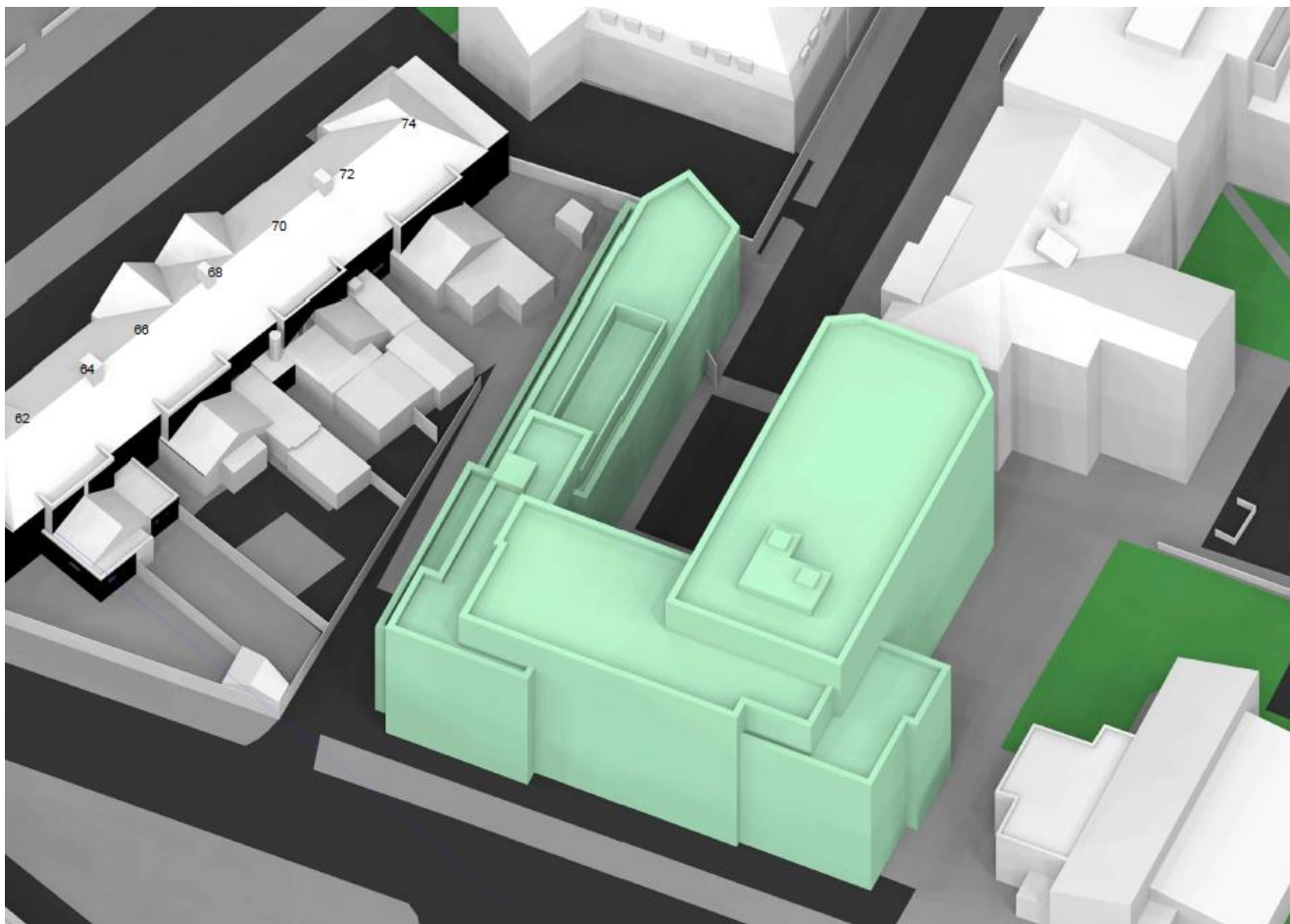




Daylight and Sunlight Report

Site at Carmoor Road, Manchester

November 2022

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Prepared By: Avison Young

Draft Date: November 2022

For and on behalf of Avison Young (UK) Limited

1. Executive Summary

- 1.1 Avison Young have been instructed to advise on daylight and sunlight matters in relation to the Proposed Purpose Built Student Accommodation Development at Carmoor Road, Manchester, M13 0FB.
- 1.2 This report considers the potential impact of the Proposed Development upon the daylight and sunlight amenity within neighbouring residential properties, in accordance with the 2022 BRE Guidelines.
- 1.3 The BRE Guidelines are not mandatory. Whilst it provides numerical guidance these are purely advisory and need to be considered pragmatically against the existing and emerging context.
- 1.4 Whilst the Proposed Development will lead to minor daylight alterations, AY consider the resulting impacts and retained levels of light to be acceptable. This report details the minor impact that may occur to the following properties:
- 68 Hathersage Road;
 - 70 Hathersage Road; and
 - 72 Hathersage Road;
 - 74 Hathersage Road.
- 1.5 Technical analysis has found that the following neighbouring residential properties will all fully comply with the recommended BRE Guidelines for daylight and therefore, have not been reported on further:
- 58-60 Hathersage Road;
 - 62 Hathersage Road; and
 - 64 Hathersage Road;
 - 66 Hathersage Road.
- 1.6 No sunlight (APSH) assessment has been undertaken as all relevant site facing windows are orientated due north and therefore, in accordance with the BRE Guidelines, do not require assessment.
- 1.7 In consideration of the above, it is AY's opinion that the Proposed Development is acceptable in terms of daylight and sunlight, despite minor daylight transgressions which are not without precedent when developing in urban locations.

2. Introduction and Scope of Report

- 2.1 Avison Young ('AY') has been instructed by Tiger Developments Limited to run daylight and sunlight technical analysis in relation to the proposed development of the Site at Carmoor Road, Manchester (the '*Proposed Development*').
- 2.2 This report considers the potential impact of the Proposed Development upon the daylight amenity within neighbouring residential properties.
- 2.3 Analysis has been undertaken by reference to the Building Research Establishment (BRE) Guidelines – '*Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice*' (2022) (the '*BRE Guidelines*').

3. Sources of Information and Assumptions

- 3.1 In order to undertake the daylight assessments, a three dimensional computer model of the existing site, Proposed Development, and surrounding context was created by AY.
- 3.2 The resultant 3D analysis model and subsequent technical analysis is based upon the following sources of information:
- Context model including the proposed and drawings prepared by O'Connell East Architects (received by Avison Young 19th January 2021);
 - Proposed Plans & Elevations prepared by Lechler Hayes Architects (received 26th October 2022); and
 - Google Map and Bing Map aerial and street view imagery.
- 3.3 The scope of buildings considered has been determined as a reasonable zone which considers both the scale of the proposed development and the proximity of those buildings which surround and face the site.
- 3.4 Best estimates have been made as to the uses which are carried out legally within the adjoining properties in terms of commercial and residential usage. These have been estimated from Valuation Office Agency (VOA) council tax band searches and external observation from aerial/street view imagery.
- 3.5 As is standard practice when assessing daylight and sunlight to adjoining properties, AY have not sought access to any of the adjoining properties.
- 3.6 As it has not been possible to obtain internal layouts from online public sources, reasonable assumptions as to the internal layouts of the rooms behind the fenestration have been made. Unless the building form dictates otherwise, we have assumed a standard 4.2m deep room for residential properties. Internal layouts are only relevant for the NSL (daylight distribution) assessment. The primary daylight (VSC) and sunlight (APSH) assessments are calculated at the window face and therefore do not require floor plans.
- 3.7 Where neighbouring elevations are not visible but where it is likely that apertures may be present we have inserted 'test' windows or estimated the position of apertures. The actual position may differ if closer access becomes possible and therefore the technical analysis may differ from that confirmed herein.
- 3.8 Floor levels have been assumed for adjoining properties. This dictates the level of the working plane which is relevant for the No Sky Line assessment.
- 3.9 Neighbouring windows have not been assessed for sunlight (APSH) as they are all orientated north. In accordance with the BRE, only windows which are oriented within 90 degrees of due south should be considered, as they have a reasonable expectation for sunlight.

4. Policy and Guidance

- 4.1 Policy context is important in establishing acceptable levels of daylight/sunlight amenity and contextualising the significance of alterations in daylight/sunlight resulting from a proposed development.
- 4.2 The appropriateness of the Proposed Development, in daylight and sunlight terms, has therefore been considered against key documents at national and local level.
- National Planning Policy Framework, July 2021 ("NPPF");
 - National Planning Practice Guidance, 2021 ("NPPG");
 - Manchester's local policy 2012; and
 - Building Research Establishment Guidelines (2022) ("BRE").
- 4.3 It is also important to have an understanding of the 2022 Building Research Establishment (BRE) Guidelines, when assessing daylight and sunlight. The Guidelines are not a rigid set of rules which must be adopted and adhered to. They are a set of guiding principles designed to assist designers and local authorities to make objective and informed decisions regarding the acceptability of a proposed development.
- 4.4 AY's understanding of the relevant sections of the above-mentioned documents is set out below.

National Planning Policy

NPPF

- 4.5 There are no national planning policies directly relating to daylight and sunlight. However, Chapter 11 of the NPPF deals with "Making effective use of land." Under the sub-heading "Achieving appropriate densities" it states at paragraph 125:

125. Where there is an existing or anticipated shortage of land for meeting identified housing needs, it is especially important that planning policies and decisions avoid homes being built at low densities and ensure that developments make optimal use of the potential of each site. In these circumstances; ...

(c) 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 the site (as long as the resulting scheme would provide acceptable living standards) ...

- 4.6 Additionally, Chapter 12 of the NPPF deals with 'Achieving well-designed places' and at paragraph 130 it states:

130. Planning policies and decisions should ensure that developments:

... e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and

f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users;

NPPG

- 4.7 The NPPG is an online resource for planning practitioners. In respect to daylight and sunlight, the document titled 'Effective Use of Land' states at paragraphs 006 and 007 (Reference IDs 66-006-20190722 and 66-007-20190722 respectively):

Paragraph 006

How are daylight and sunlight regulated?

Where a planning application is submitted, local planning authorities will need to consider whether the proposed development would have an unreasonable impact on the daylight and sunlight levels enjoyed by neighbouring occupiers, as well as assessing whether daylight and sunlight within the development itself will provide satisfactory living conditions for future occupants.

Paragraph 007

All developments should maintain acceptable living standards. What this means in practice, in relation to assessing appropriate levels of sunlight and daylight, will depend to some extent on the context for the development as well as its detailed design. For example in areas of high density historic buildings, or city centre locations where tall modern buildings predominate, lower daylight and daylight and sunlight levels at some windows may be unavoidable if new developments are to be in keeping with the general form of their surroundings.

In such situations good design (such as giving careful consideration to a building's massing and layout of habitable rooms) will be necessary to help make the best use of the site and maintain acceptable living standards.

Local Planning Policy

Manchester Core Strategy Development Plan (Adopted 11th July 2012)

- 4.8 Policy DM 1 'Development Management' states:

All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document: - [...] Impact on the surrounding areas in terms of the design, scale and appearance of the proposed development. Development should have regard to the character of the surrounding area. - Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. [...] - Adequacy of internal accommodation and external amenity space.

- 4.9 Policy H 1 'Overall Housing Provision' states:

Proposals for new residential development [...] should take account of the need to:[...] Contribute to the design principles of Manchester's Local Development Framework, including in environmental terms. The design and density of a scheme should contribute to the character of the local area. All proposals should make provision for appropriate usable amenity space, including in high density development (in which this could be in the form of balconies, as well as shared open spaces such as green roofs).

Guidance

Building Research Establishment Guidelines: Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice, BR 209 2022 Edition.

- 4.10 The daylight and sunlight assessments undertaken in support of this report are based upon the methodologies set out in the BRE (Building Research Establishment) Guidelines.
- 4.11 The Guidelines are not fixed standards but should be applied flexibly to take account of the specific circumstances of each case. For example, as the numerical targets within the Guidelines have been derived on the basis of a low density suburban housing model, it is entirely appropriate to apply a more flexible approach when dealing with higher rise developments in a denser urban environment where the general scale of development is greater.
- 4.12 The BRE Guidelines states that it provides:

advice on site layout planning to achieve good sunlighting and daylighting, both within buildings and in the open spaces between them.

[...] This report is a comprehensive revision of the 2011 edition of Site layout planning for daylight and sunlight: a guide to good practice. It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location. Appendix F explains how this can be done in a logical way, while retaining consistency with the British Standard recommendations on interior daylighting.

[...] 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 (see Section 5). In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings.

- 4.13 This does not mean that the recommendations and targets within the Guidelines can be disregarded but, instead, the 'flexibility' that should be applied should be founded on sound scientific principles that can be supported and justified. This requires a certain level of professional judgement and experience. The 'flexibility' recommended in the Guidelines should reflect the specific characteristics of each site being considered.
- 4.14 It is therefore important that the Guidelines are not incorrectly interpreted at face value, by applying a rigid interpretation of the baseline targets in the Guidelines as being the set target criteria regardless of context, when assessing new development in more urban locations or when assessing new housing schemes which may include areas with higher levels of density where lower levels of daylight are to be expected. This is not a correct or appropriate interpretation of the Guidelines.
- 4.15 It is also important to consider the alterations of daylight and sunlight in terms of the quantum of light retained, and not purely on percentage alterations, as the percentage value may be misleading.

Daylight and Sunlight Methodology - BRE

- 4.16 As a result of the recent publication of the 2022 BRE guidelines, there are no significant changes to the methodology or the target criteria for the assessment of the impact of a proposed scheme on neighbouring properties. In accordance with the BRE guidelines, detailed daylight and sunlight assessments have been undertaken to quantify any alteration in light that may occur because of the proposed development within existing residential habitable rooms and windows.

Daylight - VSC

- 4.17 The Vertical Sky Component (VSC) method of assessment is defined in the BRE Guidelines as the “ratio of that part of illuminance at a point on a given vertical plane that is received directly from a CIE standard overcast sky, to illuminate on a horizontal plane due to an unobstructed hemisphere of this sky”.
- 4.18 This ratio is the percentage of the total unobstructed view that is available, once obstructions (e.g. the Proposed Development), are placed in front of the point of view.
- 4.19 The assessment is calculated from the centre of a window on the outward face and measures the amount of light available on a vertical wall or window following the introduction of visible barriers, such as buildings.
- 4.20 The VSC has been calculated by using a 'Waldram Diagram'. The Waldram Diagram is effectively a snapshot that is taken from that point of the sky in front of the window, together with all relevant obstructions to it, i.e. the buildings.
- 4.21 The maximum VSC value is almost 40% for a completely unobstructed vertical wall or window. In terms of assessment criteria, the BRE Guidelines state that:

“if the VSC, with the development in place, is both less than 27% and less than 0.8 times its former value, occupants of the existing building will notice the reduction in the amount of skylight. The area lit by the window may appear more gloomy and electric lighting will be needed more of the time.”

Daylight - NSL

- 4.22 The BRE Guidelines advise that where room layouts are known, the effect on the daylight distribution can be calculated by plotting the No Sky Line (NSL). In terms of the neighbouring receptors, it has not been possible to obtain room layouts for all of the properties and therefore their layouts have been assumed where information has been unavailable.
- 4.23 The NSL is a measure of the distribution of daylight at the 'working plane' within a room. The 'working plane' means a horizontal 'desktop' plane 0.85m in height for residential properties. The NSL divides those areas of the working plane which can receive direct sky light from those which cannot. If a significant area of the working plane (normally more than 20%) lies beyond the NSL (i.e. it receives no direct sky light), then the distribution of daylight in the room will look poor and supplementary electric lighting may be required.
- 4.24 The potential effects of daylighting distribution in an existing building can be identified by plotting the NSL in each of the main rooms. For residential dwellings, this will include living rooms, dining rooms and kitchens. Bedrooms should also be analysed, although they are less important. The BRE Guidelines identify that if the

area of a room that does receive direct sky light is reduced to less than 0.8 times its former value, then this would be noticeable to its occupants.

Sunlight - APSH

- 4.25 With regard to sunlight, the same skylight indicator is used as the VSC assessment using the same reference point to calculate Annual Probable Sunlight Hours (APSH), which is expressed as a percentage. The BRE guidelines state:

"Access to sunlight should be checked for the main window of each room which faces within 90 degrees (°) of due south".

- 4.26 The BRE Guidelines state in Section 3.2.3 that:

"[...] kitchens and bedrooms are less important, although care should be taken not to block too much sun."

- 4.27 The BRE Guidelines propose that the appropriate date for undertaking a sunlight assessment is on 21st March, being the spring equinox. Calculations of both summer and winter availability are made with the winter analysis covering the period from the 21st September to 21st March.

- 4.28 The BRE Guidelines identify that a window may be adversely affected if a point at the centre of the window receives in the year less than 25% of the annual probable sunlight hours, including at least 5% of the annual probable sunlight hours (APSH) during the winter months (21st September to 21st March) and less than 0.8 times its former sunlight hours during either period.

- 4.29 Further information on the daylight and sunlight principles outlined in the BRE Guidelines can be found in Appendix I.

5. Existing Site and Proposed Development

Existing Site

- 5.1 The site is located on Autumn Street and Carmoor Road in Manchester under the Borough of Manchester City Council.
- 5.2 The existing site is situated to the west of Carmoor Road and bounded by Hathersage Road to the south, Upper Brook Street to the West and Blackstock Street to the north and is currently occupied by one-two storey industrial buildings, a three storey nursery building and two storey community centre.
- 5.3 A massing model of the Site is illustrated in Figure 1 below and drawings BRE/01-03, located in Appendix II.

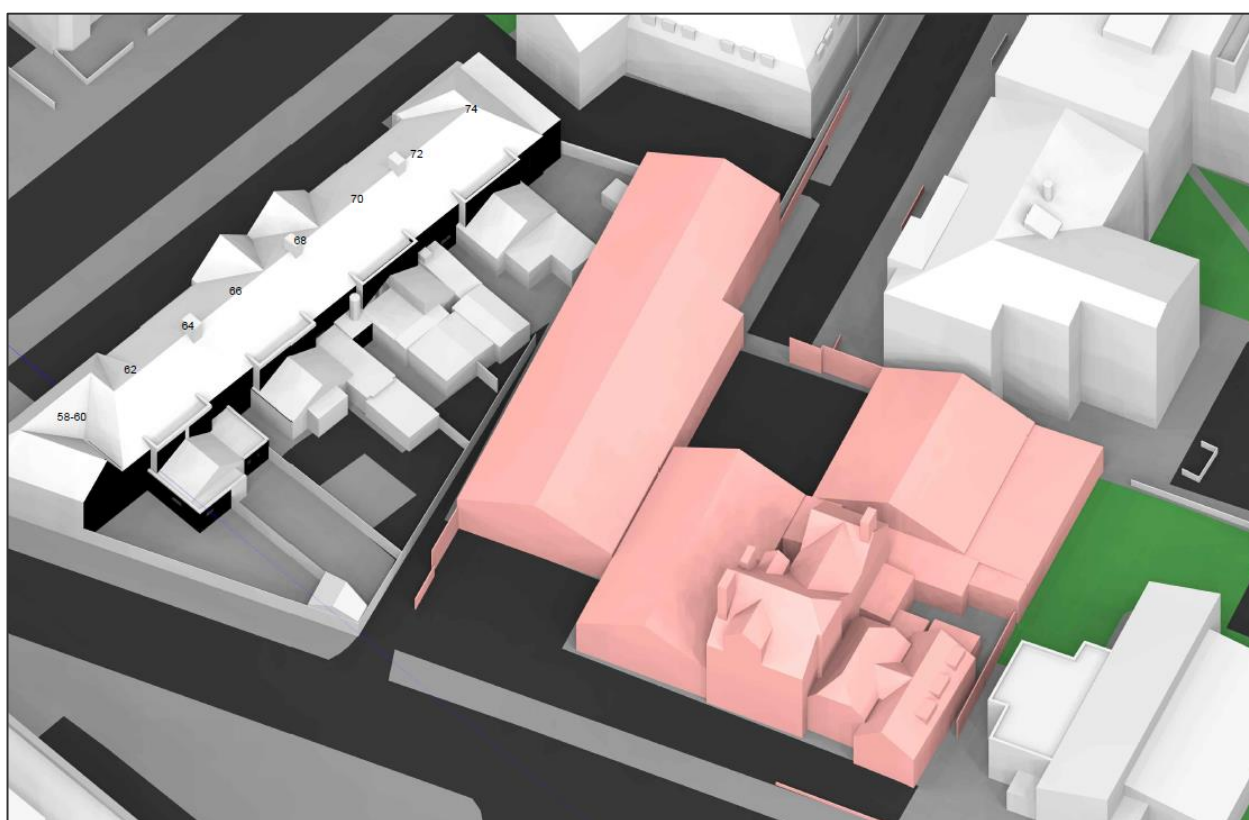


Figure 1 – Existing Site (highlighted in pink) and Neighbouring Properties

- 5.4 In accordance with the 2022 BRE Guidelines, only neighbouring residential properties have been considered for the daylight and sunlight technical assessment as they are recognised as having a greater requirement for daylight and sunlight than commercial properties (BRE Guidelines - *Site Layout Planning for Daylight and Sunlight, A guide to good practice* - Page 7, Section 2.2.2).
- 5.5 Non-habitable rooms such as bathrooms, WCs, store rooms and circulation spaces (such as hallways) have been discounted from our analysis where identified in accordance with the Guidelines (Page 7, Section 2.2.2) which state:

'The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed.'

5.6 The following neighbouring properties have been identified to contain residential usage based upon a VOA tax band search and online aerial/street-view imagery (see outlined in orange at Figure 2 below):

- 58-60 Hathersage Road;
- 62 Hathersage Road;
- 64 Hathersage Road;
- 66 Hathersage Road;
- 68 Hathersage Road;
- 70 Hathersage Road;
- 72 Hathersage Road;
- 74 Hathersage Road;

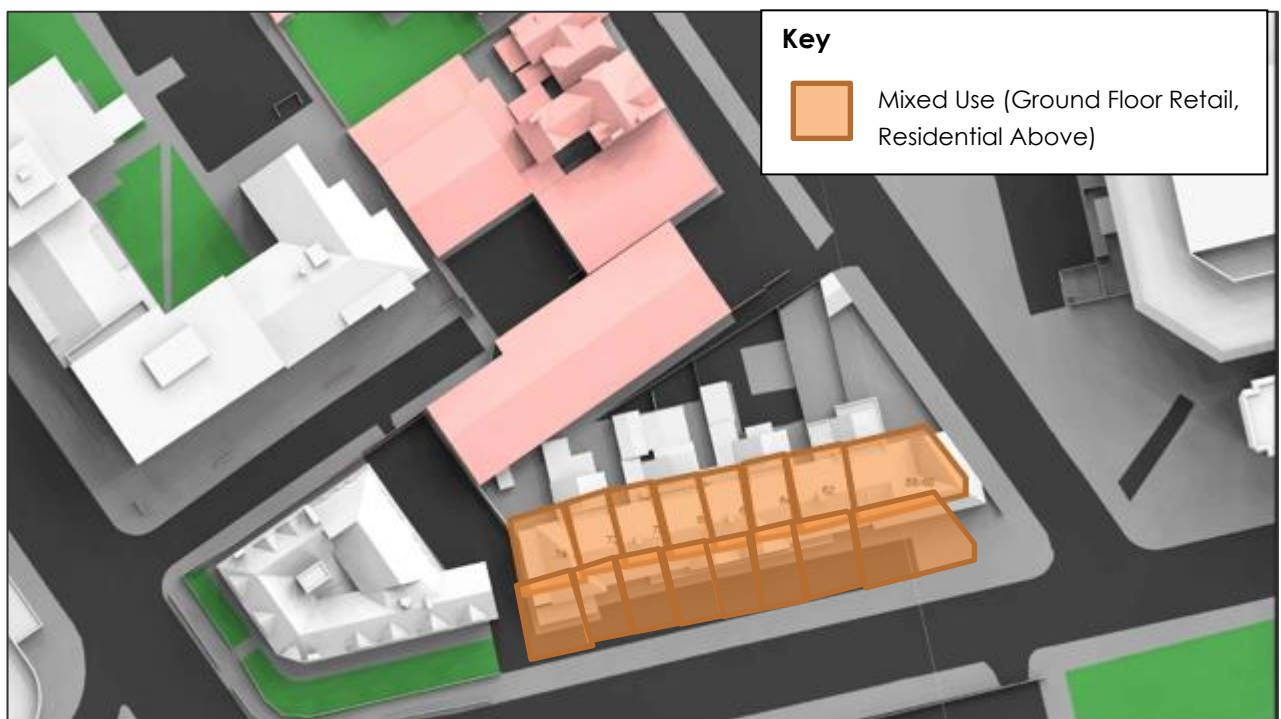


Figure 2 – Neighbouring Properties Use Map

Proposed Development

- 5.7 It is AY's understanding that the scheme is comprised of the demolition of the existing buildings and construction of purpose-built student accommodation with 172 beds in a mix of studio and cluster units alongside ancillary facilities and shared amenity space, site access and other associated works in a development of three to six storeys with a site area of 0.21 ha.
- 5.8 A massing model of the Proposed Development is illustrated in Figure 3 below and drawings BRE/04-06, located in Appendix II.

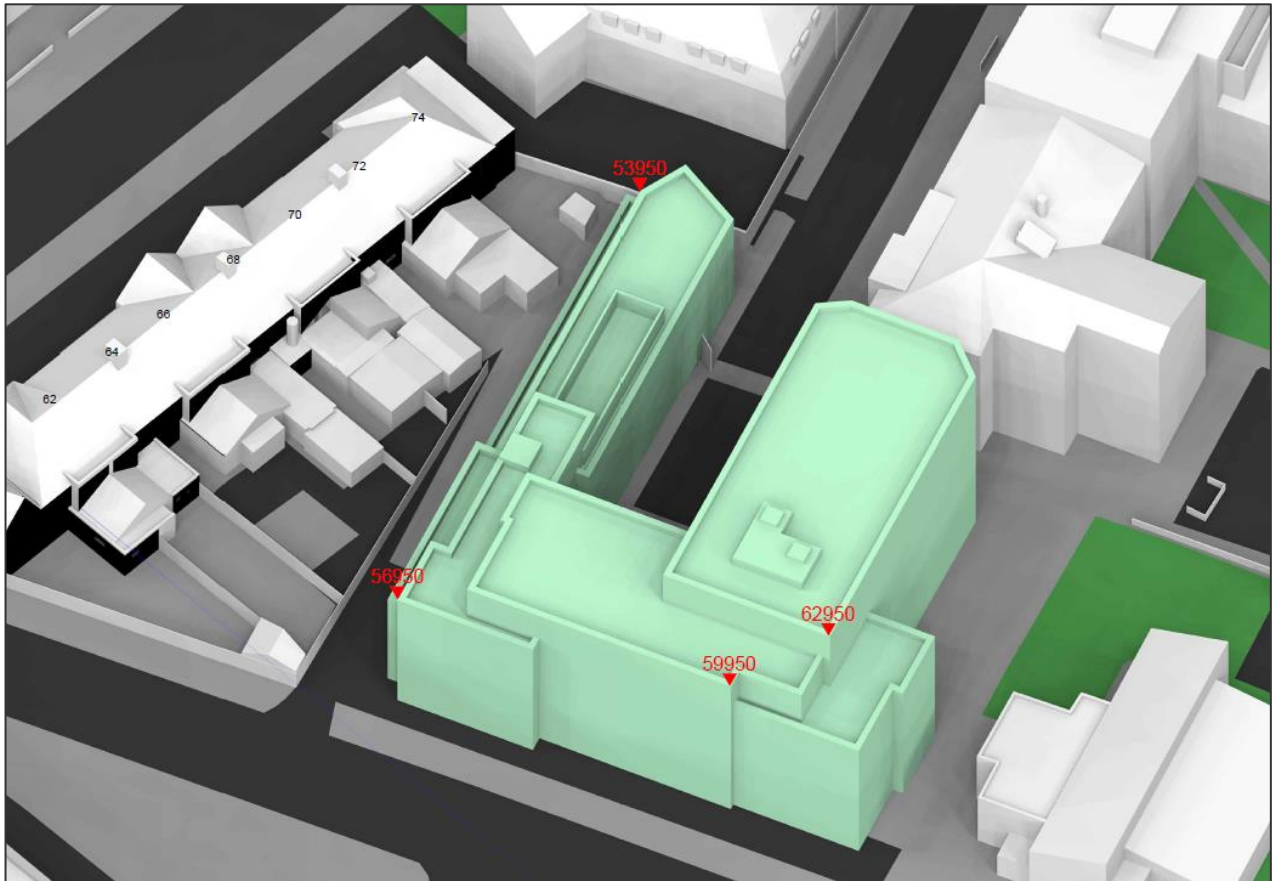


Figure 3 – Proposed Development highlighted in green (with existing massing in red) and Neighbouring Context in Grey

6. Neighbouring Daylight Assessment

6.1 Please refer to Appendix III for the Daylight analysis tables and associated No Sky-Line contour drawings (*BRE/05*) upon which the following report is based.

6.2 The following neighbouring residential properties have been considered for the daylight and sunlight assessment:

- 58-60 Hathersage Road;
- 62 Hathersage Road;
- 64 Hathersage Road;
- 66 Hathersage Road;
- 68 Hathersage Road;
- 70 Hathersage Road;
- 72 Hathersage Road;
- 74 Hathersage Road;

6.3 Of the properties listed above, the following will not be impacted by the proposed development and therefore, have not been considered further within this report:

- 58-60 Hathersage Road;
- 62 Hathersage Road; and
- 64 Hathersage Road;
- 66 Hathersage Road.

68 Hathersage Road

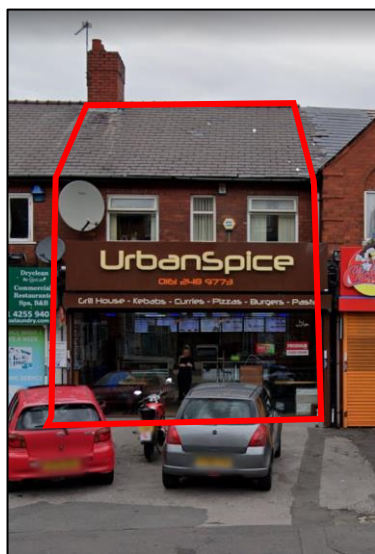
- 6.4 68 Hathersage Road is two storey mixed use property, with retail use on the ground floor and residential use at first floor level. The property is located to the south of the Site.
- 6.5 Despite a thorough review of the planning portal and online resources, no floor plans were able to be located and therefore, reasonable layouts have been adopted.

Daylight

- 6.6 For the Vertical Sky Component test ("VSC"), all three windows (100%) will meet the BRE's recommended criteria.
- 6.7 For NSL, one room (50%) will meet the BRE criterion. The single room that does not meet the criteria (R7/21) is located on the first floor and will experience a reduction of 23.35%, which is slightly beyond the 20% reduction threshold. In addition, the room will be lit to 71.40% of the area in the proposed condition which in AY's opinion, is a reasonable quantum of daylight.
- 6.8 All windows and rooms assessed will meet the recommended BRE Guidelines for VSC and thus there will be a negligible daylight impact as a result of the Proposed Development.

Sunlight

- 6.9 No windows are relevant for assessment as they do not face within 90 degrees of due south.

70 Hathersage Road

- 6.10 This property is a two storey mixed use property, with retail use on the ground floor and residential use at first floor level. The property is located to the south of the Site.
- 6.11 Despite a thorough review of the planning portal and online resources, no floor plans were able to be located and therefore, reasonable layouts have been adopted.

Daylight

- 6.12 For the Vertical Sky Component test ("VSC"), all windows (100%) will meet the BRE's recommended criteria.
- 6.13 For NSL, one room (50%) will meet the BRE criterion. The single room that does not meet the criteria (R8/21) is located on the first floor and will experience a reduction of 23.52%, which is slightly beyond the 20% reduction threshold. In addition, the room will be lit to 72.98% of the area in the proposed condition which in AY's opinion, is a reasonable quantum of daylight.
- 6.14 All windows and rooms assessed will meet the recommended BRE Guidelines for VSC and thus there will be a negligible daylight impact as a result of the Proposed Development.

Sunlight

- 6.15 No windows are relevant for assessment as they do not face within 90 degrees of due south.

72 Hathersage Road

- 6.16 72 Hathersage Road is two storey mixed use property, with retail use on the ground floor and residential use at first floor level. The property is located to the south of the Site.
- 6.17 Despite a thorough review of the planning portal and online resources, no floor plans were able to be located and therefore, reasonable layouts have been adopted.

Daylight

- 6.18 For the Vertical Sky Component test ("VSC"), all windows (100%) will meet the BRE's recommended criteria.
- 6.19 For NSL, one room (50%) will meet the BRE criterion. The single room that does not meet the criteria (R7/21) is located on the first floor and will experience a reduction of 22.22%, which is slightly beyond the 20% reduction threshold. In addition, the room will be lit to 74.20% of the area in the proposed condition which in AY's opinion, is a reasonable quantum of daylight.
- 6.20 All windows and rooms assessed will meet the recommended BRE Guidelines for VSC and thus there will be a negligible daylight impact as a result of the Proposed Development.

Sunlight

- 6.21 No windows are relevant for assessment as they do not face within 90 degrees of due south.

74 Hathersage Road

- 6.22 74 Hathersage Road is two storey mixed use property, with retail use on the ground floor and residential use at first floor level. The property is located to the south of the Site.
- 6.23 Despite a thorough review of the planning portal and online resources, no floor plans were able to be located and therefore, reasonable layouts have been adopted.

Daylight

- 6.24 For the Vertical Sky Component test ("VSC"), all three residential windows (100%) will meet the BRE's recommended criteria.
- 6.25 For NSL, all rooms will experience a reduction as a result of the Proposed Development. However, the rooms will retain between 61.48%-70.48% NSL, which in AY's professional experience, is an acceptable amount of daylight availability within the room.
- 6.26 All windows and rooms assessed will meet the recommended BRE Guidelines for VSC and despite the NSL transgressions, it is AY's opinion that there will be a negligible daylight impact as a result of the Proposed Development.

Sunlight

- 6.27 No windows are relevant for assessment as they do not face within 90 degrees of due south.

7. Summary and Conclusion

- 7.1 Avison Young have undertaken daylight and sunlight technical analysis for the Proposed Development of the Site at Carmoor Road, Manchester in accordance with the 2022 BRE Guidelines.
- 7.2 Technical analysis has found that the following neighbouring residential properties will fully comply with the recommended BRE Guidelines for daylight and sunlight and thus will experience a negligible impact as a result of the Proposed Development:
- 58-60 Hathersage Road;
 - 62 Hathersage Road; and
 - 64 Hathersage Road;
 - 66 Hathersage Road.
- 7.3 Technical analysis has found that the following four neighbouring residential properties will experience a minor daylight (NSL) impact as a result of the Proposed Development:
- 68 Hathersage Road;
 - 70 Hathersage Road; and
 - 72 Hathersage Road;
 - 74 Hathersage Road.
- 7.4 Despite minor NSL transgressions to four of the properties assessed, it is AY's opinion that the Proposed Development is acceptable on daylight and sunlight grounds based upon the high retained levels of NSL and the full compliance for VSC.

Appendix I

Daylight & Sunlight Principles

Daylight & Sunlight Principles

The BRE Guidelines – Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice are well established and are adopted by most Local Authorities as the appropriate scientific and empirical methods of measuring daylight and sunlight in order to provide objective data upon which to apply their planning policies. The Guidelines are not fixed standards but should be applied flexibly to take account of the specific circumstances of each case.

The Introduction of the Guidelines states:

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the developer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design."

The 'flexibility' recommended in the Guidelines should reflect the specific characteristics of each case being considered. For example, as the numerical targets within the Guidelines have been derived on the basis of a low density suburban housing model, it is entirely appropriate to apply a more flexible approach when dealing with higher rise developments in a denser urban environment where the general scale of development is greater. In addition, where existing and proposed buildings have specific design features such as projecting balconies, deep recesses, bay windows etc., it is also equally valid to apply a degree of flexibility to take account of the effect of these particular design features. This does not mean that the recommendations and targets within the Guidelines can be disregarded but, instead, the 'flexibility' that should be applied should be founded on sound scientific principles that can be supported and justified. This requires a certain level of professional value judgement and experience.

Daylighting

In respect of daylighting, the BRE Guidelines adopt different methods of measurement depending on whether the assessment is for the impact on existing neighbouring premises or for measuring the adequacy of proposed new dwellings. For safeguarding the daylight received by existing neighbouring residential buildings around a proposed development, the relevant recommendations are set out in Section 2.2 of the Guidelines.

The adequacy of daylight received by existing neighbouring dwellings is measured using two methods of measurement. First, it is necessary to measure the Vertical Sky Component (VSC) followed by the measurement of internal Daylight Distribution by plotting the position of the 'existing' and 'proposed' no sky line contour.

VSC is measured at the mid-point on the external face of the window serving a habitable room. For the purpose of the Guidelines, a "habitable" room is defined as a Kitchen, Living Room or Bedroom. Bathrooms, hallways and circulation space are excluded from this definition. In addition, many Local Authorities make a further distinction in respect of small kitchens. Where the internal area of a small kitchen limits the use to food preparation and is not of sufficient size to accommodate some other form of "habitable" use such as dining, the kitchen need not be classed as a "habitable" room in its own right.

VSC is a 'spot' measurement taken on the face of the window and is a measure of the availability of light from the sky from over the "existing" and "proposed" obstruction caused by buildings or structures in front of the window. As it is measured on the outside face of the window, one of the inevitable shortcomings is that it does not take account of the size of the window or the size or use of the room served by the window. For this reason, the BRE Guidelines require internal Daylight Distribution to be measured in addition to VSC.

The 'No Sky Line' contour plotted for the purpose of measuring internal Daylight Distribution identifies those areas within the room usually measured on a horizontal working plane set at table top level, where there is direct sky visibility. This therefore represents those parts within the room where the sky can be seen through the window. This second measure therefore takes account of the size of the window and the size of the room but is only more reliable than VSC when the actual room uses, layouts and dimensions are known. When interpreted in conjunction with the VSC value, the likely internal lighting conditions, and hence the quality of lighting within the room, can be assessed.

For VSC, the Guidelines states that:

"If this Vertical Sky Component is greater than 27% then enough skylight should still be reaching the window of the existing building. Any reduction below this level should be kept to a minimum. If the Vertical Sky Component with the new development in place is both less than 27% and less than 0.8 times its former value, then the occupants of the existing building will notice the reduction in the amount of skylight."

To put this in context, the maximum VSC value that can be received for a totally unobstructed vertical window is 40%. There are however circumstances where the VSC value is already below 27%. In such circumstances, it is permissible to reduce the existing VSC value by a factor of 0.2 (i.e. 20%) so that the value on the 'proposed' conditions remains more than 0.8 times its former value. The scientific reasoning for this permissible margin of reduction is that existing daylight (and sunlight) levels can be reduced by a factor of 20% before the loss becomes materially noticeable. This factor of reduction applies to VSC, daylight distribution, sunlight and overshadowing.

By contrast, the adequacy of daylight for proposed 'New-Build' dwellings is measured using the standards in the British Standard Code of Practice for Daylighting, BS8206 Part 2.

The British Standard relies upon the use of Average Daylight Factors (ADF) rather than VSC and Daylight Distribution. The use of ADF is referred to in the BRE Guidelines (Appendix C) but its use is usually limited as a supplementary 'check' of internal lighting conditions once the VSC and Daylight Distribution tests have been completed.

ADF is sometimes seen as a more accurate and representative measure of internal lighting conditions as it comprises a greater number of design factors and input variables/coefficients. That is, the value of ADF is derived from:

- The actual amount of daylight received by the window(s) serving the room expressed as the "angle of visible sky" which is derived from the VSC value and therefore represents the amount of light striking the face of the window.
- The loss of transmittance through the glazing.
- The size of the window (net area of glazing).
- The size of the room served by the window(s) (net internal surface area of the room).
- The internal reflectance values of the internal finishes within the room.
- The specific use of the room.

One of the main reasons why ADF is more appropriate for New-Build dwellings is that any of the above input variables can be changed during the course of the design process in order to achieve the required internal lighting values. The ability to make such changes is not usually available when dealing with existing neighbouring buildings.

Unlike the application of VSC and daylight distribution, the British Standard differentiates between different room uses. It places the highest ADF standard on Family Kitchens where the minimum target value is 2% df. Living Rooms should achieve 1.5% df, and Bedrooms 1.0% df.

Sunlighting

The requirements for protecting sunlight to existing residential buildings are set out in section 3.2 of the BRE Guidelines.

The availability of sunlight varies throughout the year with the maximum amount of sunlight being available on the summer solstice and the minimum on the winter solstice. In view of this, the internationally accepted test date for measuring sunlight is the spring equinox (21 March), on which day the United Kingdom has equal periods of daylight and darkness and sunlight is available from approximately 08:30hrs to 17:30hrs. In addition, on that date, sunlight received perpendicular to the face of a window would only be received where that window faces within 90° of due south. The BRE Guidelines therefore limit the extent of testing for sunlight where a window faces within 90° of due south.

The sunlight standards are normally applied to the principal Living Room within each dwelling rather than to kitchens and bedrooms.

The recommendation for sunlight is:

"If this window reference point can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months of 21 September and 21 March, then the room should still receive enough sunlight .

Any reduction in sunlight access below this level should be kept to a minimum. If the availability of sunlight hours are both less than the amounts given and less than 0.8 times their former value, either over the whole year or just during the winter months, then the occupants of the existing building will notice the loss of sunlight."

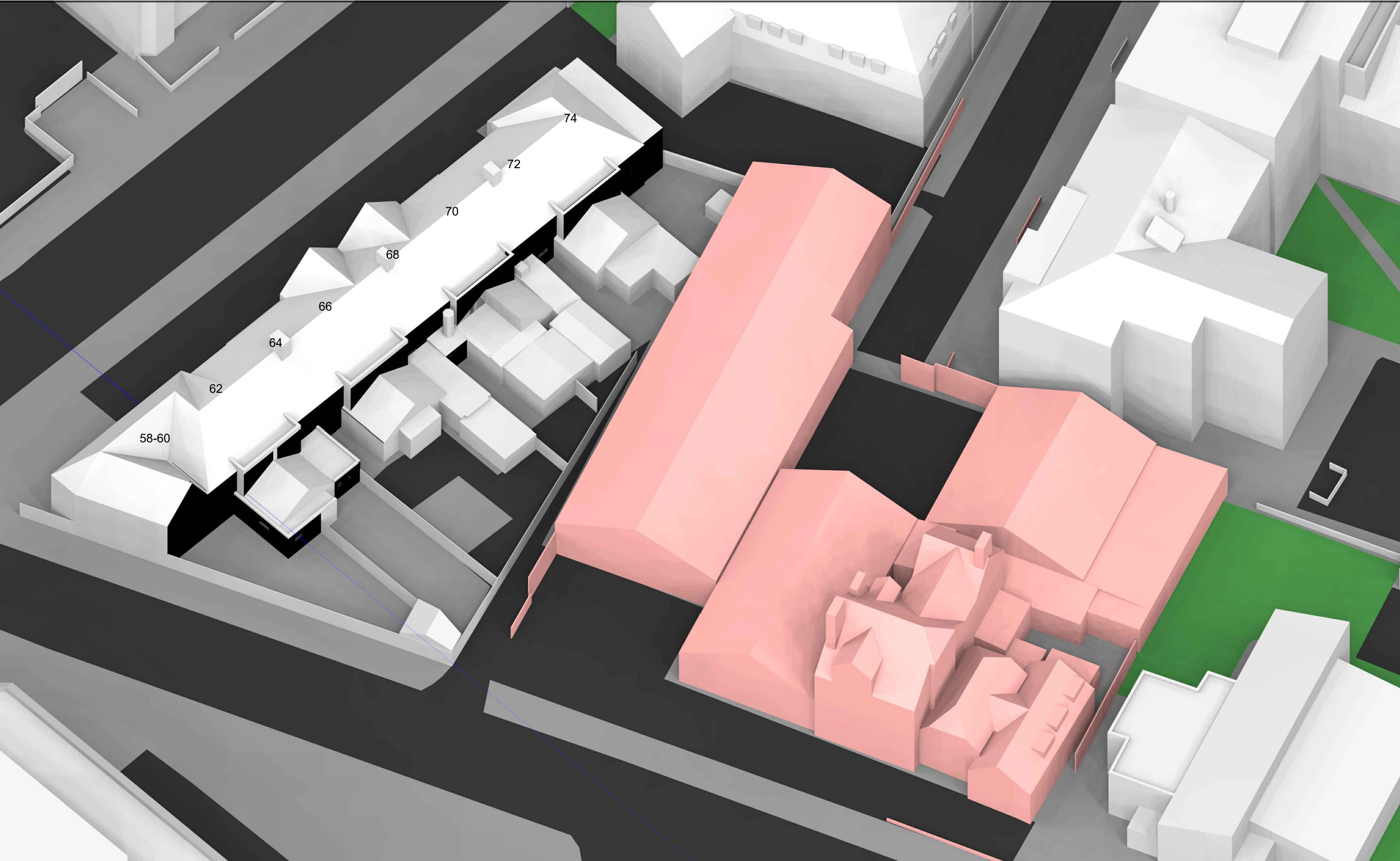
A good level of sunlight will therefore be achieved where a window achieves more than 25% APSH, of which 5% should be in the winter months. Where sunlight levels fall below this suggested recommendation, a comparison with the existing condition should be undertaken and if the reduction ratio is less than 0.2, i.e. the window continues to receive more than 0.8 times its existing sunlight levels, the impact on sunlight will be acceptable.

Appendix II

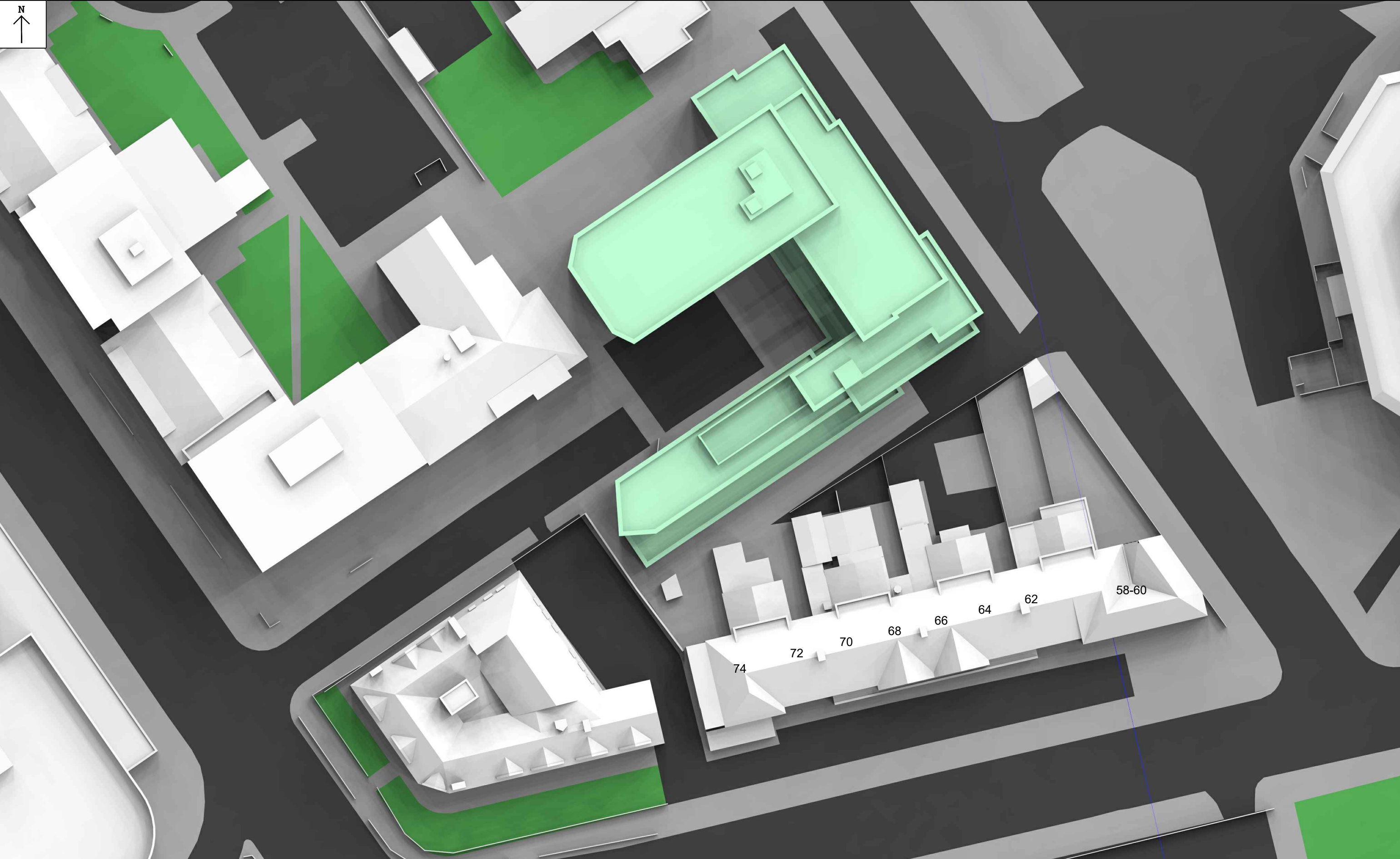
Existing & Proposed Drawings



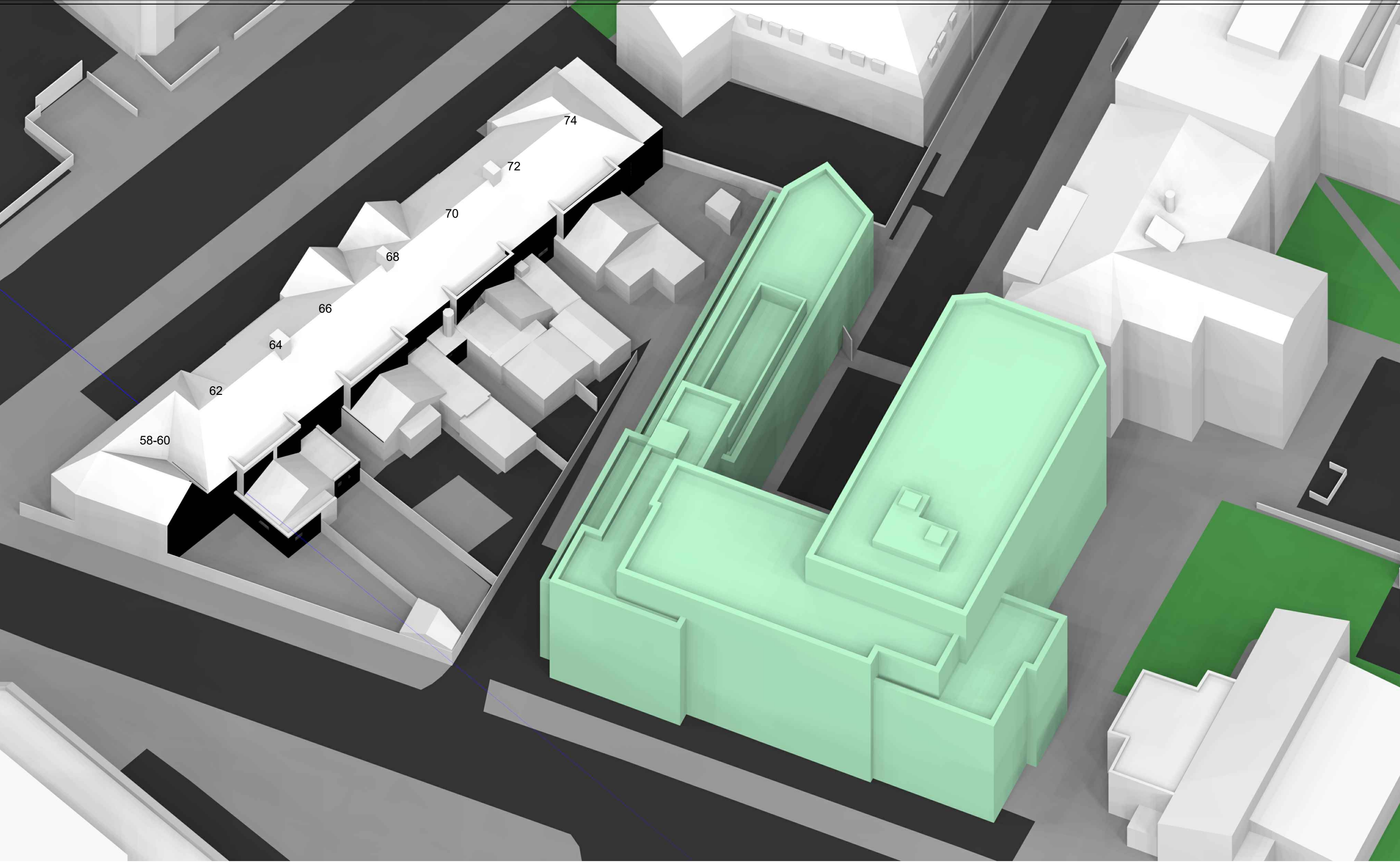
Key: Existing Proposed Consented Surrounding Context	Sources of information Existing building 2021 JAN 19 - INFO PROPOSED 131208621_2 Carmoor Road_240717_Solids.dwg Surrounding buildings 2021 JAN 19 - INFO PROPOSED 131208621_2 Carmoor Road_240717_Solids.dwg Proposed building SCHEME INFO 26 OCT 2022 2205-LHA-A-SK-016_P03 Roof Plan 2205-LHA-A-SK-010_P04 Level 00 Plan 2205-LHA-A-SK-011_P03 Level 01 Plan 2205-LHA-A-SK-012_P03 Level 02 Plan 2205-LHA-A-SK-013_P03 Level 03 Plan 2205-LHA-A-SK-014_P03 Level 04 Plan 2205-LHA-A-SK-015_P03 Level 05 Plan 21A040_2D A Consented N/A	Project Name CARMOOR ROAD, MANCHESTER Drawing Title PLAN VIEW FOR EXISTING SITE	Drawn By AS Project No. CA/195	Scale @ A3 N/A Drawing No. BRE/01	Date 17 NOV 2022 Revision -	AVISON YOUNG 65 Gresham Street, London, EC2V 7NQ 08449 02 03 04 www.avisonyoung.co.uk
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Key: Existing Proposed Consented Surrounding Context	Sources of information Existing building 2021 JAN 19 - INFO PROPOSED 131208621_2 Carmoor Road_240717_Solids.dwg Surrounding buildings 2021 JAN 19 - INFO PROPOSED 131208621_2 Carmoor Road_240717_Solids.dwg ROOMS AND WINDOWS ESTIMATED Proposed building SCHEME INFO 26 OCT 2022 2205-LHA-A-SK-016_P03 Roof Plan 2205-LHA-A-SK-010_P04 Level 00 Plan 2205-LHA-A-SK-011_P03 Level 01 Plan 2205-LHA-A-SK-012_P03 Level 02 Plan 2205-LHA-A-SK-013_P03 Level 03 Plan 2205-LHA-A-SK-014_P03 Level 04 Plan 2205-LHA-A-SK-015_P03 Level 05 Plan 21A040_2D A Consented N/A				Project Name CARMOOR ROAD, MANCHESTER Drawing Title 3D VIEW FOR EXISTING SITE	Drawn By AS Project No. CA/195	Scale @ A3 N/A Drawing No. BRE/02	Date 17 NOV 2022 Revision -	AVISON YOUNG 65 Gresham Street, London, EC2V 7NQ 08449 02 03 04 www.avisonyoung.co.uk



Key: Existing Proposed Consented Surrounding Context	Sources of information Existing building 2021 JAN 19 - INFO PROPOSED 131208621_2 Carmoor Road_240717_Solids.dwg Surrounding buildings 2021 JAN 19 - INFO PROPOSED 131208621_2 Carmoor Road_240717_Solids.dwg Proposed building SCHEME INFO 26 OCT 2022 2205-LHA-A-SK-016_P03 Roof Plan 2205-LHA-A-SK-010_P04 Level 00 Plan 2205-LHA-A-SK-011_P03 Level 01 Plan 2205-LHA-A-SK-012_P03 Level 02 Plan 2205-LHA-A-SK-013_P03 Level 03 Plan 2205-LHA-A-SK-014_P03 Level 04 Plan 2205-LHA-A-SK-015_P03 Level 05 Plan 21A040_2D A Consented N/A	Project Name CARMOOR ROAD, MANCHESTER Drawing Title PLAN VIEW FOR PROPOSED SITE	Drawn By AS Project No. CA/195	Scale @ A3 N/A Drawing No. BRE/03	Date 17 NOV 2022 Revision -	AVISON YOUNG 65 Gresham Street, London, EC2V 7NQ 08449 02 03 04 www.avisonyoung.co.uk
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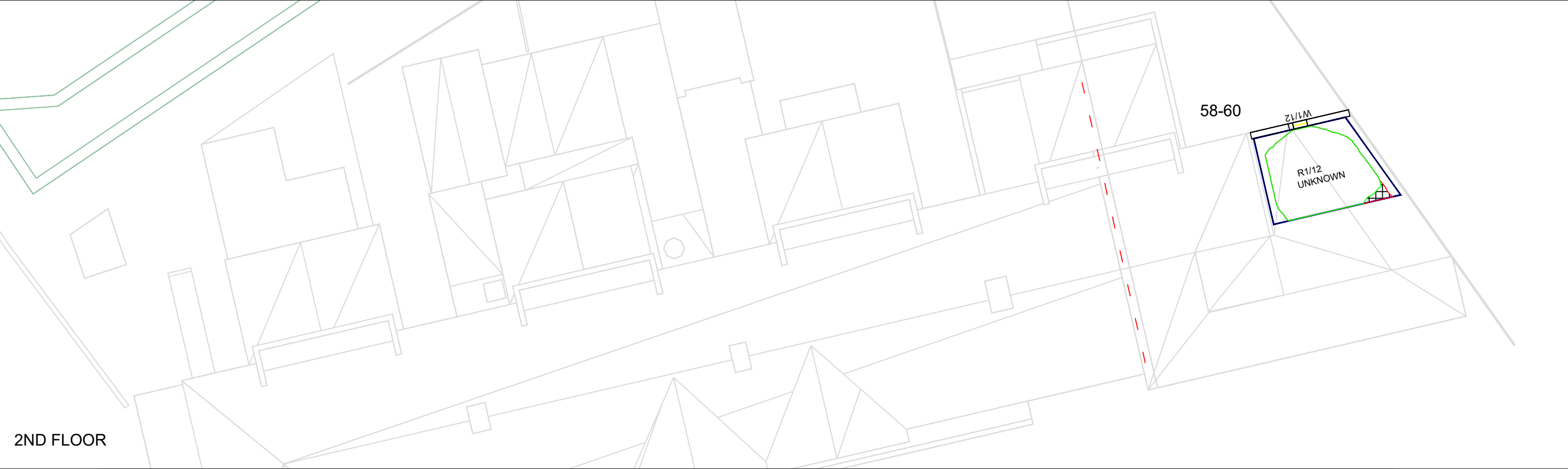
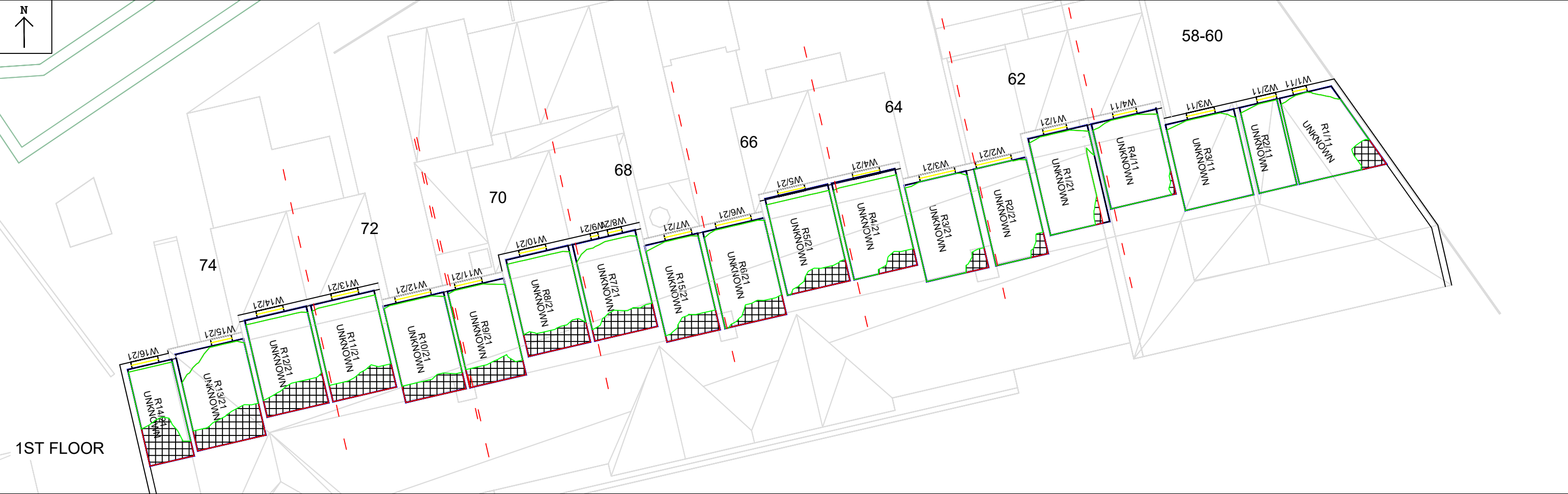
 Existing  Proposed  Consented  Surrounding Context	Sources of information Existing building 2021 JAN 19 - INFO PROPOSED 131208621_2 Carmoor Road_240717_Solids.dwg Surrounding buildings 2021 JAN 19 - INFO PROPOSED 131208621_2 Carmoor Road_240717_Solids.dwg Proposed building SCHEME INFO 26 OCT 2022 2205-LHA-A-SK-016_P03 Roof Plan 2205-LHA-A-SK-010_P04 Level 00 Plan 2205-LHA-A-SK-011_P03 Level 01 Plan 2205-LHA-A-SK-012_P03 Level 02 Plan 2205-LHA-A-SK-013_P03 Level 03 Plan 2205-LHA-A-SK-014_P03 Level 04 Plan 2205-LHA-A-SK-015_P03 Level 05 Plan 21A040_2D A Consented N/A				Project Name CARMOOR ROAD, MANCHESTER		Drawn By AS	Scale @ A3 N/A	Date 17 NOV 2022	AVISON YOUNG 65 Gresham Street, London, EC2V 7NQ 08449 02 03 04 www.avisonyoung.co.uk
	Drawing Title 3D VIEW FOR PROPOSED SITE				Project No. CA/195	Drawing No. BRE/04	Revision -			

Appendix III

Neighbouring Daylight/Sunlight Results & Contour
Drawings

CARMOOR ROAD, MANCHESTER
03-Nov-22
JOB 02 - DAYLIGHT RESULTS

Room/Floor	Room Use	Window	%VSC			% Daylight Factor			Daylight Distribution					
			Exist	Prop	% Loss	Exist	Prop	% Loss	Room Area sq ft	Existing Area sq ft	Existing % of Room Area	Proposed Area sq ft	Proposed % of Room Area	% Loss of Existing
58-60 HATHERSAGE ROAD - CA195/05														
1st Floor														
R1/11	UNKNOWN	W1/11	35.39	33.96	>27	0.44	0.42	3.21%	139.5	134	96.06%	120.7	86.52%	9.93%
R2/11	UNKNOWN	W2/11	35.53	33.95	>27	0.96	0.92	4.08%	75.2	73.6	97.87%	73.6	97.87%	0.00%
R3/11	UNKNOWN	W3/11	34.66	32.68	>27	0.97	0.92	5.05%	137	133.6	97.52%	133.6	97.52%	0.00%
R4/11	UNKNOWN	W4/11	36.18	33.65	>27	0.87	0.81	6.47%	128.8	125.5	97.44%	123.7	96.04%	1.43%
2nd Floor														
R1/12	UNKNOWN	W1/12	36.35	35.10	>27	0.30	0.29	3.01%	220	174.1	79.14%	169.1	76.86%	2.87%
62 HATHERSAGE ROAD - CA195/05														
1st Floor														
R1/21	UNKNOWN	W1/21	35.71	32.63	>27	0.77	0.71	7.83%	133.6	119.9	89.75%	116.7	87.35%	2.67%
R2/21	UNKNOWN	W2/21	34.81	31.35	>27	1.62	1.48	8.62%	117.7	117.3	99.66%	111.4	94.65%	5.03%
64 HATHERSAGE ROAD - CA195/05														
1st Floor														
R3/21	UNKNOWN	W3/21	34.70	30.86	>27	1.45	1.32	9.49%	139.8	138.7	99.21%	130.9	93.63%	5.62%
R4/21	UNKNOWN	W4/21	36.30	31.94	>27	0.60	0.53	11.54%	142.9	133.9	93.70%	121.8	85.23%	9.04%
66 HATHERSAGE ROAD - CA195/05														
1st Floor														
R5/21	UNKNOWN	W5/21	36.18	31.40	>27	0.60	0.52	12.85%	141.5	132.6	93.71%	111.7	78.94%	15.76%
R6/21	UNKNOWN	W6/21	34.03	29.16	>27	1.44	1.26	12.24%	138.2	136.2	98.55%	117	84.66%	14.10%
68 HATHERSAGE ROAD - CA195/05														
1st Floor														
R7/21	UNKNOWN	W8/21	35.64	30.33	>27	0.34	0.28	17.31%	141.6	131.9	93.15%	101.1	71.40%	23.35%
		W9/21	35.50	30.14	>27									
R15/21	UNKNOWN	W7/21	23.35	20.19	13.53%	0.92	0.84	9.43%	119.9	117.5	98.00%	96.9	80.82%	17.53%
70 HATHERSAGE ROAD - CA195/05														
1st Floor														
R8/21	UNKNOWN	W10/21	35.42	30.04	>27	0.59	0.50	14.72%	139.9	133.5	95.43%	102.1	72.98%	23.52%
R9/21	UNKNOWN	W11/21	33.71	28.53	>27	1.13	0.98	13.13%	127.1	124.5	97.95%	100	78.68%	19.68%
72 HATHERSAGE ROAD - CA195/05														
1st Floor														
R10/21	UNKNOWN	W12/21	33.02	27.84	>27	1.42	1.23	13.06%	136	134.2	98.68%	109.9	80.81%	18.11%
R11/21	UNKNOWN	W13/21	34.66	29.37	>27	0.57	0.49	14.76%	143.4	136.8	95.40%	106.4	74.20%	22.22%
74 HATHERSAGE ROAD - CA195/05														
1st Floor														
R12/21	UNKNOWN	W14/21	34.25	29.15	>27	0.57	0.49	14.46%	138.9	132.6	95.46%	97.9	70.48%	26.17%
R13/21	UNKNOWN	W15/21	30.32	25.72	15.17%	0.53	0.47	12.55%	154	141.5	91.88%	98.8	64.16%	30.18%
R14/21	UNKNOWN	W16/21	33.05	28.96	>27	0.68	0.60	11.70%	99.7	97	97.29%	61.3	61.48%	36.80%



Key: Proposed NSL Existing NSL 1ft Grid Loss Hatching	Sources of information				Project Name	Drawn By	Scale @ A3	Date	AVISON YOUNG 65 Gresham Street, London, EC2V 7NQ 08449 02 03 04 www.avisonyoung.co.uk
	Existing building 2021 JAN 19 - INFO PROPOSED 131208621_2 Carmoor Road_240717_Solids.dwg	Surrounding buildings 2021 JAN 19 - INFO PROPOSED 131208621_2 Carmoor Road_240717_Solids.dwg ROOMS AND WINDOWS ESTIMATED	Proposed building SCHEME INFO 26 OCT 2022 2205-LHA-A-SK-016_P03 Roof Plan 2205-LHA-A-SK-010_P04 Level 00 Plan 2205-LHA-A-SK-011_P03 Level 01 Plan 2205-LHA-A-SK-012_P03 Level 02 Plan 2205-LHA-A-SK-013_P03 Level 03 Plan 2205-LHA-A-SK-014_P03 Level 04 Plan 2205-LHA-A-SK-015_P03 Level 05 Plan 21A040_2D A	Consented N/A	CARMOOR ROAD, MANCHESTER	AS	1/175	17 NOV 2022	
					Drawing Title	Project No.	Drawing No.	Revision	
					NO SKYLINE CONTOURS FOR	CA/195	BRE/05	-	
					58-74 HATHERSAGE ROAD				