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Client: Stephen Vard

Daylight and Sunlight Assessment for the Development at 80-82 High Street, Billericay CM12 9BT

November 2023

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1 Background and Scope of Appraisal

1.1 Study Objectives

Herrington Consulting has been commissioned by Stephen Vard to assess the potential impact of the proposed development at 80-82 High Street, Billericay CM12 9BT, in relation to daylight, sunlight and overshadowing on the neighbouring building. The key objectives of the assessment are to:

- assess the baseline conditions at the site;
- analyse the potential impacts of the development on the daylight and sunlight currently received by the neighbouring building;
- assess these impacts in line with any relevant planning policies and best practice guidance.

1.2 Site Location

The site is situated in the town of Billericay, South Essex and is located within administrative boundaries of Basildon Borough Council. The location of the site is shown in Figure 1.1 and the site plan included in Appendix A.1 of this report gives a more detailed reference to the site location and layout.

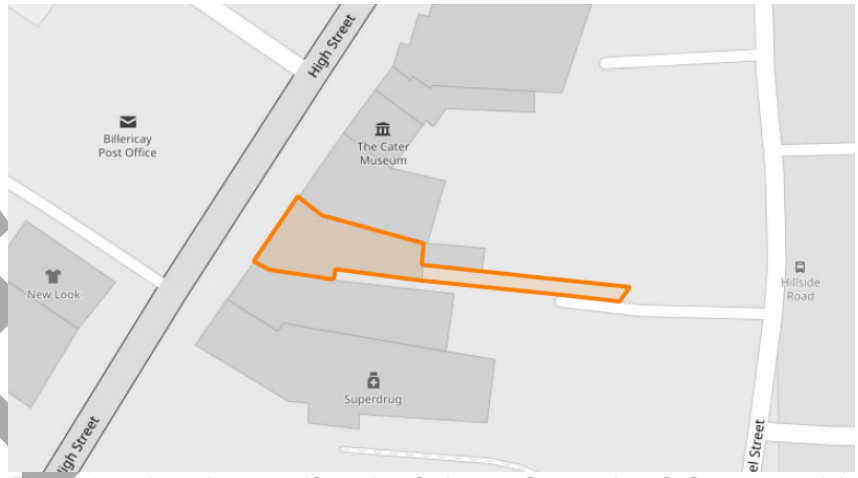


Figure 1.1 – Location map (Contains Ordnance Survey data © Crown copyright and database right 2011)

1.3 The Development

The proposal for development is to build a new roof extension that incorporates dormer windows, as well as extensions to the first and second floors, a new terrace to the rear roof and changes to the ground floor, all to create 3 self-contained flats. Drawings of the proposed scheme are included in Appendix A.1 of this report.

2 Policy and Guidance

2.1 National Planning Policy

National Planning Policy Framework (Revised September 2023)

Paragraph 125 on 'Achieving appropriate densities' states that *"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 a site (as long as the resulting scheme would provide acceptable living standards)."*

Guidance on Effective Use of Land (Revised July 2019)

The guidance states that: *'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.'*

Further to this, it also states that '*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.'

2.2 Regional Planning Policy

Essex Design Guide (Webpage Updated January 2018)

Paragraph 1.68 states *"local authorities will usually only approve a planning application if it will not have an adverse effect on the daylight and sunlight received by neighbouring properties. The daylight and sunlight tests normally used when considering planning applications are set out in the Building Research Establishment (BRE) document 'Site Layout Planning for Daylight and Sunlight: A guide to good practice' (2011)."*

"Natural light makes dwellings more attractive, pleasant and energy-efficient. Housing layouts should be designed to maximise daylight and sunlight while taking into account other factors, such as privacy and the attractiveness of the wider streetscape."

Relating to Sunlight specifically, Paragraph 1.71 states *"it is not reasonable to require all dwellings to have sunlit rooms; often, a view onto an external sunlit space is preferable. However, a room will be sunlit if at least one main living room window faces within 90° of due south and is not obstructed according to the criteria above."*

2.3 Local Planning Policy

Basildon Borough Revised Publication Local Plan 2014 – 2034

Policies CC5 and CC6: Sustainable Buildings

15.44 *"The orientation of development is an important consideration in influencing the potential to reduce energy consumption within the development and maximising the potential energy production from renewable sources. Careful orientation and arrangement of development can provide efficient opportunities for solar gain and daylight penetration, rather than seeking a technological solution. This includes capturing daylight through appropriately located and sized windows or atriums, reducing the need for artificial light, and designing for passive solar gain to reduce the need for internal space heating. Orientation and the design of glazing can also ensure passive air circulation, reducing the need for energy consuming air conditioning and fans in hot weather, and improving humidity levels during winter months to the benefit of the health of occupants."*

2.4 Best Practice Guidance

In the absence of official national planning guidance / legislation on daylight and sunlight, the most recognised guidance document is published by the Building Research Establishment and entitled 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice', Third Edition, 2022; herein referred to as the 'BRE Guidelines'.

The BRE Guidelines are not mandatory and themselves state that they should not be used as an instrument of planning policy, however in practice they are heavily relied upon as they provide a good guide to approach, methodology and evaluation of daylight and sunlight impacts.

Whilst the BRE Guidelines provide numerical guidance for daylight, sunlight and overshadowing, these criteria should not be seen as absolute targets. The document states that the intention of the guide is to aid rather than constrain the designer. The Guide is not an instrument of planning policy, therefore whilst the methods given are technically robust, it is acknowledged that some level of flexibility should be applied where appropriate.

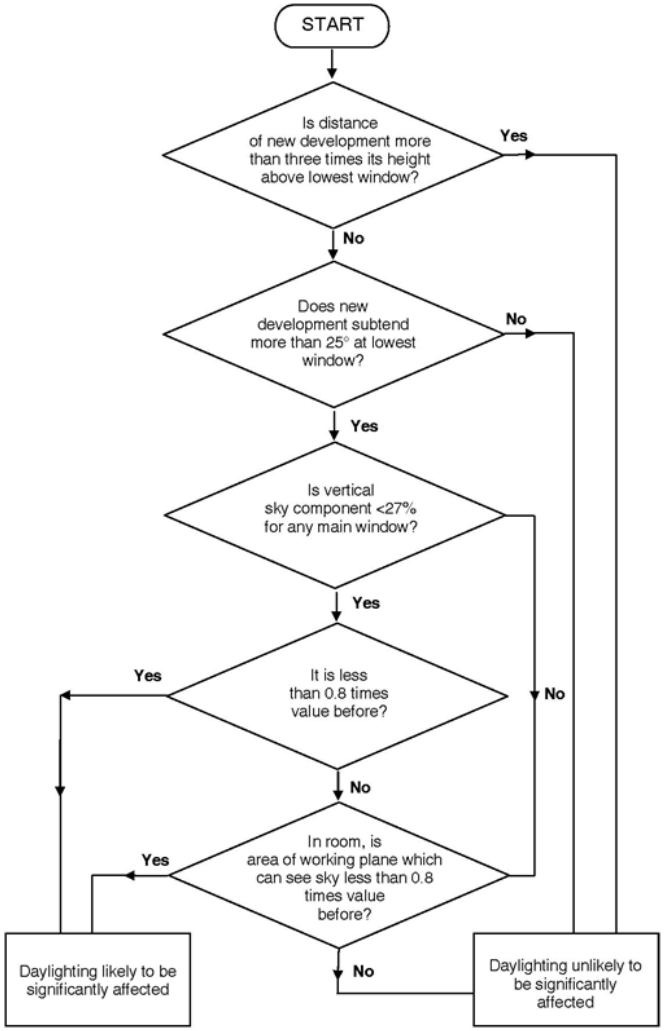
3 Assessment Techniques

3.1 Background

Natural light refers to both daylight and sunlight. However, a distinction between these two concepts is required for the purpose of analysis and quantification of natural light in buildings. In this assessment, the term '*Daylight*' is used for natural light where the source is the sky in overcast conditions, whilst '*Sunlight*' refers specifically to the light coming directly from the sun.

The primary objective of this assessment is to quantify the impacts of the proposed development on the adjacent building[s] and therefore the methods employed by this study are focussed on this objective. These methodologies are described in the following sections of this report and follow the hierarchical approach set out by the BRE Guidelines. The 'decision chart' outlining this process (Figure 20 of the Guidelines) has been reproduced for clarity.

The BRE guidelines are primarily intended for use for residential rooms in adjoining dwellings. However, they may also be applied to any existing non-domestic buildings where the occupants have a reasonable expectation of daylight, which could include schools, hospitals, hotels and offices in specific circumstances. For dwellings, it states that living rooms, dining rooms and kitchens should be assessed. Bedrooms should also be checked, although it states that they are less important. Other rooms, such as bathrooms, toilets, storerooms, circulation areas and garages need not be assessed.



3.2 Vertical Sky Component (VSC)

The Vertical Sky Component (VSC) calculation is the ratio of the direct sky illuminance falling on the outside of a window, to the simultaneous horizontal illuminance under an unobstructed sky. The standard CIE (Commission Internationale d'Éclairage) Overcast Sky is used and the ratio is expressed as a percentage. For example, a window that has an unobstructed view over open fields would benefit from the maximum VSC, which would be close to 40%. For a window to be considered as having a reasonable amount of skylight reaching it, the BRE Guidelines suggests that a minimum VSC value of 27% should be achieved. When assessing the impact of a new development on an existing building the BRE Guidelines sets out the following specific requirement:

If the VSC with the new development in place is both less than 27% and less than 0.8 times its former value, then the reduction in light to the window is likely to be noticeable.

This means that a reduction in the VSC value of up to 20% its former value would be acceptable and thus the impact would be considered negligible. It is important to note that the VSC is a simple geometrical calculation, which provides an early indication of the potential for daylight entering the space. It does not, however, assess or quantify the actual daylight levels inside the rooms.

3.3 No Sky Line

The No Sky Line, or sometimes referred to as No Sky View method, describes the distribution of daylight within rooms by calculating the area of the 'working plane', which can receive a direct view of the sky. The working plane height is generally set at 850mm above floor level within a residential property and 700mm within a commercial property. When assessing the potential impacts on the daylight available to the neighbouring properties, the BRE Guidelines state that if the area within a room receiving direct skylight is reduced by less than 0.8 following the construction of a new development, the impact will be noticeable to the occupants. This is also true if the No Sky Line encroaches onto key areas like kitchen sinks and worktops.

The BRE Guidelines state that the main rooms should be tested, this would include living rooms, dining rooms and kitchens. While bedrooms should be included in the analysis, these are acknowledged as less important. If daylight is expected in non-domestic buildings, each of these room should be included in analysis.

3.4 Annual Probable Sunlight Hours

It is also possible to quantify the amount of sunlight available to a new development and the recognised methodology for undertaking this analysis is the Annual Probable Sunlight Hours (APSH) method.

To pass this test the centre point of the window will need to receive more than one quarter (25%) of the APSH, including at least 5% APSH in the winter months between 21st September and the 21st March. The BRE Guidelines state that if 'post-development' the available sunlight hours are both less than the amount above and less than 0.8 times their 'pre-development' value, either over the whole year or just within the winter months, then the occupants of the existing building will notice the loss of sunlight. In addition, if the overall annual loss is greater than 4% of APSH, the room may appear colder and less pleasant.

For new development and especially where existing buildings are being re-developed, it is important to acknowledge that these are aspirational targets intended to aid and not constrain the designer.

These aspirational targets were derived to improve the amenity of single dwellings that typically comprise a living room, kitchen and bedrooms; the objective being to maximise sunlight in the main living areas. However, for buildings that contain multiple apartments, it is rarely possible to configure the internal layout such that all rooms receive direct sunlight as it is inevitable that some windows will be situated on an elevation that faces within 90 degrees of due north.

It is therefore important to understand that when assessing the provision of sunlight to a building containing multiple dwellings, the BRE Guidelines seek only to maximise the amount of sunlight received. They do not set absolute targets.

3.5 Overshadowing

The BRE Guidance suggests that where new development may affect one or more amenity areas, then analysis can be undertaken to quantify the loss of sunlight resulting from overshadowing. Typical examples of areas that could be considered as open spaces or amenity areas are main back gardens of houses, allotments, parks and playing fields, children's playgrounds, outdoor swimming pools, sitting-out areas, such as in public squares and focal points for views, such as a group of monuments or fountains. Amenity areas in the form of balconies are not recommended to be assessed under the BRE Guidelines due to their small size and often significant obstruction.

Sun Hours on Ground

The BRE Guidelines recommend that for a garden or amenity area to appear adequately sunlit throughout the year, at least 50% of an amenity area should receive at least 2 hours of sunlight on 21st March. The BRE Guidelines also suggest that if, as a result of a new development, an existing garden or amenity area does not meet these guidelines, and the area which can receive some sun on the 21st March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable.

When undertaking this analysis, sunlight from an altitude of 10° or less has been ignored as this is likely to be obscured by planting and undulations in the surrounding topography. Driveways and hard standing for cars is also usually left out of the area used for this calculation. Fences or walls less than 1.5 metres high are also ignored. Front gardens which are relatively small and visible from public footpaths are omitted with only main back gardens needing to be analysed.

The Guidelines also state that "normally, trees and shrubs need not be included, partly because their shapes are almost impossible to predict, and partly because the dappled shade of a tree is more pleasant than a deep shadow of a building". This is especially the case for deciduous trees, which provide welcome shade in the summer whilst allowing sunlight to penetrate during the winter months.

Transient Overshadowing

The BRE Guidelines suggest that where large buildings are proposed, which may affect a number of open spaces or amenity areas, it is useful and illustrative to plot a shadow plan to show the location of shadows at different times of the day and at key times during the year. Typically, the 21st March, the 21st June, and 21st December are used to represent the annual variance of sun position, noting

that the position of the sun in the sky during the spring equinox (21st March) is equivalent to that of the autumn equinox.

The BRE Guidelines provide no criteria for the significance of transitory overshadowing other than to suggest that by establishing the different times of day and year when shadow would be cast over surrounding areas, provides an indication as to the significance of the likely effect of a new development. The assessment of transient overshadowing effects is therefore based upon expert judgment, taking into consideration the likely effects of the various baseline conditions and comparing them with the likely significant transient overshadowing effects of the redevelopment proposals.

4 Assessment Methodology

4.1 Method of Baseline Data Collation

The following data and information has been used to inform this study:

- OS Mastermap mapping
- Scheme drawings in AutoCAD format (Novus Architectural Design – November 2021)
- 3D Building model constructed using photogrammetric techniques (provided by AccuCities June 2023 based on satellite imagery from 2021 to 15cm accuracy)
- Aerial photography (Google Maps and Bing)

4.2 Identification of Key Sensitive Receptors

The BRE Guidelines are intended for use for rooms and adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms circulation areas and garages are not deemed as requiring daylight and therefore are not identified as sensitive receptors. The BRE document also states that the guidelines may also be applied to any non-domestic building where the occupants have a reasonable expectation of daylight. This would normally include schools, hospitals, hotels, hostels, small workshops and some offices.

The first step in this process is to determine the key sensitive receptors, i.e. which windows may be affected by the proposed development. Key receptors are those windows that face, or are located broadly perpendicular to the proposed development.

If a window falls into this category, the second step is to measure the obstruction angle. This is the angle at the level of the centre of the lowest window between the horizontal plane and the line joining the highest point of nearest obstruction formed from any part of the proposed development. If this angle is less than 25° then it is unlikely to have a substantial effect on the diffuse daylight enjoyed by the existing window and the window is not deemed to be a sensitive receptor. A graphical representation of the 25° rule is illustrated in Figure 4.1 below.

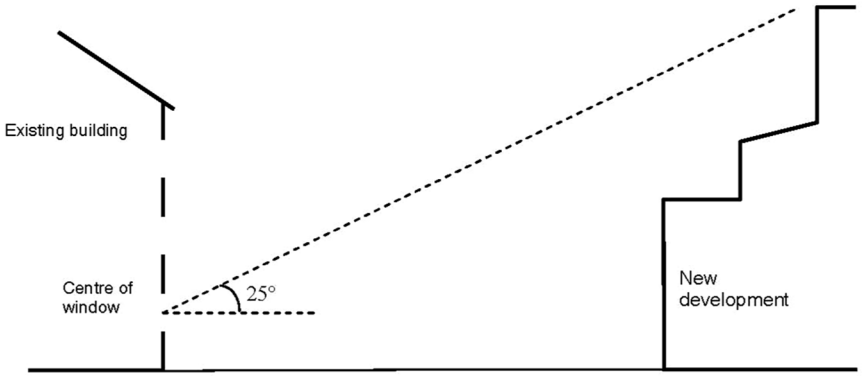


Figure 4.1 – Graphical representation of the 25° Rule (indicative buildings used for illustration purposes only)

As part of this assessment a digital three-dimensional model of the study area has been created for both the 'pre' and 'post' development scenarios. Images of these models are shown by the drawings appended to this report.

Using the 3D model, it is possible to identify all windows having an obstruction angle no greater than 25°. Impacts to these windows are therefore deemed to be negligible in line with the criteria set out within the BRE Guidelines.

There are, however, circumstances where the 25°*degree* rule is not wholly appropriate, for example where the development facing the window does not create a uniform obstruction along the skyline, or where the proposals are not directly adjacent to the receptor window. In these situations, professional judgement is used to differentiate between windows that require more detailed analysis and those that will clearly not be impacted. Where any level of uncertainty exists, the window is taken forward for detailed analysis.

Windows serving non-habitable spaces are not included within the assessment as these are not identified by planning policy or by the BRE Guidelines to be sensitive to changes in daylight and sunlight. Therefore, as part of the identification of sensitive receptor process, the use of each room is, where possible, established and windows serving non-habitable spaces such as toilets, store rooms, stairwells and circulation spaces are identified. Typically kitchens that have a floor area less then 13m^2 are not considered to be habitable spaces in their own right.

Windows serving rooms within commercial premises are assumed to be non-habitable and in accordance with the BRE Guidelines are not identified as sensitive receptors. However, there are special cases where it can be assumed that some non-domestic uses could be deemed to have a reasonable expectation of daylight and therefore could be taken forward for more detailed analysis. Typically, these could be school classrooms, hospital wards, art studios etc, but professional judgement is generally relied upon to determine this and where considered appropriate, windows serving commercial premises are included.

Drawings showing the location of all sensitive receptors that have been assessed as part of this study are included in Appendix A.2 of this report.

In summary, one habitable room in the following residential building has been identified as a potential sensitive receptor and has therefore been tested:

- Hawkley Mews, 76-78 High Street

4.3 Numerical Modelling

The numerical analysis used in this assessment has been undertaken using the Waldrum Tools (Version 6.0.0.13) software package.

4.4 Calculation Assumptions

The following assumptions have been made when undertaking the analysis:

- When assessing the VSC the calculation is based on the centre point of the window position.
- When assessing the daylighting for internal rooms and in the absence of specific information, the following parameters are assumed:

- For new buildings, the glazing type is assumed to be double glazing (Pilkington K Glass 4/16/4 Argon filled) with a light transmittance value of 0.78 (value for double glazed unit not per pane). For existing buildings, a value of 0.68 has been assumed.
- Correction factor for frames and glazing bars = 0.8
- Where information from the designer is not available, the following values are used to derive the Maintenance Factor applied to the transmittance values.

Type of window	Maintenance Factor	
	Rural/ suburban	Urban
Vertical, no overhang	0.96	0.92
Vertical, sheltered from rain by balcony/overhang	0.88	0.76
Sloping rooflight	0.92	0.84
Horizontal rooflight	0.88	0.76

Table 4.1 – Parameters used for deriving Maintenance Factor

- Where information on internal room layouts of adjacent properties is not known, best estimates as to room layout and size have been made in order to undertake No Skyline analysis.
- Where the internal arrangements and room uses have been estimated, it should be noted that this has no bearing upon the tests for VSC or APSH because the reference point is at the centre of the window being tested and windows have been accurately drawn from the survey information where possible. It is relevant to the daylight distribution assessment, but in the absence of suitable plans, estimation is a conventional approach.
- In areas where survey data has not been provided or needs to be supplemented with additional information, photographs, OS mapping and brick counts have been used in the process of building the 3D model of the surrounding and existing buildings.
- When analysing the effect of the new building on the existing buildings, the shading effect of the existing trees has been ignored. This is the recommended practice where deciduous trees that do not form a dense belt or tree line are present (BRE Guidelines – Appendix H). This is because daylight is at its scarcest and most valuable in the winter when most trees will not be in leaf.
- In situations where windows are deeply set-back beneath balconies or other overhanging features, it is common for these rooms to have low VSC values as a result of the obstruction caused by the balcony. It widely accepted and acknowledged within the BRE Guidelines that the presence of balconies can mask the impact of a proposed development when using the VSC test and therefore the Guidelines suggest that the window should be tested both ‘with’ and ‘without’ the balcony in place. If the ratio of change with the development in place, but with the balconies removed, remains above 0.8, then it can be concluded that it is the presence of the balcony rather than the introduction of a new building that is the main factor in the relative loss of light.

4.5 Assessment criteria

The numerical assessment criteria specified within the BRE Guidelines is designed to identify the threshold at which point a change in daylight or sunlight would become 'noticeable' to the occupants. Consequently, where the results of the daylight/sunlight analysis demonstrate compliance with the BRE criteria it can be concluded that the impact will be negligible. However, a point that should be stressed here is that 'noticeable' does not necessarily equate to 'unacceptable' and the BRE's standard target values should not always be considered as pass/fail criteria. Whilst the BRE Guidelines provide numerical guidance for daylight, sunlight and overshadowing, these criteria should not be seen as absolute targets since, as the document states, the intention of the guide is to help rather than constrain the designer. The Guide is not an instrument of planning policy, therefore whilst the methods given are technically robust, it is acknowledged that some level of flexibility should be applied where appropriate.

Consequently, based on the numerical assessment criteria set out with the BRE Guidelines and the use of professional judgment, the following assessment criteria have been established and are used in describing the impacts of the proposed development.

Significance	Description	Change Ratio
Negligible	No alteration or a small alteration from the existing scenario. Results demonstrate full compliance with the BRE assessment criteria and therefore occupants are unlikely to notice any change.	1.0 to 0.8
Minor adverse	An alteration from the existing scenario which may be marginally noticeable to the occupant. This may include a marginal infringement of the numerical levels suggested in the BRE Guidelines, which should be viewed in context. A typical change ratio for this level of significance would be 0.7	0.7 to 0.8
Moderate adverse	An alteration from the existing scenario which may cause a moderate noticeable change to the occupant. This may consist of a moderate infringement of the numerical BRE assessment criteria.	0.6 to 0.7
Major adverse	An alteration from the existing scenario which may cause a major noticeable change to the occupant. This may consist of a significant infringement of the numerical BRE assessment criteria.	Less than 0.6

Table 4.2 – Daylight & Sunlight Impact Descriptors

5 Discussion of Daylighting Impacts

Based on the results of the numerical analysis summarised in Appendix A.3, it is possible to draw conclusions on the impacts that the proposed development will have on the neighbouring building. These are based on the principle numerical tests that are discussed below.

5.1 Vertical Sky Component Assessment

The BRE Guidelines operate on the general principle that where the retained VSC is 27% or greater, or where the retained VSC has not reduced to less than 0.8 times its former value, then the reduction in daylight is unlikely to be noticeable to the building's occupants and thus the impact can be deemed negligible. The results of the VSC analysis are summarised below.

Property	No. Windows Tested	Windows meeting BRE Guidelines		VSC Windows Transgressions		
		No.	%	Minor adverse	Moderate adverse	Major adverse
Hawkley Mews, 76-78 High Street	3	3	100%	0	0	0

Table 5.1 – Results of Vertical Sky Component (VSC) Analysis

Inspection of the results of this test show that all of the windows either retain a VSC value greater than 27% post development, or have a ratio of change that is 0.8 or above and therefore are fully compliant. Consequently, in line with the assessment criteria set out within the BRE Guidelines it is possible to conclude that the impact will be **negligible**.

5.2 No Sky Line Assessment

In order to pass the No Sky Line Assessment, the BRE Guidelines state that the area of the working plane within the room that has a view of the sky should not be reduced to less than 0.8 times its former value as a result of new development. One benefit of the daylight distribution test is that the resulting contour plans show where the light falls within a room, for both the existing and proposed conditions, and a judgement can be made as to whether the room will retain light to a reasonable depth.

In Appendix D of the BRE guidance, it states in D3 that '*In most cases the position of the no sky line has to be found from plans. The calculation can only be carried out where room layouts are known. Using estimated room layouts is likely to give inaccurate results and is not recommended. However, where plans are available, for example on the local authorities online planning portal, the calculation should be carried out*'.

In this case, the dimensions and layouts of the habitable room of Hawkley Mews, 76-78 High Street has been reproduced from information obtained via the planning portal (Application numbers: 18/01486/FULL and 19/01906/VAR).

The results of the No Sky Line/Daylight Distribution analysis are summarised below.

Property	No. of Rooms Tested	Rooms that meet BRE Guidelines		No Sky Line No. of Rooms Experiencing Transgressions		
		No.	%	Minor adverse	Moderate adverse	Major adverse
Hawkley Mews, 76-78 High Street	1	1	100%	0	0	0

Table 5.2 – Results of No Sky Line (NSL) Analysis

From the results summarised above, it can be seen that as a result of the proposed development, the impact on the daylight distribution within the assessed room will be **negligible**. The reduction in the area of the working plane that has a direct view of the sky will be less than 20% therefore occupants are unlikely to notice any change.

When the magnitude of reduction is considered, it is evident that this will be within the acceptable limits set out within the BRE Guidelines. Consequently, it is possible to conclude that any changes to the daylight received by the habitable room of the neighbouring building will be **negligible** and is unlikely to be noticeable by the occupants.

5.3 Summary of Daylighting Impacts

The proposed development at 80-82 High Street, Billericay CM12 9BT has been evaluated against the criteria set out by the BRE Guidelines for the assessment of the potential impacts on the daylight of the neighbouring building. One property has been identified as a sensitive receptor for this study, Hawkley Mews, 76-78 High Street, and therefore, a habitable room and the windows serving this room within this property have been tested.

6 Sunlight and Overshadowing Analysis

6.1 Annual Probable Sunlight Hours Assessment

The Annual Probable Sunlight Hours (APSH) tests have been carried out using the numerical model described in Section 4.3. The assessment requirements for the APSH test, as set out in the BRE Guidelines, have been reiterated below. For the assessment to conclude that the sunlighting of the existing dwelling could be adversely affected, all three of the following tests need to have been failed:

Test A - Does the window receive less than 25% of the APSH, or less than 5% the APSH between 21st September and 21st March?

Test B - Does the assessed window receive less than 0.8 times its former sunlight hours during either the 'whole year' or 'winter' period?

Test C - Is the reduction in sunlight received over the whole of the year greater than 4% of the APSH?

However, these tests are only applicable to windows that face within 90 degrees of due south. Consequently, in line with the guidelines and assessment methodologies set out within the BRE document, the analysis of sunlight impacts has only been carried out for these windows. Windows facing within 90 degrees of due north are not analysed and impacts are deemed to be negligible.

It should also be noted that where rooms have windows on more than one elevation, it is acceptable to sum the non-coincident sunlight hours to achieve a 'room total'. This approach is acknowledged by the BRE Guidelines and facilitates a greater understanding of the sunlight received within a room by taking into account the fact that some windows will receive sunlight at different times during the day.

When examining the results of the three sunlight tests, it is first necessary to understand why there are three separate tests and more importantly, why it is not necessary to pass all three to demonstrate that there is no adverse impact. The BRE Guidelines clearly state that for the proposed development to be considered to have an adverse effect on the available sunlight to neighbouring windows, all three tests would need to have been failed.

This is because sunlight is not assessed in terms of its contribution to the overall lighting levels within the room. The value attributed to sunlight is its transient presence and the way in which it can make a room appear bright and cheerful. There are also therapeutic values associated with sunlight and therefore it can be seen that these are not quantitative metrics that can be assessed using a single pass/fail criteria test. It is also necessary to understand that the amount of sunlight received by a window is strongly influenced by the orientation of the window elevation and any surrounding obstructions.

As a consequence of these factors, the assessment methodology embodied within the three separate tests allows the change in sunlight to be assessed in terms of the magnitude of change, absolute change and the retained level of sunlight. To conclude that a new development has no adverse impact, all that is required is for one of the three tests to be passed. The APSH test has been carried out and the detailed results of the analysis are included in Appendix A.3 and a summary of the results are shown in Table 6.1 below.

Property	No. of Windows Tested	Annual			Winter		
		Windows that meet BRE Guidelines		No. of Windows Experiencing Adverse Impacts	Windows that meet BRE Guidelines		No. of Windows Experiencing Adverse Impacts
		No.	%		No.	%	
Hawkley Mews, 76-78 High Street	1	1	100%	0	1	100%	0

Table 6.1 – Results of APSH Analysis

When the results of the APSH analysis summarised in Table 6.1 and Appendix A.3 are inspected, it can be seen that the window facing within 90 degrees of due south passes at least one of the three sunlight tests. Consequently, it has been demonstrated that the proposed scheme will have a **negligible** impact on neighbouring building.

6.2 Sun on the Ground

The BRE Guidelines acknowledge that good site layout planning for daylight and sunlight should not limit itself to providing good natural light inside buildings. Sunlight in the space between buildings has an important effect on the overall appearance and ambiance of a development.

The 2022 BRE Guidelines suggest that the Spring Equinox (21st March) is a suitable date for the assessment and therefore using the specialist software described in Section 4.3, the path of the sun is tracked to determine where the sun would reach the ground and where it would not.

The BRE guidelines recommend that at least half of a garden or amenity area should receive at least 2 hours of sunlight on March 21st or the area which receives 2 hours of direct sunlight should not be reduced to less than 0.8 times its former value (i.e. there should be no more than a 20% reduction).

Typical examples of areas that could be considered as open spaces or amenity areas are main back gardens of houses, allotments, parks and playing fields, children's playgrounds, outdoor swimming pools, sitting-out areas, such as in public squares and focal points for views.

However, from inspection of aerial photographs and site-specific photos, it is evident that there are no amenity areas in close proximity to the proposed development, and therefore there is no potential for adverse impacts from overshadowing.

6.3 Transient Overshadowing

Where amenity areas are used at specific times of day or year, it is useful and illustrative to comment on the overshadowing that will occur throughout the day and at different times of the year. However, with traditional rear gardens and public open spaces that are potentially used all year round, it is acknowledged by the BRE Guidelines that the 21st March equinox is used, as this represents a much worst case than an assessment during the summer when shadows are shorter and impacts of new development are less magnified.

It is also worth highlighting that whilst the BRE Guidelines do not provide any thresholds or assessment criteria for overshadowing analysis carried out at any date other than the 21st March. All that is quoted in the Guidelines is an acknowledgement that some degree of transient overshadowing should be expected from new development. Consequently, unless there is a specific reason to assess overshadowing at a specific time of day, the use of transient shadow plots is not recommended by the BRE Guidelines.

In this situation, it is not considered that any of the amenity areas that are potentially affected by the proposed development would be described as being sensitive to overshadowing at any particular time of day. Consequently, transient overshadowing is not considered appropriate for this assessment.

6.4 Solar Glare

Solar glare or dazzle can affect neighbouring buildings and pose potential hazards for road users under certain circumstances. The BRE Guidelines highlight two particular cases where this can be a problem; these being where there are large areas of reflective glass or cladding on the façade, or where large

areas of glass or cladding slope back such that high-altitude sunlight can be reflected along the ground.

When the proposed design is considered, it can be seen that the building does not slope back, nor does it include large areas of reflective glass or cladding. Given the building design and the BRE Guideline's stance on this matter, it is not considered necessary or appropriate to incorporate an analysis of solar glare.

7 Conclusions

The detailed analysis undertaken as part of this assessment has examined the impact of the proposed development at 80-82 High Street, Billericay CM12 9BT, on the amount of daylight enjoyed by the neighbouring building. One property has been identified as a sensitive receptor for this study, Hawkley Mews, 76-78 High Street, and therefore, a habitable room and the windows serving this room within this property have been tested.

In line with the assessment criteria prescribed by the BRE Guideline, it has been shown that the reduction in daylighting to the windows of the neighbouring building will be within the acceptable limits set out within the BRE Guidelines. Consequently, it is possible to conclude that any changes to the daylight received by the habitable rooms of the neighbouring building will not be significant and is unlikely to be noticeable by the occupants.

The assessment of the impact of the proposed development on the sunlight enjoyed by the neighbouring building has also shown that there will be no reduction seen in the number of probable sunlight hours enjoyed by these windows, these are again within the limits prescribed by the BRE Guidelines as being acceptable.

In summary, the development proposals have been appraised in line with the guidelines set out in the BRE document. When assessed against the criteria for establishing whether the proposed development will have a significant impact, it has been possible to conclude that the development will not result in a notable reduction in the amount of either daylight or sunlight enjoyed by the neighbouring building.

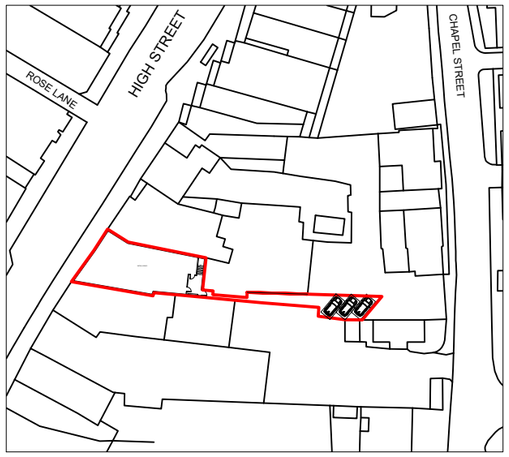
A Appendices

Appendix A.1 – Scheme Drawings

Appendix A.2 – Graphical Model Outputs

Appendix A.3 – Tabulated Results for Daylight & Sunlight Calculations

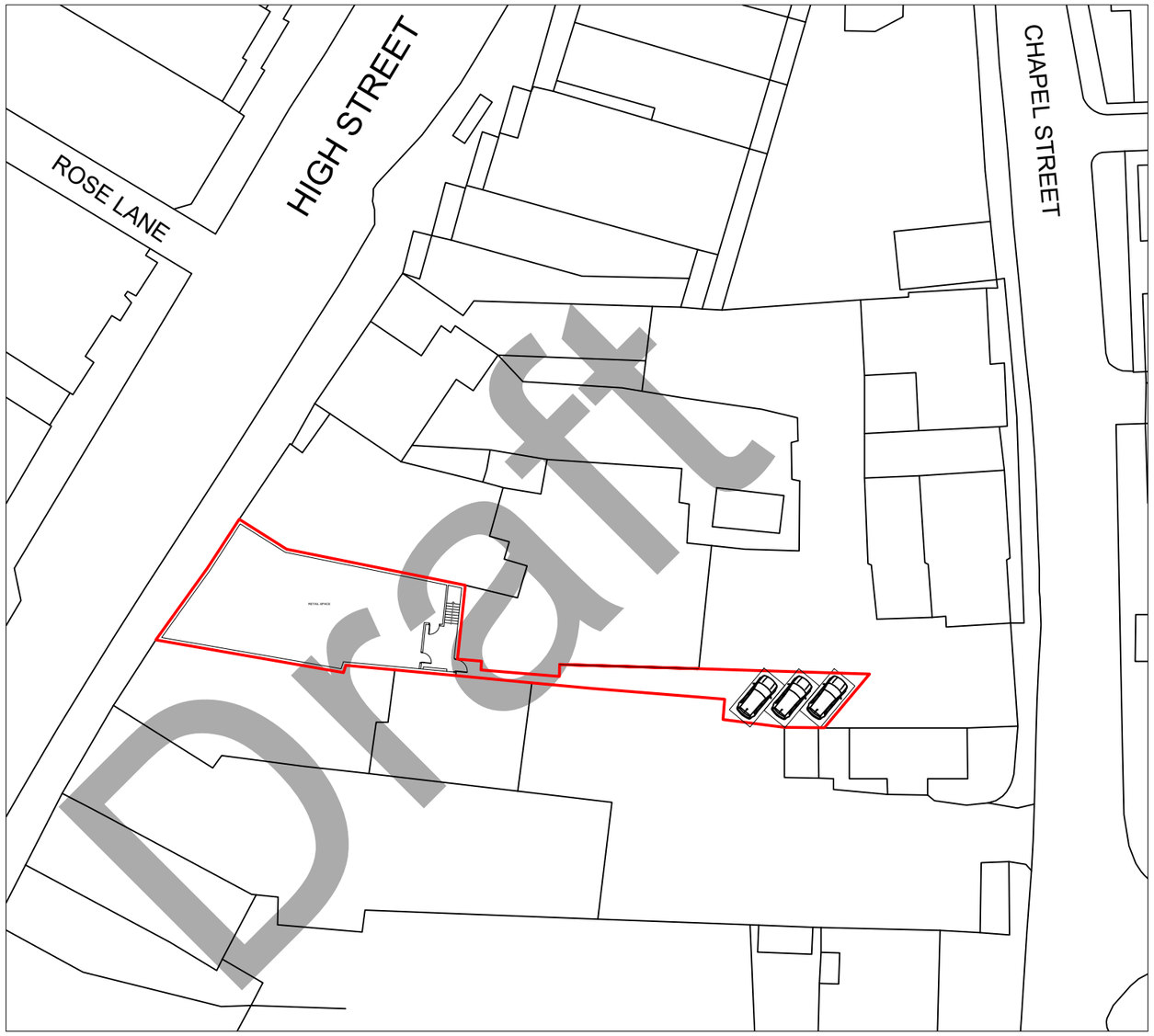
Appendix A.1 – Scheme Drawings



LOCATION PLAN
@ 1:1250

1:1250

25m 0 25m 50m 75m 100m 125m



BLOCK PLAN
@ 1:500

1:500

10m 0 10m 20m 30m 40m 50m

General Notes

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Revisions

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RICS CIAT

Client

Mr S Vard

Project

80 – 82 High Street
Billericay
CM12 9BT

Issue Status

PLANNING

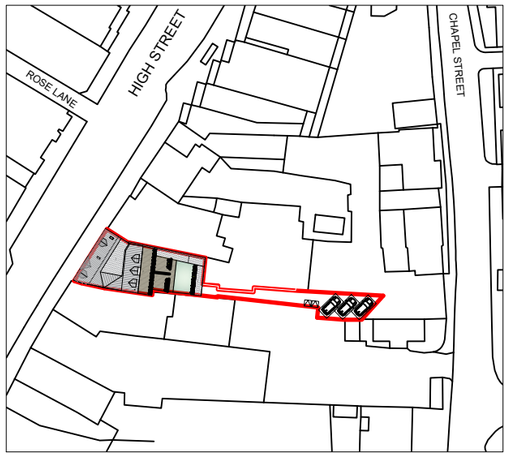
Title

EXISITNG BLOCK AND LOCATION PLAN

Date	Scale @A3	Drawn By	Checked By
NOV 2021	1:500 & 1250	J.E.	J.M.

Drawing No. NAD.21.062–01

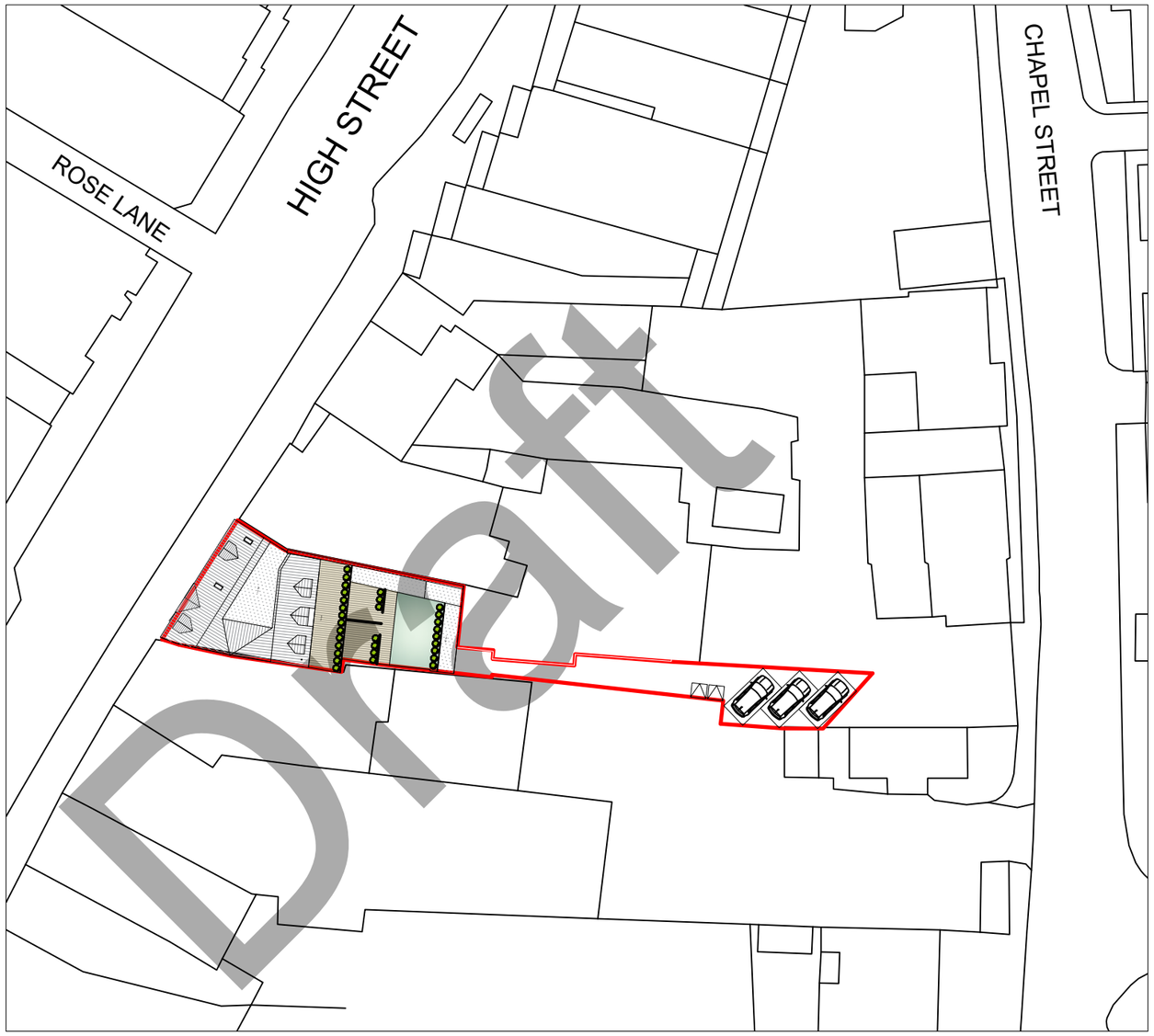
Revision P02



LOCATION PLAN
@ 1:1250

1:1250

25m 0 25m 50m 75m 100m 125m



BLOCK PLAN
@ 1:500

1:500

10m 0 10m 20m 30m 40m 50m

General Notes

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Project

80 – 82 High Street
Billericay
CM12 9BT

Issue Status

PLANNING

Title

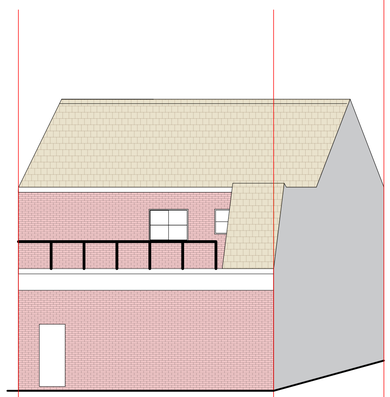
PROPOSED BLOCK AND LOCATION PLAN

Date	Scale @A3	Drawn By	Checked By
NOV 2021	1:500 & 1250	J.E.	J.M.

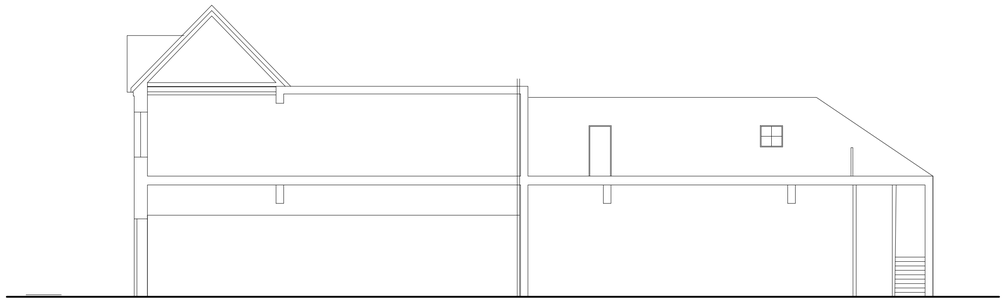
Drawing No. NAD.21.062–02

Revision P03

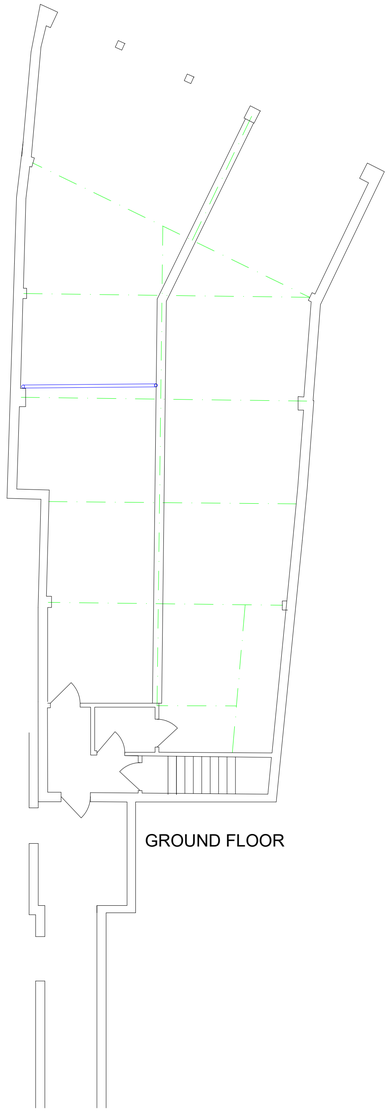
FRONT ELEVATION



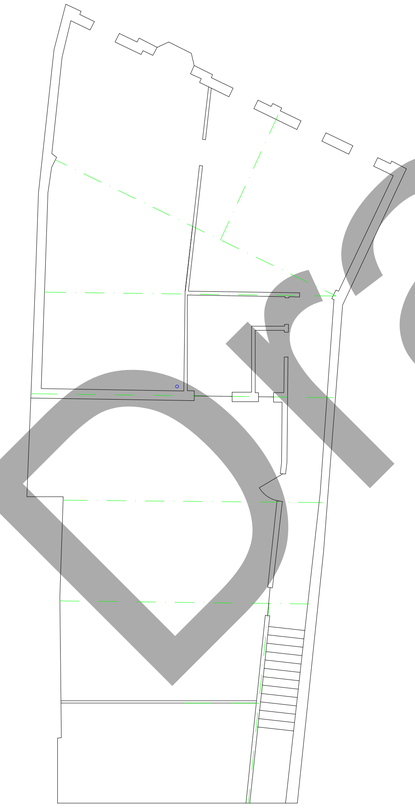
ELEVATION 1



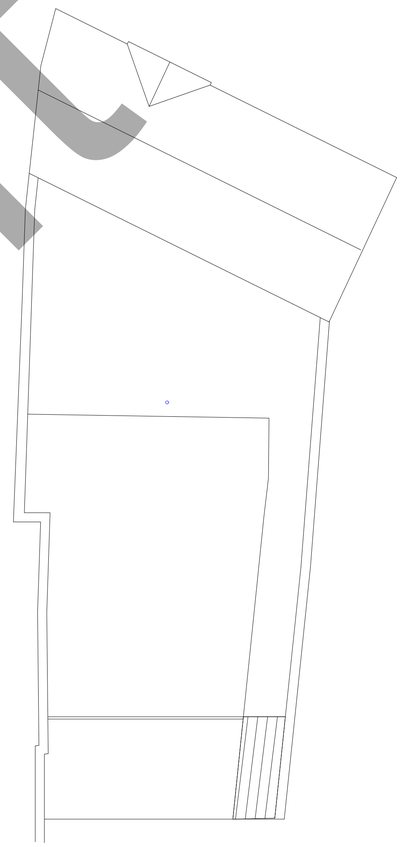
SECTION



GROUND FLOOR



1 FIRST FLOOR



ROOF

1:100

2m 0 2m 4m 6m 8m 10m

Revisions

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Project

80 – 82 High Street
Billericay
CM12 9BT

Issue Status

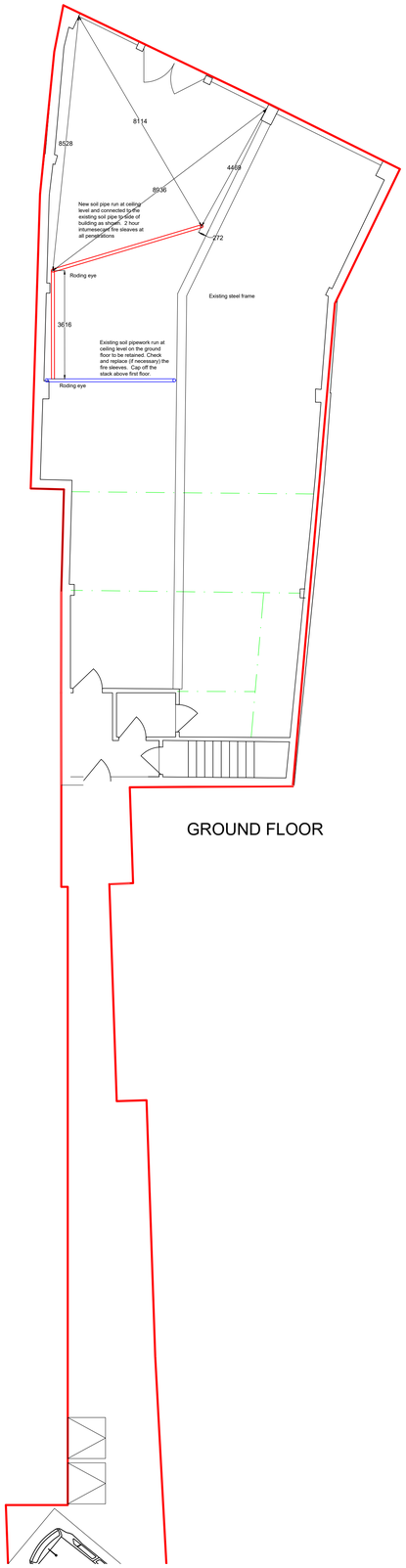
PLANNING

Title

EXISTING PLANS, ELEVATIONS AND SECTION

Date	Scale @A1	Drawn By	Checked By
NOV 2021	1:100	J.E.	J.M.

Drawing No.	Revision
NAD.21.062–03	P02



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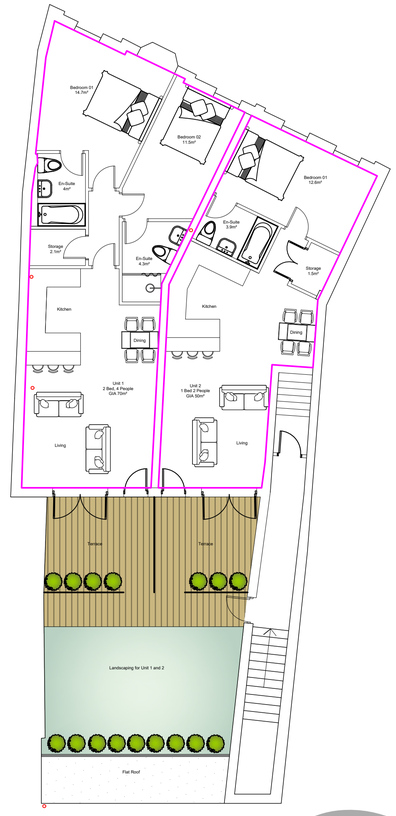

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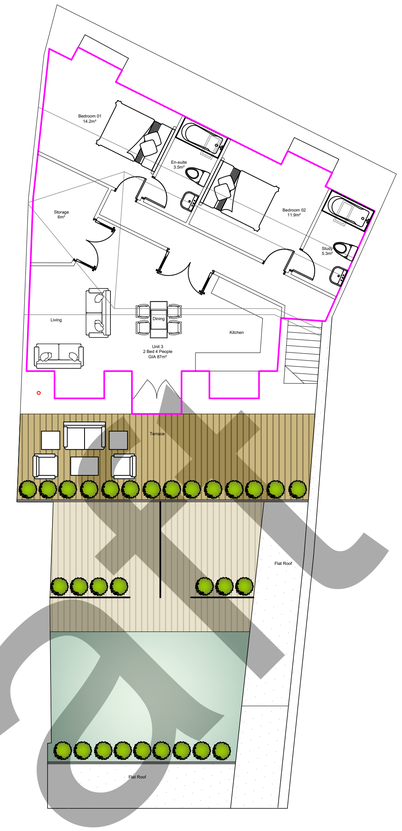

SECOND FLOOR

ROOF PLAN

1:100

2m 0 2m 4m 6m 8m 10m

General Notes

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Revisions

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80 – 82 High Street
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CM12 9BT

Issue Status
PLANNING

Title
PROPOSED PLANS

Date	Scale @A1	Drawn By	Checked By
NOV 2021	1:100	J.E.	J.M.

Drawing No.	Revision
NAD.21.062–04	P02

General Notes

Dimensions shall not be scaled from these drawings in preference to figured dimensions.

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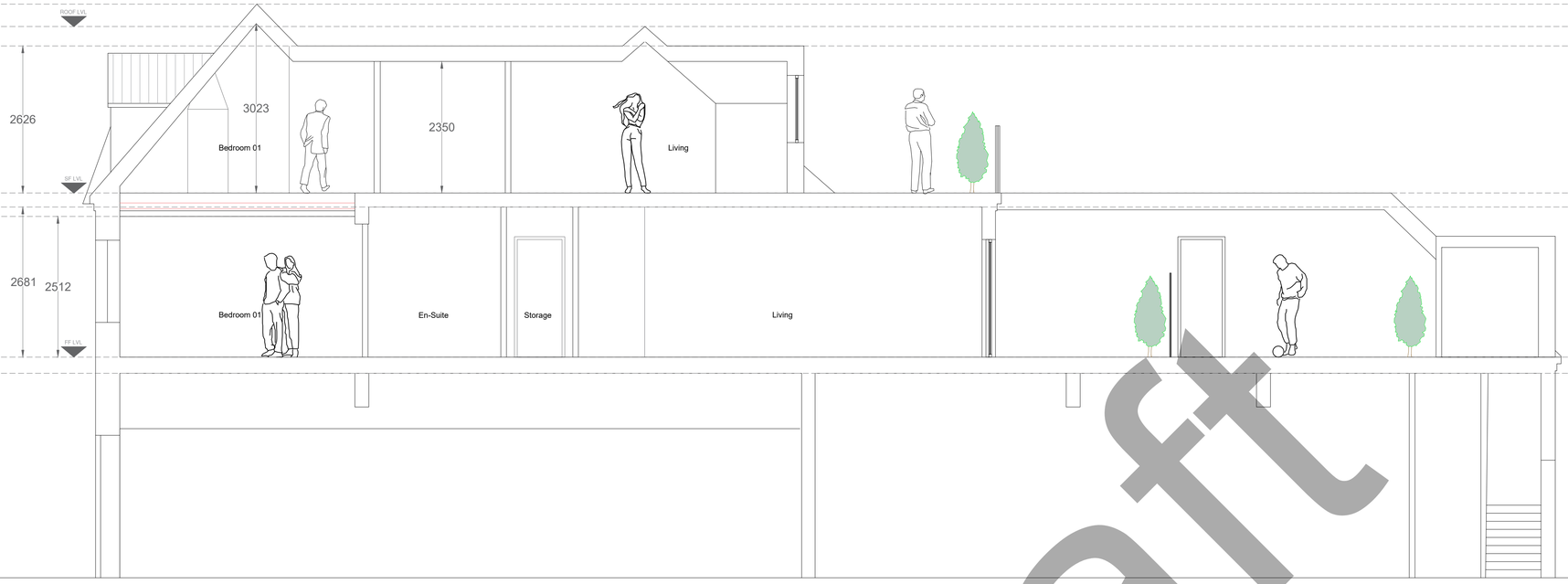

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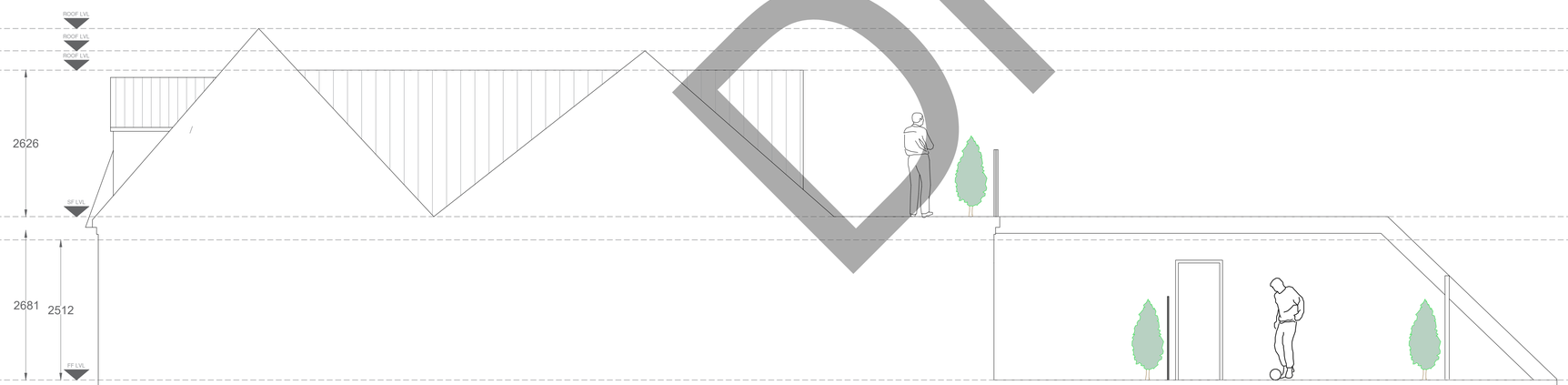

SIDE ELEVATION

1:50

1m 0 1m 2m 3m 4m 5m

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Issue Status

PLANNING

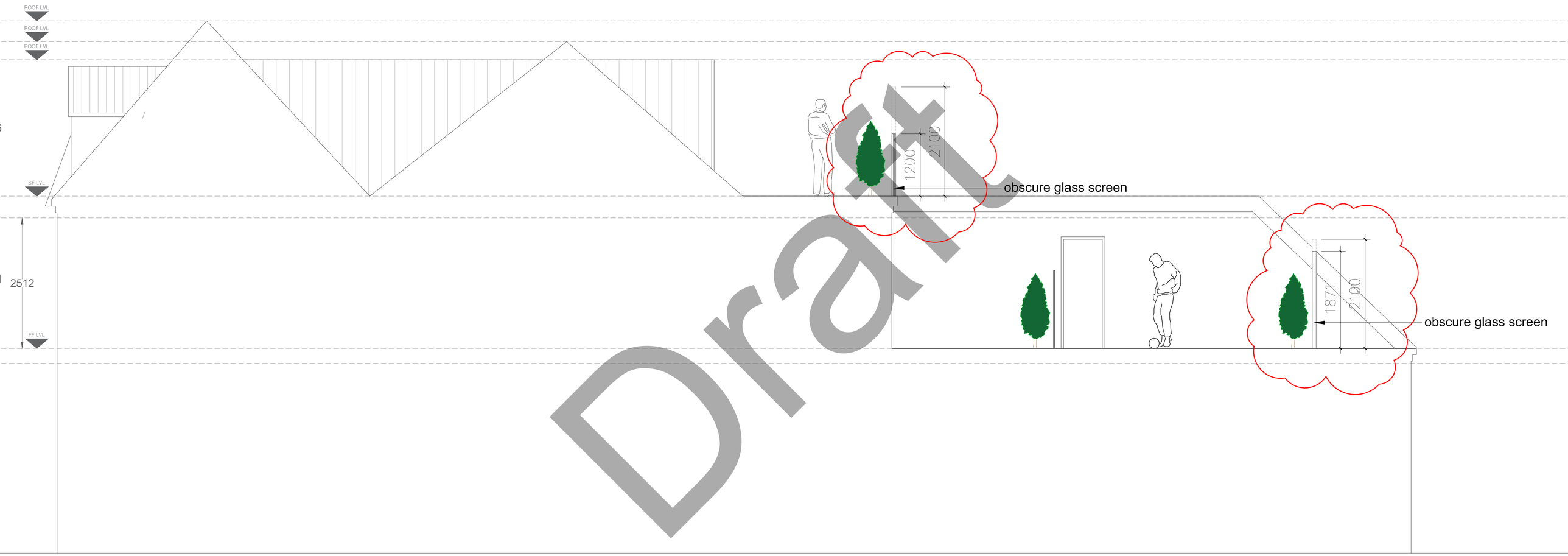
Title

PROPOSED SECTION AND ELEVATION

Date	Scale @A1	Drawn By	Checked By
NOV 2021	1:50	J.E.	J.M.

Drawing No. NAD.21.062–05

Revision P01



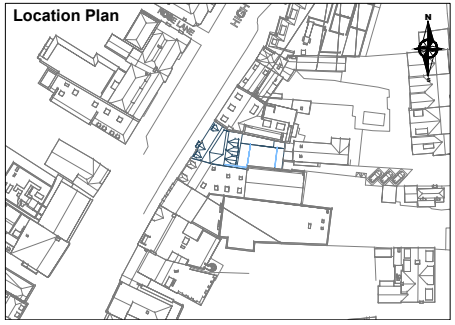
SIDE ELEVATION

Appendix A.2 – Graphical Model Outputs

herrington CONSULTING Part of eps

Canterbury | London | Cambridge | Bristol | Leeds

Location Plan



Legend

- Existing Buildings
- Surrounding Buildings

Rev	Description	Date
01	Second issue	
00	First issue	13/11/2023

CLIENT: Stephen Vard

PROJECT: High Street(80-82), Billericay

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3767	HA	JP

DWG REF: 3D Model - Existing Location Plan

DWG No.: 3767_01

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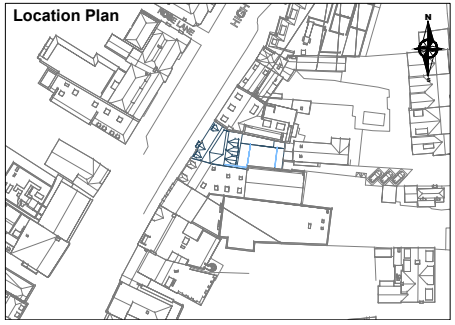
Canterbury | London | Cambridge | Bristol | Leeds

Location Plan



Legend

- Existing Buildings
- Surrounding Buildings

Rev	Description	Date
01	Second issue	
00	First issue	13/11/2023

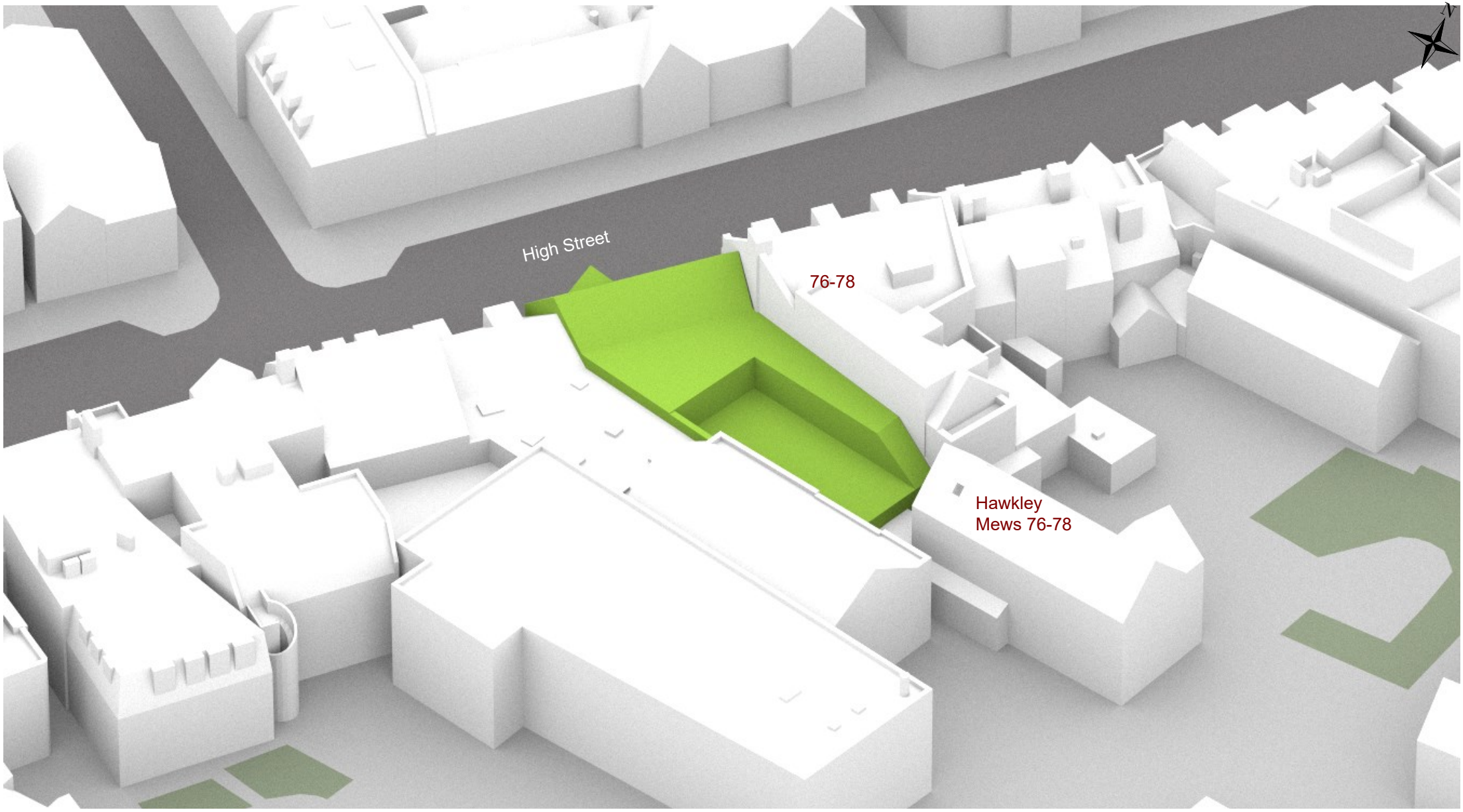
CLIENT: Stephen Vard

PROJECT: High Street(80-82), Billericay

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3767	HA	JP

DWG REF.: 3D Model - Existing Site Scenarios

DWG No.: 3767_02



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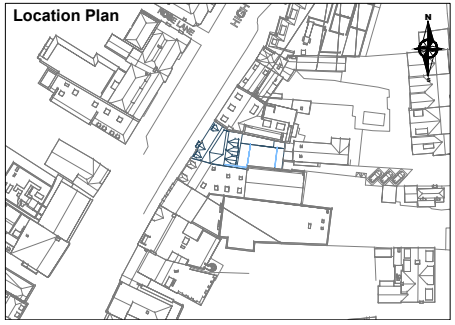
Location Plan



Legend

- Existing Buildings
- Surrounding Buildings

Rev	Description	Date
01	Second issue	
00	First issue	13/11/2023

CLIENT: Stephen Vard

PROJECT: High Street(80-82), Billericay

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3767	HA	JP

DWG REF.: 3D Model - Existing Site Scenarios

DWG No.: 3767_03

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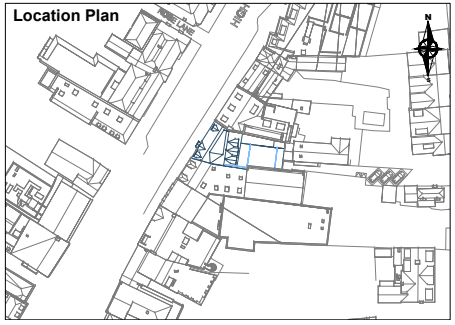
Location Plan



Legend

- Proposed Buildings
- Surrounding Buildings

Rev	Description	Date
01	Second issue	
00	First issue	13/11/2023

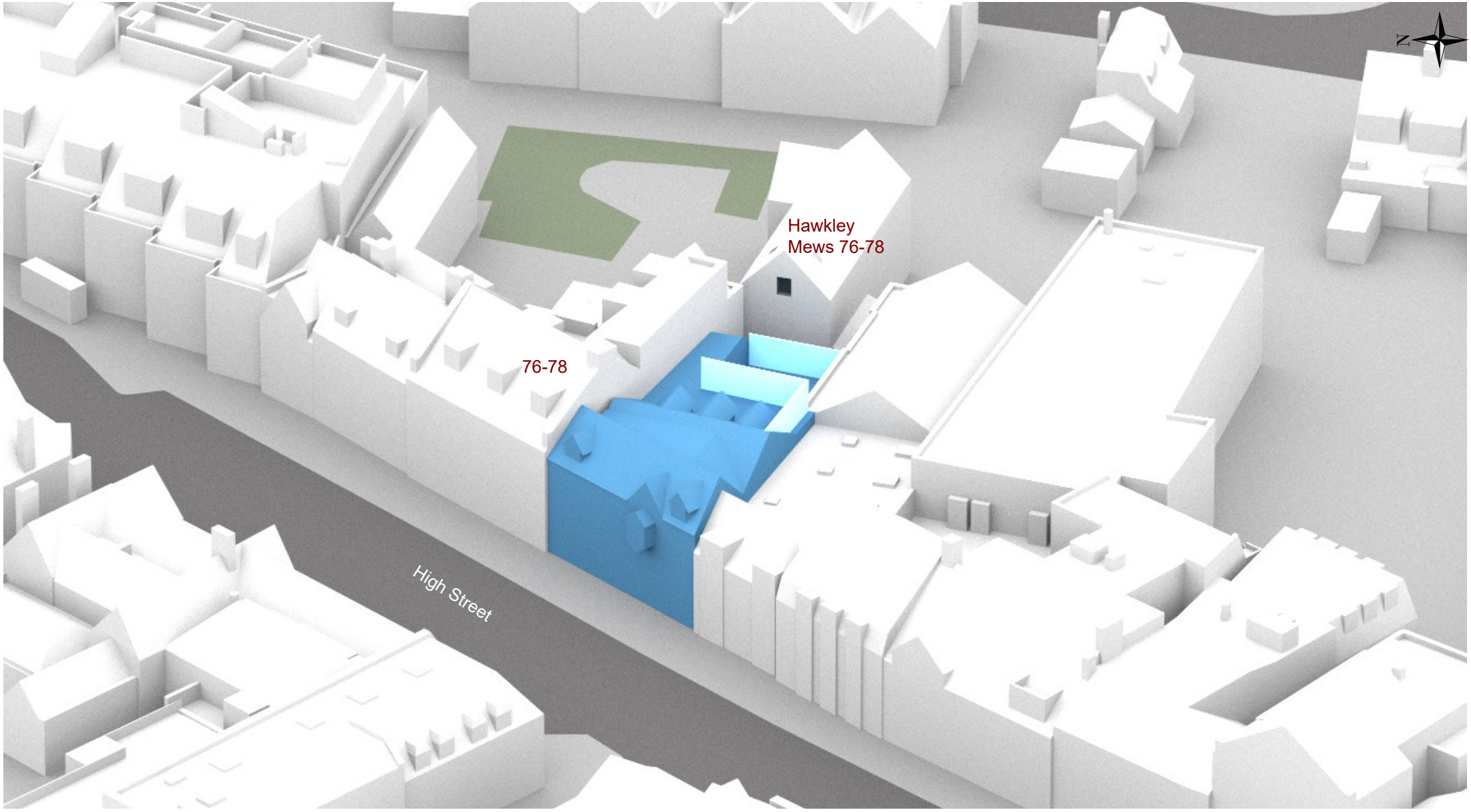
CLIENT: Stephen Vard

PROJECT: High Street(80-82), Billericay

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3767	HA	JP

DWG REF.: 3D Model - Proposed Location Plan

DWG No.: 3767_04



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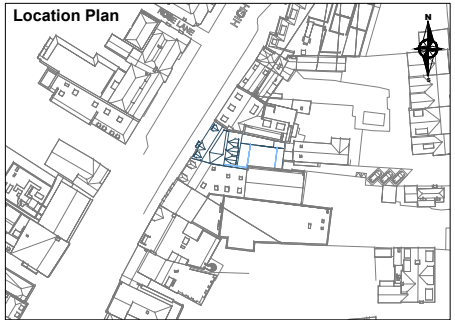
Location Plan



Legend

- Proposed Buildings
- Surrounding Buildings

Rev	Description	Date
01	Second issue	
00	First issue	13/11/2023

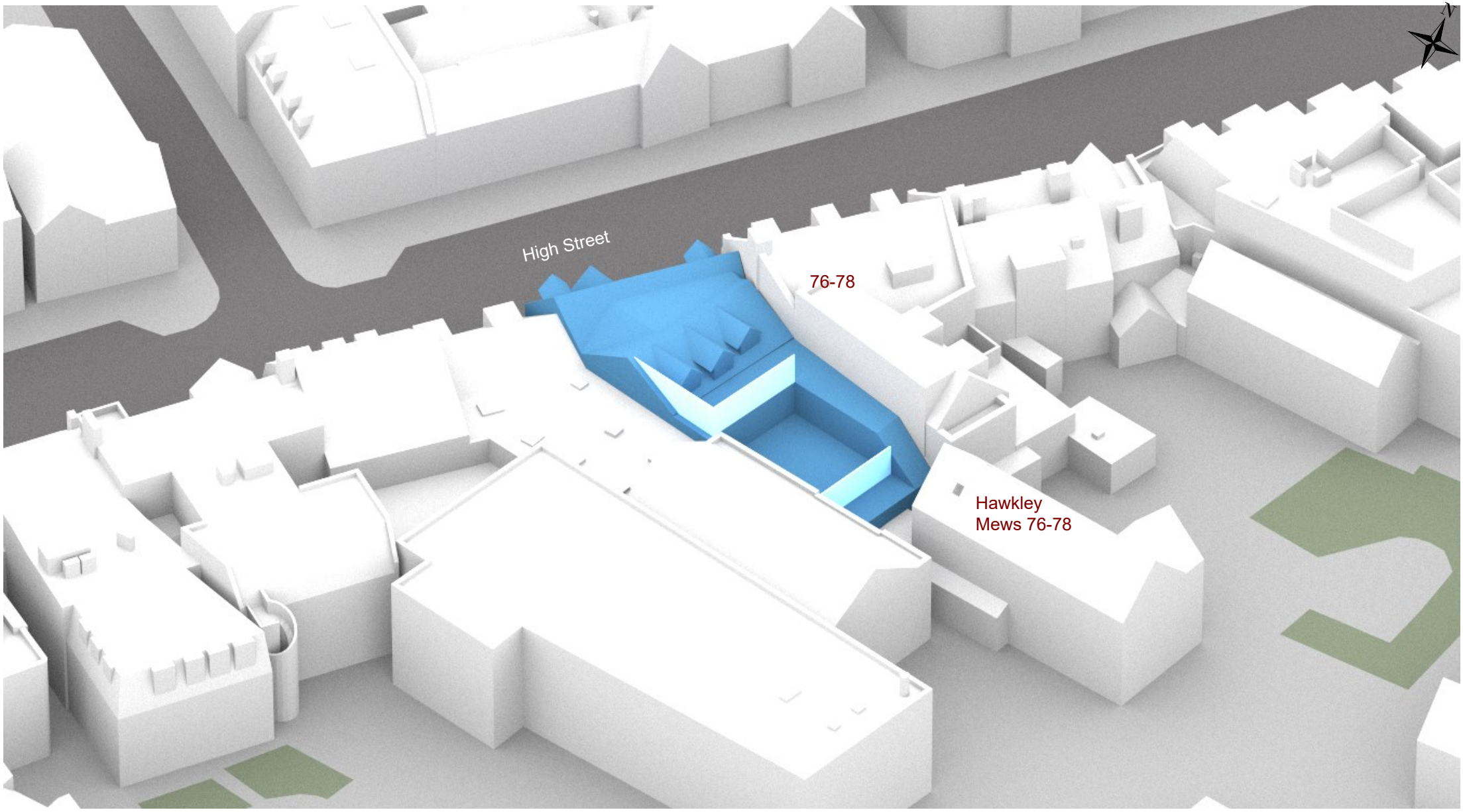
CLIENT: Stephen Vard

PROJECT: High Street(80-82), Billericay

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3767	HA	JP

DWG REF.: 3D Model - Proposed Site Scenarios

DWG No.: 3767_05



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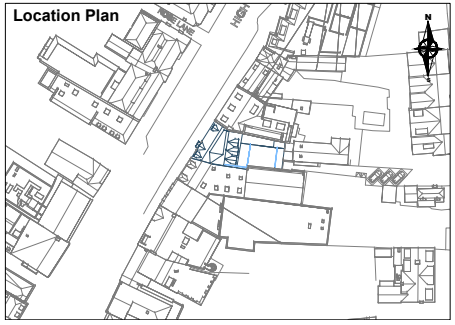
Canterbury | London | Cambridge | Bristol | Leeds

Location Plan



Legend

- Proposed Buildings
- Surrounding Buildings

Rev	Description	Date
01	Second issue	
00	First issue	13/11/2023

CLIENT: Stephen Vard

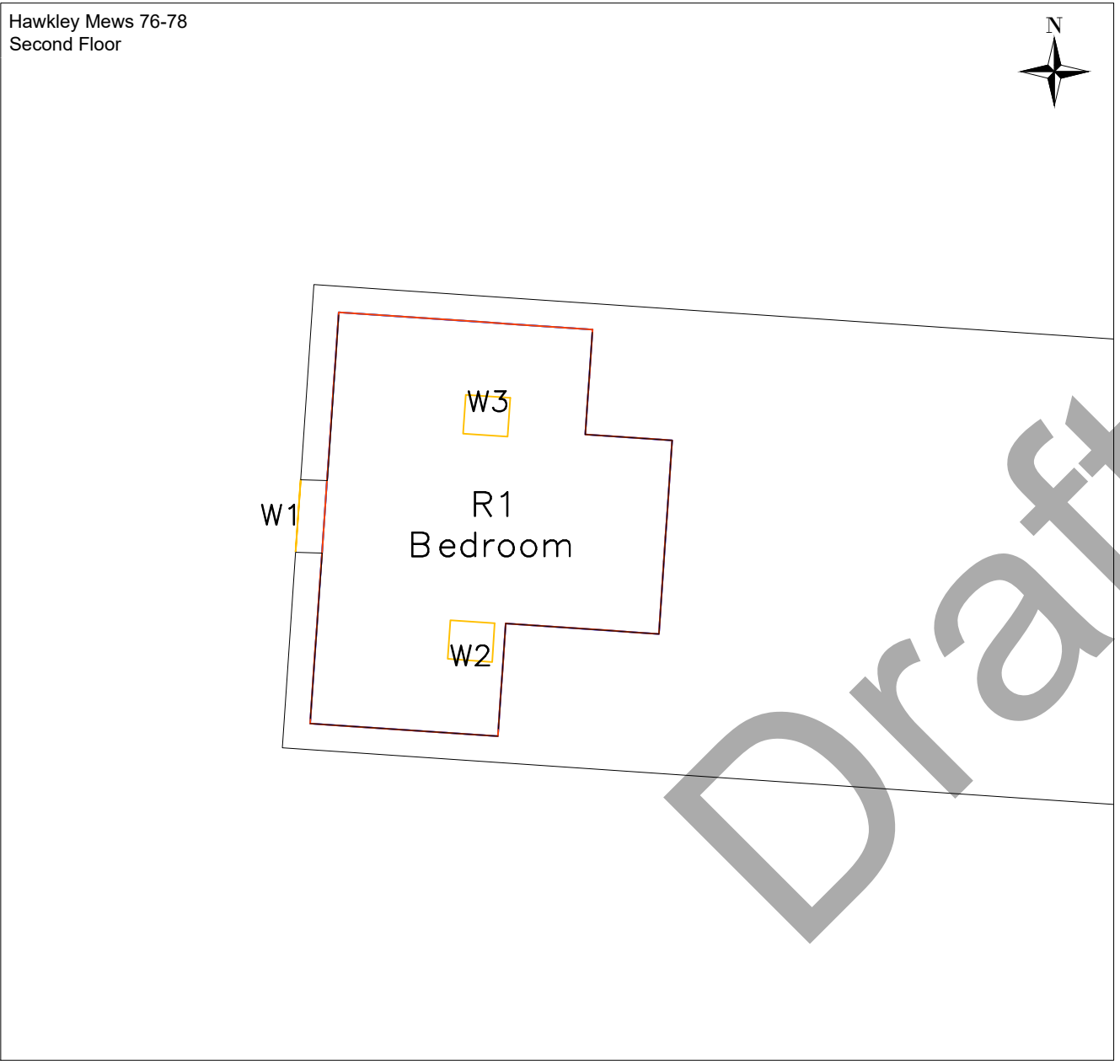
PROJECT: High Street(80-82), Billericay

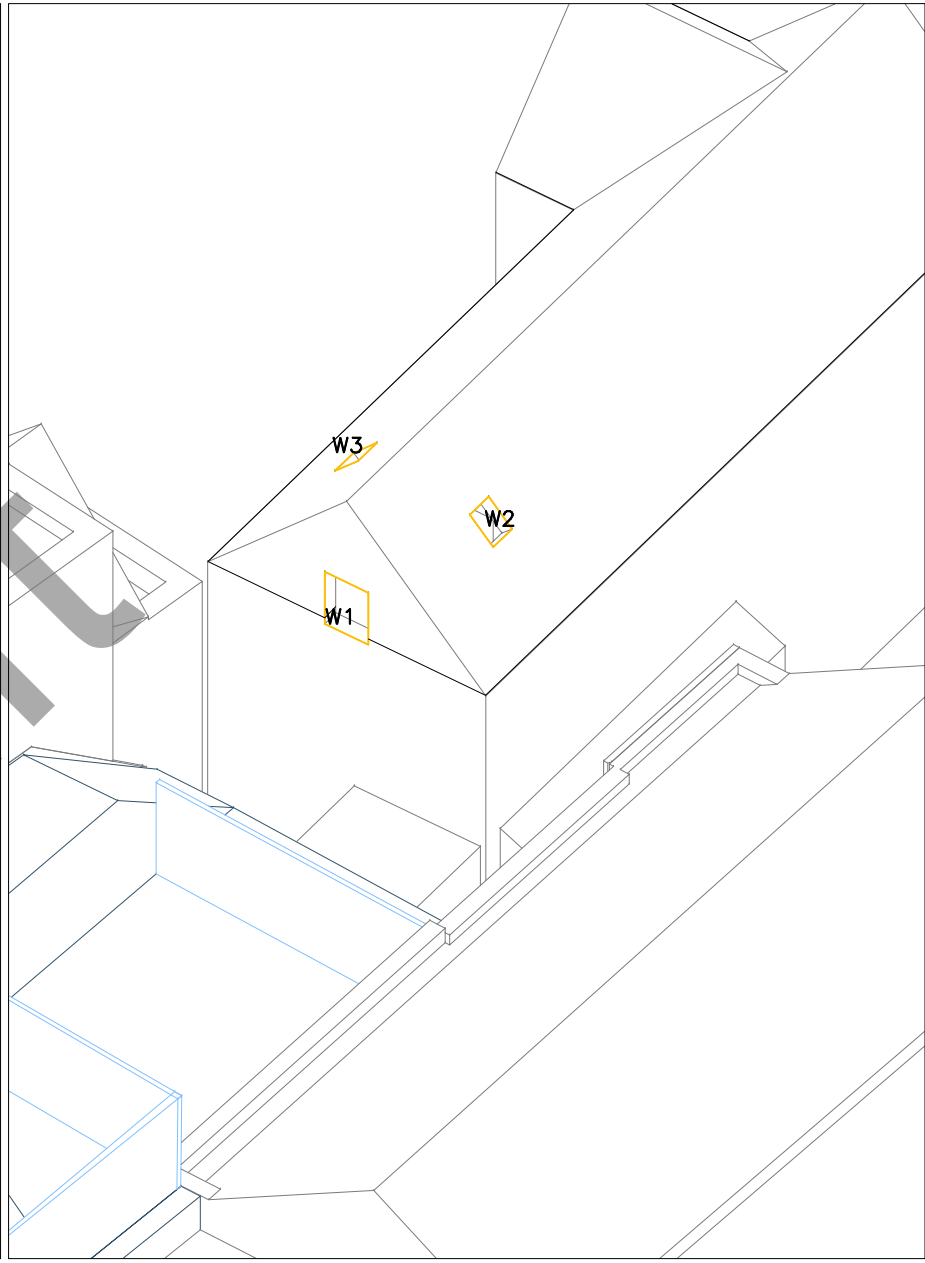
SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3767	HA	JP

DWG REF.: 3D Model - Proposed Site Scenarios

DWG No.: 3767_06

Hawkley Mews 76-78
Second Floor





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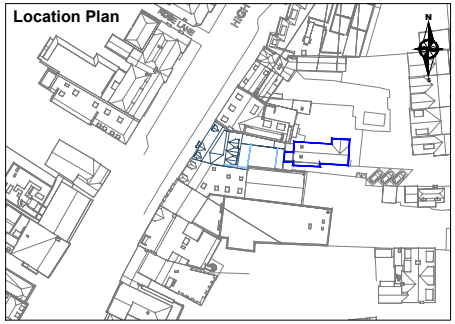
Canterbury | London | Cambridge | Bristol | Leeds

Location Plan



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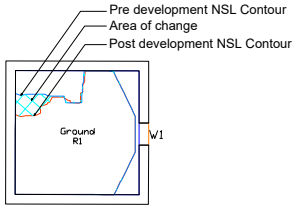

Rev	Description	Date
01	Second issue	
00	First issue	13/11/2023

CLIENT: Ian Stephenson Ltd

PROJECT: High Street(80-82), Billericay

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3767	HA	JP

DWG REF: Location of Window Receptors
NSL contours

DWG No.: 3767_07

Appendix A.3 – Tabulated Results for Daylight & Sunlight Calculations

Project Name: 80-82 High Street, Billericay
Project No.: 3767
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 13/11/2023

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Room VSC	Pr/Ex	Meets BRE Criteria	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
Hawkley Mews, 76-78 High Street																								
Second	R1	Residential	Bedroom	W1	Existing	31.19	0.99	YES	274°N				26.00	*North	*North	4.00	*North	*North						
					Proposed	30.83							26.00			4.00								
				W2	Existing	78.39	1.00	YES	184° Inc				59.00	1.00	YES	22.00	1.00	YES						
					Proposed	78.39							59.00			22.00								
				W3	Existing	75.54	1.00	YES	4°N Inc				0.00	*North	*North	0.00	*North	*North						
					Proposed	75.54							0.00			0.00								
										50.02	1.00	YES							73.00			23.00		
										49.81									73.00	1.00	YES	23.00	1.00	YES

Project Name: 80-82 High Street, Billericay
Project No.: 3767
Report Title: Daylight Distribution Analysis - Neighbour
Date of Analysis: 13/11/2023

Floor Ref.	Room Ref	Property Type	Room Use		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
Hawkley Mews, 76-78 High Street									
Second	R1	Residential	Bedroom	Area m2	17.50	17.50	17.50		
				% of room		100.00%	100.00%	1.00	YES