
Mar				0	0	0	0	0	0	0	43	100	0	0	0		
Apr			0	0	0	0	0	0	0	0.1	100	100	0	0	0	0	
May		0	0	0	0	0	0	0	0	53.2	100	36.1	0	0	0	0	
Jun	0	0	0	0	0	0	0	0	0	68.2	100	27.3	0	0	0	0	0
Jul		0	0	0	0	0	0	0	0	34.8	100	76.6	0	0	0	0	
Aug			0	0	0	0	0	0	0	0	100	100	0	0	0	0	
Sep			0	0	0	0	0	0	0	0	100	100	0	0			
Oct				0	0	0	0	0	0	0	71.1	100	0				
Nov					0	0	0	0	0	0	0	100					
Dec						0	0	0	0	0	0	99.9					

Sunlight assessment				
Total APSH (%)			Winter months APSH (%)	
Existing	Proposed	Ratio	Existing	Proposed
14.86	14.86	1.00	16.62	16.62

Surface 10 - 55-57 Holmes Road - TF

The results are expressed as a percentage of area receiving direct sunlight on the 21st of each month.

Existing

Month	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
Jan						0.00	0.00	0.00	0.00	0.00	78.57	66.67	31.47				
Feb					0.00	0.00	0.00	0.00	0.00	0.00	99.87	61.13	15.10	0.00			
Mar				0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	40.07	0.00	0.00	0.00		
Apr			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	65.90	0.00	0.00	0.00		
May		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	87.33	25.17	0.00	0.00	0.00	
Jun	29.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	98.40	61.63	0.00	0.00	0.00	0.00
Jul		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	90.93	45.93	0.00	0.00	0.00	
Aug			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	70.63	0.00	0.00	0.00	0.00	
Sep			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	99.70	26.90	0.00	0.00			
Oct				0.00	0.00	0.00	0.00	0.00	0.00	93.33	100.00	33.33	0.00				
Nov					0.00	0.00	0.00	0.00	0.00	63.00	100.00	48.00					
Dec						0.00	0.00	0.00	0.00	0.00	74.03	66.67					

Proposed

Month	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
Jan						0.00	0.00	0.00	0.00	0.00	78.57	66.67	31.47				
Feb					0.00	0.00	0.00	0.00	0.00	0.00	99.87	61.13	15.10	0.00			
Mar				0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	40.07	0.00	0.00	0.00		
Apr			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	65.90	0.00	0.00	0.00		
May		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	87.33	15.17	0.00	0.00	0.00	
Jun	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	98.40	45.80	0.00	0.00	0.00	0.00
Jul		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	90.93	27.67	0.00	0.00	0.00	
Aug			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	70.63	0.00	0.00	0.00	0.00	
Sep			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	99.70	26.90	0.00	0.00			
Oct				0.00	0.00	0.00	0.00	0.00	0.00	93.33	100.00	33.33	0.00				
Nov					0.00	0.00	0.00	0.00	0.00	63.00	100.00	48.00					
Dec						0.00	0.00	0.00	0.00	0.00	74.03	66.67					

Sunlight assessment				
Total APSH (%)			Winter months APSH (%)	
Existing	Proposed	Ratio	Existing	Proposed
20.24	19.72	0.97	19.48	19.48

Surface 11 - 55-57 Holmes Road - FoF

The results are expressed as a percentage of area receiving direct sunlight on the 21st of each month.

Existing

Month	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
Jan						0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00				
Feb					0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	0.00			
Mar				0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	78.70	26.70	0.00		
Apr			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	59.40	10.40	
May		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	95.70	46.10	
Jun	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	64.90	21.00
Jul		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	54.90	
Aug			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	64.40	14.30	
Sep			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	67.20	12.20			
Oct				0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	0.20				
Nov					0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00					
Dec						0.00	0.00	0.00	0.00	0.00	100.00	100.00					

Proposed

Month	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
Jan						0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00				
Feb					0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	0.00			
Mar				0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	78.70	21.00	0.00		
Apr			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	40.70	0.00	0.00	
May		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	99.90	27.30	0.00	
Jun	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	58.40	0.00	0.00
Jul		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	99.80	43.50	0.00	
Aug			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	46.20	0.00	0.00	
Sep			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	67.20	3.10			
Oct				0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	0.20				
Nov					0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00					
Dec						0.00	0.00	0.00	0.00	0.00	100.00	100.00					

Sunlight assessment				
Total APSH (%)			Winter months APSH (%)	
Existing	Proposed	Ratio	Existing	Proposed
37.44	33.00	0.88	32.83	32.73

Surface 12 - 55-57 Holmes Road - FoF

The results are expressed as a percentage of area receiving direct sunlight on the 21st of each month.

Existing

Month	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
Jan						0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00				
Feb					0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	0.00			
Mar				0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	24.40	0.00		
Apr			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	46.40	4.10	0.00	
May		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	85.80	72.70	45.60	
Jun	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	97.60	96.50	65.70	21.20
Jul		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	92.00	77.60	54.00	
Aug			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	52.10	6.50	0.00	
Sep			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	1.10			
Oct				0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00				
Nov					0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00					
Dec						0.00	0.00	0.00	0.00	0.00	100.00	100.00					

Proposed

Month	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
Jan						0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00				
Feb					0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	0.00			
Mar				0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	24.40	0.00		
Apr			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	46.40	2.70	0.00	
May		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	85.80	17.80	0.00	
Jun	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	97.60	37.30	0.00	0.00
Jul		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	92.00	37.50	0.00	
Aug			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	52.10	5.80	0.00	
Sep			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	1.10			
Oct				0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00				
Nov					0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00					
Dec						0.00	0.00	0.00	0.00	0.00	100.00	100.00					

Sunlight assessment				
Total APSH (%)			Winter months APSH (%)	
Existing	Proposed	Ratio	Existing	Proposed
36.22	33.81	0.90	34.99	34.99

Surface 13 - 55-57 Holmes Road - FiF

The results are expressed as a percentage of area receiving direct sunlight on the 21st of each month.

Existing

Month	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
Jan						0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00				
Feb					0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	99.90			
Mar				0.00	0.00	0.00	0.00	0.00	0.00	100.10	100.00	100.00	100.00	100.00	77.30		
Apr			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
May		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Jun	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Jul		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Aug			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Sep			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00			
Oct				0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00				
Nov					0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00					
Dec						0.00	0.00	0.00	0.00	0.00	100.00	100.00					

Proposed

Month	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
Jan						0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00				
Feb					0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	99.90			
Mar				0.00	0.00	0.00	0.00	0.00	0.00	100.10	100.00	100.00	100.00	100.00	64.60		
Apr			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	99.00	3.00	
May		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	83.50	
Jun	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	27.20
Jul		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Aug			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	11.80	
Sep			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00			
Oct				0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00				
Nov					0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00					
Dec						0.00	0.00	0.00	0.00	0.00	100.00	100.00					

Sunlight assessment				
Total APSH (%)			Winter months APSH (%)	
Existing	Proposed	Ratio	Existing	Proposed
44.21	42.18	0.95	39.59	39.36

Surface 14 - 55-57 Holmes Road - FiF

The results are expressed as a percentage of area receiving direct sunlight on the 21st of each month.

Existing

Month	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
Jan						0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00				
Feb					0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00			
Mar				0.00	0.00	0.00	0.00	0.00	0.00	100.10	100.00	100.00	100.00	100.00	75.10		
Apr			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	65.00	
May		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Jun	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Jul		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Aug			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	74.80	
Sep			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00			
Oct				0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00				
Nov					0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00					
Dec						0.00	0.00	0.00	0.00	0.00	100.00	100.00					

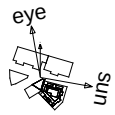
Proposed

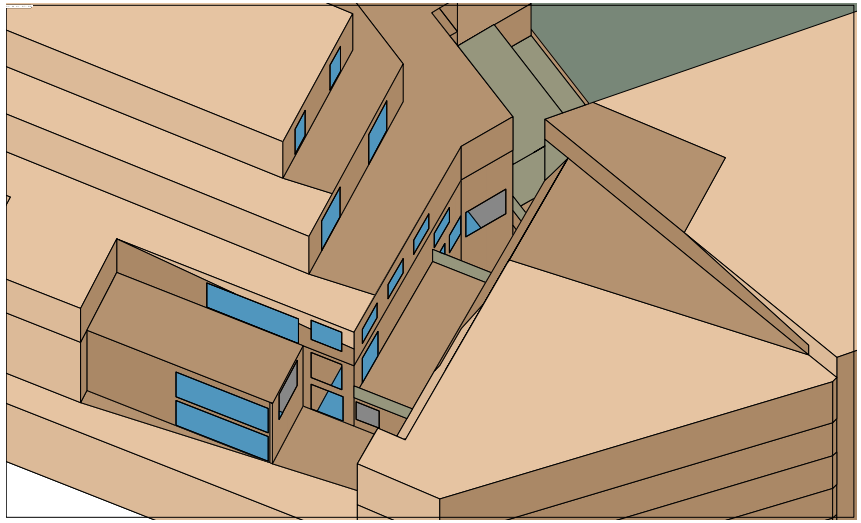
Month	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00
Jan						0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00				
Feb					0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00			
Mar				0.00	0.00	0.00	0.00	0.00	0.00	100.10	100.00	100.00	100.00	100.00	75.10		
Apr			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	2.90	
May		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	82.20	
Jun	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	27.20
Jul		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	94.30	
Aug			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	10.50	
Sep			0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00			
Oct				0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00				
Nov					0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00					
Dec						0.00	0.00	0.00	0.00	0.00	100.00	100.00					

Sunlight assessment				
Total APSH (%)			Winter months APSH (%)	
Existing	Proposed	Ratio	Existing	Proposed
43.77	42.20	0.96	39.55	39.55

9.8. Overshadowing pictures (21st March)

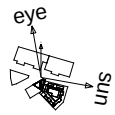
Suncast image:
View time = 21 Mar 07:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 100.16 alt = 7.48
Eye: azi = 350.00 alt = 60.00

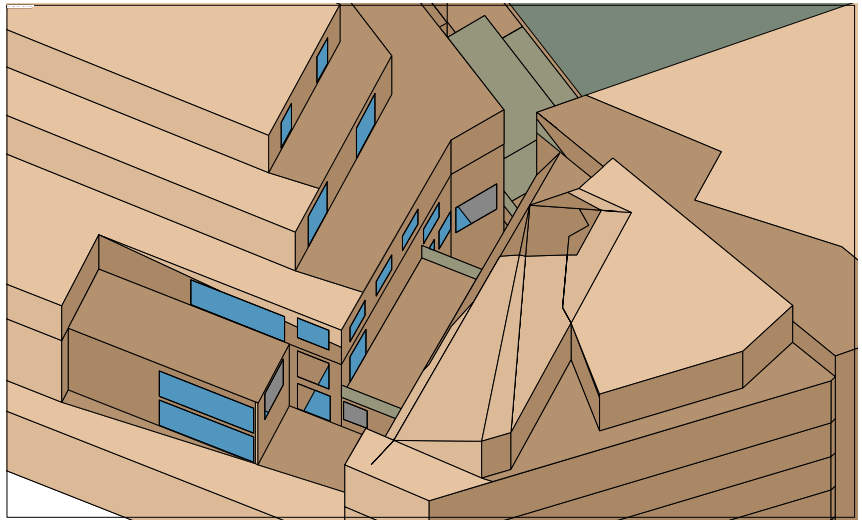




Existing

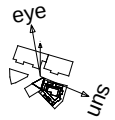
Suncast image:
View time = 21 Mar 07:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 100.16 alt = 7.48
Eye: azi = 350.00 alt = 60.00

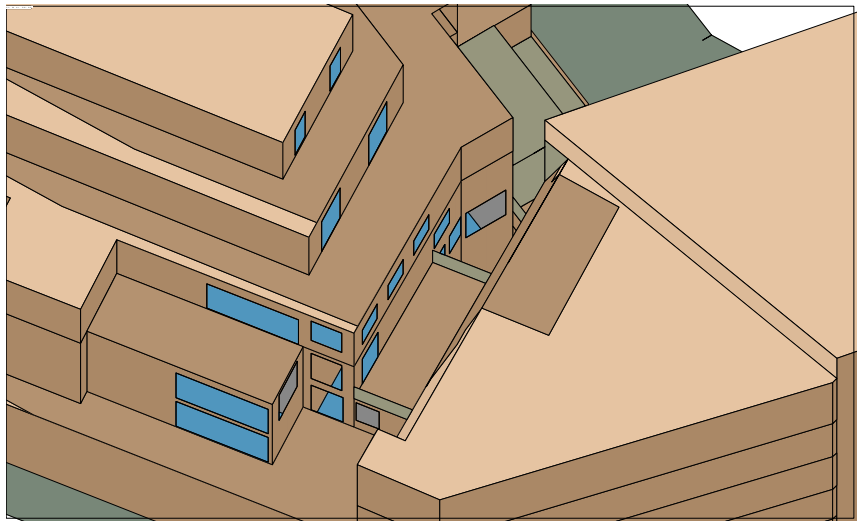




Proposed

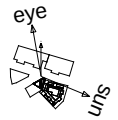
Suncast image:
View time = 21 Mar 08:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 112.48 alt = 16.43
Eye: azi = 350.00 alt = 60.00

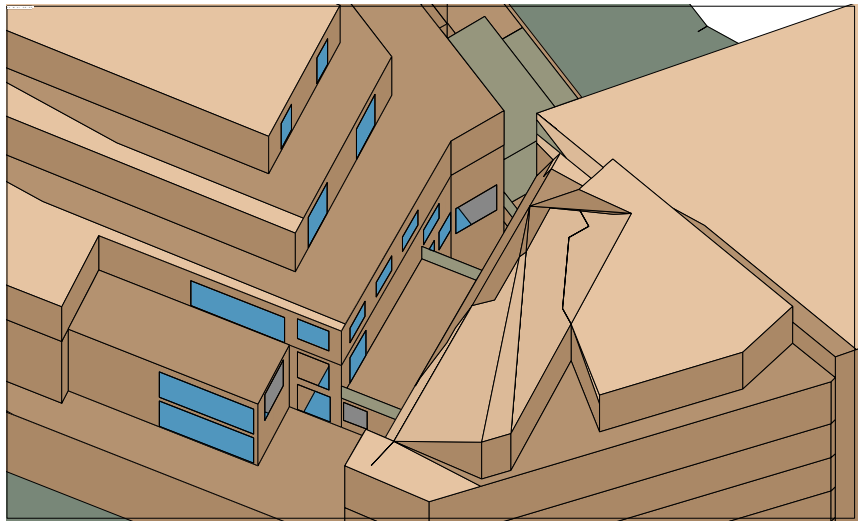




Existing

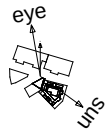
Suncast image:
View time = 21 Mar 08:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 112.48 alt = 16.43
Eye: azi = 350.00 alt = 60.00

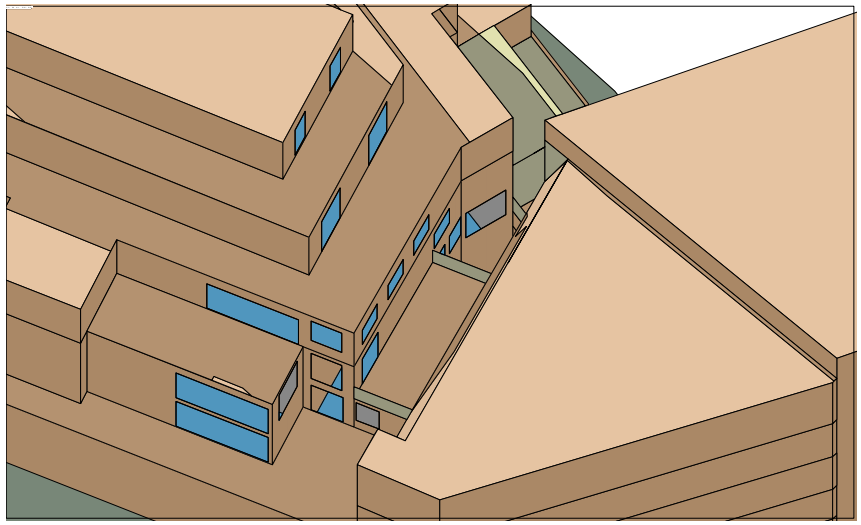




Proposed

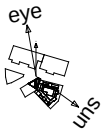
Suncast image:
View time = 21 Mar 09:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 125.95 alt = 24.58
Eye: azi = 350.00 alt = 60.00

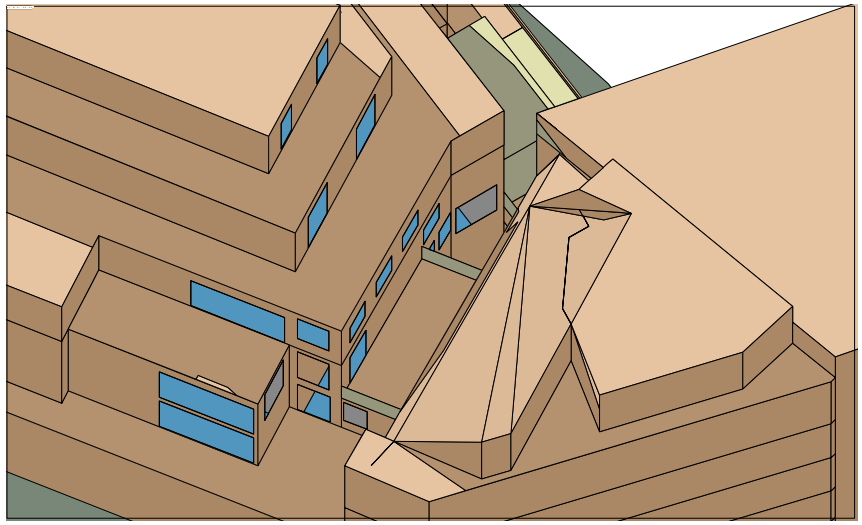




Existing

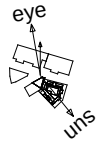
Suncast image:
View time = 21 Mar 09:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 125.95 alt = 24.58
Eye: azi = 350.00 alt = 60.00

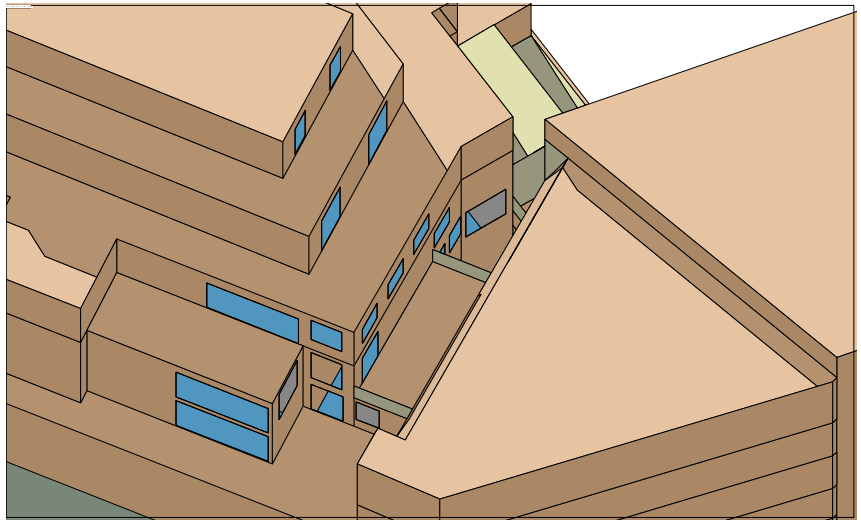




Proposed

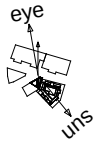
Suncast image:
View time = 21 Mar 10:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 141.13 alt = 31.35
Eye: azi = 350.00 alt = 60.00

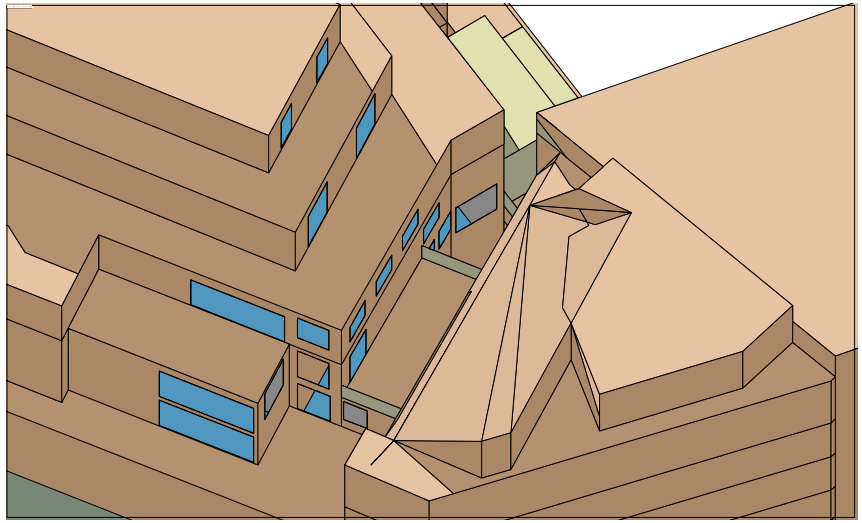




Existing

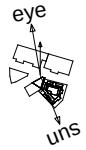
Suncast image:
View time = 21 Mar 10:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 141.13 alt = 31.35
Eye: azi = 350.00 alt = 60.00

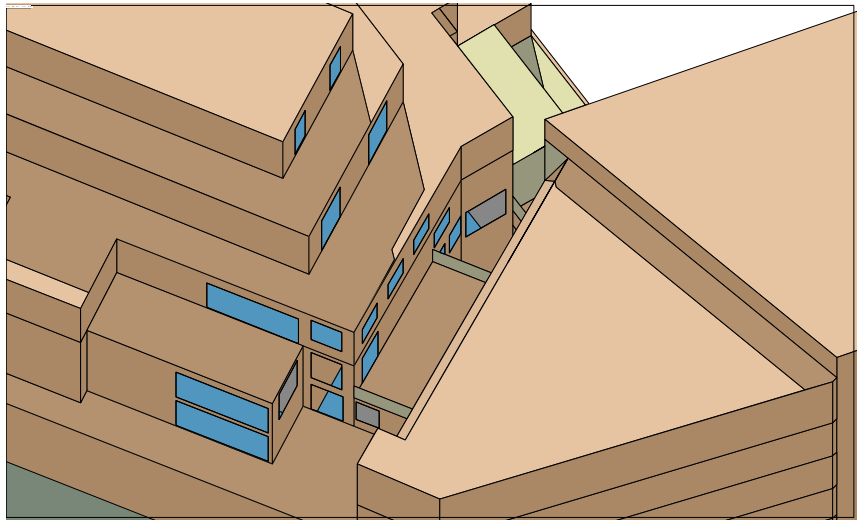




Proposed

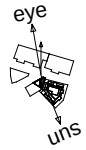
Suncast image:
View time = 21 Mar 11:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 158.28 alt = 36.06
Eye: azi = 350.00 alt = 60.00

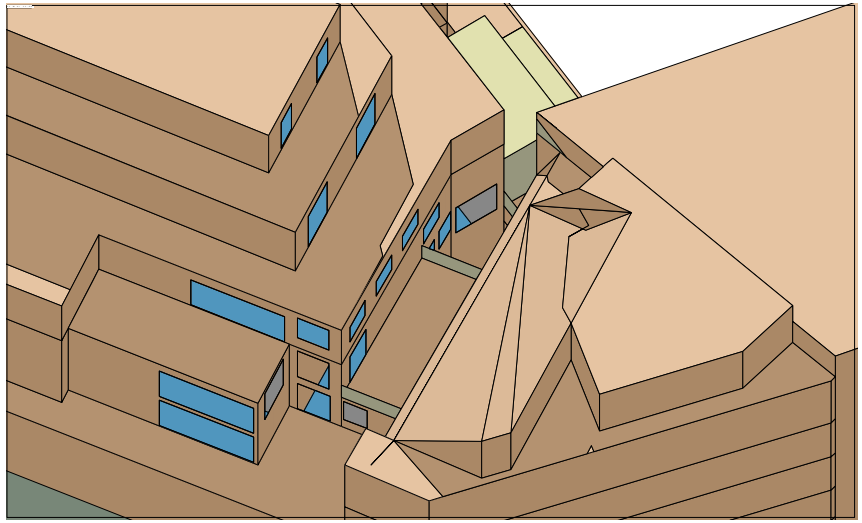




Existing

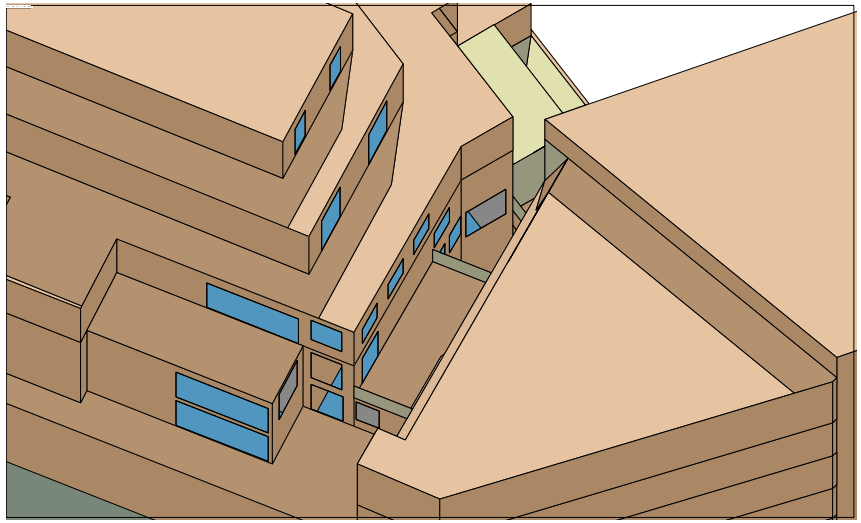
Suncast image:
View time = 21 Mar 11:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 158.28 alt = 36.06
Eye: azi = 350.00 alt = 60.00





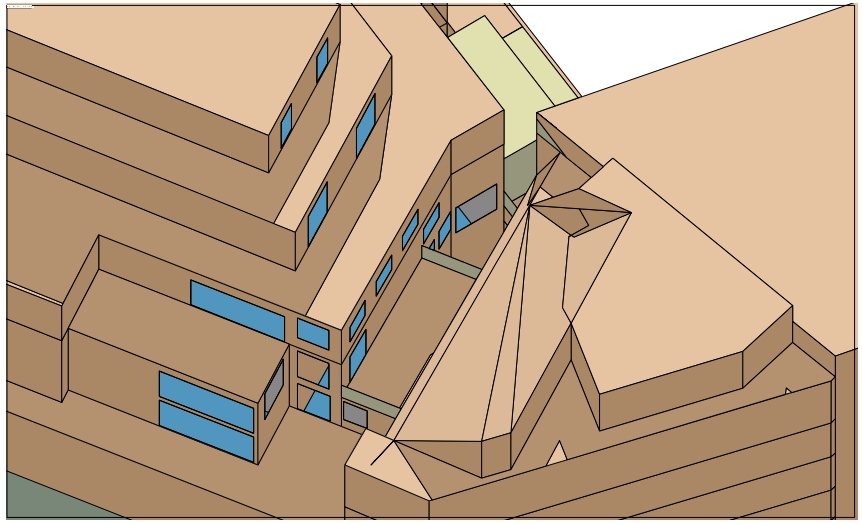
Proposed

Suncast image:
View time = 21 Mar 12:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 176.94 alt = 38.07
Eye: azi = 350.00 alt = 60.00



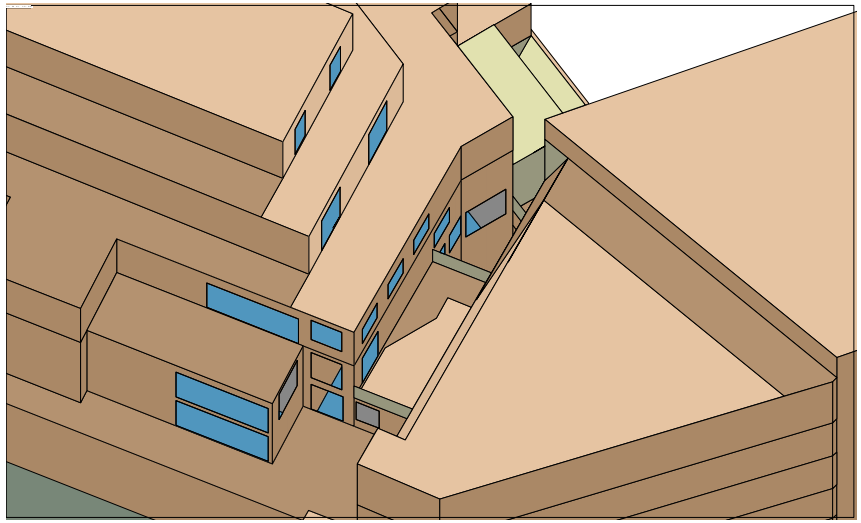
Existing

Suncast image:
View time = 21 Mar 12:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 176.94 alt = 38.07
Eye: azi = 350.00 alt = 60.00



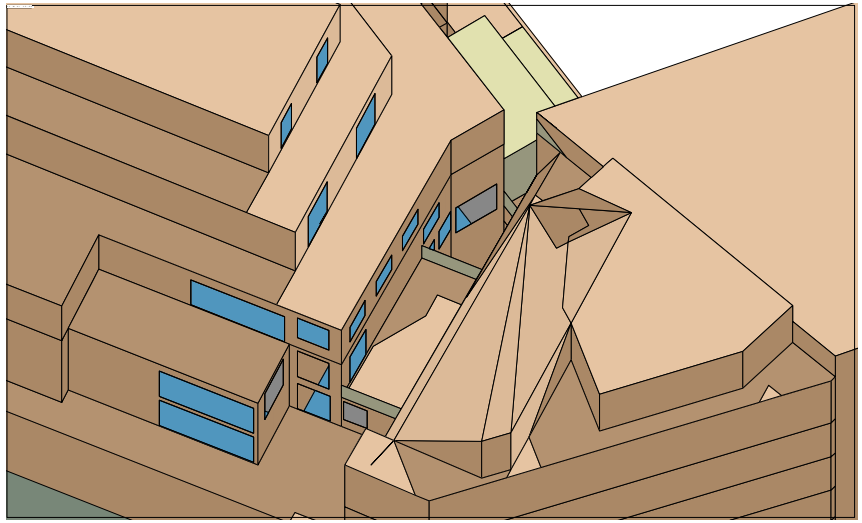
Proposed

Suncast image:
View time = 21 Mar 13:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 195.84 alt = 37.03
Eye: azi = 350.00 alt = 60.00



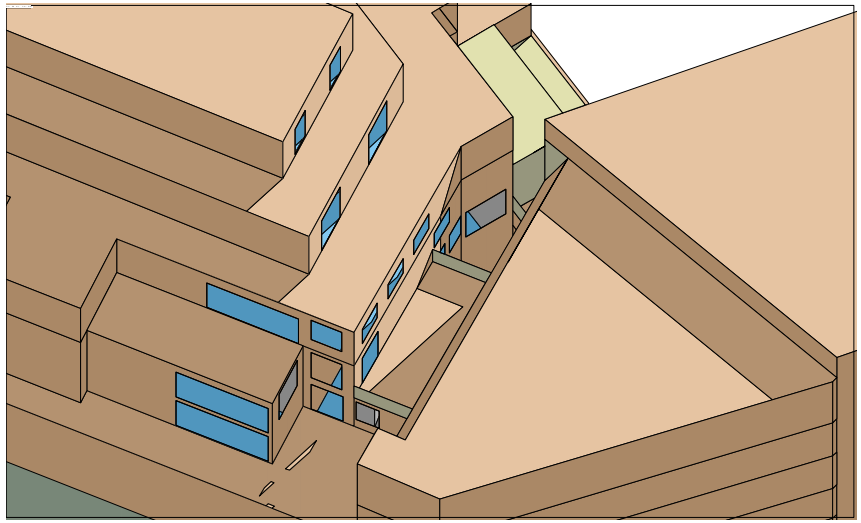
Existing

Suncast image:
View time = 21 Mar 13:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 195.84 alt = 37.03
Eye: azi = 350.00 alt = 60.00



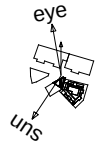
Proposed

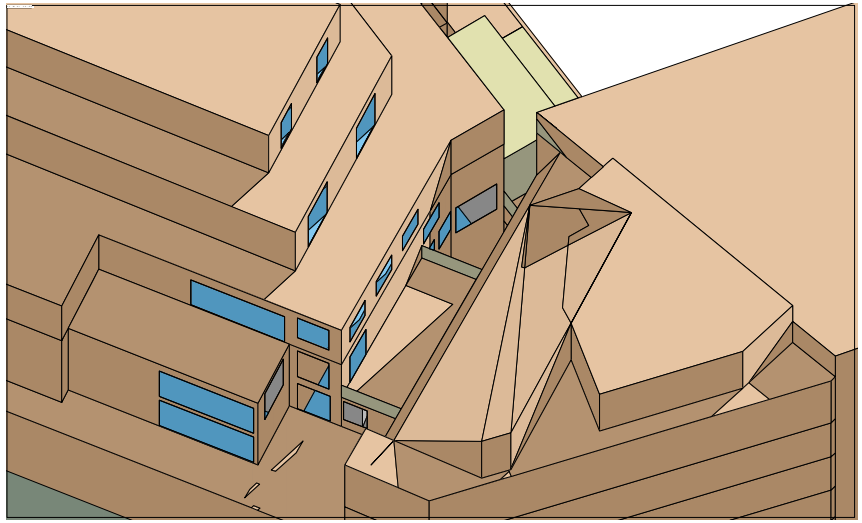
Suncast image:
View time = 21 Mar 14:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 213.57 alt = 33.12
Eye: azi = 350.00 alt = 60.00



Existing

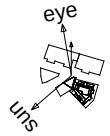
Suncast image:
View time = 21 Mar 14:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 213.57 alt = 33.12
Eye: azi = 350.00 alt = 60.00

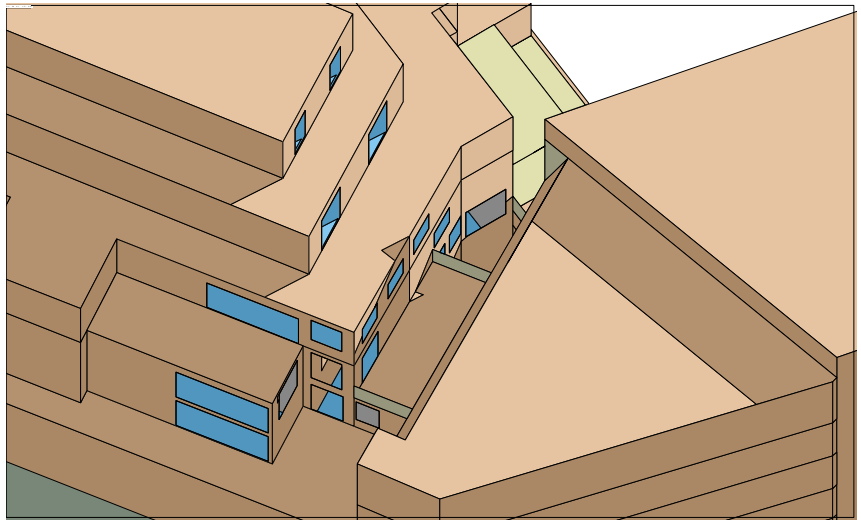




Proposed

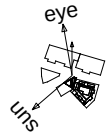
Suncast image:
View time = 21 Mar 15:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 229.38 alt = 26.93
Eye: azi = 350.00 alt = 60.00

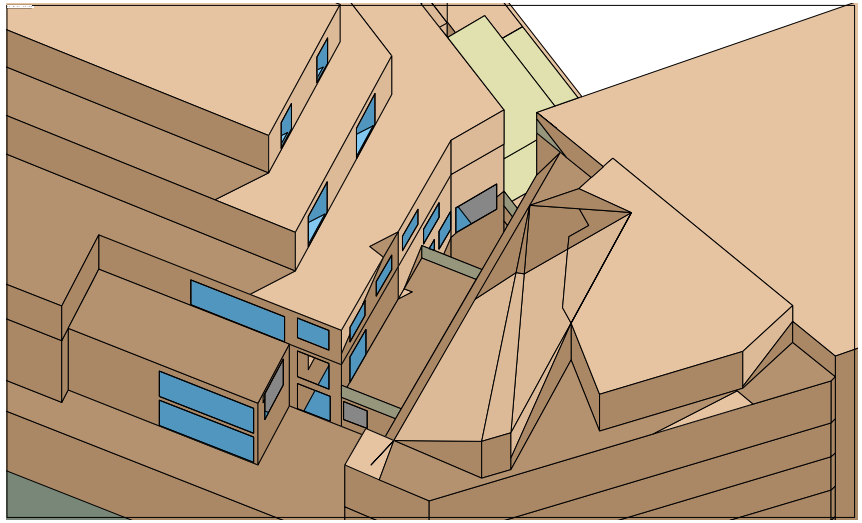




Existing

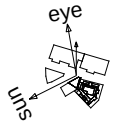
Suncast image:
View time = 21 Mar 15:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 229.38 alt = 26.93
Eye: azi = 350.00 alt = 60.00

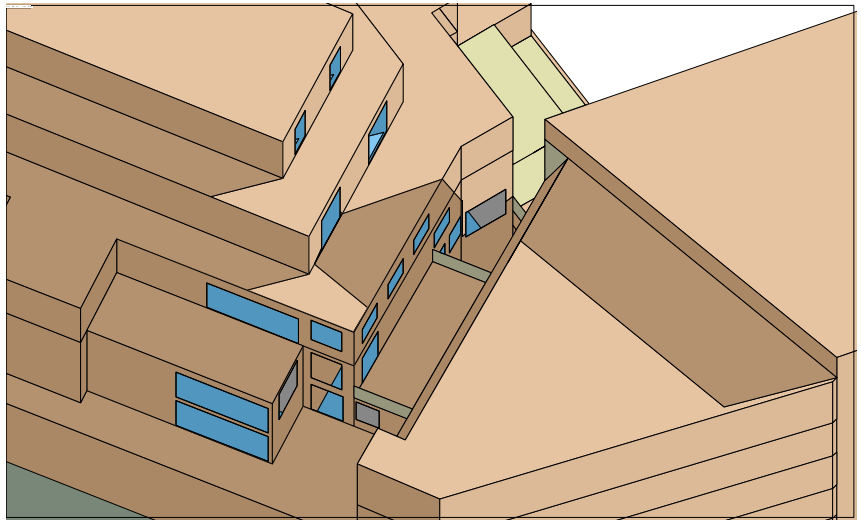




Proposed

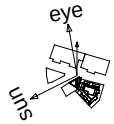
Suncast image:
View time = 21 Mar 16:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 243.34 alt = 19.16
Eye: azi = 350.00 alt = 60.00

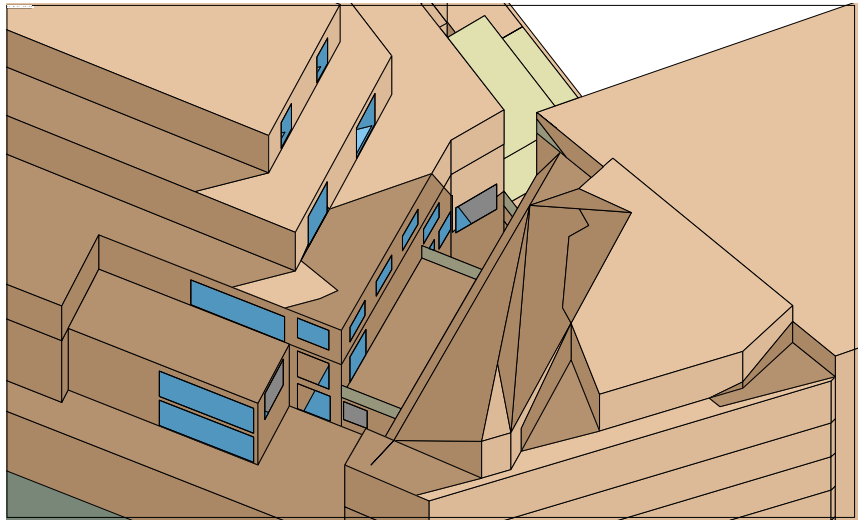




Existing

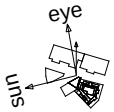
Suncast image:
View time = 21 Mar 16:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 243.34 alt = 19.16
Eye: azi = 350.00 alt = 60.00

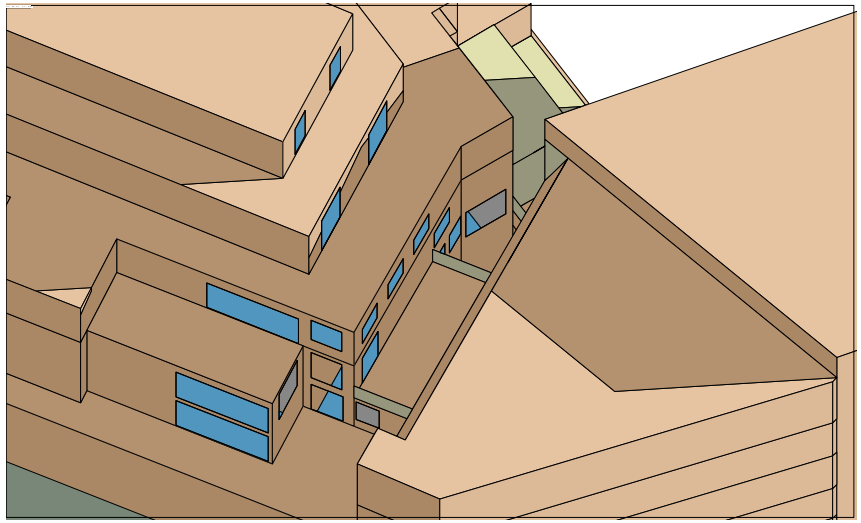




Proposed

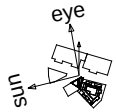
Suncast image:
View time = 21 Mar 17:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 255.96 alt = 10.42
Eye: azi = 350.00 alt = 60.00

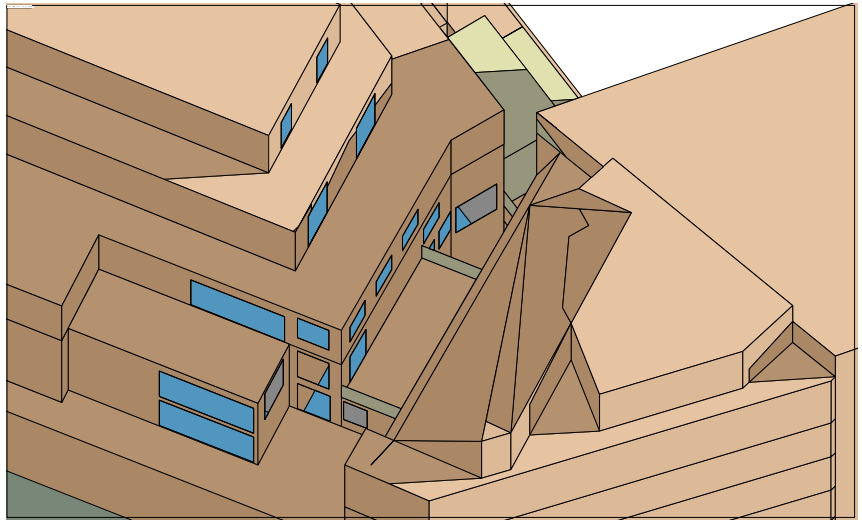




Existing

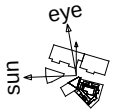
Suncast image:
View time = 21 Mar 17:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 255.96 alt = 10.42
Eye: azi = 350.00 alt = 60.00

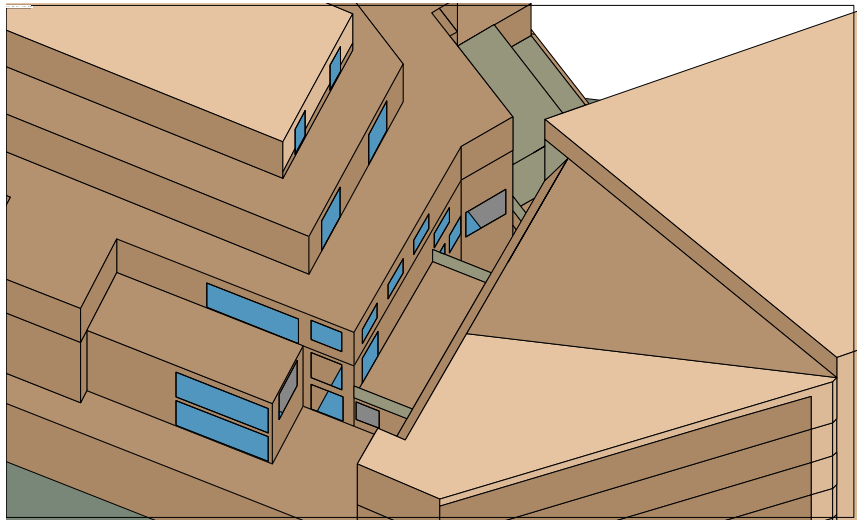




Proposed

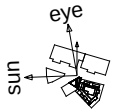
Suncast image:
View time = 21 Mar 18:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 267.86 alt = 1.18
Eye: azi = 350.00 alt = 60.00

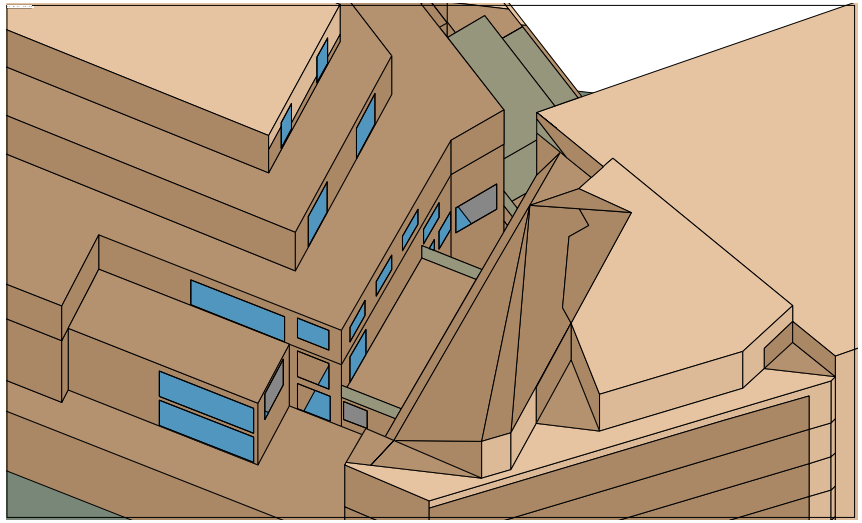




Existing

Suncast image:
View time = 21 Mar 18:00
Site Latitude = 51.48
Longitude diff. = -0.45
Model Bearing = 0.00
Sun: azi = 267.86 alt = 1.18
Eye: azi = 350.00 alt = 60.00





Proposed