

**SOLAR RADIANCE IMPACT ASSESSMENT REPORT FOR PROPOSED
“ERECTION OF SINGLE STOREY EXTENSION AND GARAGE AND SECOND
FLOOR INFILL EXTENSION” @ 47 BILSBORROW RD, MANCHESTER M14 7TH,
UK**

Planning Application Ref:

142339/FH/2025

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Executive Summary

This report relates to planning application 142339/FH/2025- 49 Bilsborrow Road- “Erection of single storey extension and garage and second floor infill extension”. It aims to assess potential impact on neighboring properties (House No. 45 & 47 Bilsborrow Road). Through comprehensive analyses, including shadow studies, Vertical Sky Component (VSC) calculations, privacy assessments, overdevelopment evaluations, overbearing/visual impact studies and a contextual analysis, this study objectively assess compliance with Manchester City Council’s planning advice and assess potential impact on residential amenity.

Seasonal shadow analyses (March, June, September, December) confirm that the proposed extension and garage causes no significant overshadowing. House No. 45 ground floor window experience minor early morning shadows, while House No. 47 remains unaffected, with both retaining at least 50% garden sunlight for two hours on March 21st, per BRE guidelines.

VSC calculations shows House No. 45’s rear wall averaging 35.83% (range: 21.9%–35.7%), exceeding the 27% BRE threshold. House 47’s VSC (average 27.73%) is unaffected by the proposal, as existing conditions dominate reductions. No new windows are proposed, and spatial arrangements (perpendicular for House 45, opposite for House 47) prevent overlooking, ensuring privacy compliance with UK Government rear privacy guidelines.

Post-construction, 30 m² of functional private amenity space remains supporting multifunctional amenity uses, which aligns with Manchester’s Supplementary Planning Document (SPD) Section 10.9. 3D massing models and viewpoint simulations confirm the proposal’s scale and design integrate respectfully with the development pattern, avoiding dominance or enclosure according to Policies DC1 and DM1, aligning with communal parking and street cohesion.

The technical analysis presented in this report demonstrates that proposed development adheres to Policies SP1, DM1, DC1, BRE guideline and SPD requirements, ensuring no adverse effects on sunlight, privacy, or amenity for neighbors.

1. Introduction

Planning application T142339/FH/2025 has been submitted for the erection of a single-storey extension, a garage, and a second-floor infill extension at 49 Bilsborrow Road, Manchester M14 7TH, UK. This proposal involves alterations to an existing three-story (ground plus two) residential property.

The development of residential extensions within urban neighborhoods is often subject to scrutiny regarding potential impacts on neighboring properties, including considerations related to privacy and daylight access. This report provides an objective assessment of these concerns. It includes detailed impact analysis, supported by site-specific visual studies and design evaluations. The report examines the proposed development's compliance with local planning regulations and assesses its potential impact on the residential amenity of neighboring properties and the subject property itself. Through daylight assessments, privacy evaluations, and spatial relationship analyses, this report aims to provide evidence-based findings to inform the decision-making process regarding this application



Figure 1 Google Map Showing the Site Location

1.1.Scope of Study

- The study focuses on assessing the potential impact of the proposed rear extension and garage on two neighboring properties including House No. 45 & 47 Bilsborrow Road, Manchester M14 7TH.
- The assessment covers the following areas:
 - Shadow Study,
 - VSC (Vertical Sky Component) Calculations,
 - Privacy Assessment,
 - Overdevelopment and
 - Availability of Private Amenity Space,
 - Overbearing Impact / Visual Impact,
 - Massing Study of Extension and Garage and
 - Contextual Study.
- The study addresses local planning regulations and guidelines set by Manchester City Council.

1.2. Study Objectives

- To evaluate the potential impact of sunlight access to neighboring properties and to calculate the amount of visible sky from the windows of the neighboring properties after the construction of proposed garage and extension.
- To assess the potential intrusion into the privacy of the neighboring houses, particularly in terms of overlooking and direct line of sight.
- To investigate whether the new construction would result in overdevelopment of the owner's site resulting in the loss of private amenity space of the property.
- To check overbearing and visual impacts which might dominant the neighboring properties by analysing the overall scale and bulk of the proposed extension and garage
- To review the extension in relation to the surrounding neighborhood and its compatibility with existing structures.

1.3. Study Limitations

- The analysis is conducted using the architectural drawings of the proposed garage and extension ensuring accuracy in assessing its potential impact. The house 47 is modelled using its architectural drawings available on the planning portal. Dimensions and layouts of the dwelling structure have been estimated using Google Maps and Google Earth imagery and triangulated with dimensions of similar properties in the terrace.
- Weather conditions, seasonal variations, and minor external obstructions (such as vegetation growth) have not been factored into the shadow and privacy analysis.
- The accuracy of shadow projections, VSC calculations and all the other assessments could have minor variations dependent on the reliability of satellite-derived dimensions and software analysis.
- The conclusions drawn in this report are based on the best available data and industry-standard methodologies.

2. Methodology

The analysis is done using structured and organised methods of assessment being used in industry. Figure 2 visualize the methodology in sequential steps in form of a process chart:

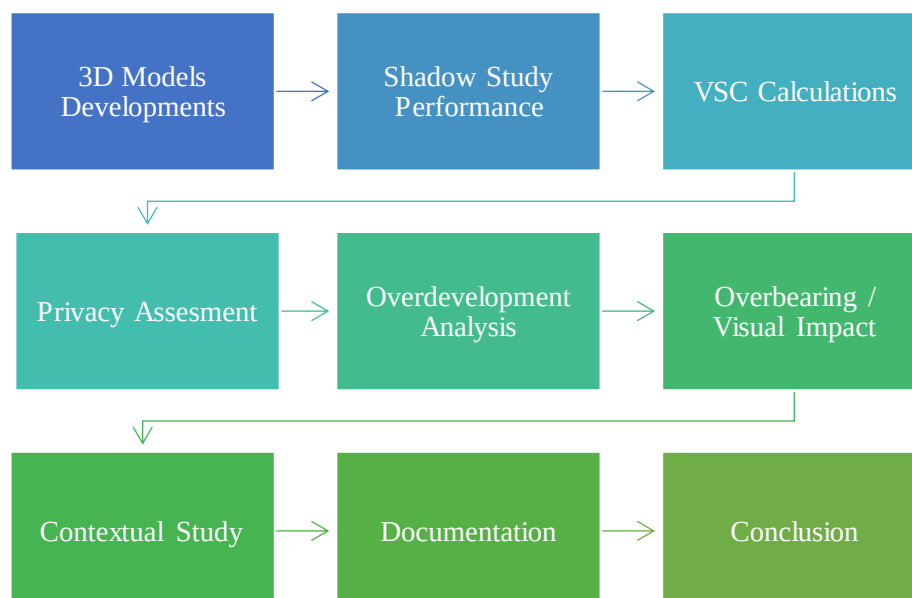


Figure 2 Process chart for the methodology

2.1.3D Models Development

The 3D models for the impact assessment were developed using Autodesk Revit, focusing specifically on the owner's house at 49 Bilsborrow Road and the two neighboring properties, House 47 and House 45. To maintain precision, accurate dimensions and positioning were followed, with particular attention given to the height and relative placement of each building to reflect real site conditions. The models include only the essential architectural components—namely, external walls and roofs—since these elements are critical for the assessments being carried out, such as shadow analysis, massing, and visual impact studies. Non-essential architectural features such as windows, doors, and internal elements were excluded, as they do not significantly influence the outcomes of the evaluated parameters. The simplified yet accurate models ensure reliable and focused results without unnecessary complexity.

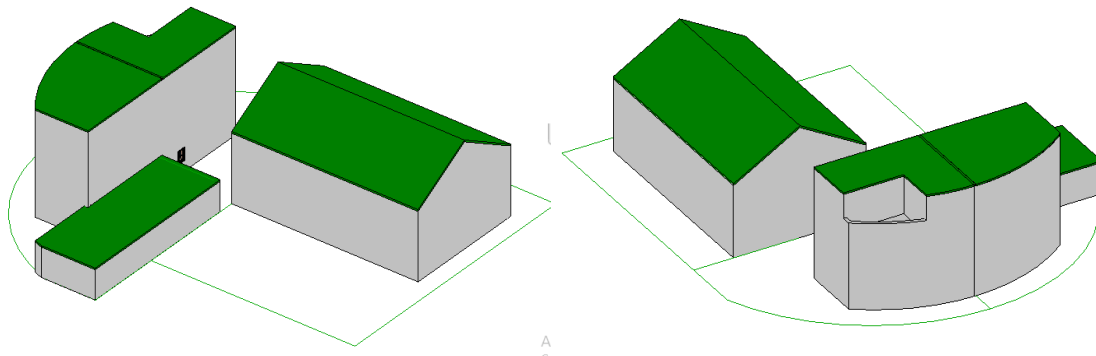


Figure 3 3D Models Front Elevation (Right) and Rear Elevation (Left)

2.2.Shadow Study Performance

The shadow study was conducted in Revit using accurate geolocation settings for 49 Bilsborrow Road, with True North properly aligned to reflect real-world orientation. This ensured that the cast shadows accurately represent site conditions throughout the year. The study was carried out for four key dates—21st March, 21st June, 21st September, and 21st December—representing each seasonal midpoint. For each of these days, shadows were analyzed from east to west in hourly intervals to capture the full daily solar path. This comprehensive approach allows for an accurate evaluation of the potential overshadowing effects of the proposed rear extension and garage on the adjacent properties, ensuring that any loss of sunlight to neighboring homes is realistically assessed and quantified.

2.3.VSC Calculations:

To perform the Vertical Sky Component (VSC) analysis, the 3D model developed in Revit was exported to SketchUp, where the *De Luminae* extension was utilized for precise daylight calculations. Proper north orientation was re-established within SketchUp to match the real-world orientation used in Revit. VSC calculation surfaces were specifically defined on the rear facades of House 47 and House 45, as these are the elevations most likely to be affected by the proposed rear extension and garage. Sensor points were strategically placed on these wall surfaces to measure the amount of visible sky from the perspective of key window locations. This method provided quantifiable data on potential reductions in daylight levels, allowing for

an objective assessment of compliance with daylight access standards and ensuring that any impact remains within acceptable limits.

2.4.Privacy Assessment:

The privacy assessment was carried out using detailed 2D and 3D drawings generated in Revit, with a focus on evaluating the spatial relationships between the proposed extension and the neighboring properties. Remoteness was analyzed by calculating precise distances and viewing angles between facing facades and potential overlooking points, using Revit's annotation and measurement tools. Particular attention was given to window-to-window and window-to-garden relationships, ensuring that any potential line of sight from the new development into private areas of House 47 and House 45 was thoroughly examined. This analysis helped determine whether the proposed extension maintains appropriate separation and orientation to preserve the privacy of adjacent residents in accordance with local planning standards.

2.5.Overdevelopment Analysis

To assess whether the proposed extension and garage would result in overdevelopment of the site at 49 Bilsborrow Road, the availability of private amenity space was analyzed after incorporating the new construction into the Revit model. Using Autodesk Revit's area calculation tools, all remaining open spaces on the plot were measured to determine their functional usability. It was checked if still there's some area available for amenities like garden for leisure, a patio or seating area for outdoor gatherings, dedicated space for refuse and recycling storage, and a safe play area for children.

2.6.Overbearing / Visual Impact

To evaluate the overbearing and visual impact of the proposed rear extension and garage, 3D massing models were developed in Revit to accurately represent the scale, bulk, and form of the new construction in relation to the neighboring properties. These models allowed for a clear comparison between the existing built environment and the proposed additions, particularly focusing on House 45 and House 47, which are potentially more sensitive to changes due to their positioning and relative height. Street-level and oblique views were generated to simulate how the extension would appear from private vantage points, including rear gardens and side approaches.

2.7.Contextual Study

The contextual study was conducted using Google Maps to gather detailed aerial views and an understanding of the surrounding environment around 49 Bilsborrow Road. By examining the immediate neighborhood and broader context, the analysis focused on the architectural style, building heights, and spatial arrangements of nearby properties. This provided insights into how the proposed rear extension and garage would fit within the existing urban fabric, ensuring the development aligns with the character and scale of the surrounding area. The study also helped to identify any patterns in the spacing between buildings, open areas, and overall development density in the vicinity, ensuring the new construction complements the established context and does not disrupt the harmony of the neighborhood.

2.8.Documentation Methodology

The documentation for this report follows standard APA formatting guidelines, ensuring consistency and clarity in presenting the research and findings. All sources, including planning regulations, tools, and methodologies, are properly cited within the text and in the reference list at the end of the report. Visual aids, such as 3D models, shadow studies, and VSC calculations, are integrated to support the analysis and are clearly labeled for easy reference. The report aims to provide a comprehensive, well-organized document that adheres to academic and professional standards, making it accessible and understandable for both the planning authorities and stakeholders involved. Based on all the findings conclusion have been drawn at the end of the report by comparing the results with the regulatory framework mentioned in next section.

3. Regulatory Framework

This study adheres to relevant UK planning regulations and guidelines to ensure that the proposed extension and garage at 49 Bilbottle Road meet the required standards for residential development. Specifically, the assessment follows the local planning policies of Manchester City Council to ensure compliance with both spatial and design requirements, as outlined below. These regulations include considerations for the impact on neighboring properties, privacy, daylight access, and amenity space, ensuring that the proposed development respects the surrounding environment and maintains the quality of life for nearby residents.

3.1. Policy SP1 Spatial Principle - Core Strategy

Policy SP1 from Manchester's Local Development Framework guides the city's development from 2012 to 2027, emphasizing sustainability, climate change mitigation, and economic growth. The policy promotes the creation of high-quality neighborhoods, with diverse housing options that cater to local needs while maintaining a distinct character. The policy advocates for development that contributes positively to neighborhoods, enhancing health, safety, and wellbeing.

3.2.Policy DM1 Development Management - Core Strategy

Policy DM1 outlines the principles for new developments, emphasizing factors such as appropriate siting, scale, and materials. Development must respect the character of the surrounding area and not negatively affect amenities such as privacy, daylight, and noise levels. The policy also considers accessibility for disabled people, community safety, and the adequacy of internal accommodation and external amenity spaces, including provisions for refuse storage and vehicular access.

3.3.Policy D1 Residential Extensions - Citywide Development Control Policies

Policy D1 focuses on the impact of residential extensions, ensuring they do not exceed acceptable sizes, do not overshadow neighboring properties excessively, and maintain the overall character of the area. It highlights the importance of minimizing the loss of sunlight, daylight, and privacy for neighboring properties, while maintaining the appearance of the street scene. It also ensures that extensions do not result in a loss of essential off-street parking spaces.

3.4.BRE - Site Layout Planning for Daylight and Sunlight

The BRE guidelines for daylight and sunlight are referenced, particularly Section 2.1, which sets the criteria for assessing the impact of new developments on daylight access. The Vertical Sky Component (VSC) method was used to evaluate whether the proposed extension would reduce natural light to neighboring properties beyond acceptable limits, with a VSC standard of 27% or higher considered acceptable.

3.5.UK Government "Rear Privacy" Guidelines

The "Rear Privacy" guidelines from UK Government¹ were used to assess the privacy impacts of the proposed extension, specifically the minimum required distances between facing windows to prevent undue overlooking. This ensures that the development provides adequate separation between properties to maintain privacy for both the applicant and the neighboring homes.

3.6.Guide to Development in Manchester - Supplementary Planning Document and Planning Guidance

Section 10.9 of this document emphasizes the need for new developments to provide useable private amenity space, which is both fit for purpose and in keeping with the character of the area. This includes considerations for gardens that serve multifunctional purposes such as play areas, storage, and space for relaxation. The policy also encourages the inclusion of green infrastructure, which enhances the natural environment and contributes to the well-being of residents.

4. Shadow Study:

This section gives a detailed overview of the performed shadow study and provides the findings with visual diagrams generated by Autodesk Revit. As mentioned in the methodology, using Revit's solar analysis tool, shadows were simulated at hourly intervals for the equinox days, i.e., the 21st of each seasonal month. For each day, diagrams have been generated from east to west. The proposed building has been visualized with yellow color, while the existing properties are marked white. The property lines are represented by green lines, and shadow colors are grey. Note that diagrams are generated 3D View looking from the rear sides of each house as per the limited scope of study. The dates and timings of the shadows have been mentioned on the top left corner of each shadow diagram.

4.1. Sun Path Analysis

To generate the outcomes as per the requirement of the project's site, the software environment is updated with two major information of the project: Location/Coordinates and True north. The location/coordinates have been updated as per site section 2.3 of this report. True North is the real-world north direction based on site conditions, which is developed in Revit environment by rotating project north at an angle from x axis.

1

https://assets.publishing.service.gov.uk/media/6270d482d3bf7f0e7947f3ad/EDG_Rear_Privacy_CHECKED.pdf

The sun path varies significantly across the seasons, directly influencing the length and orientation of shadows cast by buildings. During the summer months, particularly around June 21st, the sun rises early in the northeast and sets late in the northwest, following a high arc in the sky. This elevated sun angle results in shorter shadows and a wider sun coverage area. As such, the likelihood of prolonged overshadowing is minimal during this period. Conversely, in winter, particularly around December 21st, the sun remains low in the southern sky, producing longer and more angled shadows that extend further across adjacent properties. These seasonal extremes are crucial for evaluating the extent and duration of shadow impacts.

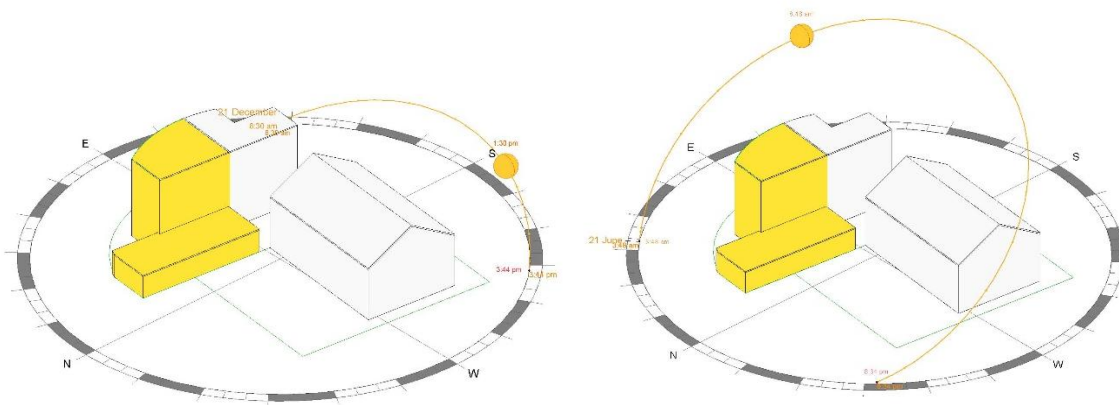


Figure 4 Winter Sun Path Showing Low Arc (Left) & Summer Sun Path \Showing High Arc (Right)

4.2.Shadow Casting

The shadow analysis was conducted for four key dates as defined below:

4.2.1. Spring Equinox (March 21st)

Shadows cast by the proposed construction are moderate in length, falling primarily towards the northwest in the morning and towards the northeast in the evening. Sunrise is at 6:14 AM, and sunset is at 6:18 PM.

The proposed extension and garage cast shadows on rear of House 45 only during the early morning hours when the sun is rising from east till noon. Due to the sun's natural path rising in the east, morning shadows cast to the west (towards the neighbor's garden) which are expected in most typical residential developments. The proposal does not result in unusual or excessive overshadowing. It should be noted that under this time the majority of house 45's rear is already under influence of it's own shadow. Soon after the noon from 12:00 AM till sunset, no shadows are cast on Houses 45 because the shadows now go towards north east when sun is setting in west. The neighbor's rear garden continues to receive sunlight during the key afternoon hours when outdoor spaces are more likely to be used, ensuring usability and amenity are maintained. It means that during the spring months, the proposed extension and the new garage of house 49 doesn't cause any overshadowing on the rear of house 45, except during the early morning hours which further ensures that house 45's amenity areas receive enough lighting during March, April, and May. Similarly for House 47, the proposed extension and garage doesn't cast any shadows at any time of the spring equinox because the shadows are in opposite directions as that of house 47's rear. In fact the the rear of 47 gets ample sunlight during noon when sun is at peak and during the early afternoon (At 1:00 PM). For 2 hours, the rear still gets

ample light even after the construction of new additions of house 49. This shows that there's no amenity implications observed by the proposed extension and garage on house 47.

Hence, the development complies with BRE guidelines, which state that at least 50% of the garden should receive two or more hours of direct sunlight on March 21st. The proposal does not reduce sunlight availability for both the neighbors below this threshold. Similarly, as per DC1 Policy's point b, the proposed rear extension doesn't not create an undue loss of sunlight and this is visually proved in figures below. On the other hand, the shadow study results also comply with SP1 Policy of Core Strategy, according to the which the proposed extension and the new garage not only respects character and amenity of surrounding areas but also it fails to have negative amenity impacts on neighbors by proposing a sustainable construction resulting in high-quality urban design and protects residential environment. This also aligns with policy DM1 of Core strategy which says that the developments must be appropriate in scale, massing, and form, and should not harm amenity (light is one aspect including privacy and others).

It can be concluded that the new garage and proposed extension provide good design and maintains quality of life for neighbor without adverse amenity impacts like overshadowing which is visually proved. Figure 5 shows the pattern of shadows. Refer to Appendix A: Spring Shadow Study for detailed shadow visualization.

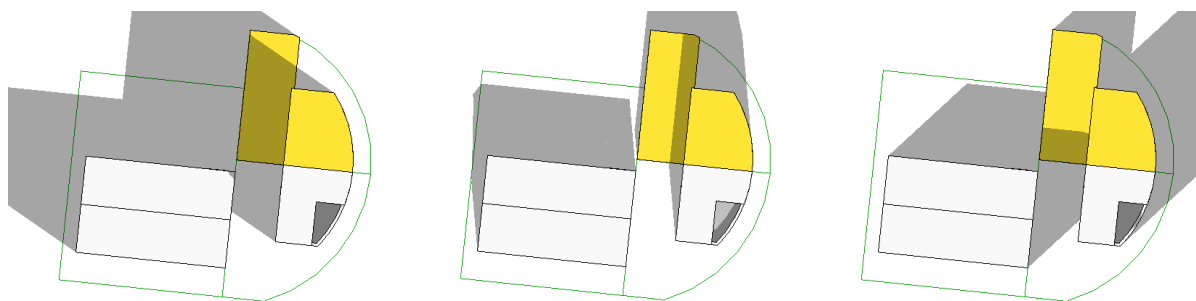


Figure 5 Spring Equinox at 9:00 AM (Left), 12:00 PM (Middle), and 3:00 PM (Right)

4.2.2. Summer Solstice (June 21st)

The sunrise on this day occurs at 3:48 am, while sunset occurs at 8:34 PM. Due to the high sun angle, the shadow sizes are shortest during the summer months, i.e., June, July, and August.

A very low intensity shadow is cast by the proposed garage and extension on rear of house 45 during early morning hours. But soon after 9:00 till 11:30 the shadow size is reduced significantly on rear garden and ultimately no shadow cast is observed after 12:00 till sunset. The rear garden of house 45 gets high sunlight especially during the noon and afternoon hours. The proposed extension and new garage don't cast any shadow on the rear of house 47 because the shadow directions are mostly towards the north east and north west while the house 47 lies on the south of the house 45. The house 47 remains unaffected by new construction.

Hence, the proposed house does not cause overshadowing on both the neighbours and doesn't reduce the sunlight for the private amenity spaces which aligns with the Policy DC1, PC1 and DM1. Both the neighbour enjoys the enough sunlight as they do before the extension and garrage construction following the 2 Hours BRE guidelines.

Figure 6 shows shadow patterns during the summer solstice. Refer to Appendix B: Summer Shadow Study for detailed shadow visualization.

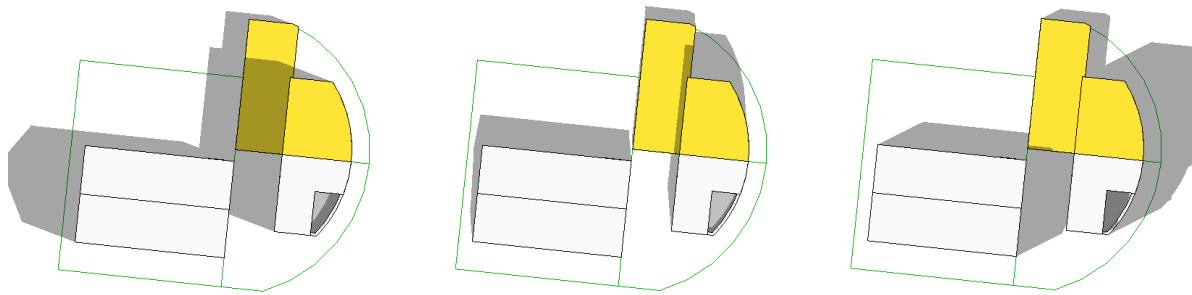


Figure 6 Summer Solstice at 9:00 AM (Left), 12:00 PM (Middle), and 3:00 PM (Right)

4.2.3. Autumn Equinox (September 21st) Analysis

The sunrise occurs at 5:59 am during this day, while the sun sets at 6:05 PM. The shadows length is greater than the shadow cast during summer but less than winter shadows.

Shadow patterns resemble those of the Spring Equinox, confirming seasonal consistency in daylight access. As it is already proved in section 5.2.1 that the design of the garage and extension doesn't contribute to loss of sunlight without any overshadowing, similarly the autumn month (September, October, November) also follows the Policy DC1, SP1 and DM1, three of which calls of protection of amenity implications. 50% of garden areas keep getting shadows for at least 2 hours as per BRE guidelines.

Figure 7 show shadow patterns during Autumn Equinox. Refer to Appendix C: Autumn Shadow Study for detailed shadow visualization.

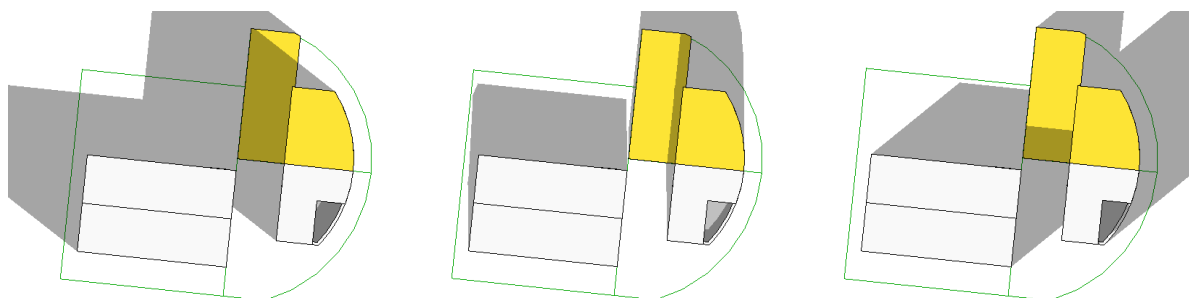


Figure 7 Autumn Equinox at 9:00 AM (Left), 12:00 PM (Middle), and 3:00 PM (Right)

4.2.4. Winter Solstice (December 21st)

During winter months (December, January, February), the sun rises late but sets very early, which causes the days to be shorter. During the winter solstice of the project location, the sun rises at 8:30 AM and sets at 3:44 PM, which is very early. As precisely mentioned during sun path analysis, due to the low sun angle, shadows are longest during this period. All the surrounding buildings cast shadows of higher lengths, exceeding the boundaries of plots.

The proposed extension and new garage casts shadows toward the northwest in the morning and northeast in the evening. By shadow analysis, we see that the shadow of the new proposal

overlaps with the existing shadow of House 45 till 12:00 PM. It means the rear of house 45 is already under the influence of its own shadow and the proposal doesn't cause additional shadows. As previously mentioned the shadows are opposite to as that of the rear of house 47 and hence it's rear remains unaffected by rear additions to house 49.

Hence, direct sunlight availability is reduced naturally during winter, but the development does not exacerbate this seasonal limitation. No Overshadowing is being observed during morning and noon hours by the proposed building which follows all the relevant policies as mentioned under section 4 of this report.

Figure 8 shows shadow patterns during the Winter Solstice. Refer to Appendix D: Winter Shadow Study for detailed shadow visualization.

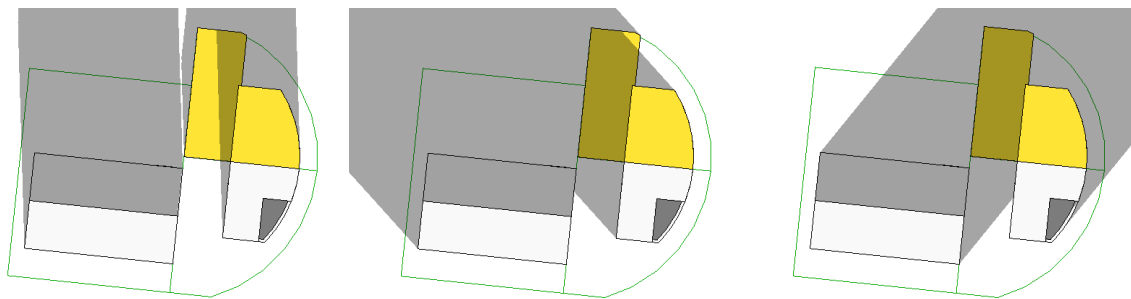


Figure 8 Winter Solstice at 9:00 AM (Left), 12:00 PM (Middle), and 3:00 PM (Right)

5. Vertical Sky Component (VSC) Assessment

The vertical sky component (VSC) quantifies the amount of skylight reaching a vertical wall or window. It is defined as the ratio of direct sky illuminance at a reference point on the wall (typically the center of the window) to the simultaneous horizontal illumination under an unobstructed sky.

Section 2.1.5 of BRE guidelines outlines methods for calculating VSC, including the use of a skylight indicator, a Waldram diagram, or computer software. In this report, VSC has been determined to use software with additional plugins, as detailed in Section 3.3. It is important to note that all surrounding buildings, not just those on the development site, influence the VSC. According to BRE guidelines, a VSC of at least 27% is generally considered sufficient for conventional window designs.

5.1. Methodology for VSC Calculation

The accurate 3D Models of existing and proposed buildings are imported. The software calculates the percentages by taking the nearest horizontal obstruction and highest point at the point of obstruction. Therefore, the models are accurately placed at the particular locations as per the values taken from Google maps. Before the analysis, inputs are provided for Location to capture existing conditions and UTC +0:00 time zone is used.

For the analysis, the complete rear walls for both neighbors are selected instead of individual windows, which will show the patterns of VSC at different locations of the wall. The level of details are selected as sparse and 10 sensors are placed per m². Finally, a color-coded scale is developed to show the VSC percentages for better visualization.

5.2.VSC Assessment for House 45:

There are 19 sensors placed, each over 10 m² for the simulation purpose. After providing the appropriate inputs to the software, the average value of VSC for the rear wall of plot 10 comes out to be 35.83%. The maximum value (shown by red) for VSC is 35.7% while the minimum value for VSC (shown by dark blue) comes out to be 21.9%. This shows that the VSC over the rear wall of the House 45 remains within the range 21.9 – 35.7%. The area where the nearest windows is place has VSC greater than the required value of 27% as mentioned Section 2.1 of BRE guidelines [1].

Hence it can be concluded that the proposed extension and new garage doesn't reduce the sunlight for house 45. Figure 10 shows a visualization of VSC calculations on rear wall of House 45. For a detailed breakdown of the data, refer to Appendix E, Table 1.

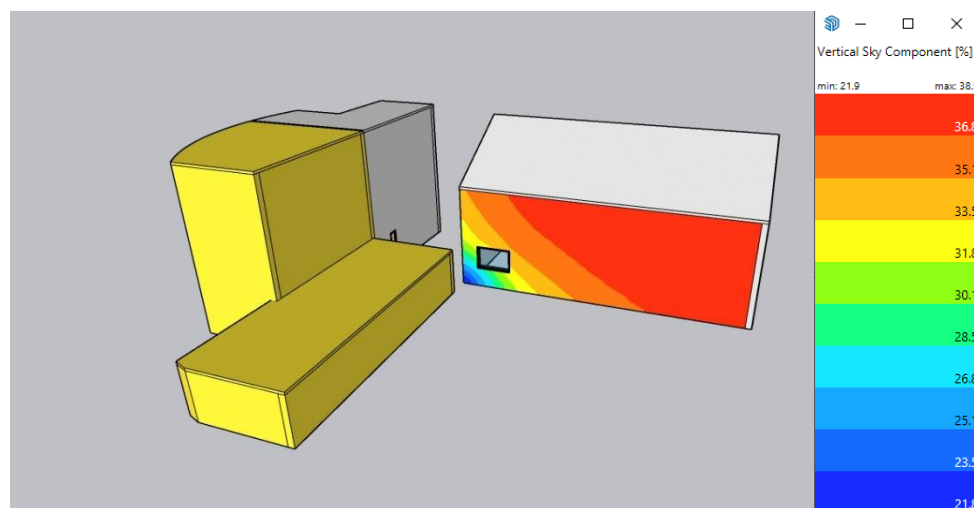


Figure 9 VSC Analysis on Rear Wall of House 45

5.3. VSC Assessment for House 47:

Because of the smaller surface area, there are 13 sensors placed all over the rear wall. The average value of VSC for rear wall of house 47 comes out to be 27.73%. The maximum value (by red) for VSC is 35.7% while the minimum value for VSC (shown by dark blue) comes out to be 9.2%. The window area has VSC less than that of 27% because it is directly facing house 45. VSC is calculated by taking the nearest highest point. In case of rear kitchen window of house 47 the nearest highest point is the roof of house 45. The proposed extension and garage are shorter and has no impact on VSC of the window. The analysis without the proposed construction shows that the VSC values remains the same after the proposed construction. Hence it can be concluded that the proposed development doesn't reduce the sunlight for House 49. Figure 11 shows a visualization of VSC calculations on rear wall of House 47 with a proper scale. For a detailed breakdown of the data, refer to Appendix E, Table 2.

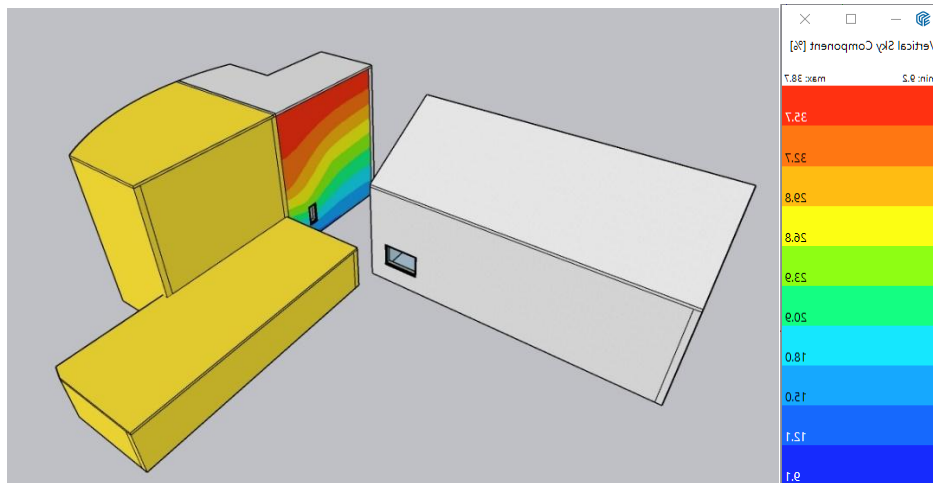


Figure 10 VSC Analysis on Rear Wall of House 47

5.4. Policy Compliance:

As per DC 1's point b, the proposed extension doesn't cause a loss of daylight for neighbors. The VSC results show that the SP1 policy is also followed by making a positive contribution to the health, safety and wellbeing of residents. The VSC of more than 27% for house 45 and unaffected VSC of house 47 shows that the proposed construction protects and enhances the built and natural environment. The scale and layout is appropriate as per Policy DM1 and effects on amenity of neighbors are kept minimal.

6. Privacy Assessment

The privacy assessment for the proposed extension and garage at 49 Bilberron Rd, Manchester carefully evaluates the potential for overlooking and loss of privacy to adjacent properties at House 45 and House 47. The results are described below:

6.1. Window Placement and Orientation

One of the key considerations is the orientation and arrangement of existing and proposed windows. Importantly, no additional windows are being introduced on any wall of the new garage or the rear extension. This ensures that the new construction does not introduce any new sightlines that could compromise the privacy of neighboring dwellings.

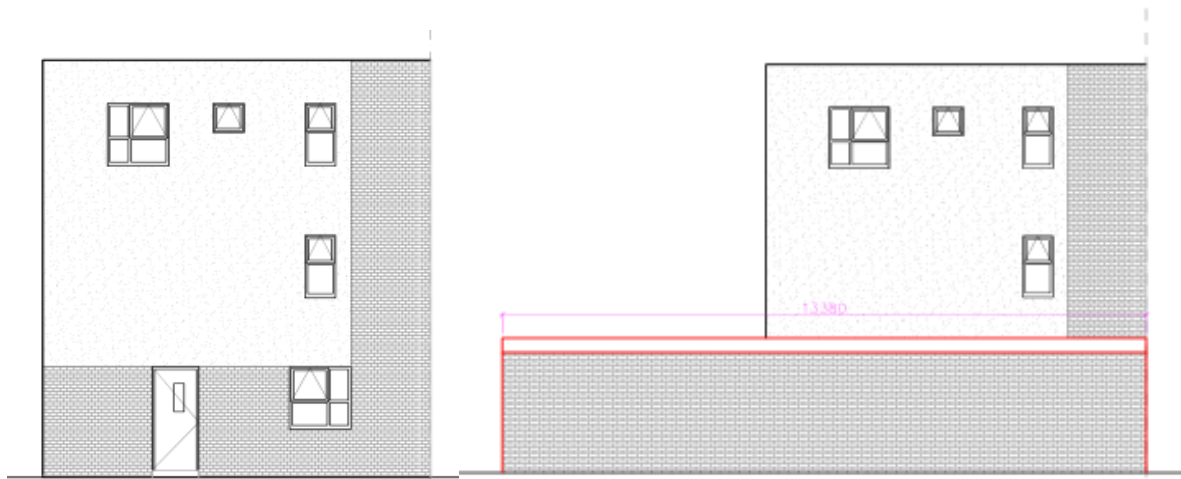


Figure 11 Existing Rear Elevation (Left) & Proposed Rear Elevation (Right)

6.2. Separation Distances

The principle of remoteness is considered—typically assessed when two sets of windows face each other. In this case, however, since the window sets do not face each other directly, the application of remoteness is not strictly relevant. The overall spatial relationship and architectural configuration of the structures maintain a respectful and private boundary between neighboring properties.

6.3. Overlooking Concerns

The configuration of the surrounding buildings significantly reduces any potential for overlooking. House 45 is positioned perpendicular (90 degrees) to the rear of House 49, meaning that its rear elevation does not directly align with any window or façade of the subject property. Similarly, House 47 lies in a position opposite (180 degrees) to the rear of House 49, with existing windows not facing directly towards it. This geometric arrangement inherently limits direct visibility and ensures visual separation between the houses.

6.4. Policy Compliances:

Policy DC1, SP1, and DM1 calls for the protection of privacy for neighbors. The new extension and garage is proposed in such a way that privacy is not hindered at any extent. In fact, privacy remains unaffected.

7. Overdevelopment Analysis

Objective of this technical analysis is to assess whether rear extension and garage would result in an unacceptable loss of private amenity space for the applicant, potentially constituting overdevelopment of the site.

8.1 Area Plan on Revit:

An area plan created within the Revit model identifies the remaining open space located in the front yard and on the left side of the house. Area calculations performed using Revit tools confirm that 29.87 m² of functional outdoor space remains available post-construction. This

residual area is sufficient to serve as private amenity space. With available boundary treatments, this space could effectively be utilized for various amenity functions, further supported by amenity space on the 2nd floor balcony.

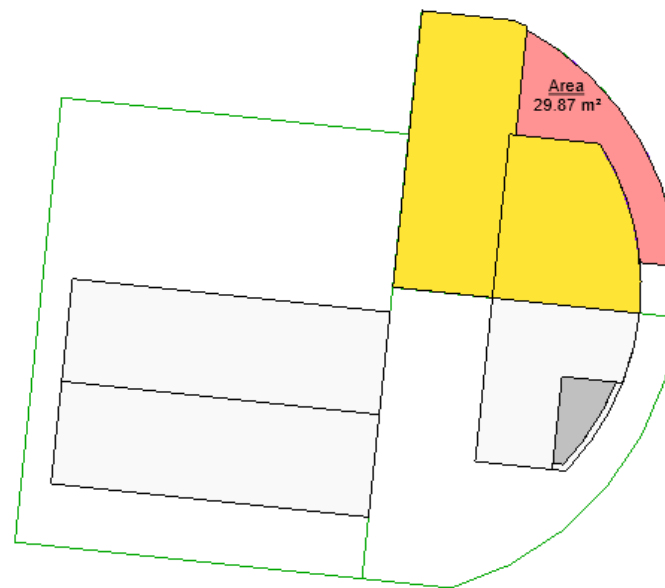


Figure 12 Plan Showing the Availability of Space for Amenity Purposes.

8.2. Compliances with SPD:

The provision approximately 30 m² of usable area ensures the proposal complies with Section 10.9 of the Manchester City Council's "Guide to Development in Manchester - Supplementary Planning Document and Planning Guidance". This policy states: "All residents should enjoy useable private amenity space wherever they choose to live in the City. All new developments should be designed to provide on-site amenity space which is fit for purpose, and which is informed by, and relates to, the character of the area". The policy emphasizes the importance of gardens that function well as multi-functional spaces. By retaining a defined, usable outdoor area suitable for multiple amenity purposes, the proposal adheres to this requirement and cannot be reasonably classified as overdevelopment.

It has to be noted that the guidance does not suggest that the private amenity space must be limited to the rear of the dwelling. As far as proper treatment like fencing is provided, the front yard can be used as Private amenity space. Furthermore, the specific area coverage for private amenity space is also not mentioned in Manchester Council SPD.

8. Overbearing / Visual Impact

To evaluate the potential overbearing and visual impact of the proposed rear extension and garage, detailed 3D massing models were developed using Autodesk Revit. These models accurately represent the scale, bulk, and form of the proposed construction relative to the neighboring properties at House 45 and House 47.

9.2 Viewpoint Simulation

To simulate the real-world visual experience from neighboring properties, 3D perspective views were generated within Revit. Cameras were strategically placed at key locations to the rear of House 45 and House 47, set at a standard eye level of 1.75 meters. This technique provides realistic visualizations of how the proposed development would appear from these sensitive viewpoints. The camera locations with their 3D Views are shown in figure

9.3 Findings

While views taken from cameras positioned very close to the proposed extension wall might show the structure blocking a portion of the sky view (areas sometimes considered "red zones" where bulk might be felt), the overall visual assessment indicates this impact is low. A key factor in determining overbearing impact is the retained visibility of both ground and sky; as long as both remain visible from relevant viewpoints, a significant overbearing effect is generally not considered to occur. In this case, the analysis confirms that the proposal does not create an unacceptable sense of enclosure or overbearing impact on the neighboring properties.

The visual analysis conducted using the 3D Mass models and perspective views demonstrates that the proposed development remains proportionate to the existing structures and its surroundings. It does not visually dominate or unduly overwhelm the adjacent dwellings. Careful consideration during the design phase regarding massing, setbacks, and orientation ensures that the visual presence of the new structure integrates respectfully into the existing rear context.

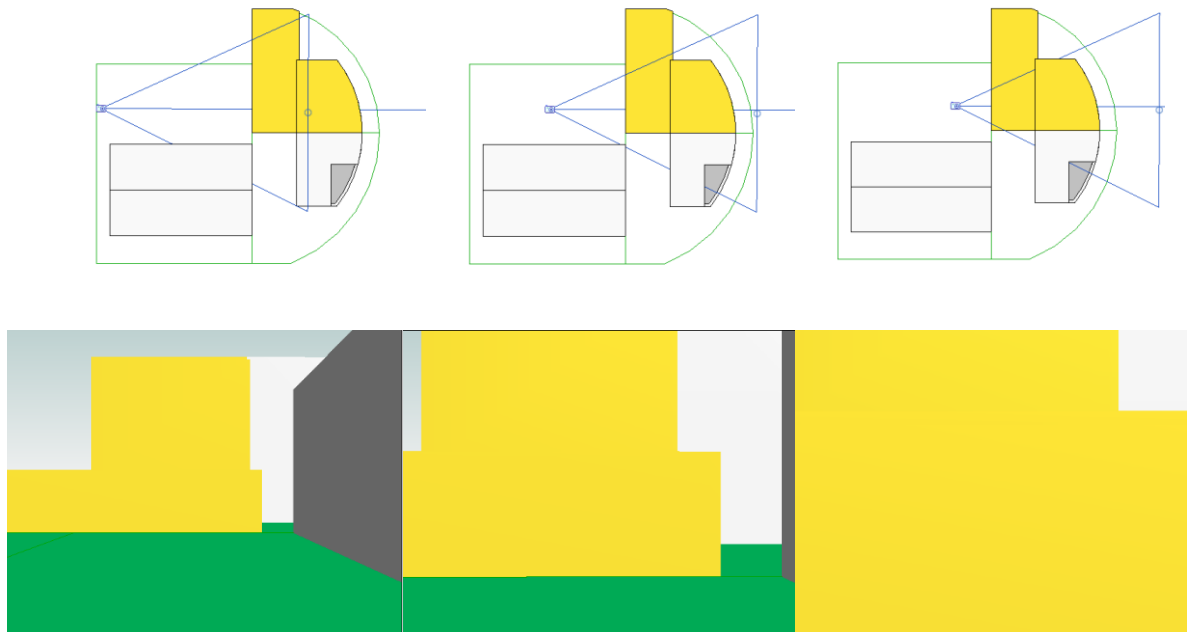


Figure 13 Camera Placement at House 45 Rear (Top) and Corresponding View of 3D Massing (Bottom) showing the sky (Blue) and Ground (Green)

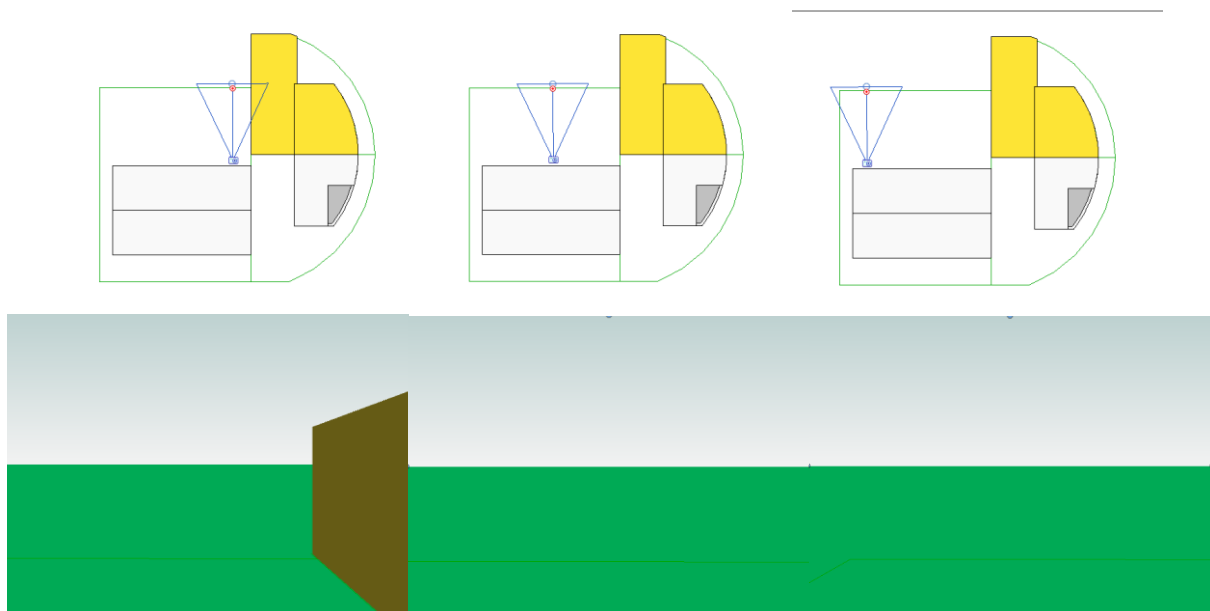


Figure 14 Camera Placement Facing Street at House 45 Rear (Top) and Corresponding View of 3D Massing (Bottom) showing the sky (Blue) and Ground (Green)

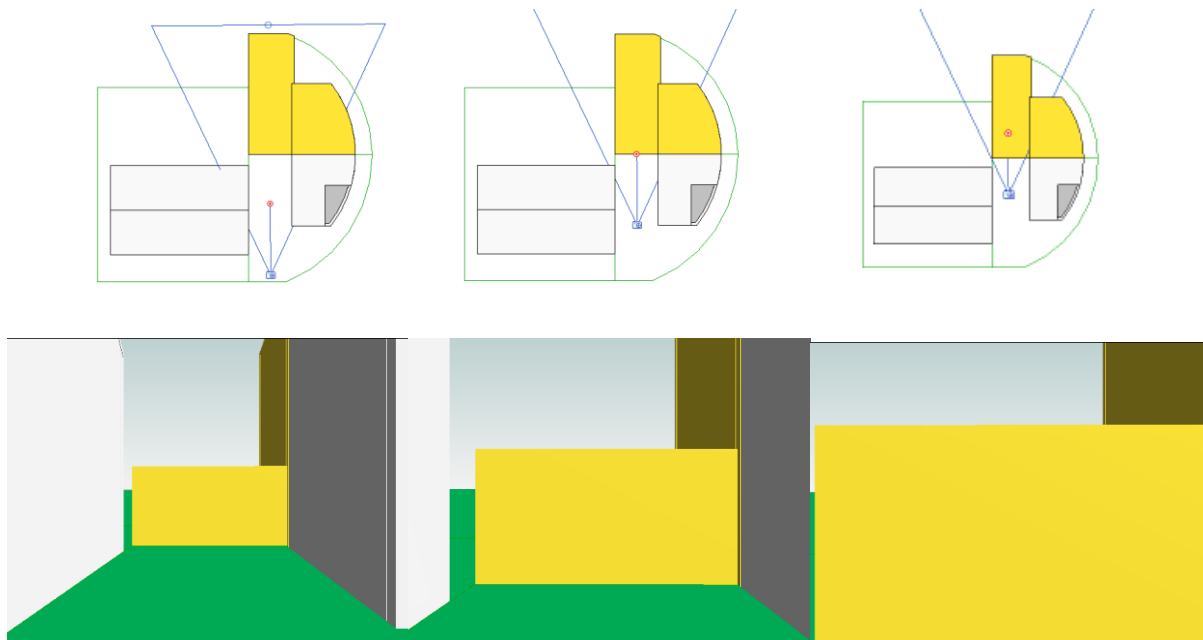


Figure 15 Camera Placement at House 47's Rear (Top) and Corresponding View of 3D Massing (Bottom) showing the sky (Blue) and Ground (Green)

9.4 Policy Compliance:

The findings align with the point a of the DC1 policy which states that the extensions should not excessively large or bulky (for example, resulting in structures which are not subservient to original houses or project out too far in front of the original buildings). The design also follows the DM1 policy by considering the Impact on the surrounding areas in terms of the design, scale and appearance of the proposed development. Appropriate siting, layout, scale, form, massing, and detail is considered also from DM1. The goal of social cohesion and place-making is also achieved that SP1 promotes.

9. Contextual Study for Garage

An objection has been made by the officer stating that the introduction of the garage would be out of keeping with the style of development in the immediate area as it would appear as a detached and alien feature. Following is the response to the objection after a detailed contextual study of the area.

First, the existing property already stands apart from the prevailing architectural style in the area due to its curved front elevation and flat roof. As such, the proposed garage does not disrupt a uniform character but complement an already distinct plot. The existing dwelling itself is already architecturally distinct from neighboring properties. The house features a curved front elevation that is not found elsewhere in the immediate area, setting it apart from the prevailing style of development.

In this context, the proposed garage has been designed as a complementary addition that respects and reflects the unique character of the host property. While the garage is visible from the front, it has been carefully positioned to the side-rear of the plot, with a scale and design

that ensures it remains subordinate to the main dwelling. Matching materials, roof profile, and proportions have been incorporated to ensure the garage does not appear as an alien feature, but rather as a natural continuation of the existing home's distinctive form. Given that the property already breaks from the traditional street pattern, the garage does not disrupt visual harmony but remains consistent with the dwelling's established individuality.

The garage has been carefully designed to align with the unique character of the existing dwelling, using materials, finishes, and proportions that reflect and enhance its architectural identity. For example, the roof of the garage will be made with Slate Tiles which are already used by houses in surroundings.

If required, to further reduce visual impact, the garage can be screened with proper fencing in front of the house so that it will not be visible from the public realm and therefore will not alter the established character of the street scene from the front elevation.

Lastly, in response to the officer's objection that the garage would conflict with the entrance communal parking space available off Kippax Street it must be clarified that the garage will be developed within the property line of the owner without exceeding the plot. The parking has existed outside the boundary of the owner's owned property. The proposed structure remains entirely within the residential curtilage and does not adversely affect neighboring amenities or street cohesion. Furthermore, the proposed garage meets a practical need for secure off-street parking and storage, reducing potential on-street parking pressure and improving the sustainability and utility of the dwelling.

10. Conclusion

A detailed analysis of the proposed rear extension and garage at 49 Bilborrow Road, Manchester M14 7TH, was conducted to assess its compliance with Manchester City Council's planning policies (SP1, DM1, DC1), BRE guidelines, and the Supplementary Planning Document. The assessment examined sunlight access, privacy, overdevelopment, overbearing/visual impact, and contextual fit, addressing previously raised objections.

- **Sunlight Access:** Shadow studies and Vertical Sky Component (VSC) calculations indicate that the proposed development maintains sunlight access within acceptable limits for neighboring properties (House 45 and House 47).
- **Privacy:** The absence of new windows and the proposed spatial arrangements were assessed to ensure no negative impact on privacy.
- **Overdevelopment:** The development retains 30 m² of functional amenity space, which was determined to mitigate concerns regarding overdevelopment.
- **Overbearing/Visual Impact and Contextual Fit:** The proposed structures were evaluated for their integration with the site's architectural character and the surrounding context. The garage was designed with matching materials and a subordinate scale.
- **Parking:** The garage's design was assessed for its impact on neighbourhood harmony and communal parking.

Based on these findings, the assessment concludes that the proposed development demonstrates compliance with the relevant planning policies and guidelines.

10.1 Summary of Findings

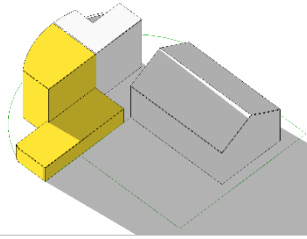
Assessment Area	Key Findings	Policy Compliance
Shadow Study	No significant overshadowing; House 45 has minor early morning shadows; House 47 unaffected. Gardens retain $\geq 50\%$ sunlight for ≥ 2 hours on March 21st.	BRE, DC1, SP1, DM1
VSC Assessment	House 45: Average VSC 35.83% (21.9%–35.7%), above 27% BRE threshold. House 47: Average VSC 27.73%, unaffected by proposal.	BRE, DC1, SP1, DM1
Privacy Assessment	No new windows; perpendicular (House 45) and opposite (House 47) orientations prevent overlooking.	DC1, SP1, DM1, GOV.UK Rear Privacy
Overdevelopment Analysis	30 m ² functional outdoor space retained for play, storage, relaxation, etc.	SPD Section 10.9, DC1, DM1
Overbearing/Visual Impact	Proportionate scale; no dominance or enclosure; integrates with existing context.	DC1, DM1, SP1
Contextual Study	Garage complements property's unique design with matching materials (e.g., slate tiles); within property lines, no impact on communal parking.	DC1, DM1, SP1

References:

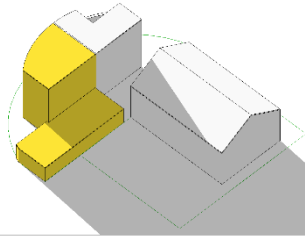
- [1] Manchester City Council, *Citywide Development Control Policies*, Manchester, UK.
[Online]. Available:
https://www.manchester.gov.uk/downloads/file/18892/citywide_development_control_policies
- [2] Manchester City Council, *Guide to Development in Manchester: Supplementary Planning Document and Planning Guidance*, Apr. 2007. [Online]. Available:
https://www.manchester.gov.uk/downloads/download/644/guide_to_development_in_manchester_-_supplementary_planning_document_and_planning_guidance_spd
- [3] Manchester City Council, *Core Strategy Development Plan Document*, Jul. 2012.
[Online]. Available:
https://www.manchester.gov.uk/downloads/download/5672/core_strategy
- [4] GOV.UK, *Privacy Notice*, Nov. 2024. [Online]. Available:
<https://www.gov.uk/help/privacy-notice>

Appendix A: Spring Shadow Study

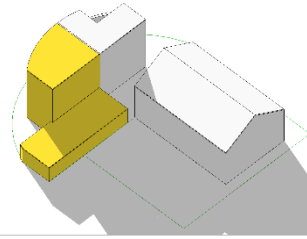
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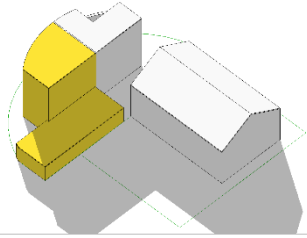
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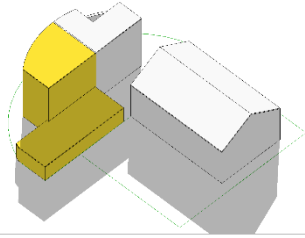
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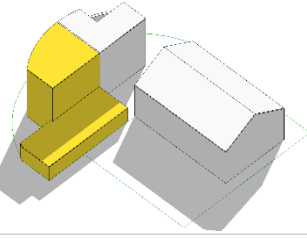
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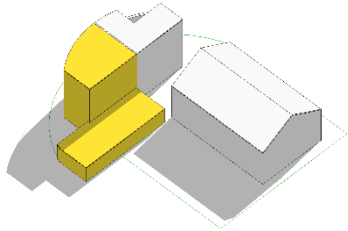
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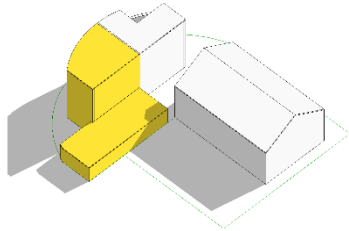
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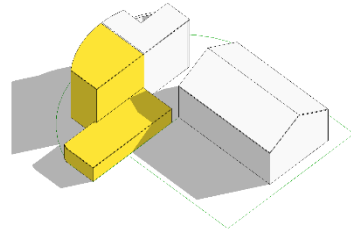
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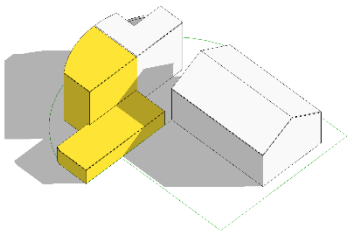
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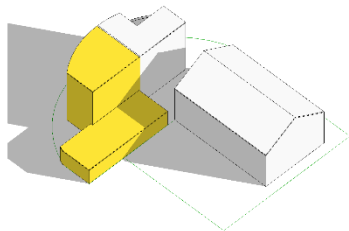
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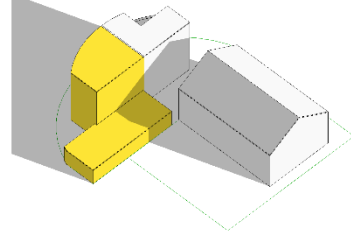
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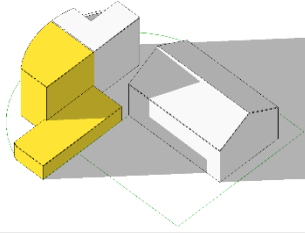


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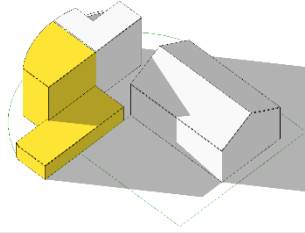


Appendix B: Summer Shadow Study

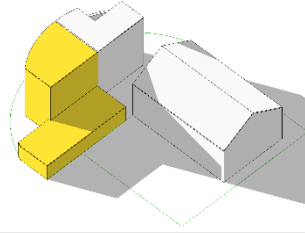
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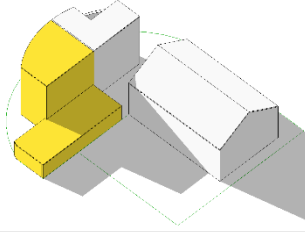
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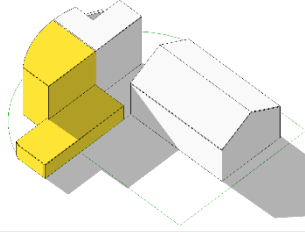
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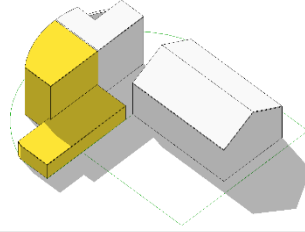
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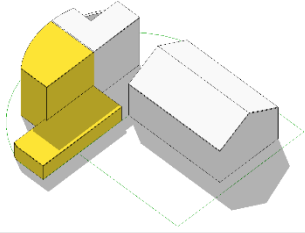
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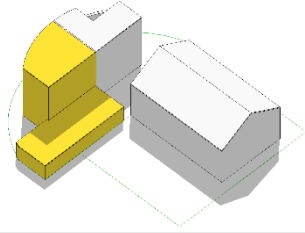
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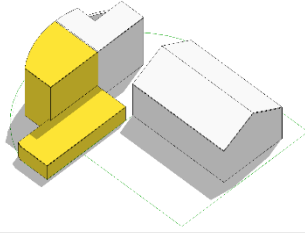
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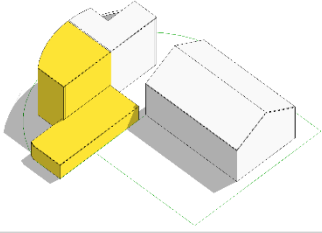
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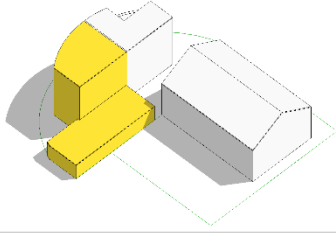
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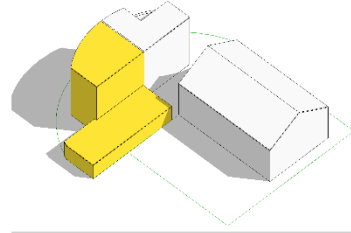
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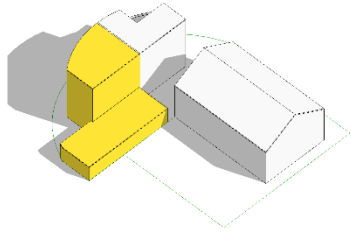
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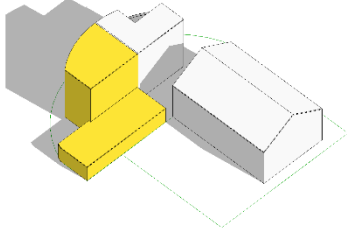
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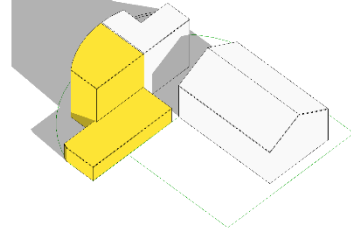
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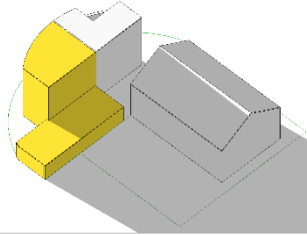


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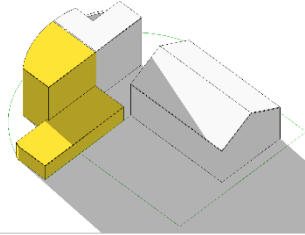


Appendix C: Autumn Shadow Study

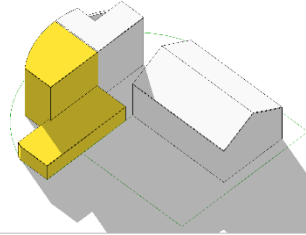
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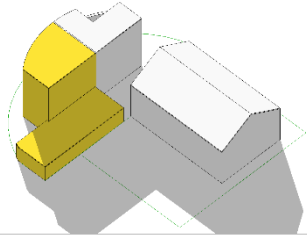
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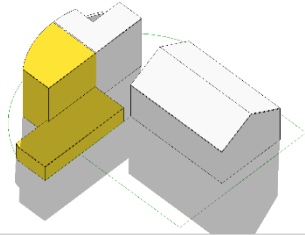
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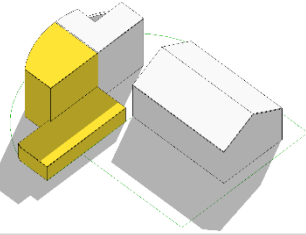
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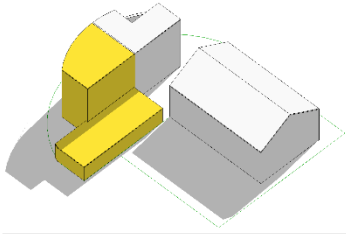
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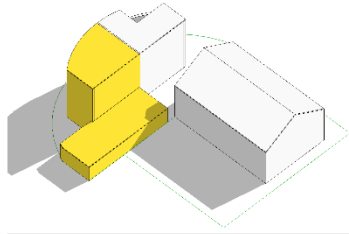
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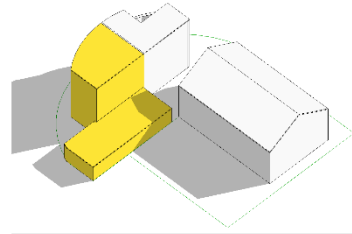
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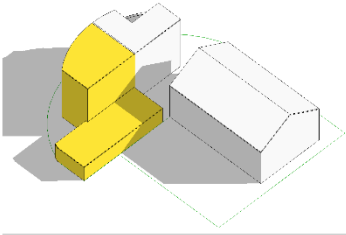
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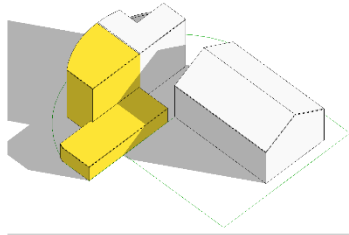
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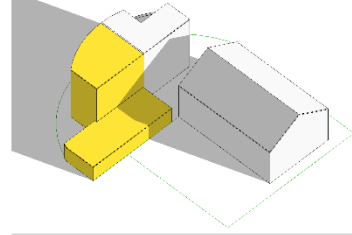
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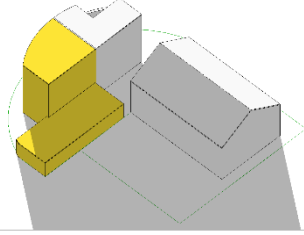


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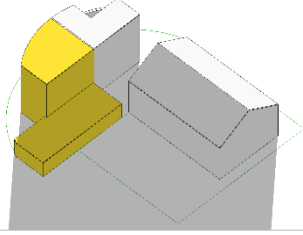


Appendix D: Winter Shadow Study

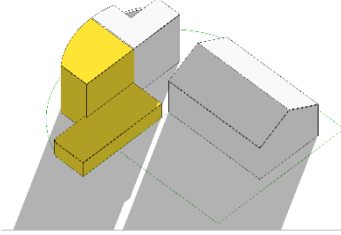
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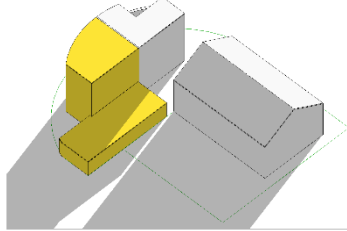
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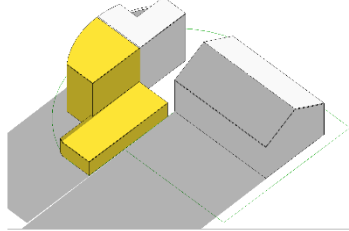
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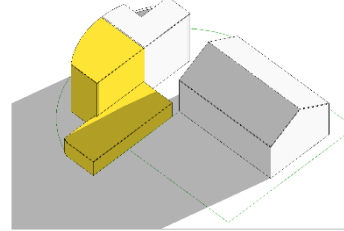
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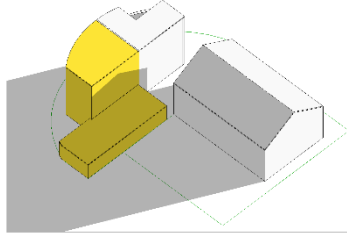
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[7 of 8] [December 21, 2025 - 14:30]



Appendix E: VSC Calculations

Table 1: VSC Values for each sensor placed over specific area on rear wall of house 45

#num	VSC [%]	area [m ²]
0	21.856079	0.489608
1	32.937360	3.066146
2	35.834135	5.263885
3	37.145113	5.263885
4	37.828714	2.773619
5	32.102755	1.328767
6	35.906827	6.188976
7	37.397951	9.785425
8	38.036247	9.785425
9	38.304980	5.156086
10	34.860966	2.680715
11	37.310491	5.128263
12	38.090323	5.263881
13	38.408227	5.263881
14	38.532900	2.773617
15	35.059191	2.918984
16	32.897139	2.369772
17	27.526889	2.009289
18	32.758897	2.416643

Appendix E

Table 2: VSC Values for each sensor placed over specific area on rear wall of House 47

#num	VSC [%]	area [m ²]
0	9.167005	1.003802
1	14.654725	4.541082
2	15.645577	4.074063
3	33.506706	5.502761
4	27.031667	12.320315
5	25.949254	7.765323
6	38.615097	4.074065
7	38.605037	7.722846
8	38.659668	4.074063
9	23.913559	3.502884
10	17.536372	1.746955
11	17.300026	1.735081
12	25.767981	3.186181