SMITH MARSTON

Building Surveyors

Daylight and Sunlight Study (Neighbouring Properties)

Development At Bowling Green, East Road
Longsight, Manchester, M12 5GZ

17 September 2024

RICS
Regulated by RICS

CONTENTS

1 EXECUTIVE SUMMARY 1
1.1 Overview 1

2 INFORMATION SOURCES 3
2.1 Drawings 3
2.2 Daylight Distribution Room Layout Information 3

3 METHODOLOGY OF THE STUDY 4
3.1 Local Planning Policy 4
3.2 National Planning Policy Framework 4
3.3 National Planning Practice Guidance 5
3.4 Daylight to Windows 5
3.5 Sunlight Availability to Windows 6
3.6 Overshadowing to Gardens and Open Spaces 7

4 RESULTS OF THE STUDY 9
4.1 Windows & Amenity Areas Considered 9
4.2 Daylight to Windows 10
4.3 Sunlight to Windows 14
4.4 Overshadowing to Gardens and Open Spaces 15
4.5 Conclusion 15

5 CLARIFICATIONS 16
5.1 General 16

APPENDICES

APPENDIX 1 WINDOW & GARDEN KEY
APPENDIX 2 DAYLIGHT AND SUNLIGHT RESULTS
APPENDIX 3 OVERSHADOWING TO GARDENS AND OPEN SPACES
APPENDIX 4 ALTERNATIVE MIRROR IMAGE RESULTS
APPENDIX 5 COMPARISON BETWEEN SCHEME AND MIRROR IMAGE RESULTS

1 EXECUTIVE SUMMARY

1.1 Overview

1.1.1 Smith Marston Building Surveyors have been commissioned by Views Holdings Ltd to undertake a daylight and sunlight study of the proposed development at the Bowling Green, East Road, Longsight, Manchester, M12 5GZ, with regards the impact it may have on the ground, first and second floor flats located immediately to the east of Plot 12.

1.1.2 The study is based on the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice, 3rd Edition' 2022.

1.1.3 The images in Appendix 1 identify the windows we have assessed. Appendix 2 gives the numerical results of the various daylight and sunlight tests. Overshadowing to gardens and opens spaces data and contour drawings are provided in Appendix 3. Alternative results and contours based upon a mirror image of the adjacent property are included in Appendix 4. Tables comparing the scheme results and the mirror image results are provided in Appendix 5.

1.1.4 With regards to daylight Vertical Sky Component (VSC) test, 28 out of 34 relevant habitable windows pass the standard daylight test targets (82%). (3 windows, Windows 5, 17, and 30 are 'secondary' windows and can be disregarded from analysis).

1.1.5 Non-compliance with the standard BRE recommendations is limited to the daylight Vertical Sky Component (VSC) in respect of ground floor Windows 3, 4, 6, 7,8, 9, and first floor Windows 18 and 19, which will experience reductions of between 28% and 53% from the starting VSC levels. This is more than the 20% threshold in the BRE Guide at which the BRE consider daylight may be adversely affected. <u>If we consider mitigation from the use of alternative targets values in accordance with Appendix F, then all windows (100%) pass the VSC daylight test.</u>

1.1.6 With regards the daylight No Sky Line test, for daylight distribution within flats, the flats tested have 12 relevant rooms (two combined living/dining/kitchens, and 2 bedrooms, at each floor level). 8 of the 12 rooms pass the BRE No Sky Line test for

daylight distribution. Non- compliance with the standard BRE No Sky Line recommendations is limited to the two ground floor bedrooms served by Windows 6, 7 and 8, and, first floor bedrooms served by Windows 19, 19 and 20. If we consider mitigation from the use of alternative targets values in accordance with Appendix F, then all windows (100%) pass the No Sky Line daylight test.

1.1.7 With regards to the sunlight to windows test, 30 out of the 31 relevant habitable windows pass the standard Total Annual Sunlight hours test target (97%) and, 29 out of the 31 relevant habitable windows pass the standard Winter Sunlight hours test target (94%). The same number of window pass, if we consider alternative targets. Where the individual windows do not meet the sunlight targets, the rooms in question are also served by additional windows that exceed the sunlight requirements.

1.1.8 In summary, the numerical results in this assessment demonstrate that the proposed development will have a low impact on the light receivable by its neighbouring properties. In our opinion, the proposed development sufficiently safeguards the daylight and sunlight amenity of the neighbouring properties.

2 INFORMATION SOURCES

2.1 Drawings

This report is based on the following drawings:

Ollier Smurthwaite Architects

A795_P_001	Location Plan	Rev -
A795_P_020	Existing Context Elevations	Rev -
A795_P_100	Proposed Site Plan	Rev -
A795_P_210	House Type 3A/4A Plans	Rev -
A795_P_220	House Type 4B Plans	Rev -
A795_P_310	House Type 3A/4A Elevations	Rev -
A795_P_311	House Type 3A/4A Elevations	Rev -
A795_P_312	House Type 3A/4A Elevations	Rev -
A795_P_320	House Type 4B Elevations	Rev -
A795_P_321	House Type 4B Elevations	Rev -
A795_P_322	House Type 4B Elevations	Rev -
A795_P_330	Proposed Context Elevations	Rev -

Quickdraw Surveys Ltd

QDS/350/1289/TOP	Topographical Survey	Rev O

2.2 Daylight Distribution Room Layout Information

The daylight distribution test has been applied based on the following room layout information:

Online Local Authority planning records

2 Armitage Avenue:

125	Floor Plans Apartment Nos.1-18	Rev -

3 METHODOLOGY OF THE STUDY

3.1 Local Planning Policy

3.1.1 We understand that the Local Authority take the conventional approach of considering daylight and sunlight amenity with reference to the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice, by P J Littlefair 2011. This report is based on the 3rd edition of the BRE guide which was published on 8 June 2022.

3.1.2 The standards set out in the BRE guide are intended to be used flexibly. The BRE guide states:

3.1.3 "The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the guide 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, since natural lighting is only one of many factors in site layout design."

3.1.4 In reference to applying different numerical target values in different locations, the BRE guide states:

3.1.5 "These values are purely advisory and different targets may be used based on the special requirements of the proposed development or its location."

3.2 National Planning Policy Framework

3.2.1 The BRE numerical guidelines should be considered in the context of the revised National Planning Policy Framework (NPPF), which stipulates that local planning authorities should take a flexible approach to daylight and sunlight to ensure the efficient use of land. The NPPF states:

3.2.2 "Local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they

would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards)."

3.3 National Planning Practice Guidance

3.3.1 The BRE numerical guidelines should also be considered in the context of the National Planning Practice Guidance (NPPG). The NPPG states that developments should maintain acceptable living standards. It goes on to explain that what this means in practice is that appropriate levels of sunlight and daylight, will depend to some extent on the context for the development. This is consistent with the BRE guide which as noted in paragraphs 3.1.4 to 3.1.5 above, states that site location is a relevant factor when setting sunlight and daylight targets.

3.4 Daylight to Windows

3.4.1 Diffuse daylight is the light received from the sun which has been diffused through the sky. Even on a cloudy day, when the sun is not visible, a room will continue to be lit with light from the sky. This is diffuse daylight.

3.4.2 Diffuse daylight calculations should be undertaken to all rooms within domestic properties, where daylight is required, including living rooms, kitchens and bedrooms. The BRE guide states that windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. These room types are non-habitable and do not have a requirement for daylight.

3.4.3 The BRE guide contains two tests which measure diffuse daylight:

Test 1 Vertical Sky Component

3.4.4 The Vertical Sky Component is a measure of available skylight at a given point on a vertical plane. Diffuse daylight may be adversely affected if after a development the Vertical Sky Component is both less than 27% and less than 0.8 times its former value.

3.4.5 The BRE guide states that the total amount of skylight can be calculated by finding the Vertical Sky Component at the centre of each main window. However, the guide states that if there would be a significant loss of light to the main window but the room also has one or more smaller windows, an overall Vertical Sky Component may be

derived by weighting each Vertical Sky Component element in accordance with the proportion of the total glazing area represented by its window.

Test 2 Daylight Distribution

3.4.6 The distribution of daylight within a room can be calculated by plotting the 'no sky line'. The no sky line is a line which separates areas of the working plane that do and do not have a direct view of the sky. Daylight may be adversely affected if, after the development, the area of the working plane in a room which can receive direct skylight is reduced to less than 0.8 times its former value.

3.4.7 The BRE guide states that both the total amount of skylight (Vertical Sky Component) and its distribution within the building (Daylight Distribution) are important. The BRE guide states that the daylight distribution calculation can only be carried out where room layouts are known. It states that using estimated room layouts is likely to give inaccurate results and is not recommended. Therefore, we don't endorse the practice of applying the test based on assumed room layouts. However, we can provide additional daylight distribution data upon request by the local authority, if neighbouring room layout information is confirmed.

3.5 Sunlight Availability to Windows

3.5.1 The BRE sunlight tests should be applied to all main living rooms and conservatories which have a window which faces within 90 degrees of due south. The BRE guide states that kitchens and bedrooms are less important, although care should be taken not to block too much sunlight. It also states that normally loss of sunlight need not be analysed to kitchens and bedrooms, except for bedrooms which also comprise a living space. The tests should also be applied to non-domestic buildings where there is a particular requirement for sunlight.

3.5.2 The test is intended to be applied to main windows which face within 90 degrees of due south. However, the BRE guide explains that if the main window faces within 90 degrees due north, but a secondary window faces within 90 degrees due south, sunlight to the secondary window should be checked. For completeness, we have tested all windows which face within 90 degrees of due south. The BRE guide states that sunlight availability may be adversely affected if the centre of the window:

- receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March and
- receives less than 0.8 times its former sunlight hours during either period and
- has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

3.6 Overshadowing to Gardens and Open Spaces

3.6.1 The availability of sunlight should be checked for all open spaces where sunlight is required. This would normally include:

- Gardens, usually the main back garden of a house
- Parks and playing fields
- Children's playgrounds
- Outdoor swimming pools and paddling pools
- Sitting out areas, such as those between non-domestic buildings and in public squares
- Focal points for views such as a group of monuments or fountains.

3.6.2 One way to consider overshadowing is by preparing shadow plots. However, the BRE guide states that it must be borne in mind that nearly all structures will create areas of new shadow, and some degree of transient overshadowing is to be expected. Therefore, shadow plots are of limited use as interpretation of the plots is subjective. Shadow plots have not been undertaken as part of this study.

3.6.3 The BRE guide also contains an objective overshadowing test which has been adopted for the purpose of this study. This guide recommends that at least 50% of the area of each amenity space listed above should receive at least two hours of sunlight on 21 March. If as a result of new development an existing garden or amenity area does not meet the above, and the area which can receive two hours of

sunlight on 21 March is less than 0.8 times its former value, then the loss of light is likely to be noticeable.

4 RESULTS OF THE STUDY

4.1 Windows & Amenity Areas Considered

4.1.1 The aim of the study is to assess the impact of the development on the light receivable by the neighbouring ground, first and second floor flats at No. 2 Armitage Avenue, located immediately to the east of Plot 12. The flats in question are shown below:



4.1.2 The images in Appendix 1 identify the windows we have assessed. Appendix 2 gives the numerical results of the various daylight and sunlight tests. Overshadowing to gardens and opens spaces data and contour drawings are provided in Appendix 3. Alternative results and contours based upon a mirror image of the adjacent property are included in Appendix 4. Tables comparing the scheme results and the mirror image results are provided in Appendix 5.

4.2 Daylight to Windows

Vertical Sky Component

4.2.1 28 out of 34 relevant habitable windows pass the standard daylight test targets (82%). (3 windows, Windows 5, 17, and 30 are 'secondary' windows and can be disregarded from analysis in terms of daylight).

4.2.2 Non-compliance with the 'standard' BRE recommendations is limited to the daylight Vertical Sky Component (VSC) in respect of ground floor Windows 3, 4, 6, 7,8, 9, and first floor Windows 18 and 19, which will experience reductions of between 28% and 53% from the starting VSC levels. This is more than the 20% threshold in the BRE Guide at which the BRE consider daylight may be adversely affected.

4.2.3 However, the Guide permits the setting of alternative targets in certain situations. Paragraph 2.2.3 of the Guide states:

4.2.4 "Note that numerical values given here are purely advisory. Different criteria may be used based on the requirements for daylighting 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. Appendix F gives further guidance".

4.2.5 The BRE Guide permits setting of alternative targets in cases where an existing building has windows that are unusually close to the site boundary. Section F5 of the Guide states:

4.2.6 "A similar approach may be adopted in cases where an existing building has windows that are unusually close to the site boundary and taking more than their fair share of light. Figure F3 shows an example, where side windows of an existing building are close to the boundary. To ensure that new development matches the height and proportions of existing buildings, the VSC, daylight distribution, and APSH targets for these windows could be set to those for a 'mirror-image' building of the same height and size, an equal distance away on the other side of the boundary".

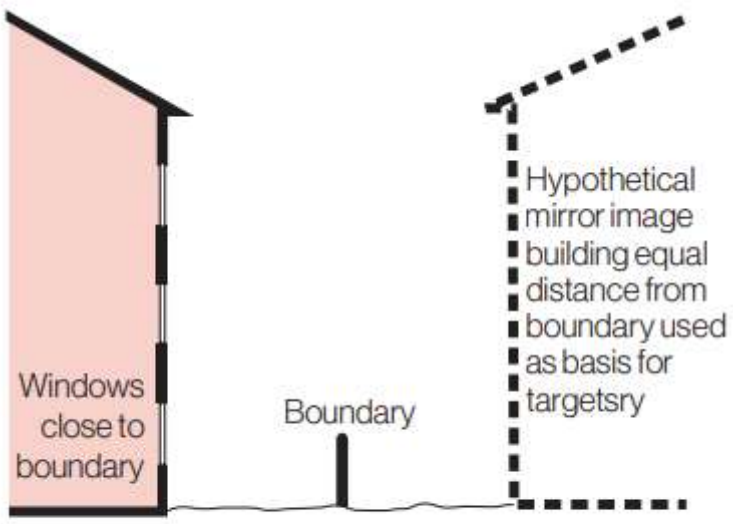
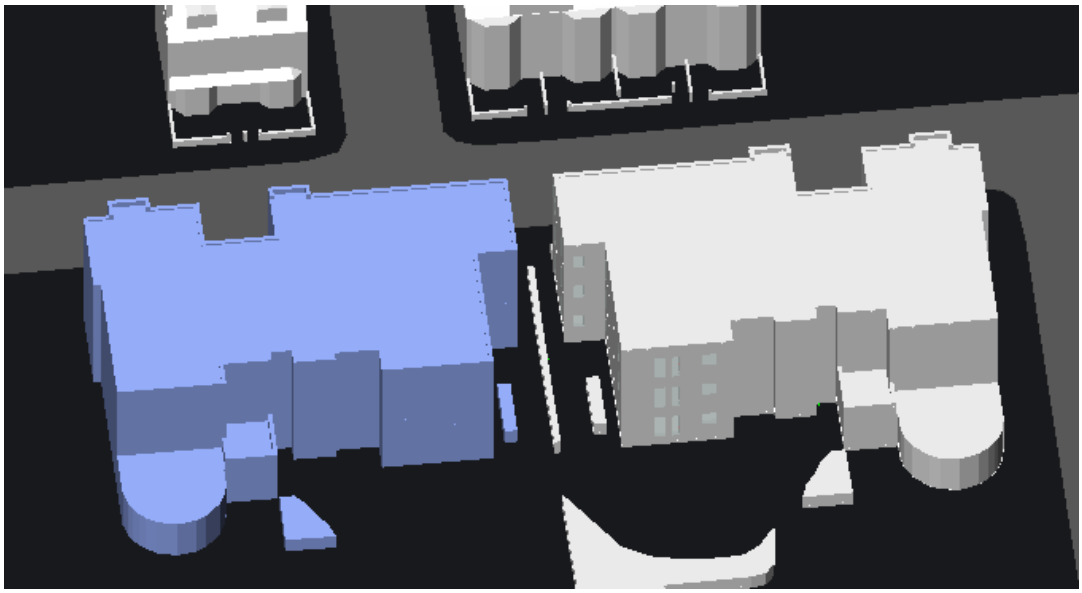


Figure F3: Use of a hypothetical mirror image building to set target daylight values

4.2.7 We have considered this approach by modelling such a mirror image scheme:



4.2.8 If we consider the approved methodology in Appendix F of the BRE Guide for setting alternative target values based upon a development that would be a mirror image of the neighbouring property (as image above), then the results (see Appendix 4 of this report) show that the impact of the proposed scheme would be less than the impact that would be caused if building a mirror image of Number 2.

4.2.9 A summary comparing the scheme results against those of a mirror image development of the adjacent property are included in Appendix 5, but, are summarised below:

Window 3	Scheme would leave a better VSC (19.4%) than Mirror Image building (13.6%)
Window 4	Scheme would leave a better VSC (14.6%) than Mirror Image building (8.4%)
Window 6	Scheme would leave a better VSC (12.1%) than Mirror Image building (12.0%)
Window 7	Scheme would leave a better VSC (14.5%) than Mirror Image building (13.9%)
Window 8	Scheme would leave a better VSC (19.7%) than Mirror Image building (18.7%)
Window 9	Scheme would leave a better VSC (24.0%) than Mirror Image building (22.8%)
Window 18	Scheme would leave a better VSC (18.7%) than Mirror Image building (17.4%)
Window 19	Scheme would leave a better VSC (22.6%) than Mirror Image building (20.6%)

4.2.10 Based upon the above, the scheme would **comply fully** with the BRE Guide when considering this mitigation as permitted in Appendix F of the Guide.

Daylight Distribution

4.2.11 We have undertaken the Daylight Distribution test where room layouts are known. All rooms with a requirement for daylight pass the daylight distribution test.

4.2.12 The flats tested have 12 relevant rooms (two combined living/dining/kitchens, and 2 bedrooms, at each floor level). 8 of the 12 rooms (67%) pass the BRE 'standard' No Sky Line test for daylight distribution. Non- compliance with the standard BRE No Sky Line recommendations is limited to the two ground floor bedrooms served by Windows 6, 7 and 8, and, first floor bedrooms served by Windows 19, 19 and 20. These rooms will experience reductions of between 21% and 53% from the starting No Sky Line levels. This is more than the 20% threshold in the BRE Guide at which the BRE consider daylight may be adversely affected, albeit marginal with regards the two first floor bedrooms (24% and 21% reductions).

4.2.13 However, as set out in 4.2.3 to 4.2.5 above, the BRE Guide does permit setting of alternative targets in cases where an existing building has windows that are unusually close to the site boundary, and this would take more than their fair share of light by setting new targets based upon the results that a mirror image building would produce.

4.2.14 If we consider the approved methodology in Appendix F of the BRE Guide for setting alternative target values based upon a development that would be a mirror image of the neighbouring property, then the daylight distribution results (see Appendix 4 of this report) show that the impact of the proposed scheme would be less than the impact that would be caused if building a mirror image of Number 2.

4.2.15 A summary comparing the scheme results against those of a mirror image development of the adjacent property are included in Appendix 5, but, are summarised below:

Windows 6 & 7	Scheme would cause less reduction (52%) than Mirror Image (58%)
Window 8	Scheme would cause less reduction (48%) than Mirror Image (57%)
Windows 18 & 19	Scheme would cause less reduction (24%) than Mirror Image (48%)
Window 20	Scheme would cause less reduction (21%) than Mirror Image 43%)

4.2.16 Daylight distribution 'No Sky Line' contours as a result of the proposed scheme are included in Appendix 3. The contours based upon a mirror image scheme (that show the impact would be worse from such a scheme than that of the impact from the proposed development) are shown in Appendix 4.

4.2.17 Based upon the above, the scheme would **comply fully** with the BRE Guides No Sky Line tests when considering this mitigation as permitted in Appendix F of the Guide.

4.3 Sunlight to Windows

4.3.1 31 windows that face within 90 degrees of due south have been tested for direct sunlight.

4.3.2 30 out of the 31 relevant habitable windows pass the standard Total Annual Sunlight hours test target (97%) and, 29 out of the 31 relevant habitable windows pass the standard Winter Sunlight hours test target (94%).

4.3.3 When considering alternative targets derived from a mirror image of the adjacent property (see alternative results in Appendix 4), the same outcomes as above are

noted, that is, one window (Window 4) does not mee the Total Annual Sunlight requirements, and Windows 3 and 4 will not meet the Witner Sunlight requirements.

4.3.4 With regards Window 4, it should be noted that whilst this window will not meet the Total Sunlight requirements, the room is also served by Windows 3 and 5, which, exceed the BRE Total Sunlight requirements, so, overall, we consider this room will receive sufficient sunlight.

4.3.5 With regards Windows 3 and 4, whilst these do not meet the Winter Sunlight requirements, the room is also served by Window 5, which will exceed the BRE Winter sunlight requirements (this window will achieve 12%, more than the 5% requirement).

4.3.6 Overall therefore, the scheme achieves a high level of compliance with regards Total Annual Sunlight hours test target (97%) and Winter Sunlight hours test target (94%).

4.4 Overshadowing to Gardens and Open Spaces

4.4.1 There are no nearby gardens or amenity areas directly to the north of the development. The proposed development will therefore not create any new areas which receive less than two hours of sunlight on 21 March. The proposed development therefore satisfies the BRE overshadowing to gardens and open spaces requirements.

4.5 Conclusion

4.5.1 In summary, the numerical results in this study demonstrate that the proposed development will have a low impact on the light receivable by its neighbouring properties.

5 CLARIFICATIONS

5.1 General

5.1.1 The report provided is solely for the use of the client and no liability to anyone else is accepted.

5.1.2 The assessment is limited to assessing daylight, sunlight and overshadowing to neighbouring windows, gardens and open spaces as set out in section 2.2, 3.2 and 3.3 of the BRE Guide.

5.1.3 The study is based on the information listed in section 2 of this report. The study has been undertaken without access to the proposed development site or neighbouring properties.

5.1.4 This assessment does not calculate the effects of trees and hedges on daylight, sunlight and overshadowing to gardens. The BRE guide states that it is usual to ignore the effect of existing trees.

5.1.5 We have undertaken the study following the guidelines of the RICS publication "Surveying Safely". Where limited access or information is available, assumptions will have been made which may affect the conclusions reached in this report. For example, where neighbouring room uses are not known, we will either make an assumption regarding the use, or take the prudent approach of treating the use of the room as being used for domestic purposes. Therefore, the report may need to be updated if room uses are confirmed by the local authority or by the consultation responses.

5.1.6 This report is based upon and subject to the scope of work set out in Smith Marston Building Surveyor's quotation and standard terms and conditions.

APPENDICES

APPENDIX 1
WINDOW KEY



Key

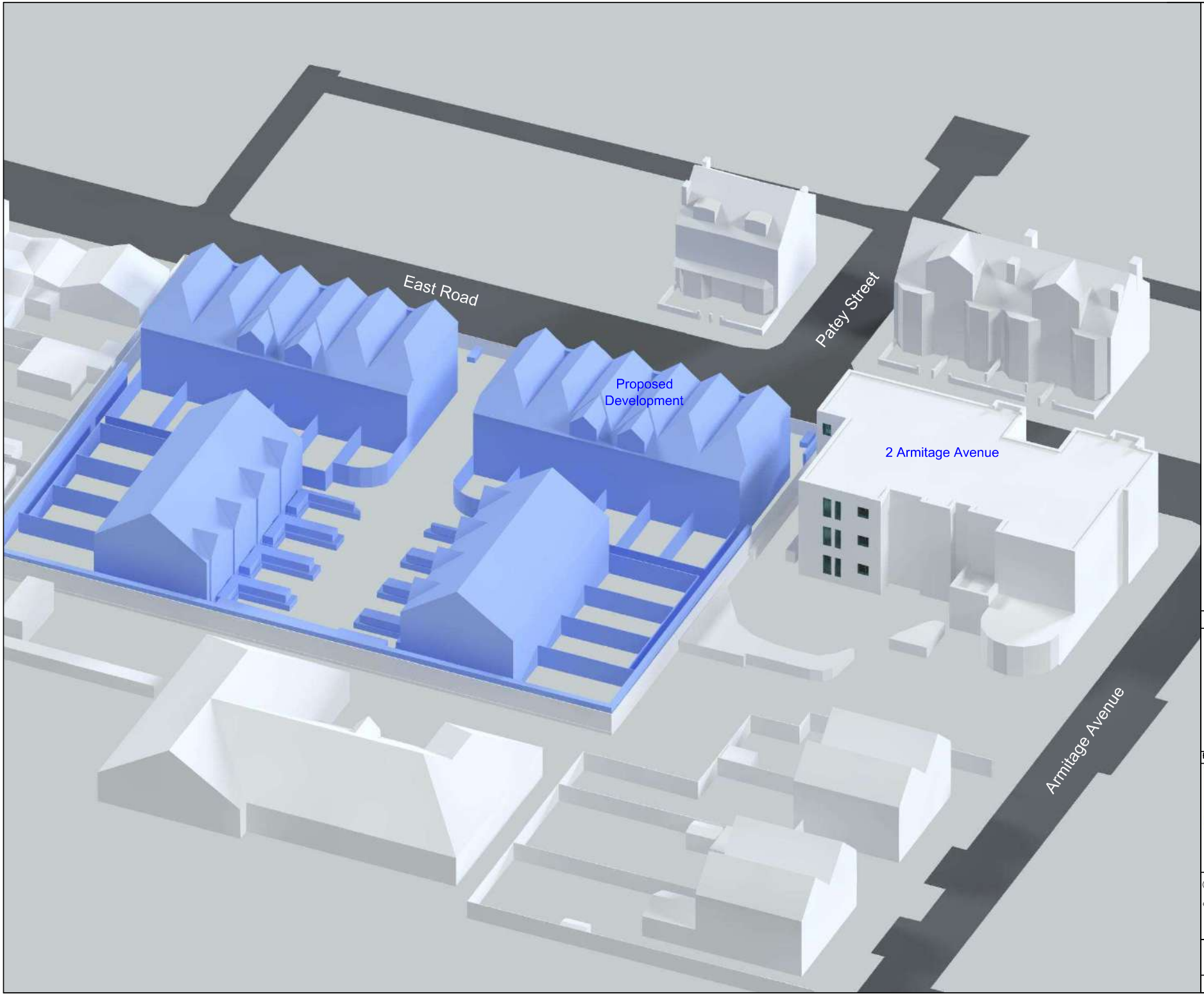
- Proposed Development
- Neighbouring Properties
- Neighbouring Gardens and Amenity Areas

Rev	Date	Description

SMITH MARSTON
Building Surveyors
CHARTERED BUILDING SURVEYORS
email: info@smithmarston.co.uk
RICS

Drawing Title: 3D Window & Garden Key

Scale: Do not scale



View From South East

Key

Proposed Development

Neighbouring Properties

Rev	Date	Description

SMITH MARSTON

Building Surveyors

CHARTERED BUILDING SURVEYORS

email: info@smithmarston.co.uk

RICS

Drawing Title: 3D Window & Garden Key

Scale: Do not scale



View From South West

Key

Proposed Development

Neighbouring Properties

Rev	Date	Description

SMITH MARSTON

Building Surveyors

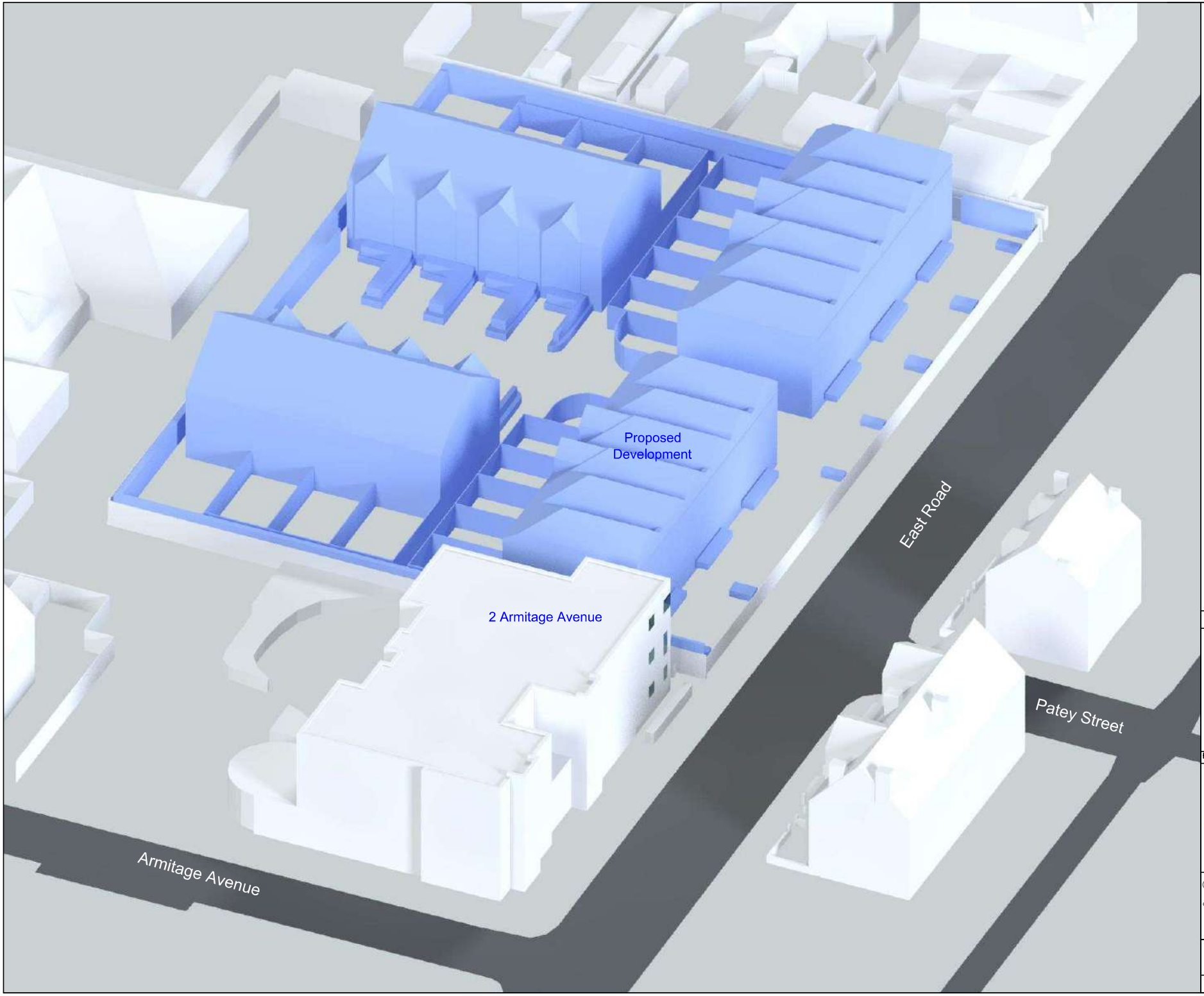
CHARTERED BUILDING SURVEYORS

email: info@smithmarston.co.uk

RICS

Drawing Title: 3D Window & Garden Key

Scale: Do not scale



View From North East

Key

Proposed Development

Neighbouring Properties

Rev	Date	Description

SMITH MARSTON

Building Surveyors

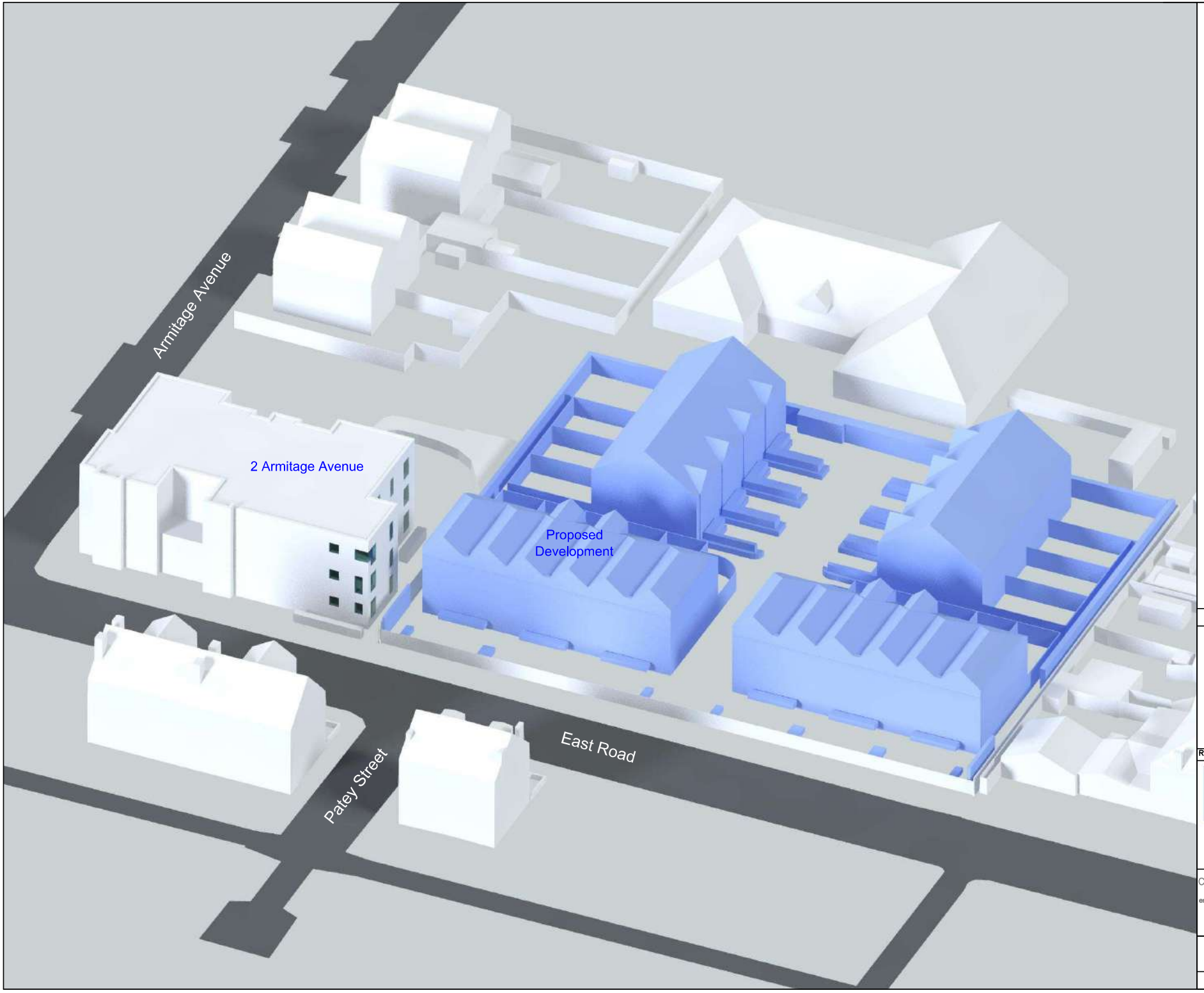
CHARTERED BUILDING SURVEYORS

email: info@smithmarston.co.uk

RICS

Drawing Title: 3D Window & Garden Key

Scale: Do not scale



View From North West

Key

Proposed Development

Neighbouring Properties

Rev	Date	Description

SMITH MARSTON

Building Surveyors

CHARTERED BUILDING SURVEYORS

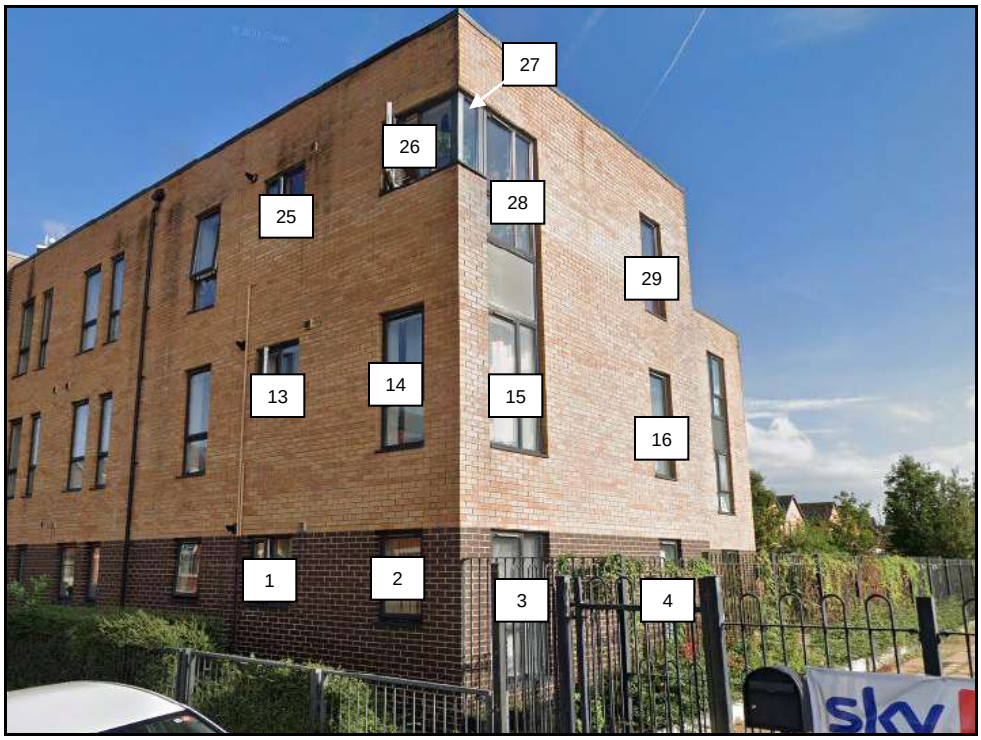
email: info@smithmarston.co.uk

RICS

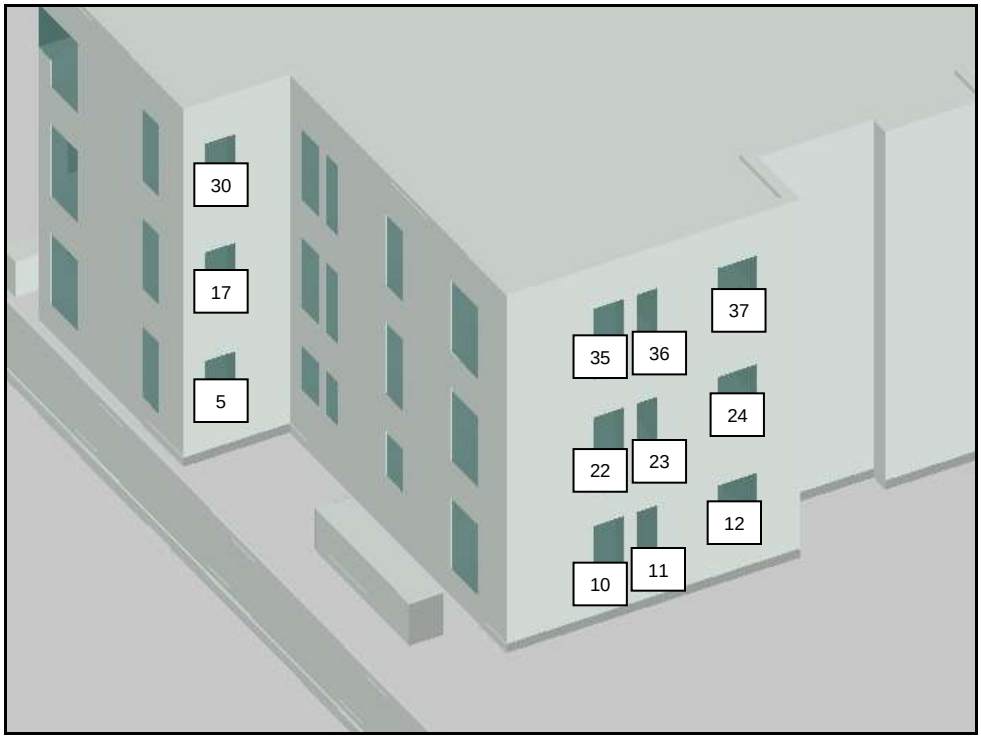
Drawing Title: 3D Window & Garden Key

Scale: Do not scale

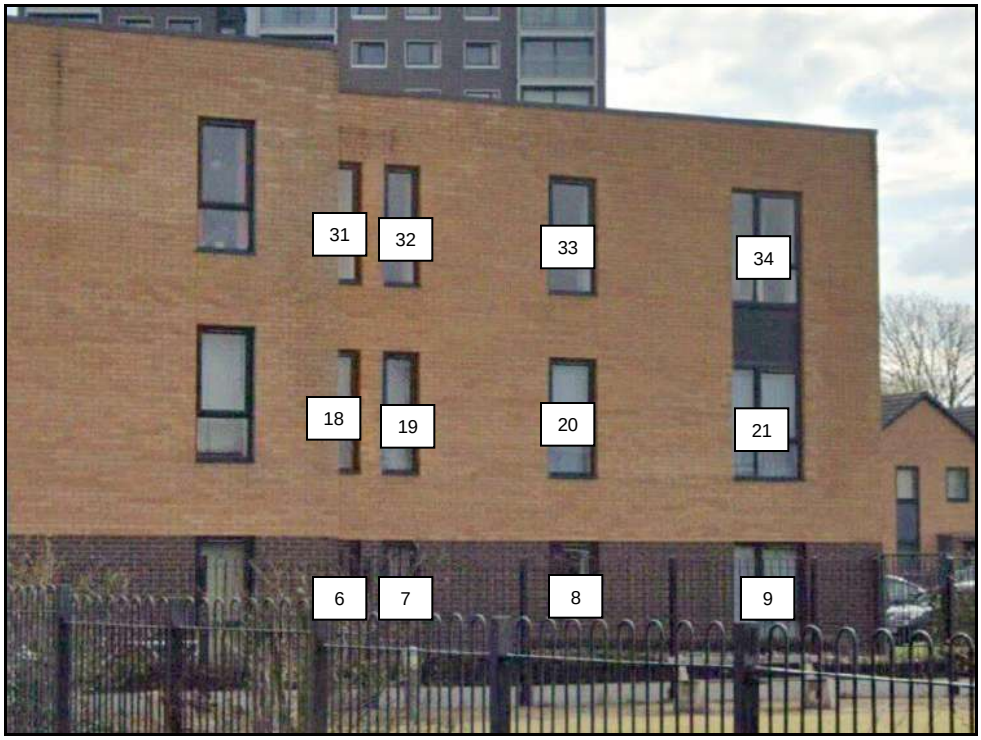
Neighbouring Windows



2 Armitage Avenue



2 Armitage Avenue



2 Armitage Avenue

APPENDIX 2
DAYLIGHT AND SUNLIGHT CALCULATIONS

Appendix 2 - Vertical Sky Component - Based on 'Standard' BRE targets
Development At Bowling Green, East Road, Longsight, Manchester M12 5GZ

Reference	Room Use	Vertical Sky Component			
		Before	After	Loss	Ratio
2 Armitage Avenue					
Ground Floor					
Window 1	Living/Dining/Kitchen	32.9%	32.8%	0.1%	1.0
Window 2	Living/Dining/Kitchen	32.8%	32.4%	0.4%	0.99
Window 3	Living/Dining/Kitchen	31.1%	19.4%	11.7%	0.62
Window 4	Living/Dining/Kitchen	31.0%	14.6%	16.4%	0.47
Window 5	Living/Dining/Kitchen - secondary - n/a	23.5%	17.0%	6.5%	0.72
Window 6	Bedroom	25.0%	12.1%	12.9%	0.48
Window 7	Bedroom	30.0%	14.5%	15.5%	0.48
Window 8	Bedroom	35.4%	19.7%	15.7%	0.56
Window 9	Living/Dining/Kitchen	35.3%	24.0%	11.3%	0.68
Window 10	Living/Dining/Kitchen	36.9%	35.6%	1.3%	0.96
Window 11	Living/Dining/Kitchen	36.9%	35.7%	1.2%	0.97
Window 12	Living/Dining/Kitchen	37.2%	36.2%	1.0%	0.97
First Floor					
Window 13	Living/Dining/Kitchen	35.8%	35.8%	0.0%	1.0
Window 14	Living/Dining/Kitchen	35.5%	35.5%	0.0%	1.0
Window 15	Living/Dining/Kitchen	38.7%	33.2%	5.5%	0.86
Window 16	Living/Dining/Kitchen	38.8%	27.3%	11.5%	0.7
Window 17	Living/Dining/Kitchen - secondary - n/a	25.9%	22.1%	3.8%	0.85
Window 18	Bedroom	26.2%	18.7%	7.5%	0.71
Window 19	Bedroom	31.5%	22.6%	8.9%	0.72
Window 20	Bedroom	37.2%	28.5%	8.7%	0.77
Window 21	Living/Dining/Kitchen	38.5%	32.2%	6.3%	0.84
Window 22	Living/Dining/Kitchen	38.7%	37.9%	0.8%	0.98
Window 23	Living/Dining/Kitchen	38.7%	38.0%	0.7%	0.98
Window 24	Living/Dining/Kitchen	38.6%	38.0%	0.6%	0.98
Second Floor					
Window 25	Living/Dining/Kitchen	38.3%	38.3%	0.0%	1.0
Window 26	Living/Dining/Kitchen	38.3%	38.3%	0.0%	1.0
Window 27	Living/Dining/Kitchen	39.3%	38.1%	1.2%	0.97
Window 28	Living/Dining/Kitchen	39.4%	38.2%	1.2%	0.97
Window 29	Living/Dining/Kitchen	39.4%	37.0%	2.4%	0.94
Window 30	Living/Dining/Kitchen - secondary - n/a	32.1%	31.3%	0.8%	0.98
Window 31	Bedroom	29.7%	28.2%	1.5%	0.95
Window 32	Bedroom	35.2%	33.5%	1.7%	0.95
Window 33	Bedroom	38.9%	37.3%	1.6%	0.96
Window 34	Living/Dining/Kitchen	39.3%	38.0%	1.3%	0.97
Window 35	Living/Dining/Kitchen	39.5%	39.3%	0.2%	0.99
Window 36	Living/Dining/Kitchen	39.5%	39.3%	0.2%	0.99
Window 37	Living/Dining/Kitchen	39.5%	39.3%	0.2%	0.99

Appendix 2 - Daylight Distribution - Based on 'Standard' BRE targets
Development At Bowling Green, East Road, Longsight, Manchester M12 5GZ

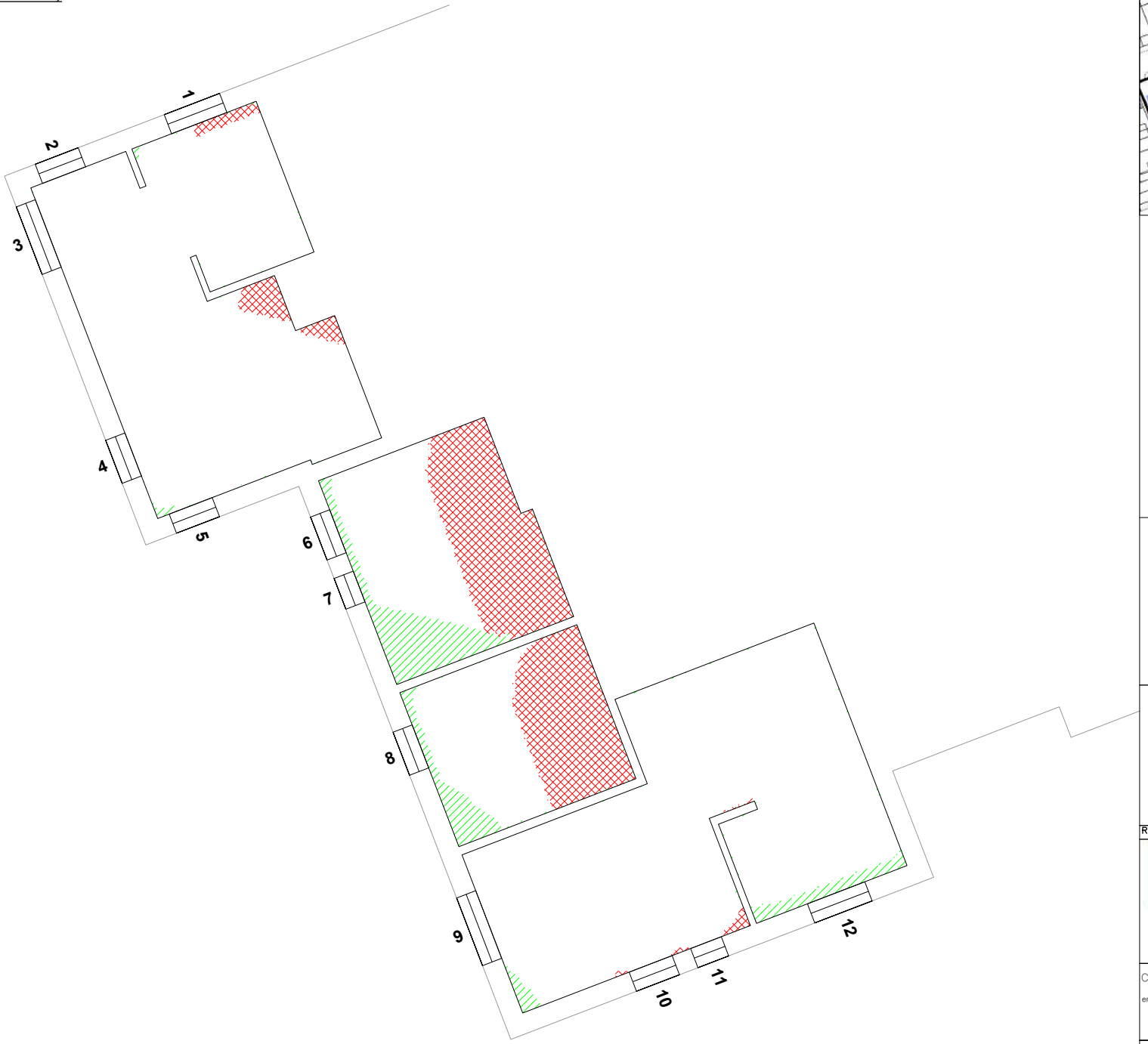
Reference	Room Use	Daylight Distribution			
		Before	After	Loss	Ratio
2 Armitage Avenue					
Ground Floor					
Windows 1 to 5	Living/Dining/Kitchen	99%	96%	3.0%	0.97
Windows 6 & 7	Bedroom	83%	40%	43.0%	0.48
Window 8	Bedroom	91%	47%	44.0%	0.52
Windows 9 to 12	Living/Dining/Kitchen	97%	96%	1.0%	0.99
First Floor					
Windows 13 to 17	Living/Dining/Kitchen	100%	98%	2.0%	0.98
Windows 18 & 19	Bedroom	86%	65%	21.0%	0.76
Window 20	Bedroom	92%	73%	19.0%	0.79
Windows 21 to 24	Living/Dining/Kitchen	98%	98%	0.0%	1.0
Second Floor					
Windows 25 to 30	Living/Dining/Kitchen	100%	100%	0.0%	1.0
Windows 31 & 32	Bedroom	91%	91%	0.0%	1.0
Window 33	Bedroom	94%	94%	0.0%	1.0
Windows 34 to 37	Living/Dining/Kitchen	98%	98%	0.0%	1.0

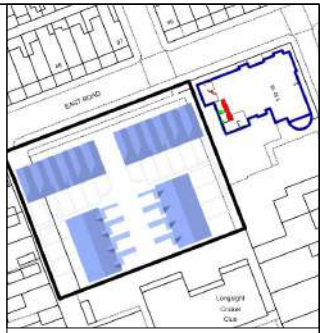
Appendix 2 - Sunlight to Windows - Based on 'Standard' BRE targets
Development At Bowling Green, East Road, Longsight, Manchester M12 5GZ

Reference	Room Use	Sunlight to Windows							
		Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
2 Armitage Avenue									
Ground Floor									
Window 3	Living/Dining/Kitchen	54%	26%	28%	0.48	16%	4%	12%	0.25
Window 4	Living/Dining/Kitchen	54%	22%	32%	0.41	16%	4%	12%	0.25
Window 5	Living/Dining/Kitchen	54%	34%	20%	0.63	22%	12%	10%	0.55
Window 6	Bedroom	56%	34%	22%	0.61	20%	11%	9%	0.55
Window 7	Bedroom	60%	35%	25%	0.58	20%	12%	8%	0.6
Window 8	Bedroom	63%	39%	24%	0.62	20%	14%	6%	0.7
Window 9	Living/Dining/Kitchen	61%	44%	17%	0.72	19%	15%	4%	0.79
Window 10	Living/Dining/Kitchen	83%	79%	4%	0.95	28%	24%	4%	0.86
Window 11	Living/Dining/Kitchen	83%	79%	4%	0.95	28%	24%	4%	0.86
Window 12	Living/Dining/Kitchen	82%	79%	3%	0.96	28%	25%	3%	0.89
First Floor									
Window 15	Living/Dining/Kitchen	63%	54%	9%	0.86	20%	11%	9%	0.55
Window 16	Living/Dining/Kitchen	63%	48%	15%	0.76	20%	10%	10%	0.5
Window 17	Living/Dining/Kitchen	56%	45%	11%	0.8	22%	13%	9%	0.59
Window 18	Bedroom	56%	48%	8%	0.86	20%	15%	5%	0.75
Window 19	Bedroom	60%	50%	10%	0.83	20%	15%	5%	0.75
Window 20	Bedroom	63%	52%	11%	0.83	20%	16%	4%	0.8
Window 21	Living/Dining/Kitchen	63%	54%	9%	0.86	20%	18%	2%	0.9
Window 22	Living/Dining/Kitchen	83%	80%	3%	0.96	28%	25%	3%	0.89
Window 23	Living/Dining/Kitchen	83%	80%	3%	0.96	28%	25%	3%	0.89
Window 24	Living/Dining/Kitchen	83%	81%	2%	0.98	28%	26%	2%	0.93
Second Floor									
Window 27	Living/Dining/Kitchen	63%	62%	1%	0.98	20%	19%	1%	0.95
Window 28	Living/Dining/Kitchen	63%	62%	1%	0.98	20%	19%	1%	0.95
Window 29	Living/Dining/Kitchen	63%	61%	2%	0.97	20%	18%	2%	0.9
Window 30	Living/Dining/Kitchen	67%	64%	3%	0.96	25%	22%	3%	0.88
Window 31	Bedroom	56%	56%	0%	1.0	20%	20%	0%	1.0
Window 32	Bedroom	60%	60%	0%	1.0	20%	20%	0%	1.0
Window 33	Bedroom	63%	63%	0%	1.0	20%	20%	0%	1.0
Window 34	Living/Dining/Kitchen	63%	63%	0%	1.0	20%	20%	0%	1.0
Window 35	Living/Dining/Kitchen	84%	84%	0%	1.0	29%	29%	0%	1.0
Window 36	Living/Dining/Kitchen	84%	84%	0%	1.0	29%	29%	0%	1.0
Window 37	Living/Dining/Kitchen	84%	84%	0%	1.0	29%	29%	0%	1.0

APPENDIX 3
NO SKY LINE CONTOURS

2 Armitage Avenue (Ground Floor)





Area that does not receive visible sky both before and after the development.

Area that can receive visible sky as a result of the development.

Area that cannot receive visible sky as a result of the development.

Area that can recieve visible sky both before and after the development.

Rev	Date	Description

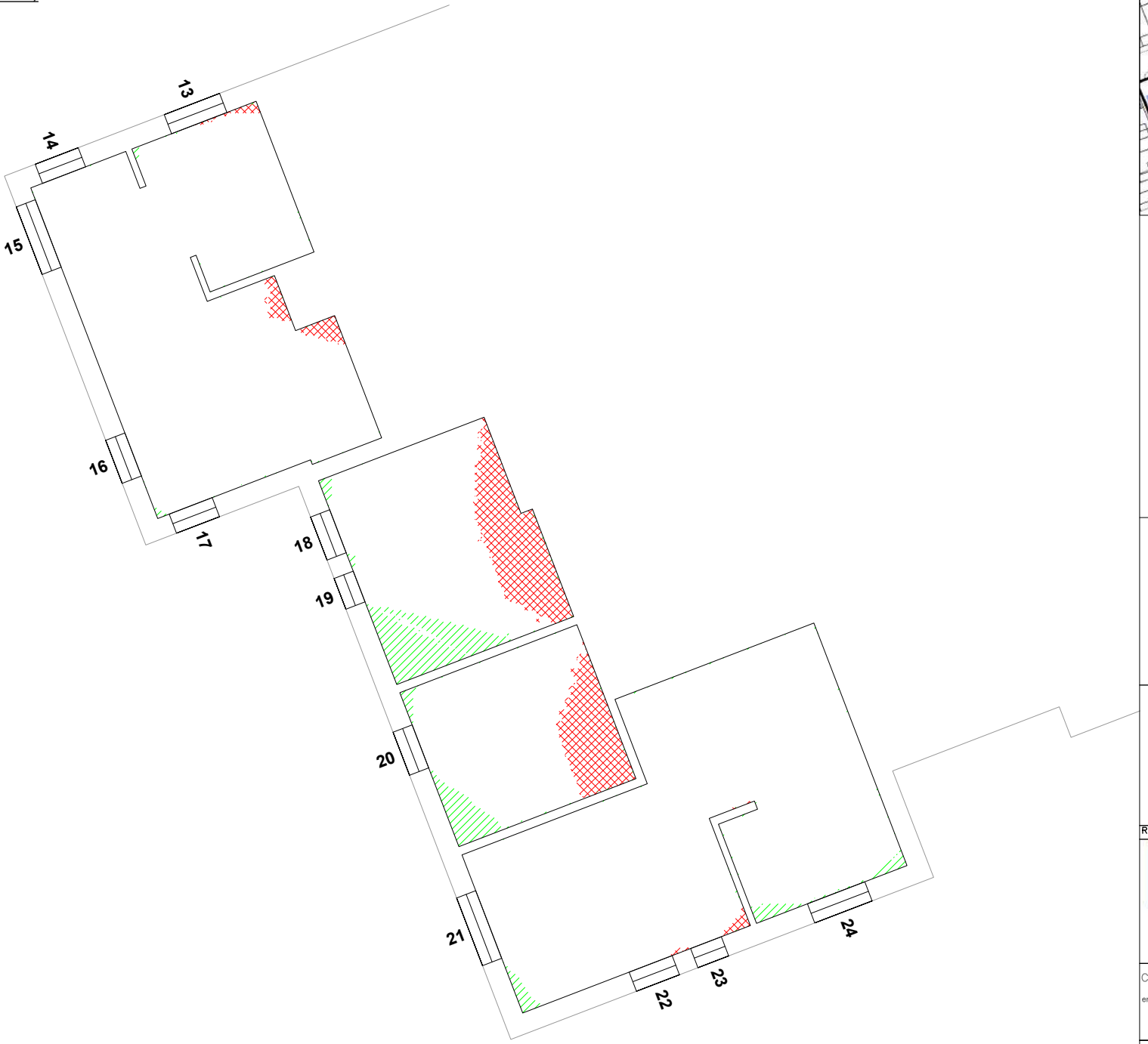
SMITH MARSTON
Building Surveyors

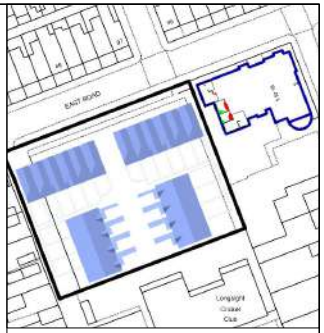
CHARTERED BUILDING SURVEYORS
email: info@smithmarston.co.uk
RICS

Drawing Title: No Sky Line Contours

Scale: Do not scale

2 Armitage Avenue (First Floor)





Area that does not receive visible sky both before and after the development.

Area that can receive visible sky as a result of the development.

Area that cannot receive visible sky as a result of the development.

Area that can recieve visible sky both before and after the development.

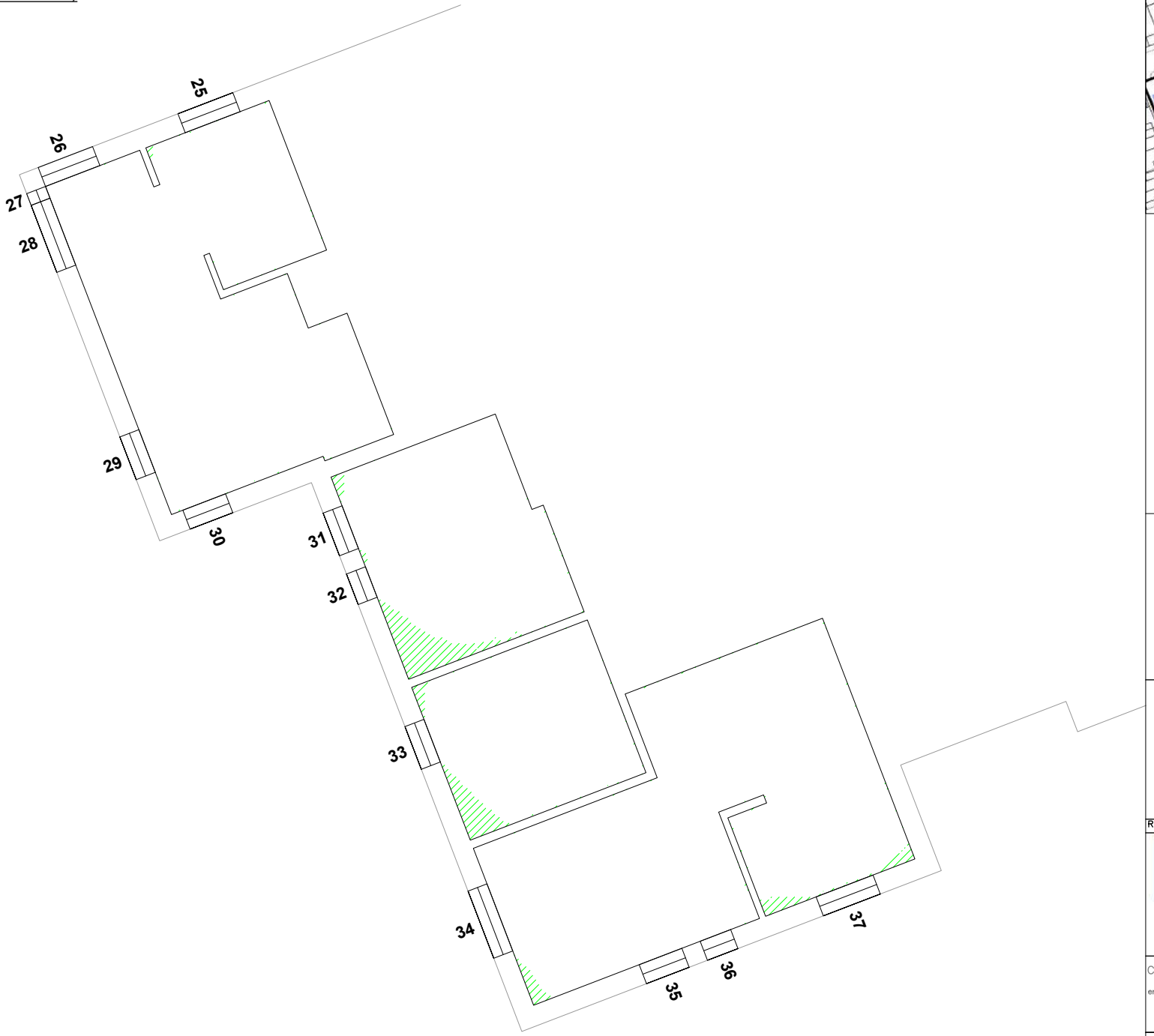
Rev	Date	Description

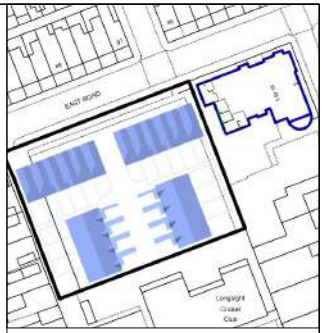
SMITH MARSTON
Building Surveyors
CHARTERED BUILDING SURVEYORS
email: info@smithmarston.co.uk
RICS

Drawing Title: No Sky Line Contours

Scale: Do not scale

2 Armitage Avenue (Second Floor)





Area that does not receive visible sky both before and after the development.

Area that can receive visible sky as a result of the development.

Area that cannot receive visible sky as a result of the development.

Area that can recieve visible sky both before and after the development.

Rev	Date	Description

SMITH MARSTON
Building Surveyors

CHARTERED BUILDING SURVEYORS
email: info@smithmarston.co.uk
RICS

Drawing Title: No Sky Line Contours

Scale: Do not scale

APPENDIX 4
MIRROR IMAGE RESULTS

Appendix 4 - Vertical Sky Component - Mirror Image Results
Development At Bowling Green, East Road, Longsight, Manchester M12 5GZ

Reference	Room Use	Vertical Sky Component			
		Before	After	Loss	Ratio
2 Armitage Avenue					
Ground Floor					
Window 3	Living/Dining/Kitchen	31.1%	13.6%	17.5%	0.44
Window 4	Living/Dining/Kitchen	31.0%	8.4%	22.6%	0.27
Window 6	Bedroom	25.0%	12.0%	13.0%	0.48
Window 7	Bedroom	30.0%	13.9%	16.1%	0.46
Window 8	Bedroom	35.4%	18.7%	16.7%	0.53
Window 9	Living/Dining/Kitchen	35.3%	22.8%	12.5%	0.65
First Floor					
Window 18	Bedroom	26.2%	17.4%	8.8%	0.66
Window 19	Bedroom	31.5%	20.6%	10.9%	0.65

Appendix 4 - Daylight Distribution - Mirror Image Results
Development At Bowling Green, East Road, Longsight, Manchester M12 5GZ

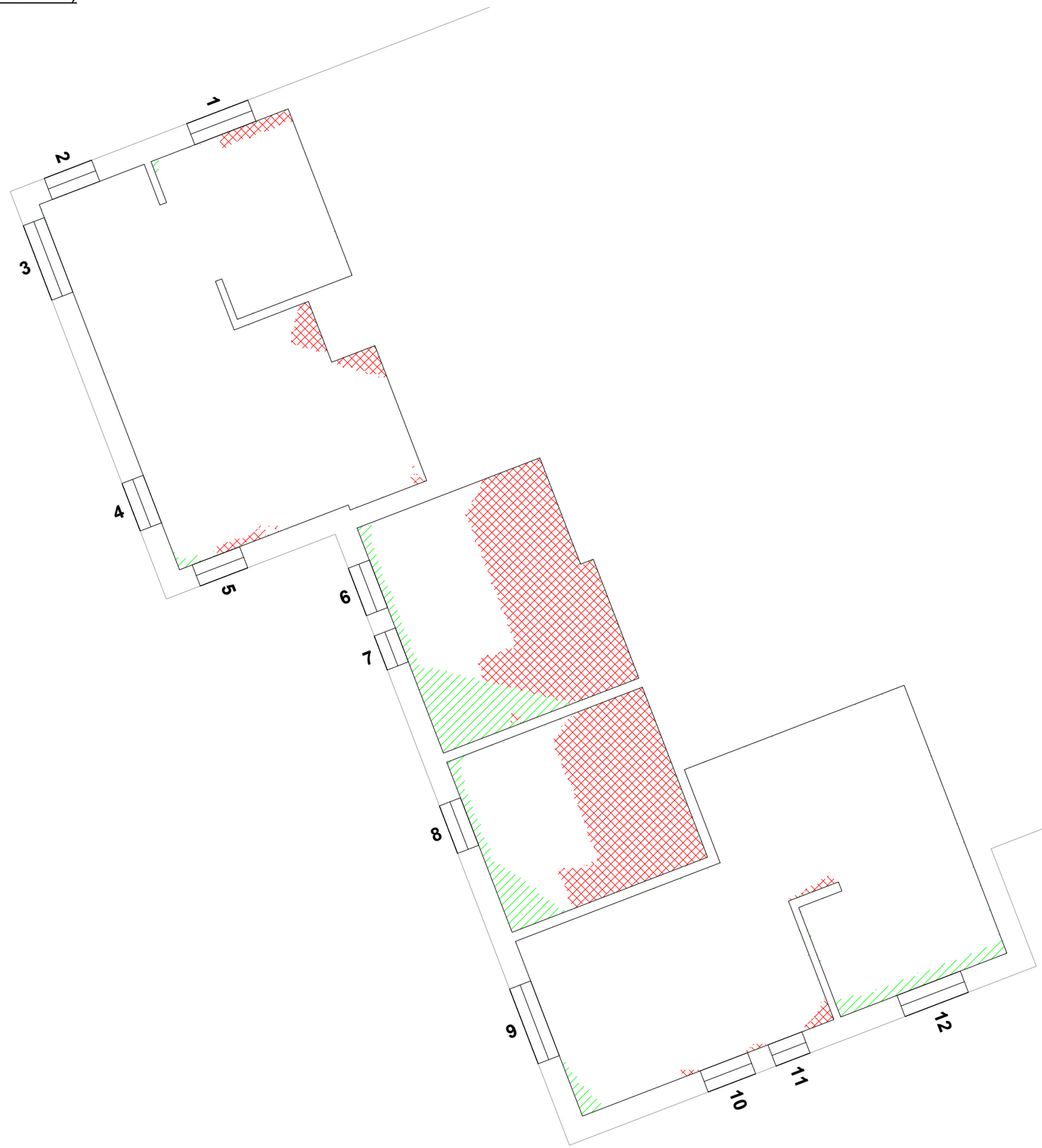
Reference	Room Use	Daylight Distribution			
		Before	After	Loss	Ratio
2 Armitage Avenue					
Ground Floor					
Windows 6 & 7	Bedroom	83%	35%	48.0%	0.42
Window 8	Bedroom	91%	39%	52.0%	0.43
First Floor					
Windows 18 & 19	Bedroom	86%	45%	41.0%	0.52
Window 20	Bedroom	92%	52%	40.0%	0.57

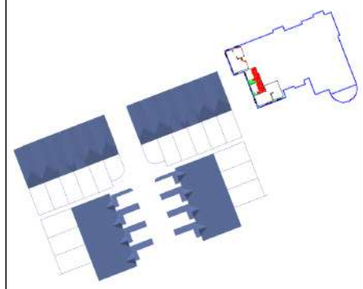
Appendix 4 - Sunlight to Windows - Mirror Image Results

Development At Bowling Green, East Road, Longsight, Manchester M12 5GZ

Reference	Room Use	Sunlight to Windows							
		Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
2 Armitage Avenue									
Ground Floor									
Window 3	Living/Dining/Kitchen	54%	16%	38%	0.3	16%	5%	11%	0.31
Window 4	Living/Dining/Kitchen	54%	25%	29%	0.46	16%	9%	7%	0.56

2 Armitage Avenue (Ground Floor)





Area that does not receive visible sky both before and after the development.

Area that can receive visible sky as a result of the development.

Area that cannot receive visible sky as a result of the development.

Area that can recieve visible sky both before and after the development.

Rev	Date	Description

SMITH MARSTON

Building Surveyors

CHARTERED BUILDING SURVEYORS

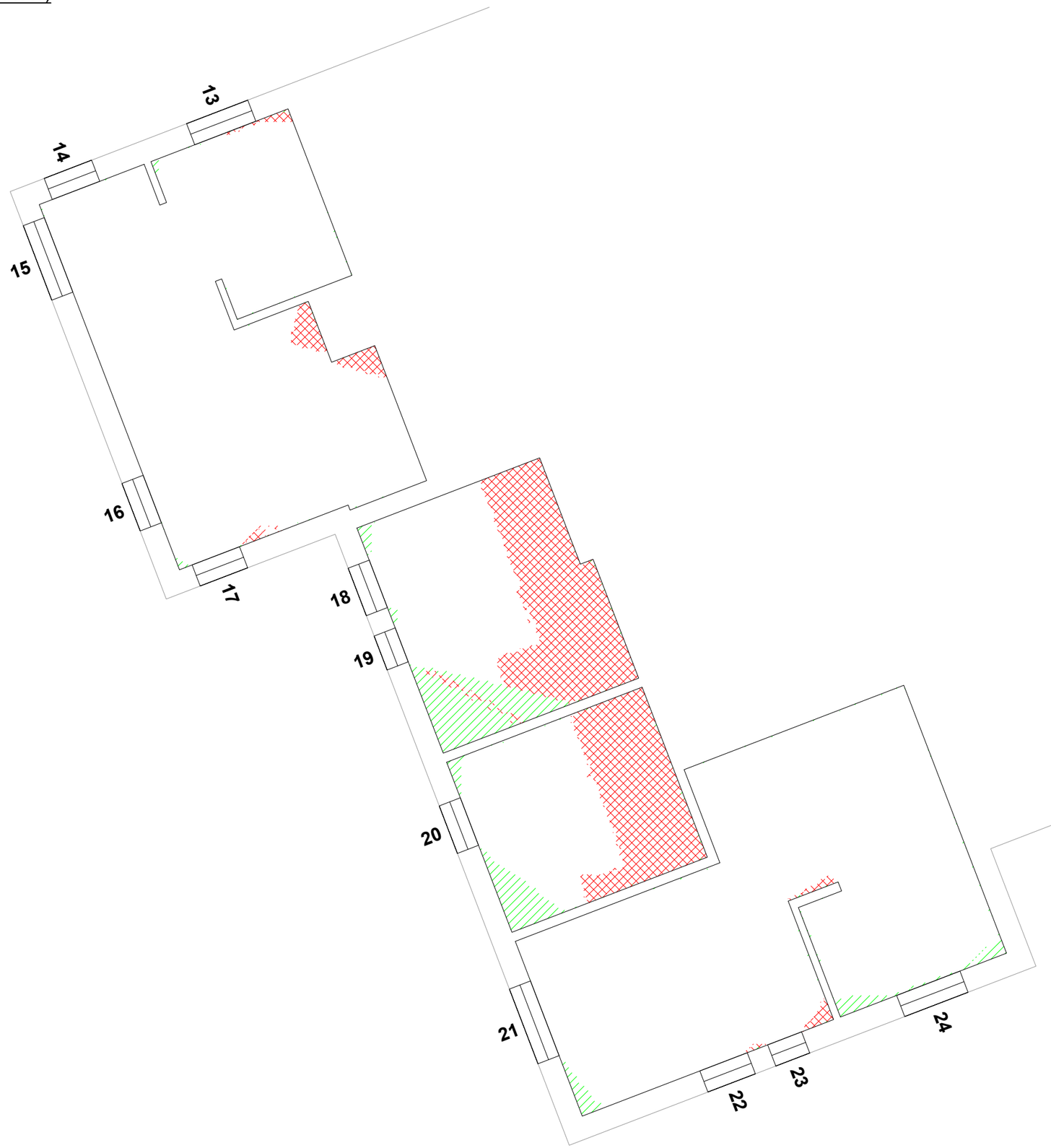
email: info@smithmarston.co.uk

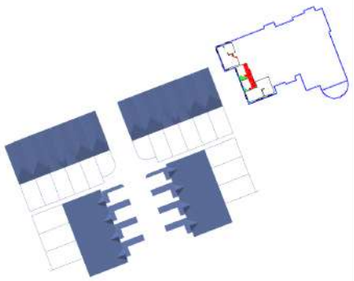
RICS

Drawing Title: No Sky Line Contours

Scale: Do not scale

2 Armitage Avenue (First Floor)





Area that does not receive visible sky both before and after the development.

Area that can receive visible sky as a result of the development.

Area that cannot receive visible sky as a result of the development.

Area that can recieve visible sky both before and after the development.

Rev	Date	Description

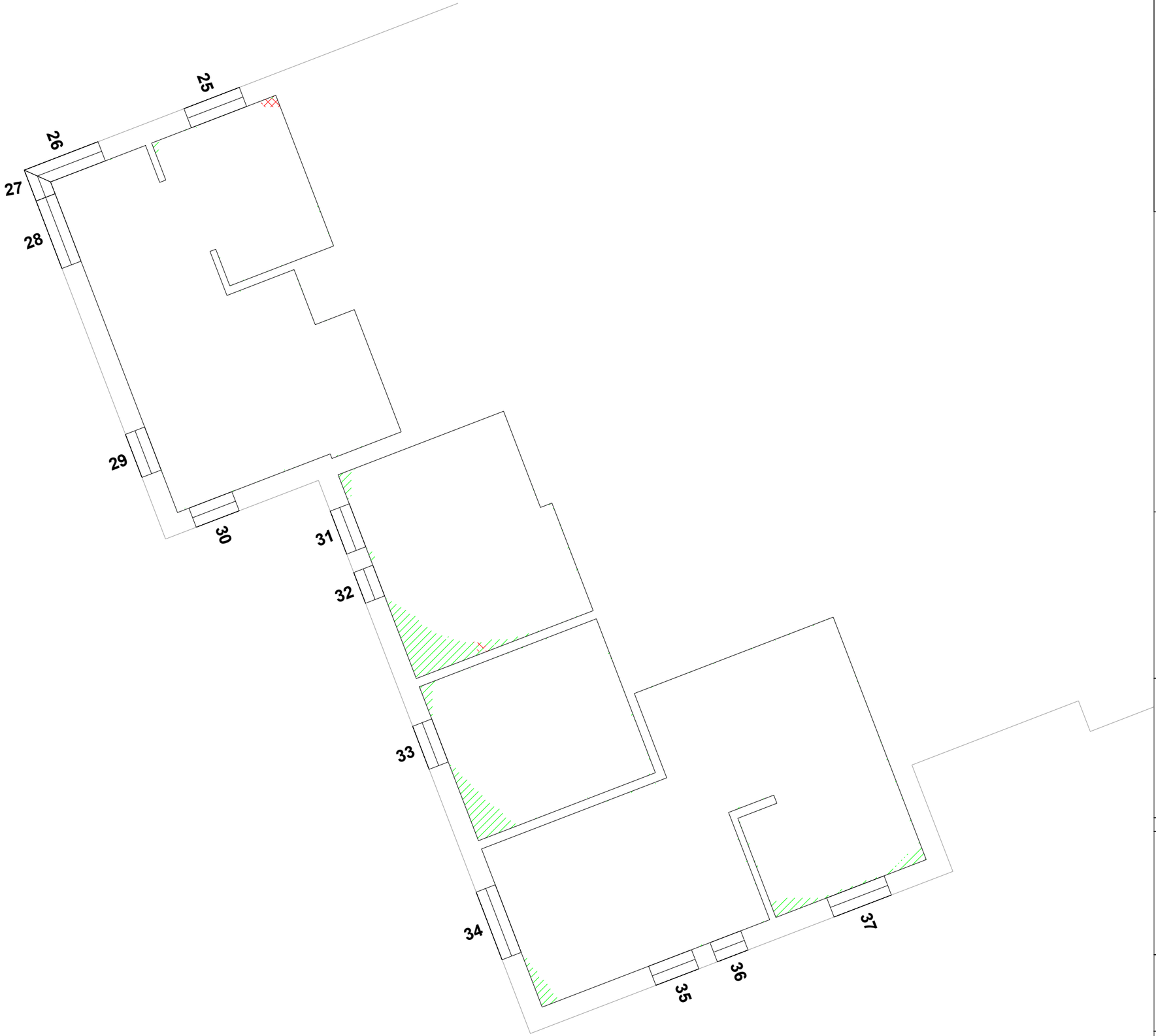
SMITH MARSTON
Building Surveyors

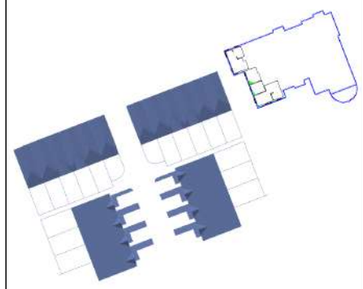
CHARTERED BUILDING SURVEYORS
email: info@smithmarston.co.uk
RICS

Drawing Title: No Sky Line Contours

Scale: Do not scale

2 Armitage Avenue (Second Floor)





Area that does not receive visible sky both before and after the development.

Area that can receive visible sky as a result of the development.

Area that cannot receive visible sky as a result of the development.

Area that can recieve visible sky both before and after the development.

Rev	Date	Description

SMITH MARSTON

Building Surveyors

CHARTERED BUILDING SURVEYORS

email: info@smithmarston.co.uk

RICS

Drawing Title: No Sky Line Contours

Scale: Do not scale

APPENDIX 5
COMPARISON OF STANDARD 'FAILED' RESULTS
WITH MIRROR IMAGE RESULTS

Appendix 5 - Vertical Sky Component - Comparison of Standard Results that Failed, to Mirror Image Targets
Development At Bowling Green, East Road, Longsight, Manchester M12 5GZ

Reference	Room Use	Vertical Sky Component - Scheme				Scheme Reduction	Mirror Image Result & Target	Summary	Result
		Before	After	Loss	Ratio				
2 Armitage Avenue									
Ground Floor									
Window 3	Living/Dining/Kitchen	31.1%	19.4%	11.7%	0.62	(38%)	13.6%	Scheme would leave a better VSC (19.4%) than Mirror Image building (13.6%)	Pass
Window 4	Living/Dining/Kitchen	31.0%	14.6%	16.4%	0.47	(53%)	8.4%	Scheme would leave a better VSC (14.6%) than Mirror Image building (8.4%)	Pass
Window 6	Bedroom	25.0%	12.1%	12.9%	0.48	(52%)	12%	Scheme would leave a better VSC (12.1%) than Mirror Image building (12.0%)	Pass
Window 7	Bedroom	30.0%	14.5%	15.5%	0.48	(52%)	13.9%	Scheme would leave a better VSC (14.5%) than Mirror Image building (13.9%)	Pass
Window 8	Bedroom	35.4%	19.7%	15.7%	0.56	(44%)	18.7%	Scheme would leave a better VSC (19.7%) than Mirror Image building (18.7%)	Pass
Window 9	Living/Dining/Kitchen	35.3%	24.0%	11.3%	0.68	(32%)	22.8%	Scheme would leave a better VSC (24.0%) than Mirror Image building (22.8%)	Pass
First Floor									
Window 18	Bedroom	26.2%	18.7%	7.5%	0.71	(29%)	17.4%	Scheme would leave a better VSC (18.7%) than Mirror Image building (17.4%)	Pass
Window 19	Bedroom	31.5%	22.6%	8.9%	0.72	(28%)	20.6%	Scheme would leave a better VSC (22.6%) than Mirror Image building (20.6%)	Pass

from Appendix 2 results based upon proposed scheme

from Appendix 4 results based on a Mirror Image of adjcent property

Appendix 5 - Daylight Distribution - Comparison of Standard Results that Failed, to Mirror Image Targets
Development At Bowling Green, East Road, Longsight, Manchester M12 5GZ

Reference	Room Use	Daylight Distribution - Scheme				Scheme Reduction	Mirror Image Result & Target	Summary	Result
		Before	After	Loss	Ratio				
2 Armitage Avenue									
Ground Floor									
Windows 6 & 7	Bedroom	83%	40%	43.0%	0.48	(52%)	58% (0.42)	Scheme would cause less reduction (52%) than Mirror Image (58%)	Pass
Window 8	Bedroom	91%	47%	44.0%	0.52	(48%)	57% (0.43)	Scheme would cause less reduction (48%) than Mirror Image (57%)	Pass
First Floor									
Windows 18 & 19	Bedroom	86%	65%	21.0%	0.76	(24%)	48% (0.52)	Scheme would cause less reduction (24%) than Mirror Image (48%)	Pass
Window 20	Bedroom	92%	73%	19.0%	0.79	(21%)	43% (0.57)	Scheme would cause less reduction (21%) than Mirror Image 43%)	Pass

from Appendix 2 results based upon proposed scheme

from Appendix 4 results based on a Mirror Image of adjcent property

Appendix 5 - Sunlight to Windows - Comparison of Standard Results that Failed, to Mirror Image Targets
Development At Bowling Green, East Road, Longsight, Manchester M12 5GZ

TOTAL SUNLIGHT HOURS:

Reference	Room Use	Total Sunlight Hours				Scheme Reduction	Mirror Image Result & Target	Sunlight to Windows Summary	Result
		Before	After	Loss	Ratio				
2 Armitage Avenue									
Ground Floor									
Window 3	Living/Dining/Kitchen								
Window 4	Living/Dining/Kitchen	54%	22%	32%	0.41	(59%)	0.46 or 54%	Scheme would cause more reduction (59%) than Mirror Image (54%)	Fail

WIN TER SUNLIGHT HOURS

Reference	Room Use	Winter Sunlight Hours				Scheme Reduction	Mirror Image Result & Target	Sunlight to Windows Summary	Result
		Before	After	Loss	Ratio				
2 Armitage Avenue									
Ground Floor									
Window 3	Living/Dining/Kitchen	16%	4%	12%	0.25	(75%)	0.31 or 69%	Scheme would cause more reduction (75%) than Mirror Image (69%)	Fail
Window 4	Living/Dining/Kitchen	16%	4%	12%	0.25	(75%)	0.56 or 44%	Scheme would cause more reduction (75%) than Mirror Image (44%)	Fail

from Appendix 2 results based upon proposed scheme

from Appendix 4 results based on a Mirror Image of adjcent property