



Client: Yamuna House Limited

Daylight and Sunlight Assessment for the Development at
The Adam and Eve Public House site, Uxbridge Road, Hayes, London

February 2022



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1 Background and Scope of Appraisal

1.1 Study Objectives

Herrington Consulting has been commissioned by Yamuna House Limited to assess the potential impact of the proposed development at The Adam and Eve Public House site, Uxbridge Road, Hayes, London, 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.

In addition to the assessment of impacts on the neighbouring building, this study also includes an assessment of the natural daylight and sunlight that will be available within the habitable rooms of the proposed development.

1.2 Site Location

The site is located within the London Borough of Hillingdon. The location of the site is shown in Figure 2.1 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 proposals for development are to demolish the rear extension of the existing public house building, and to convert the retained parts of the building into mixed use commercial and residential flats. A new residential building will be constructed at the rear of the site. 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 July 2021)

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

The London Plan – The Spatial Development Strategy for Greater London – (March 2021)

Policy D6 on Housing quality and standards states that

C) Housing development should maximise the provision of dual aspect dwellings and normally avoid the provision of single aspect dwellings. A single aspect dwelling should only be provided where it is considered a more appropriate design solution to meet the requirements of Part B in Policy D3 Optimising site capacity through the design-led approach than a dual aspect dwelling, and it can be demonstrated that it will have adequate passive ventilation, daylight and privacy, and avoid overheating.

'D) The design of development should provide sufficient daylight and sunlight to new and surrounding housing that is appropriate for its context, whilst avoiding overheating, minimising overshadowing and maximising the usability of outside amenity space'.

The London Plan – Supplementary Planning Guidance on Housing (2016)

Policy 7.6Bd on 'Standards for privacy, daylight and sunlight' requires new development to avoid causing 'unacceptable harm' to the amenity of surrounding land and buildings, particularly in relation to privacy and overshadowing and where tall buildings are proposed'. It also states that 'An appropriate degree of flexibility needs to be applied when using BRE guidelines to assess the daylight and sunlight impacts of new development on surrounding properties, as well as within new developments themselves. Guidelines should be applied sensitively to higher density development, especially in opportunity areas, town centres, large sites and accessible locations, where BRE advice suggests considering the use of alternative targets'

In the 'Standards for privacy, daylight and sunlight', Paragraph 1.3.46 states that 'The degree of harm on adjacent properties and the daylight targets within a proposed scheme should be assessed drawing on broadly comparable residential typologies within the area and of a similar nature across London'. Similarly, Paragraph 2.3.47 on 'Daylight and Sunlight' includes the following statement 'Quantitative standards on daylight and sunlight should not be applied rigidly, without carefully considering the location and context and standards experienced in broadly comparable housing typologies in London'.

Standard 32 on 'Daylight and Sunlight' states that 'All homes should provide for direct sunlight to enter at least one habitable room for part of the day. Living areas and kitchen dining spaces should preferably receive direct sunlight'.

Mayor of London SPG – Housing Design Quality and Standards (Pre-consultation Draft 2020)

In Section C5.3 on Daylight, Sunlight and Overshadowing Key Standards it states that when applying the BRE Guidelines in relation to balancing natural light 'Natural light can be restricted in densely developed areas. However, an appropriate degree of flexibility needs to be applied when using BRE guidelines to assess the daylight and sunlight impacts within proposed new homes, as well as the impact that proposed development would have on surrounding homes and open spaces.'

Furthermore, in relation to neighbouring homes it is stated: 'Decision-makers should recognise that fully optimising housing potential on sites may necessitate standards which depart from those presently experienced, but which still achieve satisfactory levels of residential amenity and avoid unacceptable harm.'

Guidelines should be applied sensitively to higher density development, where BRE advice suggests considering the use of alternative targets. This should take into account local circumstances, the need to optimise housing capacity, and the scope for the character and form of an area to change over time.

The BRE guidelines apply nationwide, and the default numerical targets provided are purely advisory. These are based on a uniform, 25 degree development angle (vertical obstruction angle) typical of a low-rise suburban location. This corresponds to the Vertical Sky Component (VSC) target of 27 per cent cited in the guidelines. Typical development angles in a city or central urban location are considerably higher. In Central London, development angles of 40 degree or 50 degree are common and can, if well planned, deliver successful schemes. A uniform development angle of 40 degree corresponds to a VSC target of 18 per

cent, and 50 degree gives a VSC target of 13 per cent. Such daylight levels have been accepted in many desirable central areas for well over a century. *Module A: Optimising Site Capacity - A Design-led Approach* therefore adopts a 50 degree development angle to determine offset distances.

Even with access to good levels of daylight on the outside of a building, it is possible to have low levels of daylight within a building due to design features such as small windows, recessed windows, poor placement of balconies or deep rooms. Therefore, consideration of the retained target VSC should be the principal consideration. Where this is not met in accordance with BRE guidance, it should not be less than 0.8 times its former value (which protects areas that already have low daylight levels).

Less weight should be given to the room-based measures of daylight such as 'no-sky line' or average daylight factor as these are dependent on the design of the neighbouring property. Except in exceptional circumstances, design features of neighbouring properties (referred to above) should not hamper the development potential of a site.'

With regards to applying the BRE Guidelines in relation to proposed homes, the guidance provides the following Key Standards:

- C5.3.1 New dwellings should achieve a minimum average daylight factor (ADF) target value of 1 per cent for a bedroom and 1.5 per cent for a living room.
- C5.3.2 Proposed development should maximise quality and availability of sunlight and natural light in outdoor spaces, particularly in winter. Outdoor

spaces should benefit from at least two hours of daylight on 21st March into 50 per cent of space in line with BRE guidance.

- C5.3.3 All homes must provide for direct sunlight to enter at least one habitable room for part of the day. Living areas and kitchen dining spaces should preferably receive direct sunlight.

It also states that '*Room based measures of daylight and sunlight are most appropriate for judging the acceptability of a proposed development, as these encourage good daylight design. Appropriate 3D modelling should be used to demonstrate acceptable levels.*

BRE guidelines confirm that the acceptable minimum average daylight factor target value depends on the room use. That is 1 per cent for a bedroom, 1.5 per cent for a living room and 2 per cent for a family kitchen. In cases where one room serves more than one purpose, the minimum ADF should be that for the room type with the higher value. Notwithstanding this, the independent daylight and sunlight review states that in practice, the principal use of rooms designed as a 'living room/kitchen/dining room' is as a living room. Accordingly, it would be reasonable to apply a target of 1.5 per cent to such rooms.

The need for balconies to be a minimum depth so as to function as usable amenity space, (see C4 Dwelling Space Standards), can have significant bearing on the daylight and sunlight levels reaching nearby windows and rooms. Inevitably, any window or room under a balcony will receive much lower daylight and sunlight levels, although the adjacent balcony space will typically have excellent levels of daylight and sunlight amenity. Given this, the Mayor encourages boroughs to allow the daylight levels on the balcony to contribute to the ADF of the adjacent living space.

With regarding to overshadowing, it states that '*The BRE guidelines recommend that at least half of private amenity and public open space should receive at least two hours of sunlight on March 21. Development should be designed to maximise sunlight in these spaces, particularly during the winter, and at least meet the BRE guidelines. The design of outside communal space should be planned so that seating areas or play space are located in the areas that are most likely to receive sunlight.*'

2.3 Local Planning Policy

Local Plan: Part 1 – Strategic Policies (Adopted November 2012)

Paragraph 6.23 under 'Design and Density' states that 'High quality design for new homes will continue to be a priority for the Council and the type of dwellings provided should reflect housing needs identified in the borough, particularly the need to provide more family homes with adequate garden space...The density of residential development should take account of the need to optimise the potential of sites compatible with local and historic context, while respecting the quality, character and amenity of surrounding uses.'

Local Plan: Part 2 – Development Management Policies (Adopted Version January 2020)

Paragraph 5.33 under 'High Buildings and Structures' states that 'High buildings and structures are likely to have a greater effect on their surroundings than other building types, because of their potential significant visual impact, impact on the transport network, microclimate and surrounding occupiers' daylight and sunlight.'

Paragraph 5.41 under 'Design of New Development' states that 'The Council will aim to minimise the impact of the loss of daylight and sunlight and unacceptable overshadowing caused by new development on habitable rooms, amenity space and public open space. The council will also seek to ensure that the design of new development optimises the levels of daylight and sunlight. The Council will expect the impact of the development to be assessed following the methodology set out in the most recent version of the Building Research Establishments (BRE) "Site layout planning for daylight and sunlight. A good to good practise".

Policy DMHB 11: Design of New Development states that 'Development proposals should not adversely impact on the amenity, daylight and sunlight of adjacent properties and open spaces'.

Paragraph 5.72 under 'Private and Outdoor Amenity Spaces' states that 'Private outdoor amenity space will be required to be well located, well designed and usable for the private enjoyment of the occupier. In assessing the quality of all amenity space in development proposals, whether individual or communal, consideration will be given to the shape and position and whether the layout has regard to matters such as daylight and sunlight, noise, enclosure and privacy.'

Policy DMH 5: Houses in Multiple Occupation (HMOs) and Student Accommodation states that 'Proposals for the provision of large HMOs, residential hostels, student accommodation and secure accommodation will be required to demonstrate that: iii) there will be no adverse impact on the amenity of neighbouring properties of the character of the area'.

Paragraph 5.65 under 'Residential Density' states that 'A habitable room is defined as a room within a dwelling, the primary use of which is for living, sleeping or dining. This definition includes living rooms, dining rooms, bedrooms, studies and conservatories but excludes halls, corridors, bathrooms and lavatories. For the purpose of this policy, kitchens which provide spaces for dining and have windows, will be considered habitable rooms and should be fully considered as part of the assessment of amenity impacts'.

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', Second Edition, 2011; 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.

In conjunction with the BRE Guidelines further guidance is given within the British Standard (BS) 8206-2:2008: 'Lighting for buildings - Part 2: Code of practice for daylighting'.

In this assessment, the BRE Guidelines have been used to establish the extent to which the Proposed Development meets current best practice guidelines. In cases where the Development is likely to reduce light to key windows the study has compared results against the BRE criteria.

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.

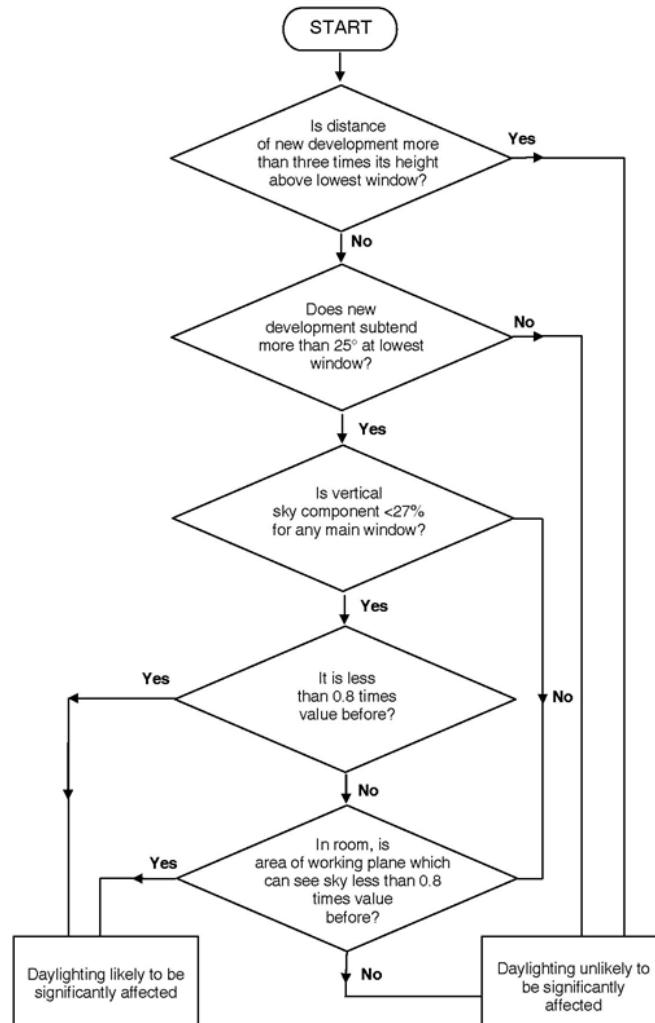
3 Assessment Techniques

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.

When assessing the provision of daylight to a new development, the BRE Guidelines state that if a significant area of the working plane (normally more than 20%) lies beyond the No Sky Line then the daylight distribution within the room will be poor and supplementary electric lighting will be required.

One benefit of this test is that the resulting contour plans show where the light falls within a room and a judgment can be made as to whether the room will retain light to a reasonable depth. However, this method can only be accurately used to examine the daylight distribution within the rooms where the layout and dimensions are known. In the case of the proposed development, room layouts are replicated from the floor plans provided by the architects or developer. When assessing the impact of a new development on the daylight distribution within existing buildings, however, such information may not be available. As consequence, the internal layout and dimensions of the affected room(s) must then be estimated based on the property type and its overall layout.

3.4 Average Daylight Factor

The Average Daylight Factor (ADF) method calculates the average illuminance within a room as a proportion of the illuminance available to an unobstructed point outdoors under a sky of known luminance and luminance distribution. This is the most detailed of the daylight calculations and considers the physical nature of the room behind the window, including; window transmittance, and surface reflectivity.

This method of quantifying the availability of daylight within a room does, however, require the internal layout to be known and is generally only used for establishing daylight provision in new rooms. The BRE Guide sets out the following guidelines for the assessment of the ADF:

If a predominantly daylit appearance is required, then the ADF should be 5% or more if there is no supplementary electric lighting, or 2% or more if supplementary electric lighting is provided. In dwellings, the following minimum average daylight factors should be achieved: 1% in bedrooms, 1.5% in living rooms and 2% in kitchens.

3.5 Room Depth Criteria

The BRE Guidelines do include advice for determining recommended room depths to proposed new rooms under specific circumstances using the Room Depth Criteria (RDC). This is more of a rule-of-thumb test that can be used to plan building layouts etc at an early conceptual stage, rather than providing quantitative outputs at the more detailed stage of a development.

This test has numerous limitations when being applied to anything but a simplistic room layout and does not take into account external obstructions. It is therefore

not considered to provide any meaningful data on the level or distribution of daylight that is not already provided by the ADF and NSL tests. Consequently, it is only applied in very particular situations.

3.6 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 facing 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.

3.7 **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
- Measured survey data including elevations of neighbouring properties with location of windows (Warner Surveys, London – April 2017)
- Scheme drawings in AutoCAD format (Bernard Murray Design – January 2022)
- Photographic information provided by collected during a site visit carried out on 7th April 2017
- 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.

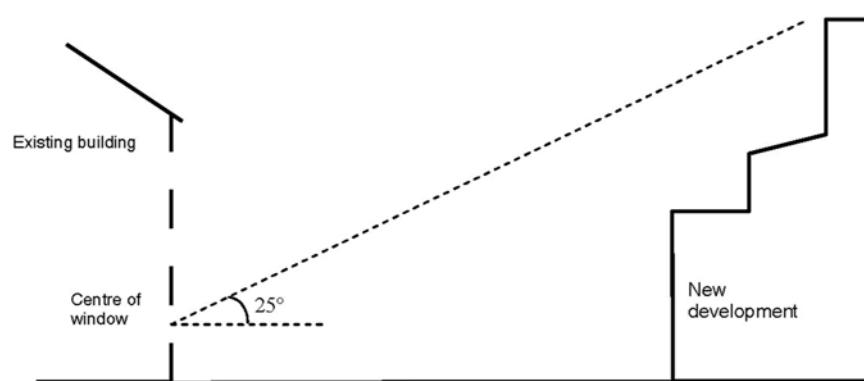


Figure 4.1 – Graphical representation of the 25° Rule (indicative buildings used for illustration purposes only)

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 than 13m² 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, habitable rooms in the following residential buildings have been identified as potential sensitive receptors and have therefore been tested.

- House 6 Abbeyfield Residential Care Home / Assisted Living
- No. 6 – 8 Legion House
- No. 812 Uxbridge Road
- No. 814 Uxbridge Road (Eden House)
- No. 832 Uxbridge Road
- 6 Marshall Drive

4.3 Numerical Modelling

The numerical analysis used in this assessment has been undertaken using the Waldrum Tools (Version 5.0.0.6) 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 ADF 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.

Location / setting	Building type (Residential – good maintenance)	Exposure (normal)	Special exposure	Maintenance Factor
Urban	8%	x 1.0	x 1.0	0.92
Rural / suburban	4%	x 1.0	x 1.0	0.96

Table 4.1 – Parameters used for deriving Maintenance Factor (refer to BS 8206-2:2008 Tables A3, A4 and A5)

- The reflectance values used in the ADF analysis of neighbouring buildings are based on typical values for internal surfaces. Where information on internal finishes is not available, the default value of 0.5 prescribed by the BRE Guidelines is adopted.
- The reflectance values used in the ADF analysis of the proposed new buildings are shown in Table 4.2 below and are used unless specified otherwise by the designer:

Surface	Value
Internal walls (painted pale cream)	81%
Internal ceiling (painted white)	85%
Internal flooring	30%

Table 4.2 – Reflectance values used in ADF analysis

- 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 and, if applicable, ADF 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 is 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.
- Where the results of the detailed analysis are presented in the appendix to 2 decimal places, these values may be rounded to a single decimal place when interpreting the results and discussing compliance with assessment criteria. This is to fit with the convention adopted within the BRE Guidelines where all ratio of change values are expressed to one decimal place.

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 4.3 – 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 buildings. 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
832 Uxbridge Rd	7	7	100%	0	0	0
814 Uxbridge Rd (Eden House)	9	9	100%	0	0	0
812 Uxbridge Rd	1	1	100%	0	0	0
6-8 Legion House	7	7	100%	0	0	0
House 6 Abbeyfield Residential Home	13	13	100%	0	0	0
Total	37	37	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 this case the dimensions and exact layout of the rooms within the neighbouring buildings are not known, although planning information was obtained for the Abbeyfield Care Home. Therefore, as is considered best practice, the rooms within buildings for which internal layout information is not available have been assumed with a depth appropriate to the buildings size.

The results of the No Sky Line/Daylight Distribution analysis are summarised in Table 5.2.

Property	Number of Rooms Tested	Rooms that meet BRE Guidelines		No Sky Line		
		No.	%	Minor adverse	Moderate adverse	Major adverse
832 Uxbridge Rd	5	5	100%	0	0	0
814 Uxbridge Rd (Eden House)	9	9	100%	0	0	0
812 Uxbridge Rd	1	1	100%	0	0	0
6-8 Legion House	5	5	100%	0	0	0
House 6 Abbeyfield Residential Home	5	5	100%	0	0	0
Total	25	25	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 rooms 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.

5.3 Summary of Daylighting Impacts

The proposed development at The Adam and Eve Public House site, Uxbridge Road, Hayes, London 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 properties. Five neighbouring buildings have been identified as sensitive receptors for this study (see Tables 5.1 and 5.2) and therefore, the habitable rooms and the windows serving these rooms have been tested.

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 rooms of the neighbouring buildings will not be significant and is unlikely to be noticeable by the occupants.

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.

Property	Number 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.	%	
832 Uxbridge Road	2	2	100%	0	2	100%	0
814 Uxbridge Road (Eden House)	*tested windows face within 90 degrees of due north*						
812 Uxbridge Road	*tested windows face within 90 degrees of due north*						
6-8 Legion House	7	7	100%	0	7	100%	0
House 6 Abbeyfield Residential Home	11	11	100%	0	11	100%	0
Total	20	20	100%	0	20	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 all windows serving habitable rooms pass at least two of the three sunlight tests. Consequently, it has been demonstrated that the proposed scheme will have a negligible impact on neighbouring buildings.

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 2011 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.

From inspection of aerial photographs and site-specific photos, the only amenity area in close enough proximity to the proposed development site is the eastern garden within the Abbeyfield Residential Home site. The results of the sun on the ground analysis are summarised in Table 7.2 and the graphical results of the overshadowing analysis are included in Appendix A.2.

Amenity area	Percentage of area lit for 2 hours or more on the 21 st March		Ratio of change	Compliant with BRE criteria?
	Existing	Proposed		
House 6 Abbeyfield Residential Home	50%	50%	n/a	Yes

Table 6.2 – Results of the Sun on Ground analysis

From the above results, it can be seen that with the proposed scheme in place, the amenity area benefits from two hours or more of direct sunlight to 50% of its area on the 21st March. In addition, it can be seen that as a result of the proposed development, the sunlight available to this amenity area will not be reduced by more than 20% which is the acceptable reduction limit prescribed by the BRE Guidelines.

Consequently, it can be concluded that the proposed development will not result in a noticeable increase in overshadowing to the neighbouring amenity areas.

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 Daylight and Sunlight Provision to Proposed Development

7.1 Overview

As discussed in Section 4, the primary test for daylight within the proposed development is the Average Daylight Factor (ADF) test and this is discussed in detail in the following section. The No Sky Line (NSL) analysis has also been carried out to provide supporting information on the distribution of daylight within each of the habitable rooms. The NSL results are processed by the computational model in both graphical and numerical formats and these are included in the appendix to this report.

It is the intention of the BRE Guidelines to aid, rather than constrain the designer and as such a range of qualitative and quantitative tests are outlined, which vary in complexity. During the early stages of design, it is often appropriate to use the more simplistic rule-of-thumb tests. However, when assessing a final design at the planning application stage, it is more appropriate to rely upon the more detailed and quantitative analysis techniques. These allow window size and position, glazing type, room layout and dimensions etc to be taken into consideration. Consequently, the assessment of natural daylight provision has been based primarily on the results of the ADF test, although reference to the NSL results is made when deemed necessary.

7.2 Assessment of Daylight Provision to New Rooms

Using the analytical techniques discussed in Section 4, the Average Daylight Factor (ADF) for the habitable rooms within the proposed development has been calculated.

It is first important to note that in accordance with the guidance set out in both the BRE Guidelines and the BS 8206-2:2008 document, rooms that have a dual use, i.e. an open plan kitchen and lounge, are assessed as a single room and assessed against the room use with the highest daylighting requirement.

The results of the ADF analysis are included within Appendix A.4 of this report and from these it can be seen that all of the habitable rooms within each of the 6 units meet the BRE assessment criteria.

It can also be seen from the results of the No Sky Line analysis that all of the habitable rooms benefit from excellent daylight distribution, with every room having over 90% of the lit area of the working plane benefiting from a direct sky view.

Consequently, it can be concluded that these habitable spaces will be well lit throughout the year and will have a reduced reliance on supplementary electric lighting.

7.3 Provision of Sunlight to New Rooms

The BRE Guidelines provide guidance in respect of sunlight quality for new developments stating: "in housing, the main requirement for sunlight is in living rooms, where it is valued at any time of the day, but especially in the afternoon. Sunlight is also required in conservatories. It is viewed as less important in

bedrooms and in kitchens where people prefer it in the morning rather than the afternoon."

The assessment criteria set out within the BRE document are discussed in Section 4.3 of this report, but in general terms the overall objective sought by the guidelines is as follows:

"In general, a dwelling or non-domestic building which has a particular requirement for sunlight, will appear reasonably sunlit provided that at least one main window faces within 90 degrees of due south; and the centre of at least one window to a main living room can receive 25% of annual probable sunlight hours, including at least 5% of annual probable sunlight hours in the winter months between 21st September and 21st March.

It is also worth noting that in paragraph 3.1.11 of the BRE guidance it is suggested that if a room faces significantly north of due east or west it is unlikely to meet the recommended levels of sunlight. A further observation from paragraph 5.3 of the BS 8206-2 is that with regards to sunlight duration, the degree of satisfaction is related to the expectation of sunlight. Therefore, if a room is north facing or if the building is in a densely-built urban area, the expectation of sunlight will be lower.

It should be noted that where rooms have more than one window, 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.

The detailed results of the APSH analysis are set out in Appendix A.4 of this report and from these a number of observations can be made.

Firstly, the 6 plots of terraced dwellings are aligned such that the front elevation faces due south (209 degrees) and the rear elevation is north facing (29 degrees). Due to the configuration of the site, there are very limited opportunities to change this configuration.

As would be expected, the bedrooms and kitchens with south-facing windows all achieve very high levels of direct sunlight, however, the two rooms with north-facing windows do fall below the aspirational BRE target values for 'all year' and 'winter' sunlight. Notwithstanding this, these rooms do still achieve very reasonable levels of sunlight and for the living room in particular, when the ADF value for all rooms (in excess of 5%) is taken into account, it is evident that this room will be very well lit throughout the year.

Therefore, when considering the direct sunlight to each dwelling, it can be seen that the overall provision is very good. In addition, when assessed against the criteria set out in the London Plan – Supplementary Planning Guidance on Housing (2016) it can be seen that all units meet in full the requirements of Standard 32 on 'Daylight and Sunlight'.

7.4 Direct Sunlighting to Amenity Spaces

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 worst situation is to have

significant areas on which the sun does not shine for a large part of the year. These areas would, in general, be damp, chilly and uninviting.

The BRE Guidelines set out the following principle benefits of sunlight in the spaces between buildings:

- To provide attractive sunlit views (all year)
- To make outdoor activities, like sitting out and children's play more pleasant (mainly during the warmer months)
- To encourage plant growth (mainly in spring and summer)
- To dry out the ground, reducing moss and slime (mainly during the colder months)
- To melt frost, ice and snow (in winter)
- To dry clothes (all year)

The assessment criteria set out within the BRE Guidelines is based on the recommendation that for an amenity space to appear adequately sunlit throughout the year, at least half of this area should receive at least two hours of sunlight on 21st March.

Inspection of the site plan shows each dwelling has its own garden space located at the rear of the terrace and there is a slightly larger HMO shared garden in the north east corner of the site.

From the results of the equinox test (21st March) in Appendix A.4 it can be seen both the amenity area serving Plot 1 and the HMO shared garden exceed 50%

lit area for 2 hours or more at this time of year. Although the private amenity areas serving plots 2-6 are receiving 2 hours or more of direct sunlight to less than 50% of their area, this is not uncommon in urban locations, where north facing gardens are necessary to make efficient use of the site.

In circumstances such as this, it is often beneficial to carry out the test on the 21st June so as to better understand the provision of sunlight to the garden area during the summer months when outside space is used most often. The results of this analysis are also included within Appendix A.4 and from these it is evident that in the summer, all of the proposed gardens will benefit from over 2 hours of direct sunlight to at least 90% of their total area.

Taking into account the results of the summer analysis, and that the shared HMO garden is fully compliant with March target values, it is considered that proposed development will provide the amenity benefits that the guidelines seek to achieve.

8 Conclusions

The detailed analysis undertaken as part of this assessment has examined the impact of the proposed development at The Adam and Eve Public House site, Uxbridge Road, Hayes, London, on the amount of daylight enjoyed by the neighbouring buildings. Five residential properties have been identified as sensitive receptors for this study, and therefore, the habitable rooms and the windows serving these rooms 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 buildings 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 buildings 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 buildings has also shown that despite some small reductions seen in the number of probable sunlight hours, these are again within the limits prescribed by the BRE Guidelines as being acceptable. Furthermore, the assessment of the sunlight available to the neighbouring amenity areas indicates that the garden at Abbeyfield Residential Home will not experience any change to the sunlight levels it currently enjoys.

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 buildings.

In addition to the impact on its neighbours, the provision of natural daylight and sunlight to the habitable rooms within the proposed development itself has also been quantified. This analysis has shown that all habitable rooms exceed the minimum target values for natural daylight set out within the BRE Guidelines and the British Standards. Consequently, it can be concluded that these habitable spaces will be well lit and will have a reduced reliance on supplementary electric lighting.

It has also been possible to demonstrate that each of the proposed houses will receive good levels of direct sunlight both 'all year' and during the winter months. As a consequence of the light and additional visual interest provided by this direct sunlight, the amenity value of these rooms will be enhanced.

A Appendices

Appendix A.1 – Scheme Drawings

Appendix A.2 – Graphical Model Outputs

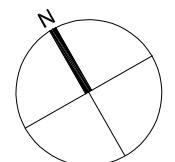
Appendix A.3 – Tabulated Results for Daylight & Sunlight Calculations (Impact on Neighbours)

Appendix A.4 – Tabulated Results for Daylight & Sunlight Calculations (Provision to New Development)

Appendix A.1 – Scheme Drawings



SOUTH ELEVATION



0 0.5 1 Metres 3 4
Scale 1:100

AMENDMENTS DATE REV.
Dimensions, areas and levels where given are only approximate and subject to site survey.
All dimensions are to be checked on site. Figured dimensions only are to be taken from this drawing.
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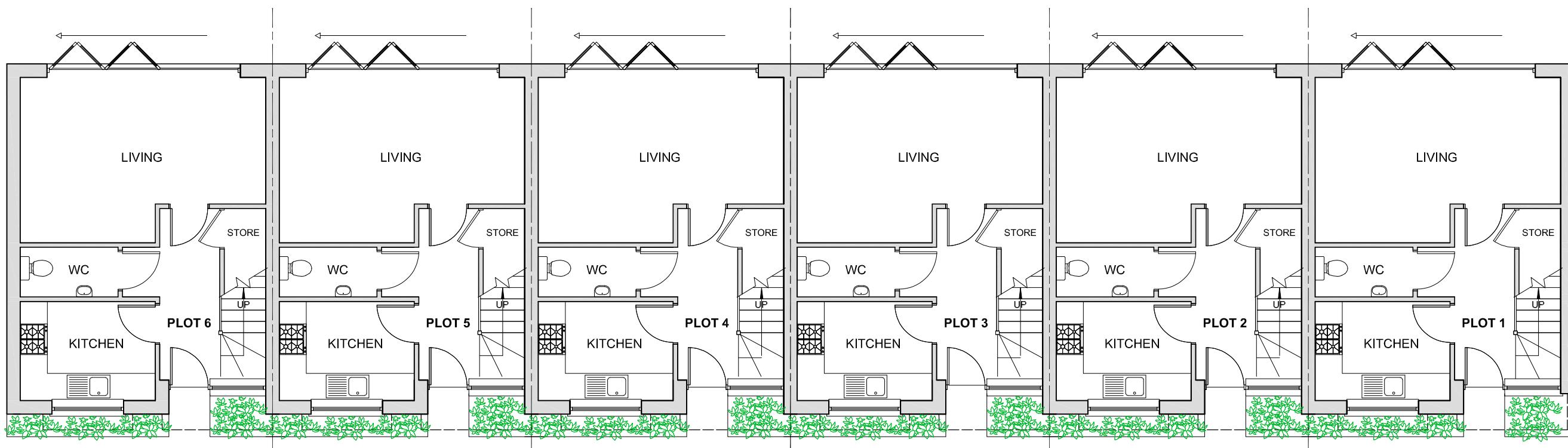
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PROJECT
ADAM & EVE PUBLIC HOUSE
830 UXBRIDGE ROAD
HAYES
UB4 0RR

CLIENT
YAMUNA HOUSE LTD

DRAWING
PROPOSED GROUND FLOOR
PLAN AND SOUTH ELEVATION

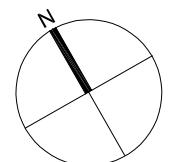
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DATE OCT 2021 DRAWN BM 1129-18



GROUND FLOOR PLAN



SOUTH ELEVATION



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Scale 1:100

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Dimensions, areas and levels where given are only approximate and subject to site survey.
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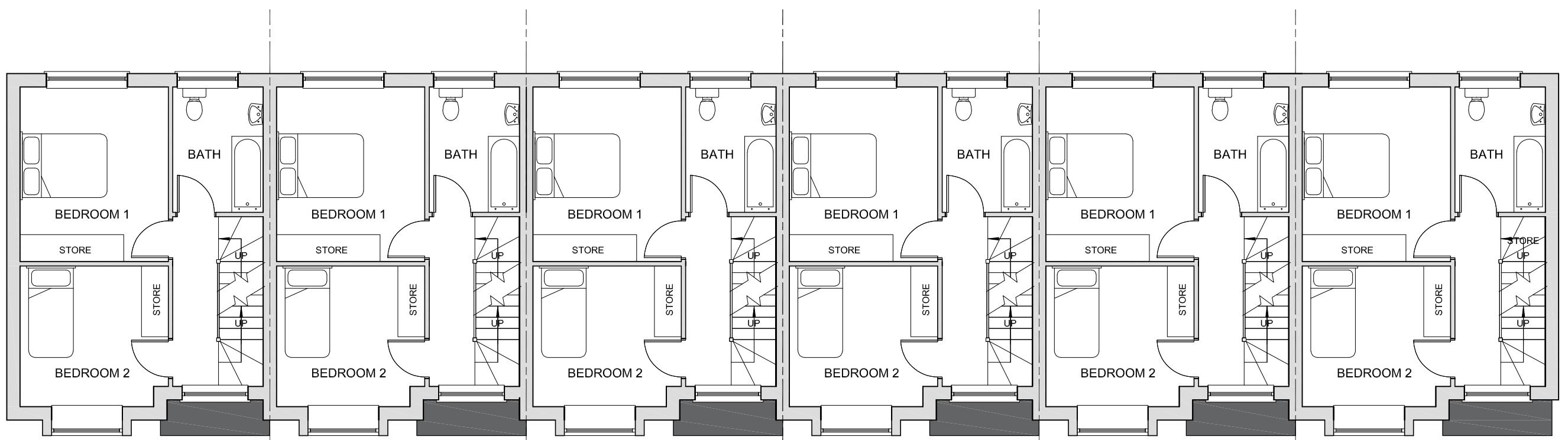
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PROPOSED FIRST FLOOR
PLAN AND NORTH ELEVATION

SCALE 1:100 @ A3 DRAWING NUMBER REV.

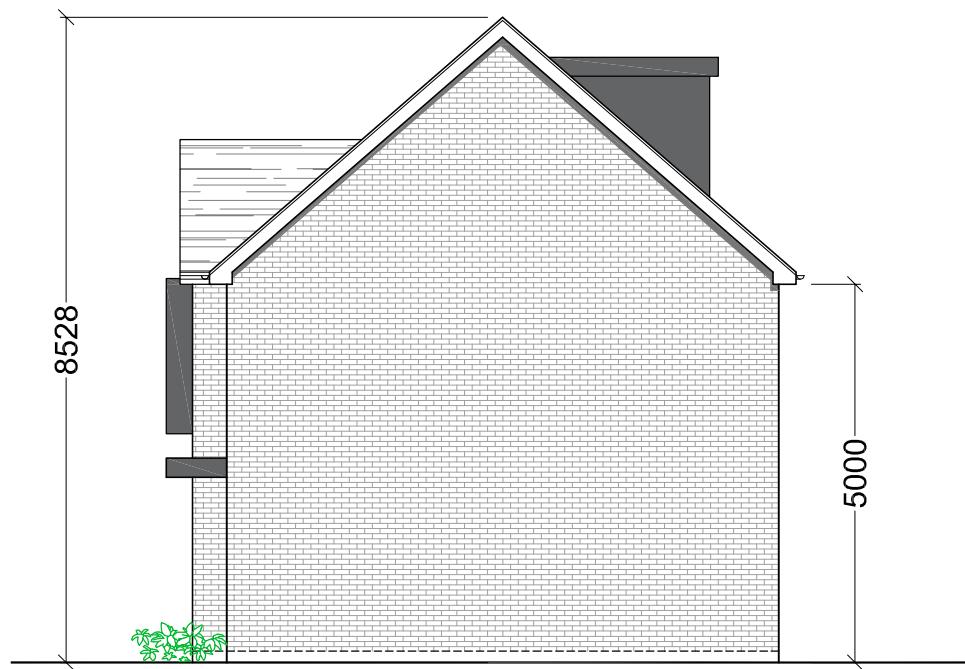
DATE OCT 2021

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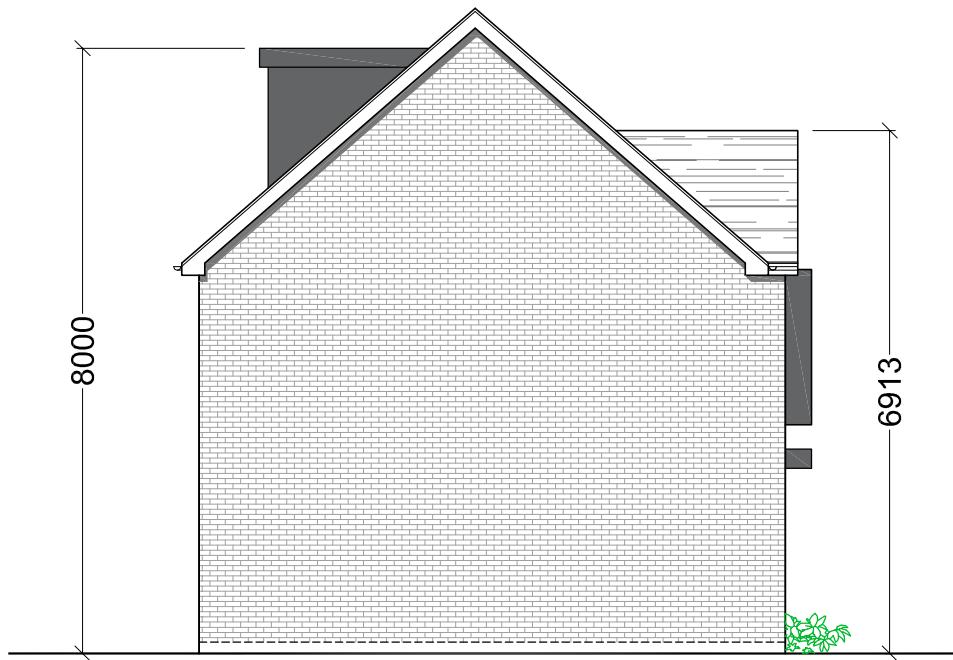
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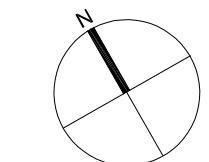
FIRST FLOOR PLAN



EAST ELEVATION



WEST ELEVATION



0 0.5 1 Metres 3 4
Scale 1:100

AMENDMENTS DATE REV.

Dimensions, areas and levels where given are only approximate and subject to site survey.
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PROJECT
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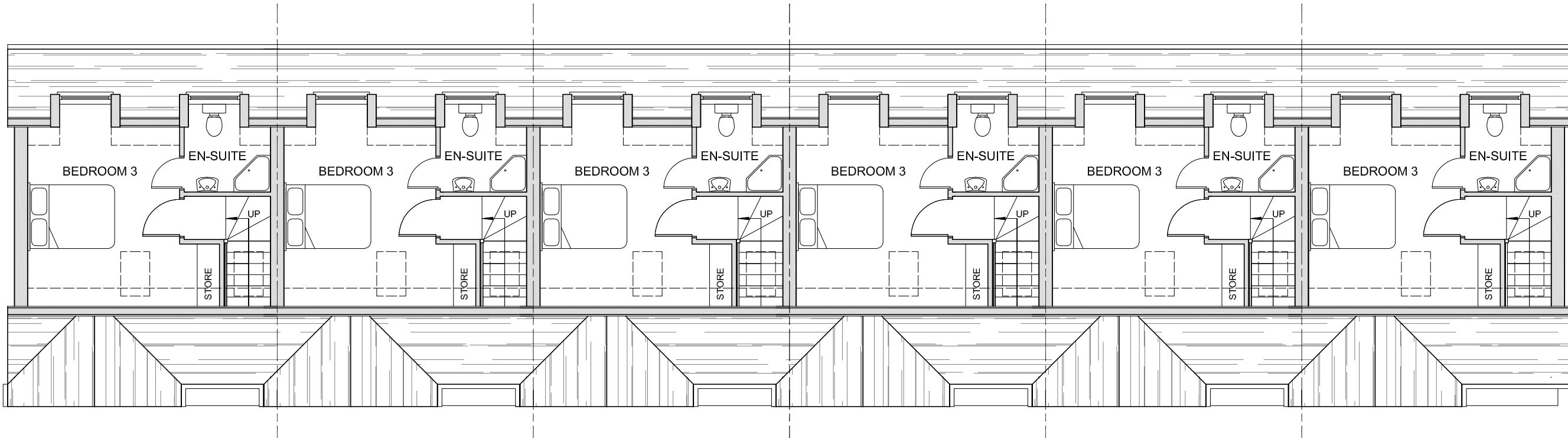
CLIENT
YAMUNA HOUSE LTD

DRAWING
PROPOSED LOFT FLOOR
PLAN AND ELEVATIONS

SCALE 1:100 @ A3 DRAWING NUMBER REV.

DATE OCT 2021 DRAWN BM

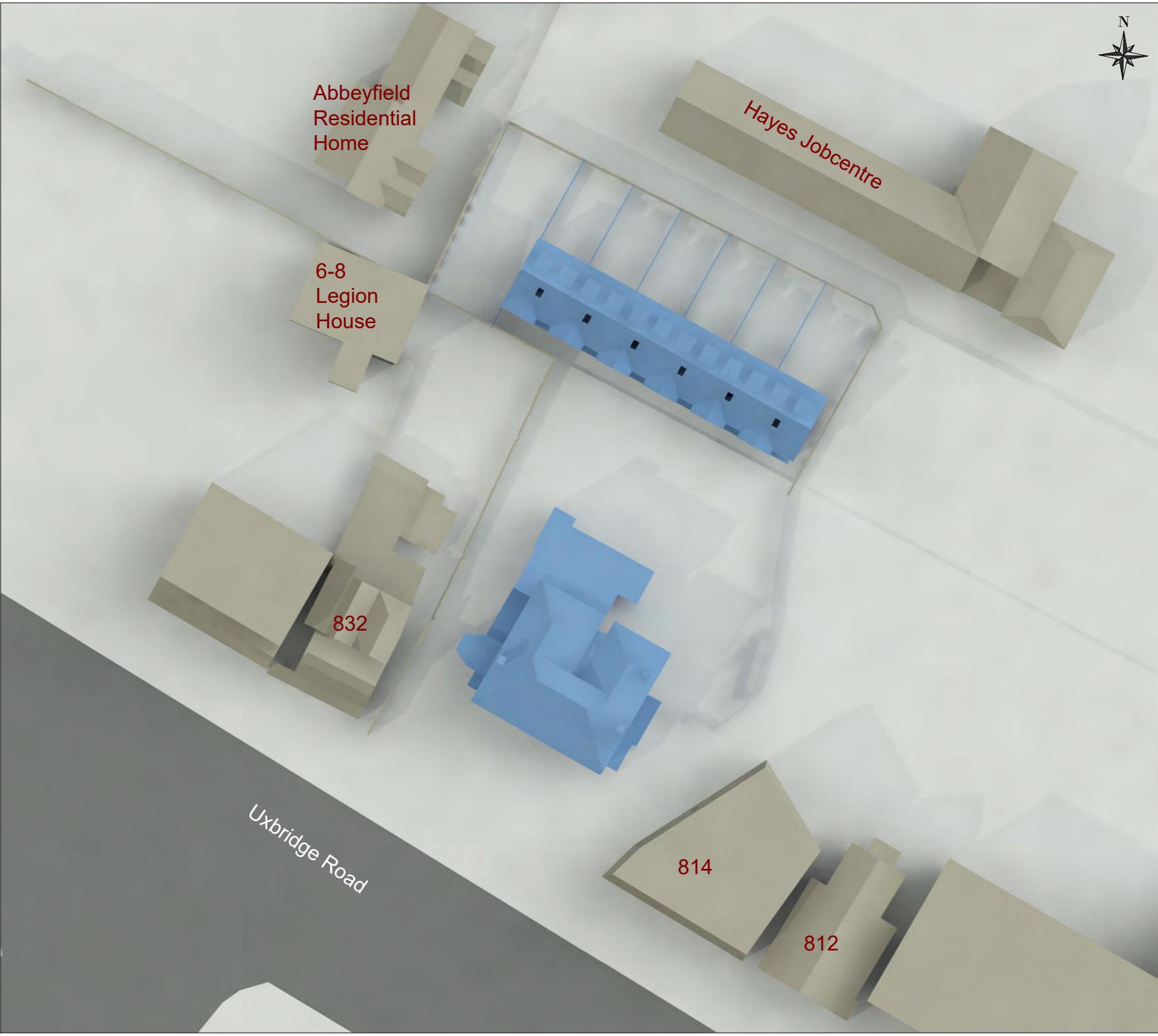
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LOFT FLOOR PLAN



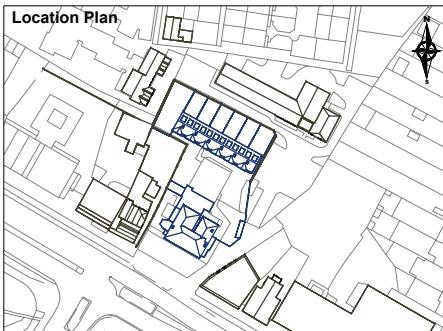
Appendix A.2 – Graphical Model Outputs



Legend

- Proposed Buildings
- Surrounding Buildings

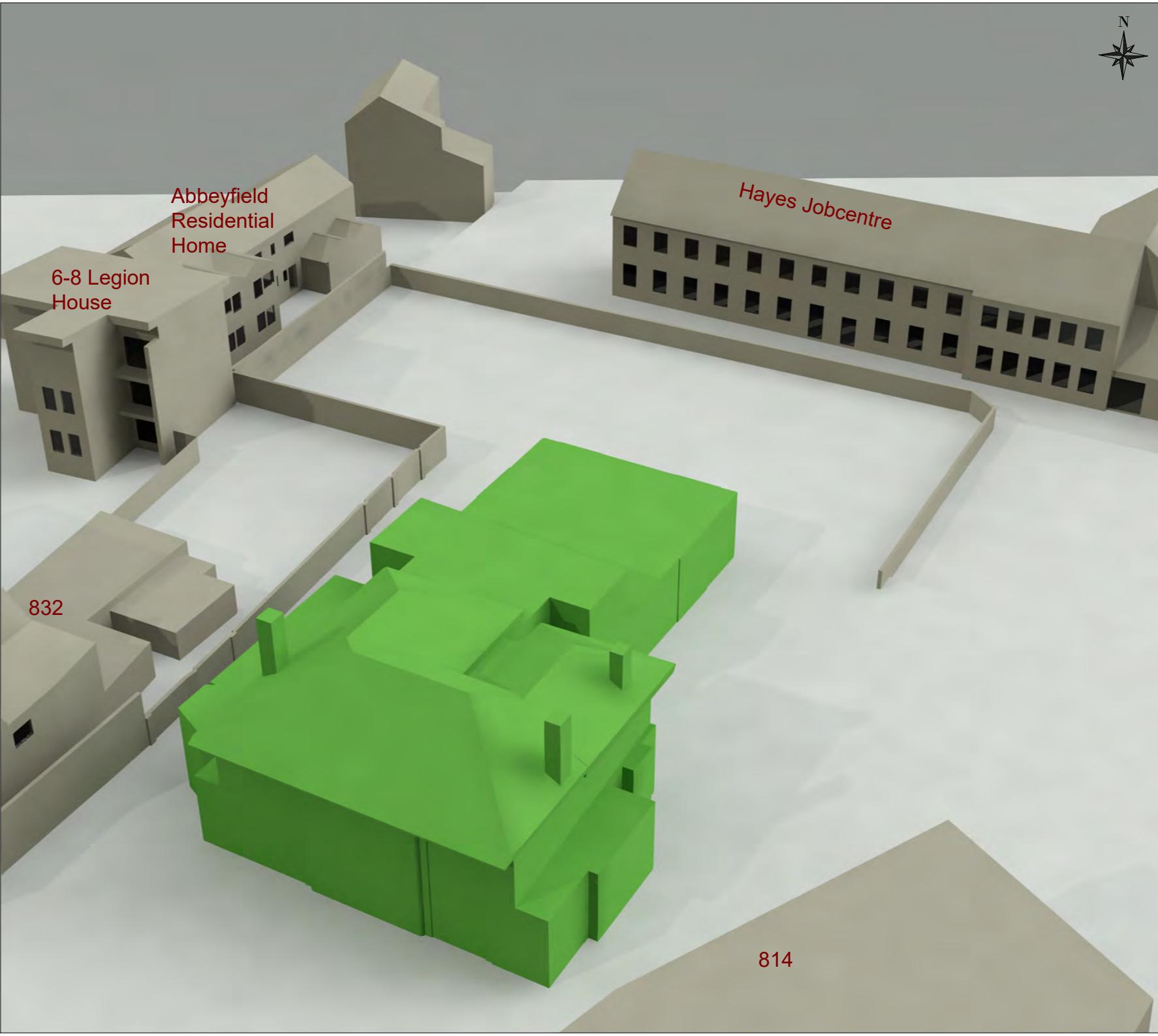
Location Plan



Rev	Description	Date
02	Amended scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

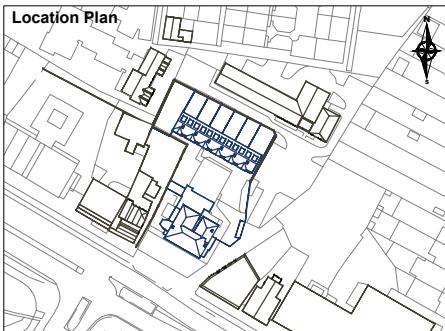
CLIENT	Yamuna House Ltd	
PROJECT	Adam & Eve Pub Site, Uxbridge Road, Hayes, London	

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	1768	KC	JP
DWG REF.			DWG No.
3D Model - Location Plan			1951_01



Legend

- Proposed Buildings
- Surrounding Buildings



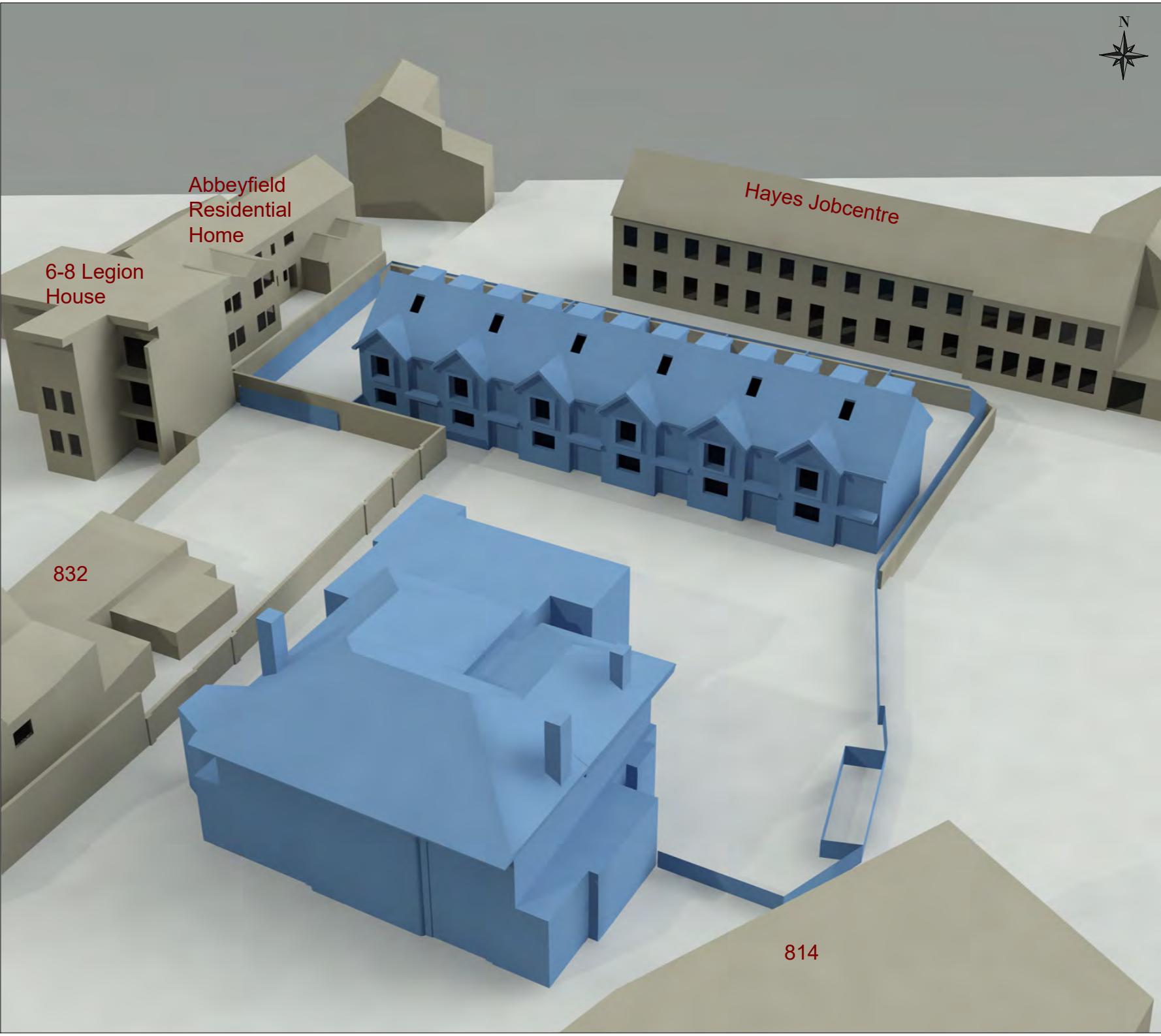
Rev	Description	Date
02	Amended scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

CLIENT	Yamuna House Ltd
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PROJECT	Adam & Eve Pub Site, Uxbridge Road, Hayes, London
---------	---

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	1768	KC	JP

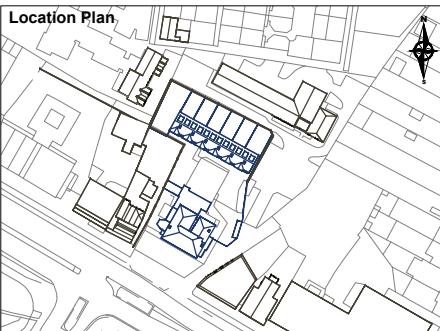
DWG REF.	DWG No.
3D Model - Existing Site Scenarios	1951_02



Legend

- Proposed Buildings
- Surrounding Buildings

Location Plan



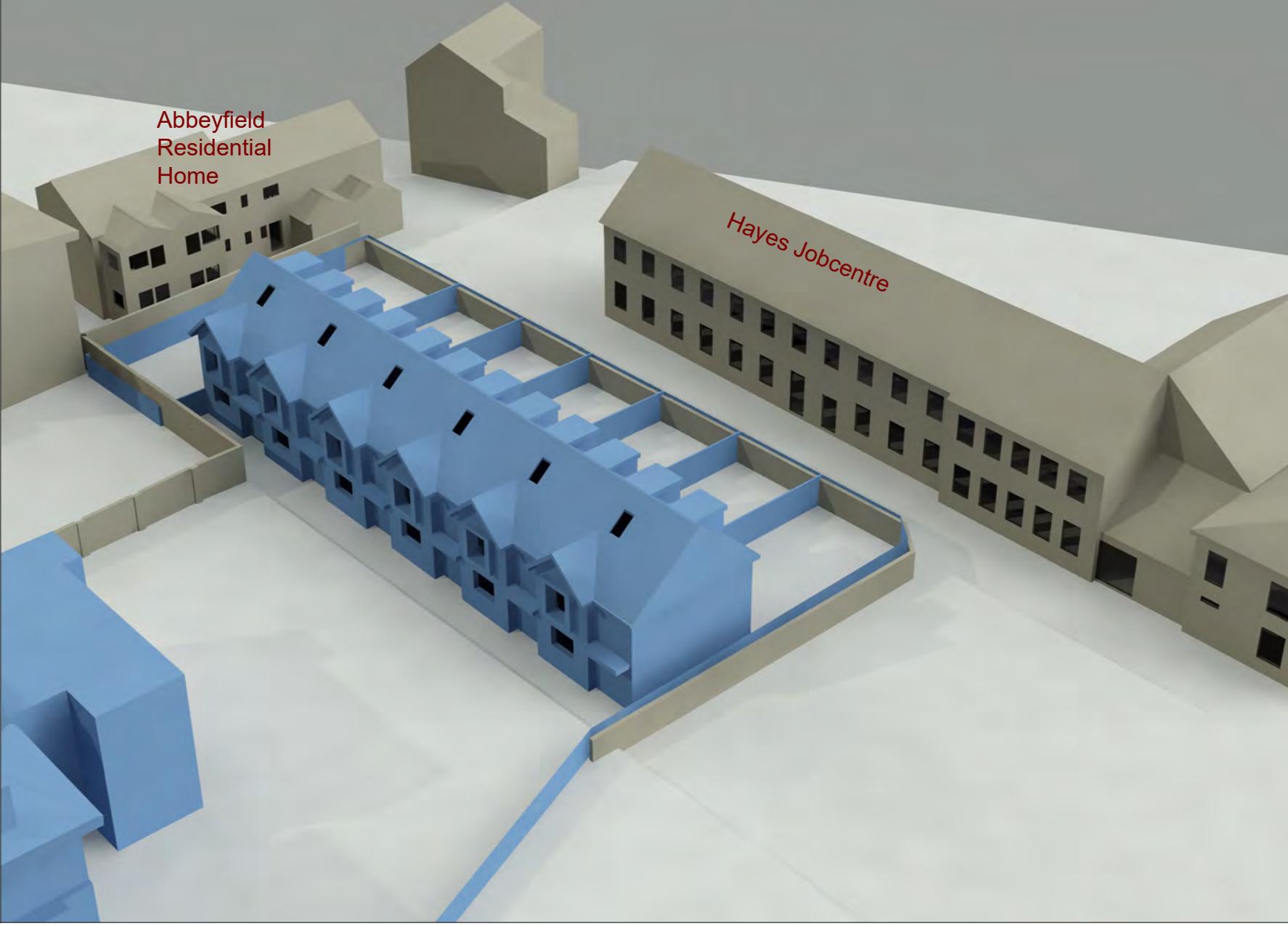
Rev	Description	Date
02	Amended scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

CLIENT	Yamuna House Ltd
--------	------------------

PROJECT	Adam & Eve Pub Site, Uxbridge Road, Hayes, London
---------	---

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	1768	KC	JP

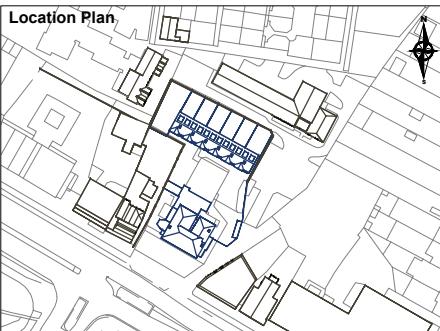
DWG REF.	DWG No.
3D Model - Proposed Site Scenarios	1951_03



Legend

- Proposed Buildings
- Surrounding Buildings

Location Plan



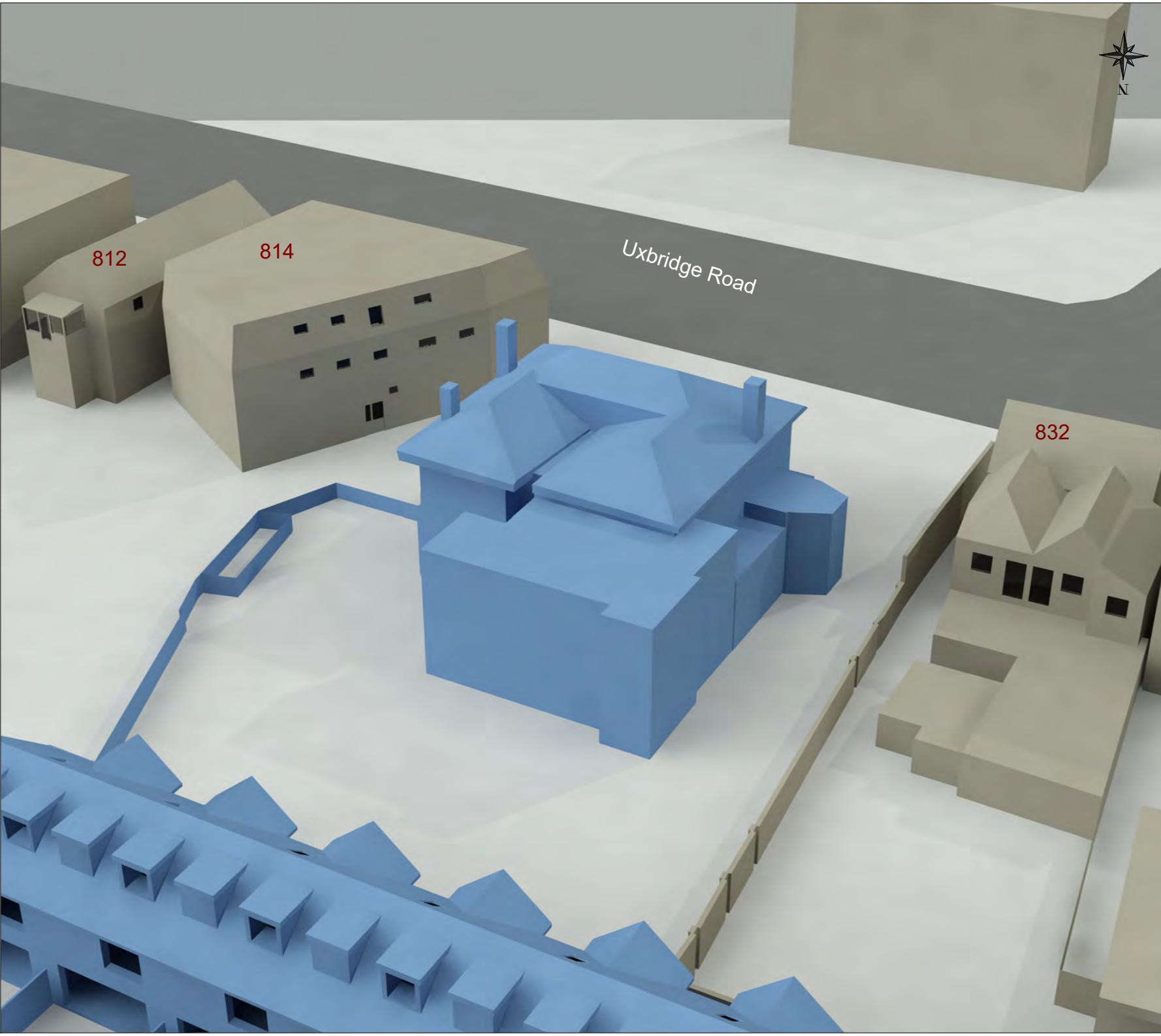
Rev	Description	Date
02	Amended scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

CLIENT	Yamuna House Ltd
--------	------------------

PROJECT	Adam & Eve Pub Site, Uxbridge Road, Hayes, London
---------	---

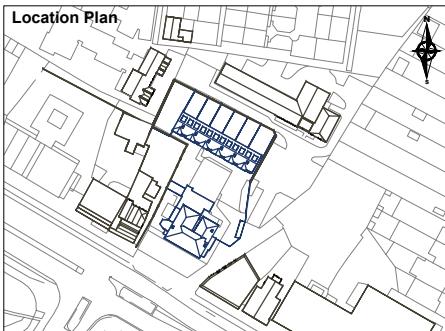
SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	1768	KC	JP

DWG REF.	DWG No.
Location of Window Receptors	1951_04



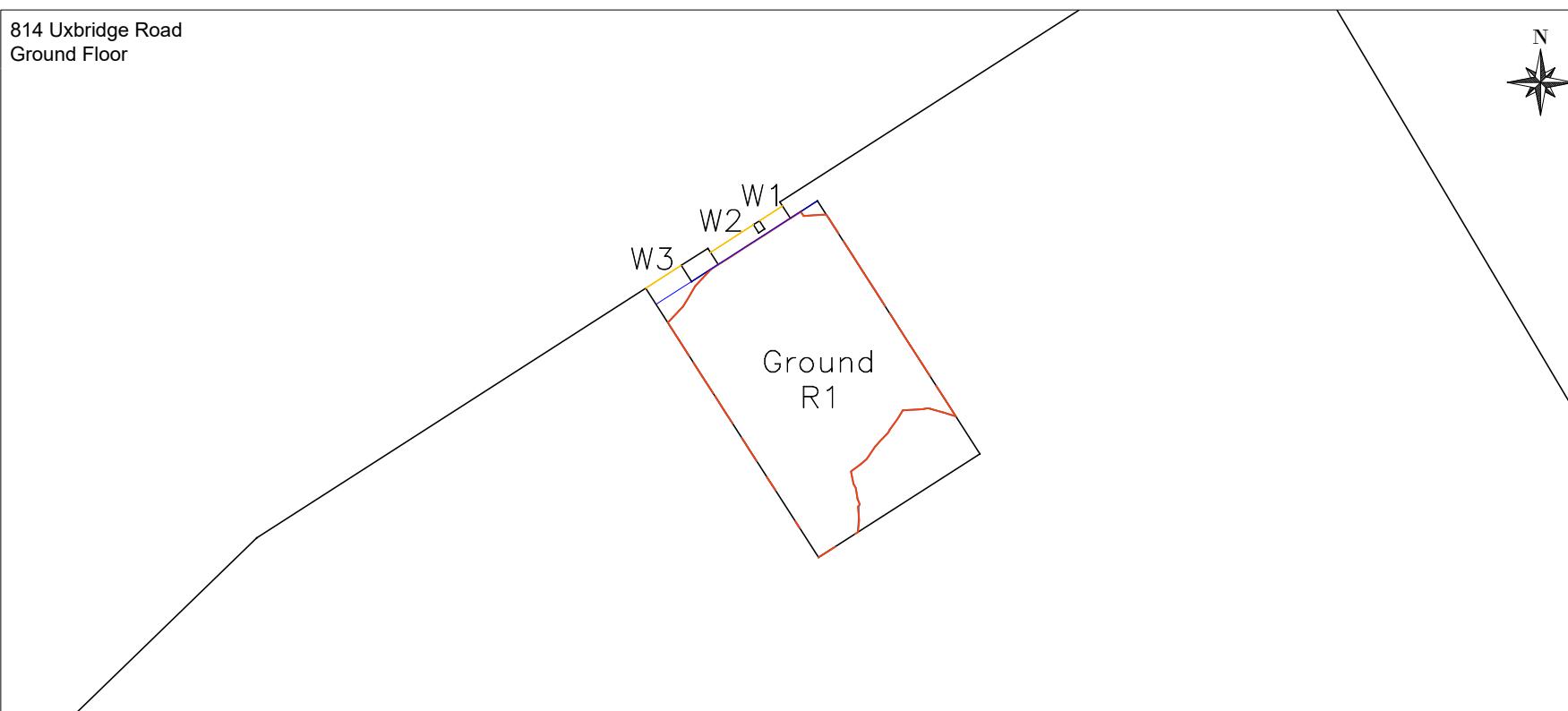
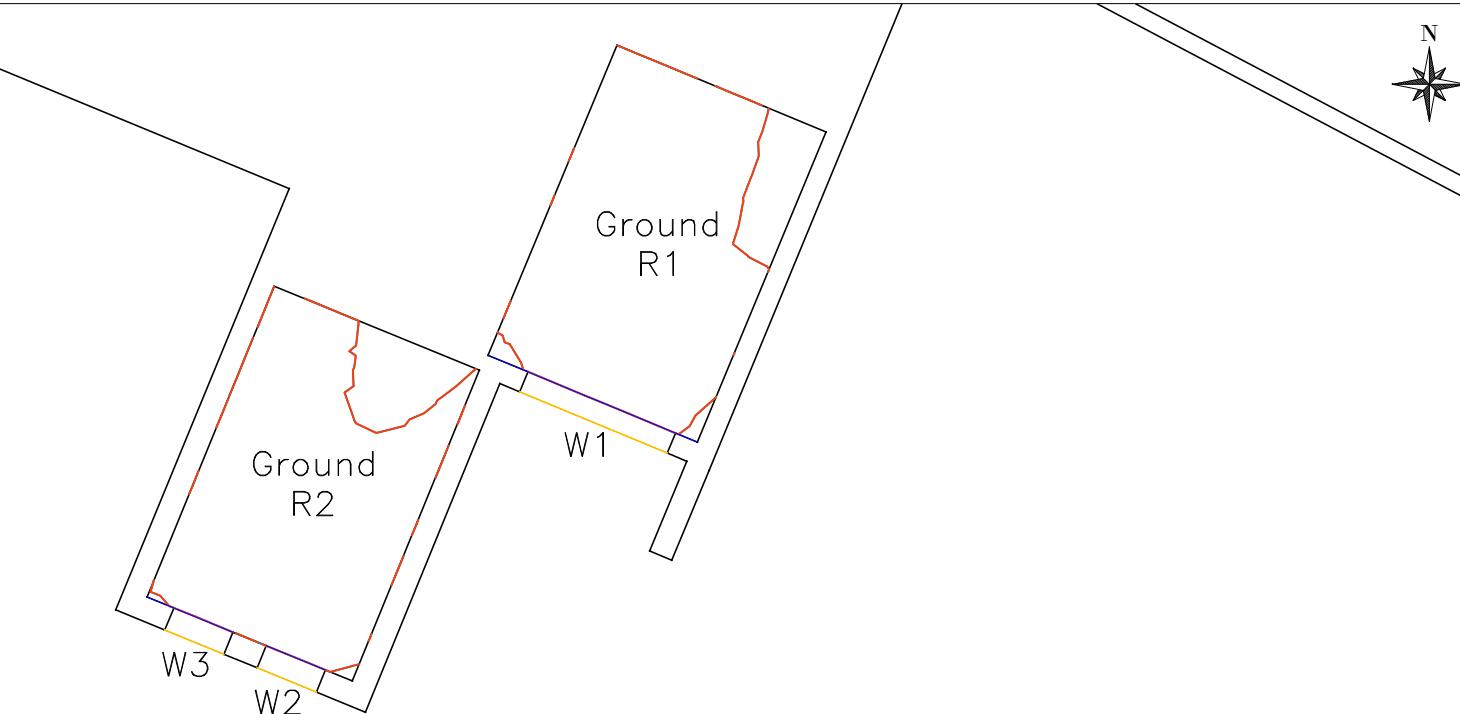
Legend

- Proposed Buildings
- Surrounding Buildings

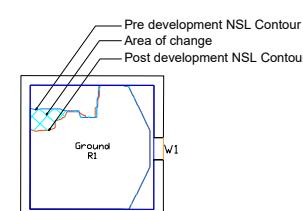


Rev	Description	Date
02	Amended scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

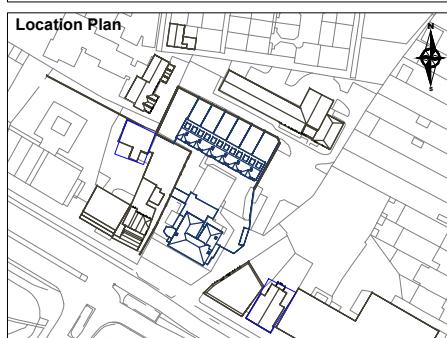
CLIENT	Yamuna House Ltd		
PROJECT	Adam & Eve Pub Site, Uxbridge Road, Hayes, London		
SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	1768	KC	JP
DWG REF.	Location of Window Receptors		
DWG No.	1951_05		



Legend



Location Plan



Rev	Description	Date
02	Amended scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

CLIENT	Yamuna House Ltd
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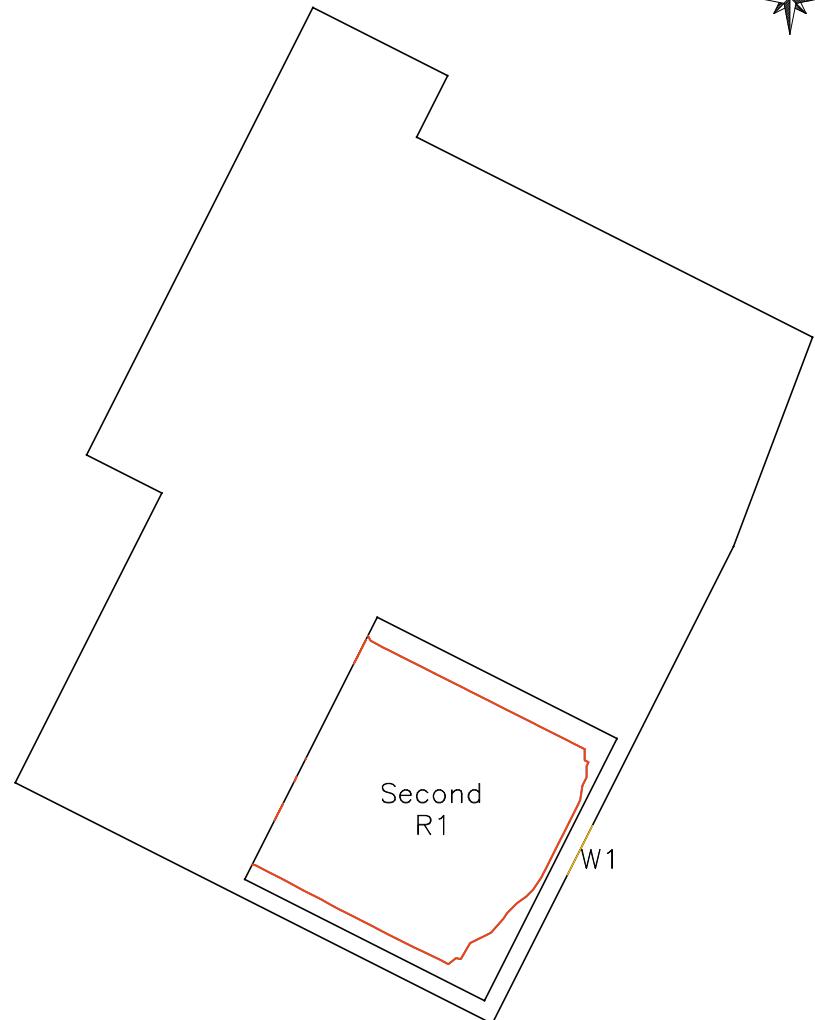
PROJECT	Adam & Eve Pub Site, Uxbridge Road, Hayes, London
---------	---

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	1768	KC	JP

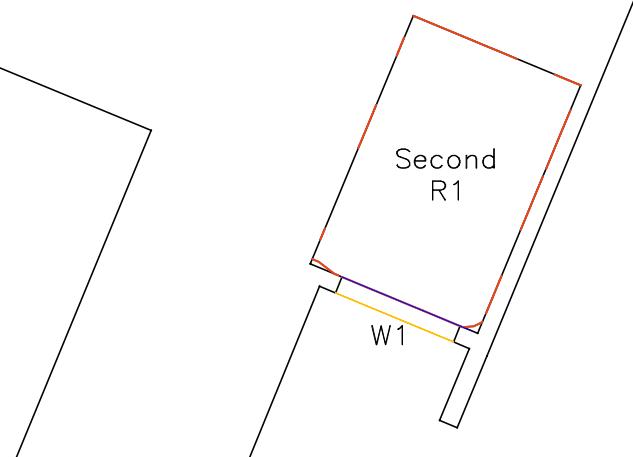
DWG REF.	DWG No.
Daylight distribution contours	1951_06



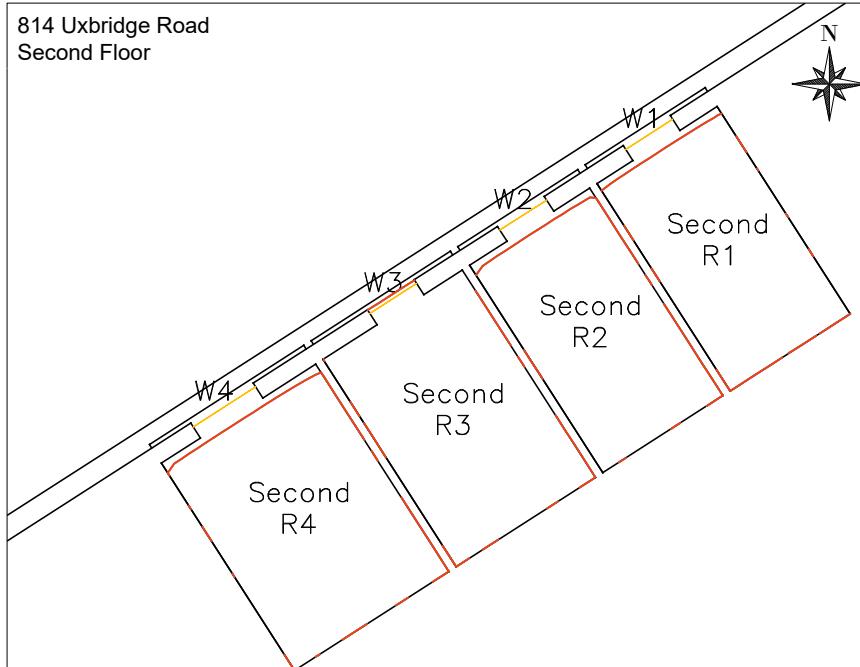
832 Uxbridge Road
Second Floor



6-8 Legion House
Second Floor



814 Uxbridge Road
Second Floor

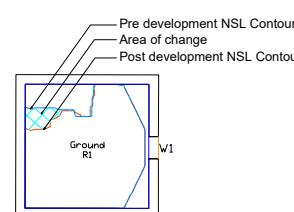


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Legend



Location Plan



02	Amended scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

Rev	Description	Date
02	Amended scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

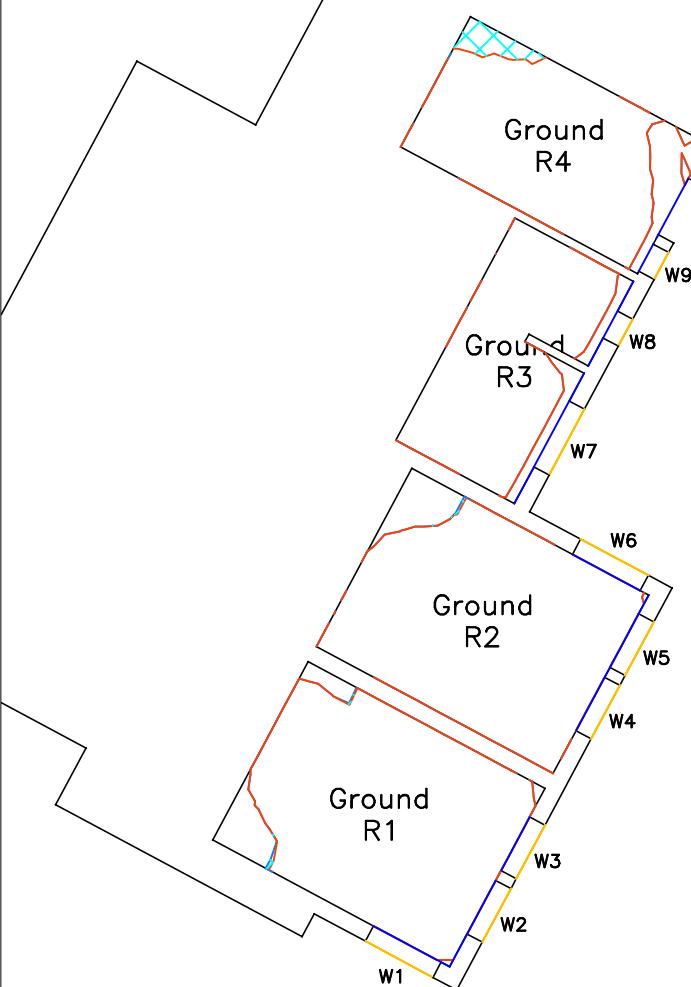
CLIENT	Yamuna House Ltd		
PROJECT	Adam & Eve Pub Site, Uxbridge Road, Hayes, London		

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	1768	KC	JP
DWG REF.			DWG No.

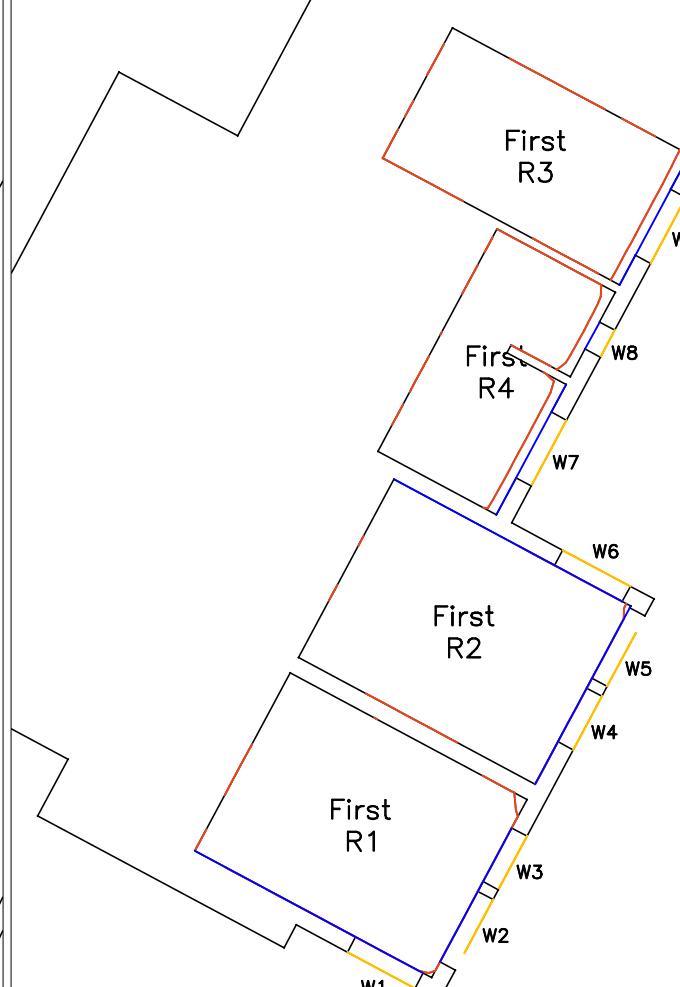
Daylight distribution contours

1951_08

House 6- Abbeyfield Residential Home
Ground Floor



House 6- Abbeyfield Residential Home
First Floor

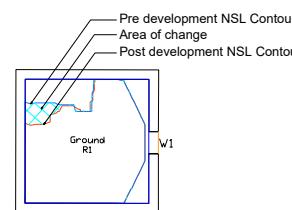


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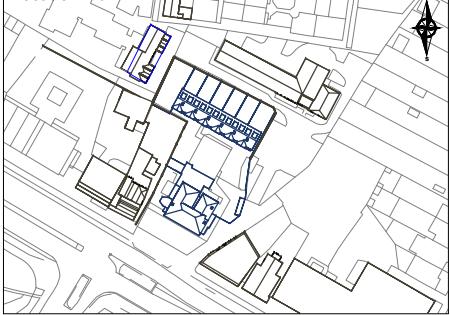
Unit 6 - Barham Business Park
Elham Valley Road
Canterbury
Kent CT4 6DQ

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Legend



Location Plan



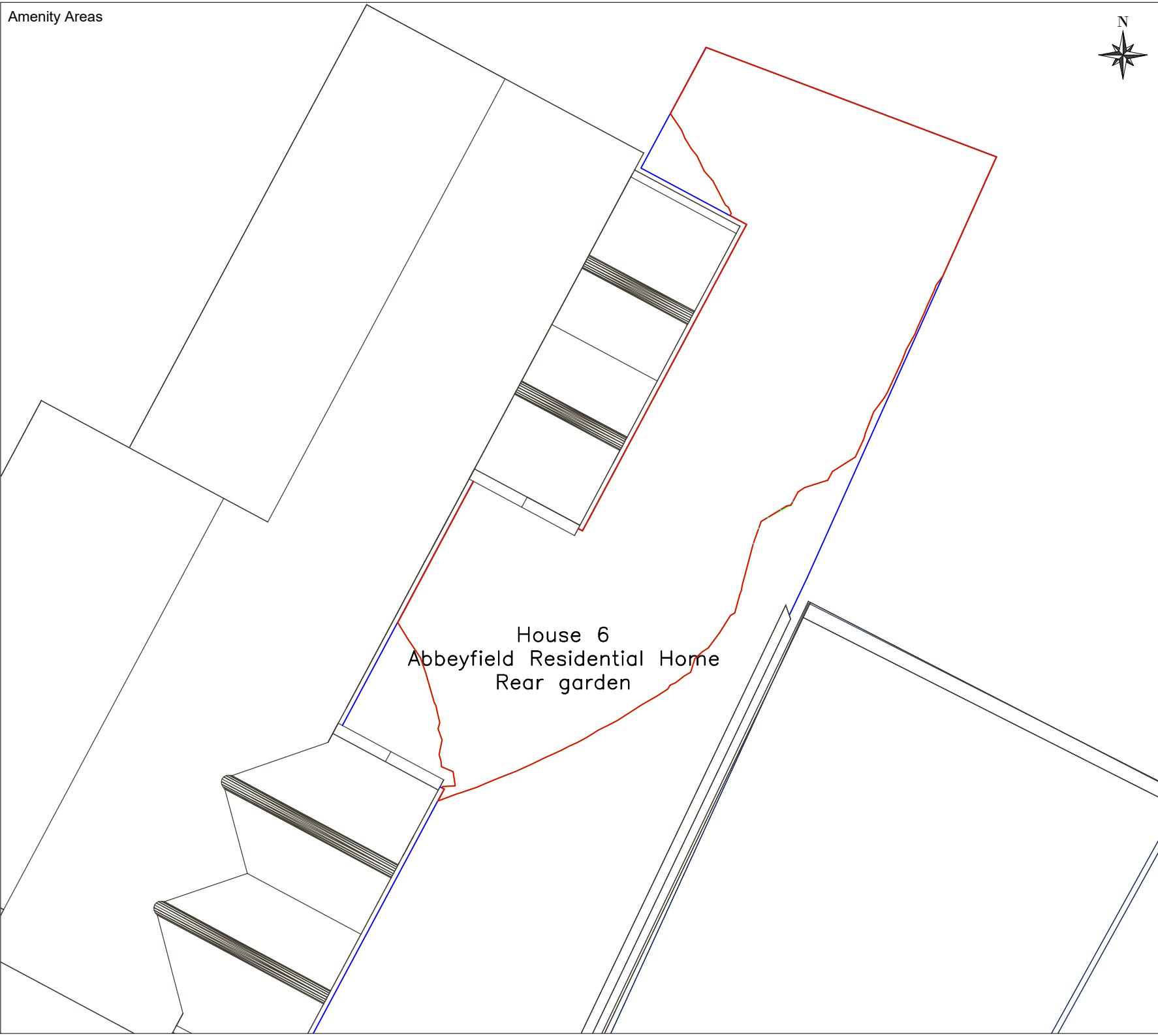
02	Amended scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

Rev	Description	Date
02	Amended scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

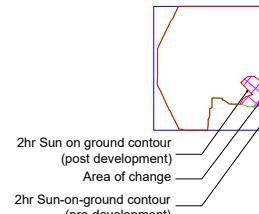
CLIENT	Yamuna House Ltd		
PROJECT	Adam & Eve Pub Site, Uxbridge Road, Hayes, London		

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	1768	KC	JP
DWG REF.			DWG No.

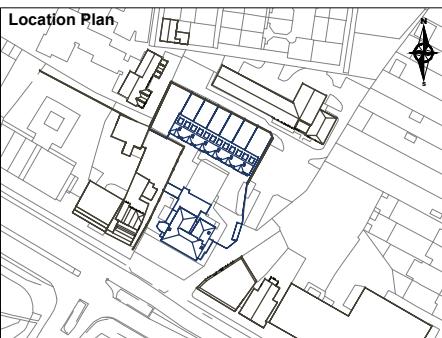
Daylight distribution contours
1951_09



Legend

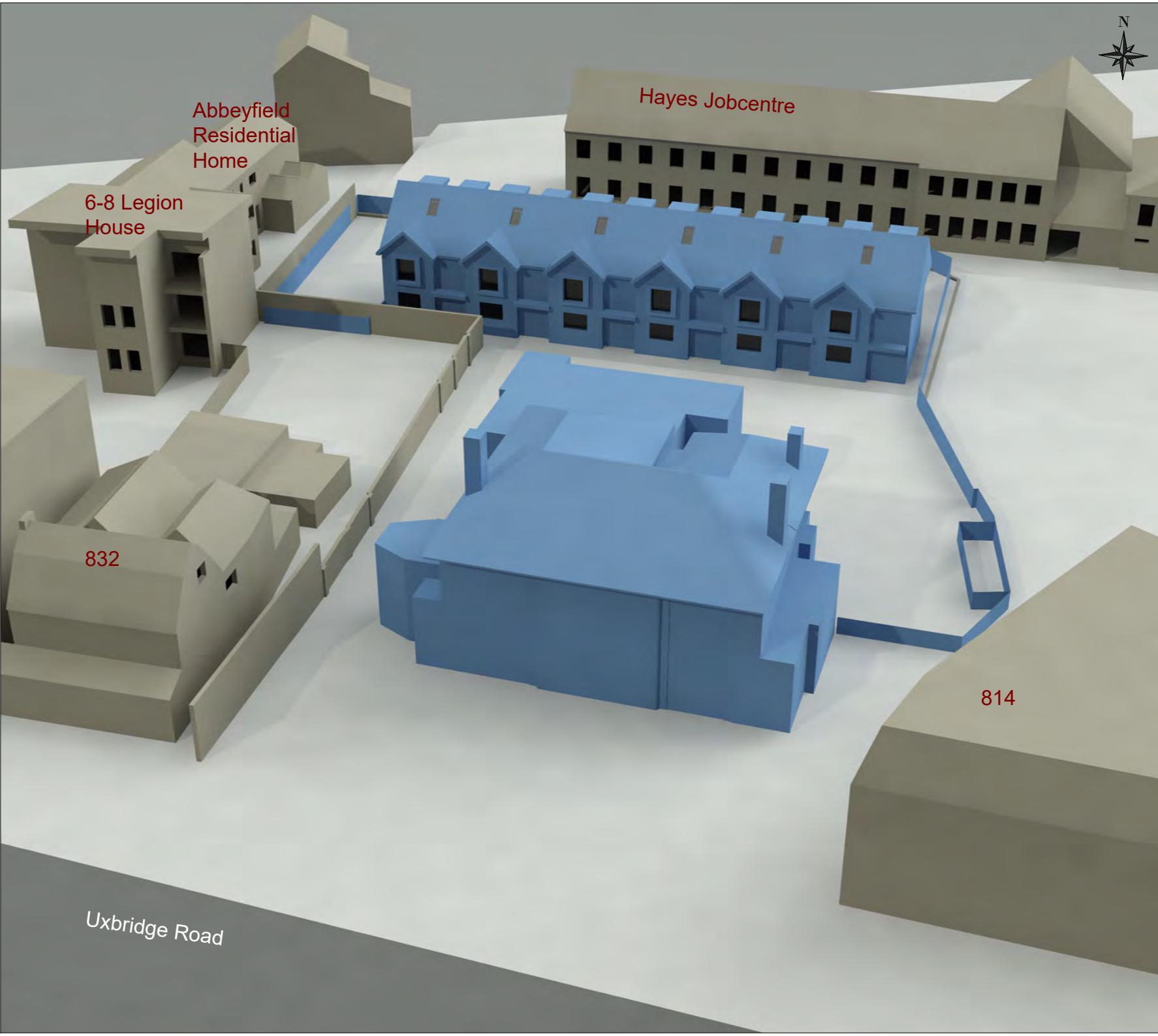


Location Plan



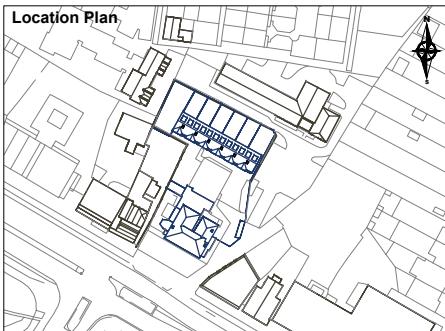
Rev	Description	Date
02	Amended scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

CLIENT	Yamuna House Ltd		
PROJECT	Adam & Eve Pub Site, Uxbridge Road, Hayes, London		
SCALE	Not to scale	PROJ REF	ANALYST
	1768	KC	JP
DWG REF.	2hr sun on the ground amenity contours		
DWG No.	1951_10		



Legend

- Proposed Buildings
- Surrounding Buildings



Rev	Description	Date
02	Amended Scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

CLIENT
Yamuna House Ltd

PROJECT
Adam & Eve Pub Site, Uxbridge Road, Hayes, London

SCALE
Not to scale

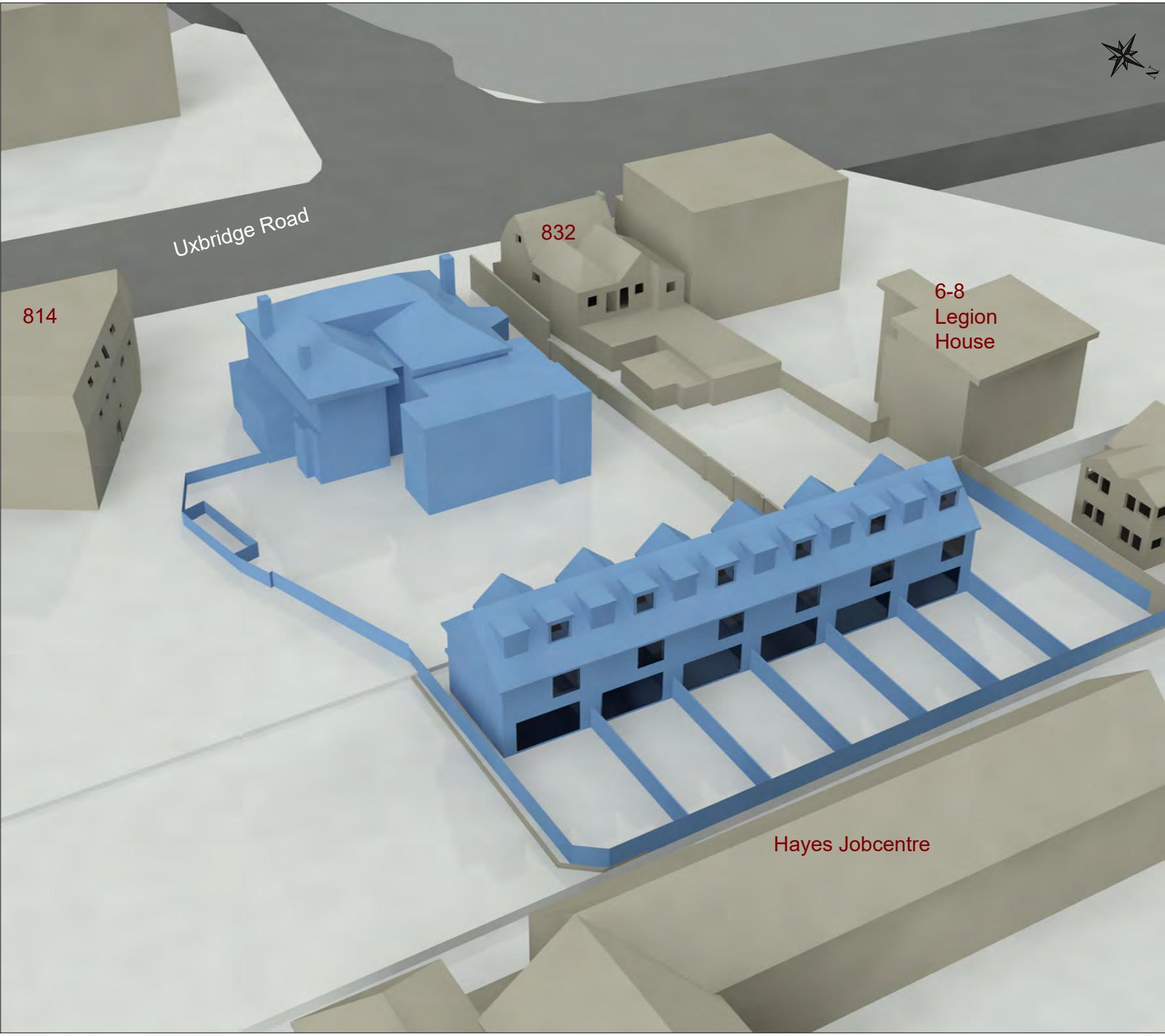
PROJ REF
1768

ANALYST
KC

DRAWN BY
JP

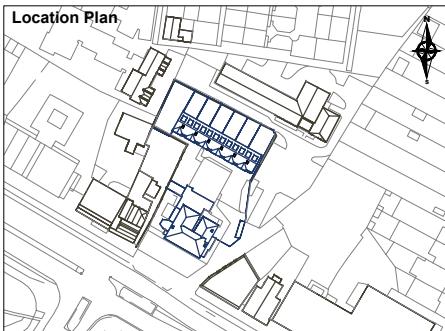
DWG REF.
3D Model - Proposed Site Scenarios

DWG No.
1951_11



Legend

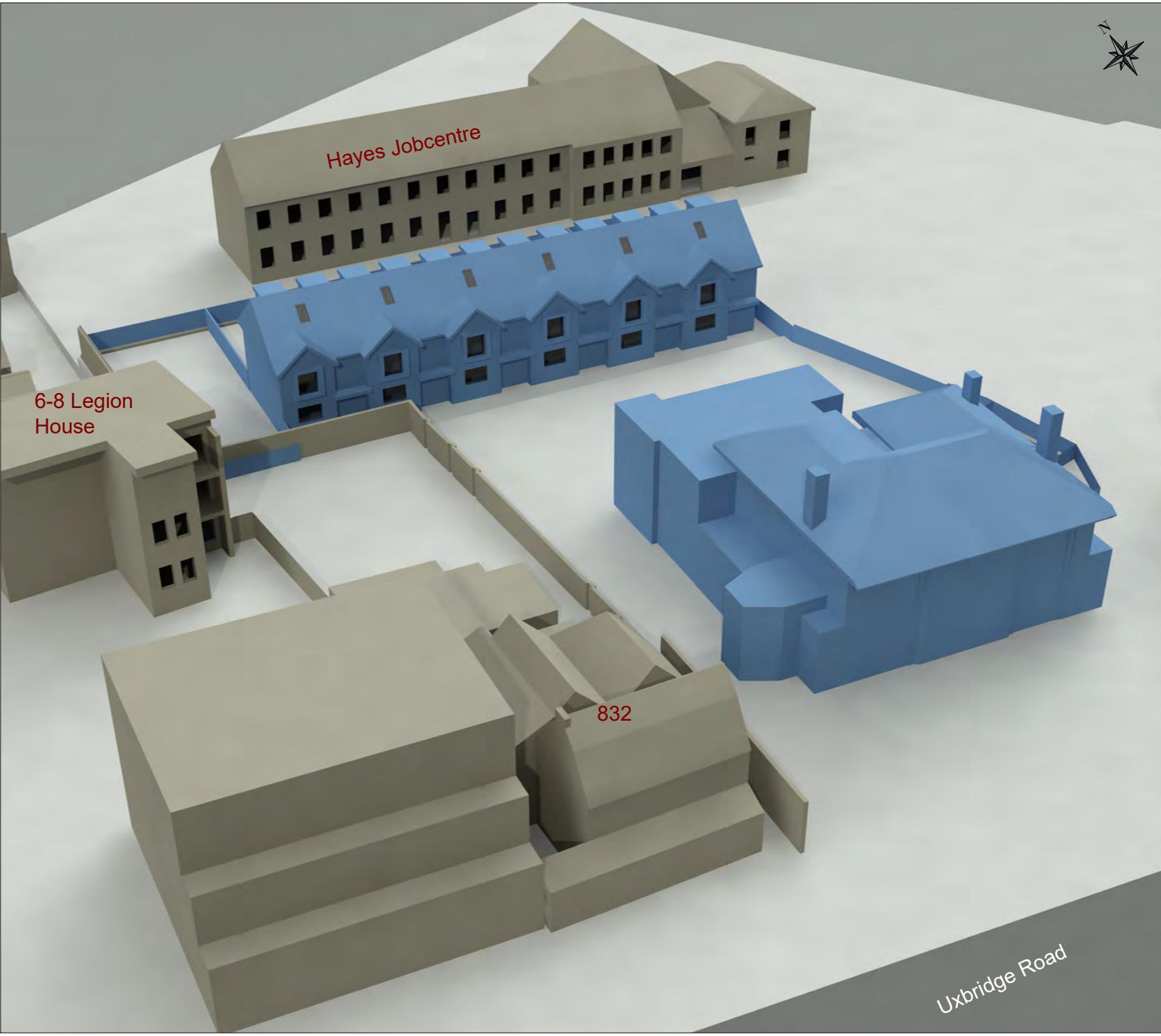
- Proposed Buildings
- Surrounding Buildings



Rev	Description	Date
02	Amended Scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

CLIENT	Yamuna House Ltd	
PROJECT	Adam & Eve Pub Site, Uxbridge Road, Hayes, London	

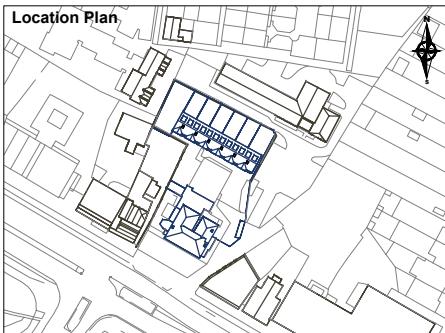
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Not to scale	1768	KC	JP
DWG REF.			DWG No.
3D Model - Proposed Site Scenarios			1951_12



Legend

- Proposed Buildings
- Surrounding Buildings

Location Plan



Rev	Description	Date
02	Amended Scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

CLIENT
Yamuna House Ltd

PROJECT
Adam & Eve Pub Site, Uxbridge Road, Hayes, London

SCALE
Not to scale

PROJ REF
1768

ANALYST
KC

DRAWN BY
JP

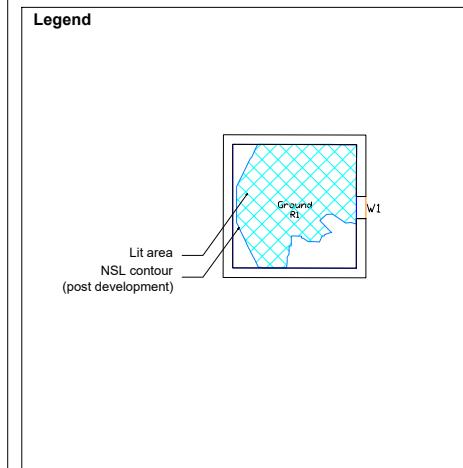
DWG REF.
Location of Window Receptors

DWG No.
1951_13



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Rev	Description	Date
02	Amended Scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

CLIENT
Yamuna House Ltd

PROJECT
Adam & Eve Pub Site, Uxbridge Road, Hayes, London

SCALE
Not to scale

PROJ REF
1768

ANALYST
KC

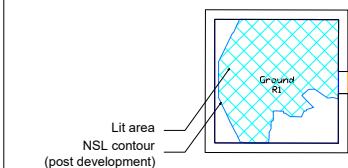
DRAWN BY
JP

DWG REF.
NSL contours

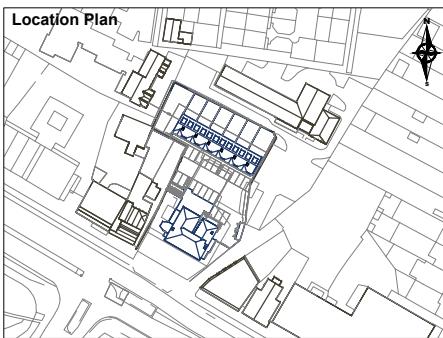
DWG No.
1951_14



Legend



Location Plan



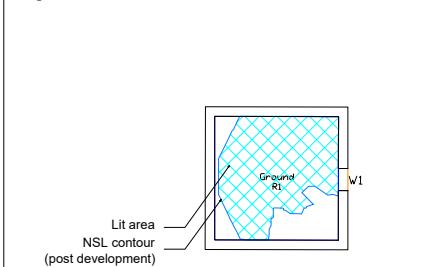
02	Amended Scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17
Rev	Description	Date

CLIENT	Yamuna House Ltd		
PROJECT	Adam & Eve Pub Site, Uxbridge Road, Hayes, London		
SCALE	Not to scale	PROJ REF	ANALYST
	1768	KC	JP
DWG REF.	NSL contours	DWG No.	1951_15

Proposed - Second Floor Layout



Legend



Location Plan



Rev	Description	Date
02	Amended Scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

CLIENT
Yamuna House Ltd

PROJECT
Adam & Eve Pub Site, Uxbridge Road, Hayes, London

SCALE
Not to scale

PROJ REF

1768

ANALYST

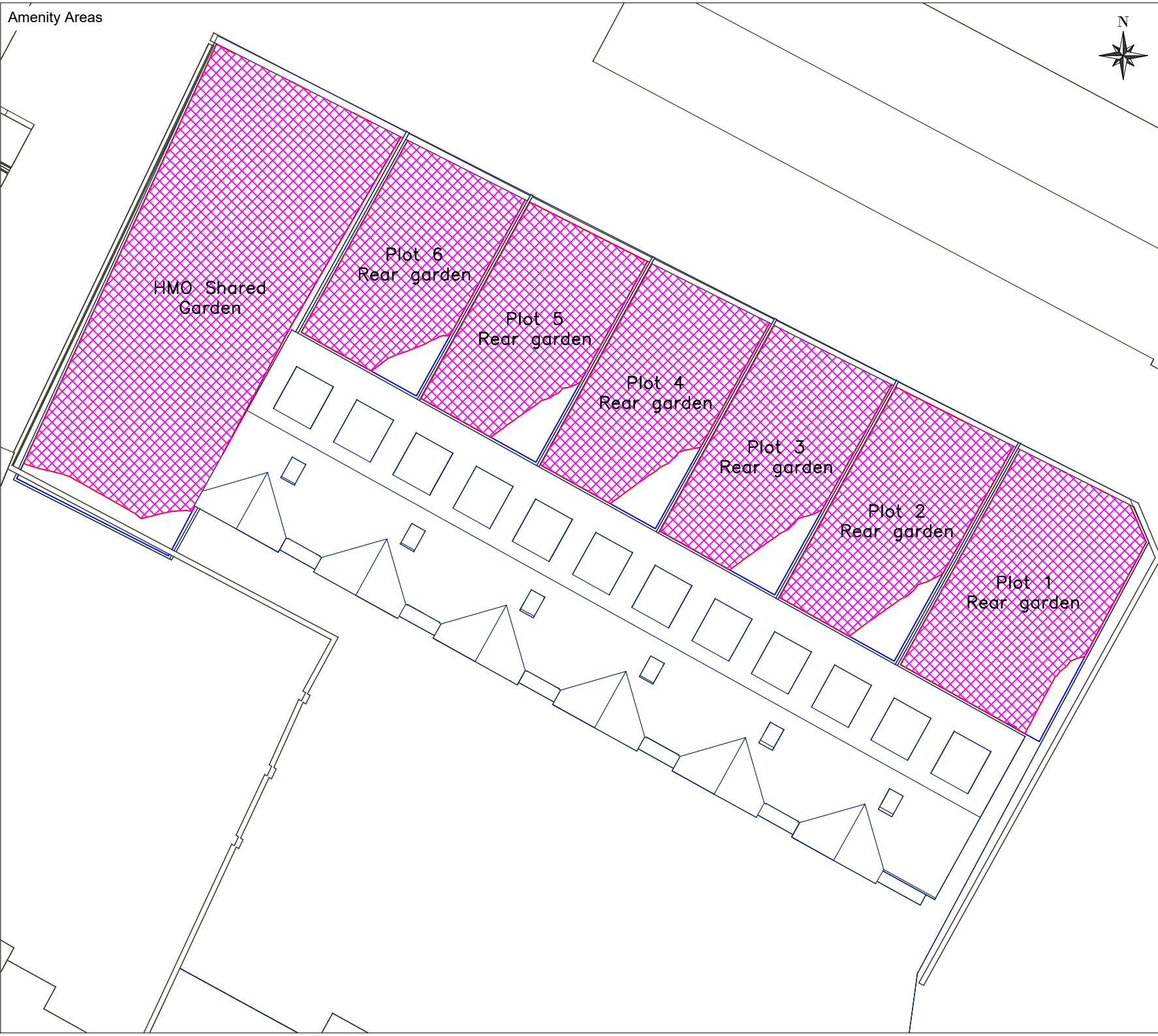
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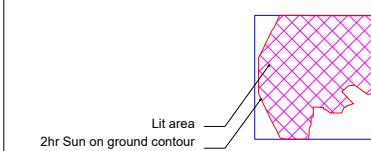
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DWG REF.
NSL contours

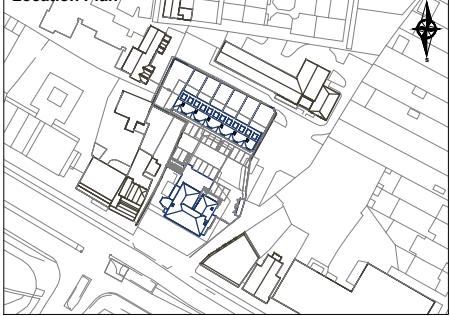
DWG No.
1951_16



Legend



Location Plan



Rev	Description	Date
02	Amended Scheme	27/01/22
01	Final issue	27/07/17
00	First issue	13/06/17

CLIENT
Yamuna House Ltd

PROJECT
Adam & Eve Pub Site, Uxbridge Road, Hayes, London

SCALE
Not to scale

PROJ REF
1768

ANALYST
KC

DRAWN BY
JP

DWG REF.
2hr SoG amenity contours

DWG No.
1951_16

Appendix A.3 – Tabulated Results for Daylight and Sunlight Calculations (Impact on Neighbours)

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Daylight & Sunlight Assessment - VSC and APSh Analysis

Date of Analysis: 19/01/2022

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.	VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
832 Uxbridge Road																		
First	R1	Residential	Residential	W1	Existing 33.41	1.00	YES	117°	56.00	1.00	YES	19.00	1.00	YES	56.00	YES	19.00	YES
	R2	Residential	Residential	W2	Existing 36.15	0.99	YES	27°N	15.00	*North	*North	0.00	*North	*North	15.00			
				W3	Existing 35.66	0.98	YES	27°N	15.00	*North	*North	0.00	*North	*North	15.00			
	R3	Residential	Residential	W4	Existing 35.11	0.98	YES	27°N	15.00	*North	*North	0.00	*North	*North	15.00			
				W5	Existing 31.74	0.99	YES	27°N	16.00	*North	*North	0.00	*North	*North	16.00			
	R4	Residential	Residential	W6	Existing 36.69	0.99	YES	27°N	17.00	*North	*North	1.00	*North	*North	17.00			
Second	R1	Residential	Residential	W1	Existing 37.02	1.00	YES	117°	63.00	1.00	YES	22.00	1.00	YES	63.00	YES	22.00	YES
Hayes Jobcentre																		
Ground	R1	Commercial	Office	W1	Existing 34.87	0.87	YES	208°	76.00	0.91	YES	26.00	0.73	YES	69.00		19.00	
				W2	Existing 34.94	0.87	YES	208°	78.00	0.91	YES	26.00	0.73	YES	71.00		19.00	
				W3	Existing 35.01	0.86	YES	208°	78.00	0.92	YES	26.00	0.77	YES	72.00		20.00	
				W4	Existing 35.09	0.86	YES	208°	78.00	0.92	YES	26.00	0.77	YES	72.00		20.00	
				W5	Existing 35.15	0.86	YES	208°	78.00	0.91	YES	26.00	0.73	YES	71.00		19.00	
				W6	Existing 35.19	0.86	YES	208°	78.00	0.91	YES	26.00	0.73	YES	71.00		19.00	
				W7	Existing 34.96	0.86	YES	208°	78.00	0.91	YES	26.00	0.73	YES	71.00		19.00	
				W8	Existing 34.56	0.86	YES	208°	77.00	0.92	YES	25.00	0.76	YES	71.00		19.00	
				W9	Existing 35.28	0.88	YES	208°	78.00	0.91	YES	27.00	0.74	YES	71.00		20.00	
				W10	Existing 35.10	0.89	YES	208°	74.00	0.93	YES	25.00	0.80	YES	69.00		20.00	
				W11	Existing 32.95	0.89	YES	208°	65.00	0.94	YES	22.00	0.82	YES	61.00		18.00	
				W12	Existing 35.78	0.91	YES	208°	78.00	0.96	YES	25.00	0.88	YES	75.00		22.00	
				W13	Existing 35.80	0.92	YES	208°	78.00	0.96	YES	25.00	0.88	YES	75.00		22.00	
				W14	Existing 35.81	0.93	YES	208°	78.00	0.96	YES	26.00	0.88	YES				

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Daylight & Sunlight Assessment - VSC and APSh Analysis

Date of Analysis: 19/01/2022

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.	VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
				W15	Proposed 33.33			208°	75.00			23.00			80.00 79.00	YES	27.00 26.00	YES
					Existing 35.82	0.94	YES		77.00	0.95	YES	25.00	0.88	YES				
				W16	Proposed 33.63				73.00			22.00						
					Existing 35.84	0.95	YES	208°	78.00	0.97	YES	26.00	0.96	YES				
					Proposed 33.91				76.00			25.00						
	R2	Commercial	Office	W17	Existing 34.85	0.95	YES	207°	76.00	0.97	YES	26.00	0.96	YES	76.00 74.00	YES	26.00 25.00	YES
					Proposed 33.21				74.00			25.00						
	R3	Commercial	Office	W18	Existing 36.16	0.97	YES	208°	79.00	0.99	YES	26.00	0.96	YES	79.00 78.00	YES	26.00 25.00	YES
					Proposed 35.22				78.00			25.00						
				W19	Existing 35.85	0.98	YES	208°	79.00	0.97	YES	26.00	0.96	YES				
					Proposed 35.07				77.00			25.00						
First	R1	Commercial	Office	W1	Existing 34.79	0.94	YES	208°	73.00	0.99	YES	26.00	0.96	YES	81.00 79.00	YES	28.00 26.00	YES
					Proposed 32.67				72.00			25.00						
				W2	Existing 34.66	0.94	YES	208°	73.00	0.99	YES	26.00	0.96	YES				
					Proposed 32.43				72.00			25.00						
				W3	Existing 34.68	0.93	YES	208°	73.00	0.99	YES	26.00	0.96	YES				
					Proposed 32.38				72.00			25.00						
				W4	Existing 34.72	0.93	YES	208°	73.00	0.99	YES	26.00	0.96	YES				
					Proposed 32.37				72.00			25.00						
				W5	Existing 34.73	0.93	YES	208°	72.00	0.99	YES	26.00	0.96	YES				
					Proposed 32.39				71.00			25.00						
				W6	Existing 34.75	0.93	YES	208°	72.00	0.99	YES	26.00	0.96	YES				
					Proposed 32.44				71.00			25.00						
				W7	Existing 34.75	0.94	YES	208°	72.00	0.99	YES	26.00	0.96	YES				
					Proposed 32.51				71.00			25.00						
				W8	Existing 34.77	0.94	YES	208°	73.00	0.97	YES	27.00	0.93	YES				
					Proposed 32.62				71.00			25.00						
				W9	Existing 34.76	0.94	YES	208°	74.00	0.96	YES	28.00	0.89	YES				
					Proposed 32.75				71.00			25.00						
				W10	Existing 34.68	0.95	YES	208°	73.00	0.96	YES	27.00	0.89	YES				
					Proposed 32.83				70.00			24.00						
				W11	Existing 33.04	0.95	YES	208°	68.00	0.96	YES	24.00	0.88	YES				
					Proposed 31.38				65.00			21.00						
				W12	Existing 37.30	0.96	YES	208°	81.00	0.96	YES	28.00	0.89	YES				
					Proposed 35.77				78.00			25.00						
				W13	Existing 37.30	0.96	YES	208°	81.00	0.96	YES	28.00	0.89	YES				
					Proposed 35.96				78.00			25.00						
				W14	Existing 37.30	0.97	YES	208°	81.00	0.96	YES	28.00	0.89	YES				
					Proposed 36.12				78.00			25.00						
				W15	Existing 37.30	0.97	YES	208°	81.00	0.98	YES	28.00	0.93	YES				
					Proposed 36.26				79.00			26.00						
				W16	Existing 37.29	0.98	YES	208°	78.00	0.99	YES	27.00	0.96	YES				
					Proposed 36.37				78.00			26.00						
	R2	Commercial	Office	W17	Existing 37.03	0.98	YES	208°	80.00	0.99	YES	27.00	0.96	YES	80.00 79.00	YES	27.00 26.00	YES
					Proposed 36.43				79.00			26.00						
				W18	Existing 37.07	0.99	YES	208°	80.00	0.99	YES	27.00	0.96	YES				
					Proposed 36.63				79.00			26.00						

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Date of Analysis: 19/01/2022

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.	VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BR Criteria				
814 Uxbridge Road (Eden House)																						
Ground	R1	Residential	Hallway	W1	Existing Proposed	28.48 28.21	0.99	YES	327°N	15.00 15.00	*North *North	2.00 2.00	*North *North	*North *North								
				W2	Existing Proposed	29.06 28.80	0.99	YES	327°N	14.00 14.00	*North *North	2.00 2.00	*North *North	*North *North								
				W3	Existing Proposed	31.03 30.81	0.99	YES	327°N	17.00 17.00	*North *North	2.00 2.00	*North *North	*North *North								
First	R1	Residential	Residential	W1	Existing Proposed	35.31 35.10	0.99	YES	327°N	17.00 17.00	*North *North	2.00 2.00	*North *North	*North *North								
	R2	Residential	Residential	W2	Existing Proposed	34.85 34.69	1.00	YES	327°N	17.00 17.00	*North *North	2.00 2.00	*North *North	*North *North								
	R3	Residential	Residential	W3	Existing Proposed	34.47 34.35	1.00	YES	327°N	17.00 17.00	*North *North	2.00 2.00	*North *North	*North *North								
	R4	Residential	Residential	W4	Existing Proposed	34.39 34.33	1.00	YES	327°N	18.00 18.00	*North *North	2.00 2.00	*North *North	*North *North								
	R5	Residential	Residential	W5	Existing Proposed	34.79 34.77	1.00	YES	327°N	18.00 18.00	*North *North	2.00 2.00	*North *North	*North *North								
Second	R1	Residential	Residential	W1	Existing Proposed	38.14 38.14	1.00	YES	327°N	16.00 16.00	*North *North	2.00 2.00	*North *North	*North *North								
	R2	Residential	Residential	W2	Existing Proposed	37.94 37.95	1.00	YES	327°N	17.00 17.00	*North *North	2.00 2.00	*North *North	*North *North								
	R3	Residential	Residential	W3	Existing Proposed	36.87 36.86	1.00	YES	327°N	12.00 12.00	*North *North	0.00 0.00	*North *North	*North *North								
	R4	Residential	Residential	W4	Existing Proposed	37.69 37.69	1.00	YES	327°N	18.00 18.00	*North *North	2.00 2.00	*North *North	*North *North								

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Daylight & Sunlight Assessment - VSC and APSh Analysis

Date of Analysis: 19/01/2022

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.	VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria			
812 Uxbridge Road																					
First	R1	Residential	Residential	W1	Existing 21.61 Proposed 21.51	1.00	YES	301°N	15.00 15.00	*North 3.00	*North *North	3.00 3.00	*North *North	*North *North	*North *North						
	R2	Residential	Lobby	W2	Existing 27.48 Proposed 27.35	1.00	YES	301°N	1.00 1.00	*North 17.00	*North *North	0.00 0.00	*North *North	*North *North	*North *North						
				W3	Existing 38.88 Proposed 38.78	1.00	YES	31°N	17.00 17.00	*North 17.00	*North *North	0.00 0.00	*North *North	*North *North	*North *North						
				W4	Existing 38.65 Proposed 38.55	1.00	YES	31°N	17.00 17.00	*North 14.00	*North *North	0.00 0.00	*North *North	*North *North	*North *North						
				W5	Existing 38.43 Proposed 38.34	1.00	YES	31°N	14.00 14.00	*North 14.00	*North *North	0.00 0.00	*North *North	*North *North	*North *North						
				W6	Existing 19.99 Proposed 19.99	1.00	YES	121°	24.00 24.00	1.00 1.00	YES YES	1.00 1.00	1.00 1.00	YES YES	33.00 33.00						
				33.00 33.00																	
6-8 Legion House																					
Ground	R1	Residential	Residential	W1	Existing 10.47 Proposed 10.47	1.00	YES	203°	19.00 19.00	1.00 13.00	YES 1.00	13.00 1.00	1.00 YES	YES YES	19.00 19.00						
	R2	Residential	Residential	W2	Existing 30.86 Proposed 30.86	1.00	YES	202°	75.00 75.00	1.00 1.00	YES YES	20.00 20.00	1.00 1.00	YES YES	75.00 75.00						
				W3	Existing 30.93 Proposed 30.93	1.00	YES	202°	75.00 75.00	1.00 1.00	YES YES	20.00 20.00	1.00 1.00	YES YES	75.00 75.00						
First	R1	Residential	Residential	W1	Existing 12.07 Proposed 12.07	1.00	YES	203°	20.00 20.00	1.00 14.00	YES 1.00	14.00 14.00	1.00 YES	YES YES	20.00 20.00						
	R2	Residential	Residential	W2	Existing 33.93 Proposed 33.93	1.00	YES	202°	81.00 81.00	1.00 1.00	YES YES	26.00 26.00	1.00 1.00	YES YES	81.00 81.00						
				W3	Existing 33.94 Proposed 33.94	1.00	YES	202°	80.00 80.00	1.00 1.00	YES YES	25.00 25.00	1.00 1.00	YES YES	81.00 81.00						
Second	R1	Residential	Residential	W1	Existing 19.49 Proposed 19.49	1.00	YES	203°	38.00 38.00	1.00 1.00	YES YES	14.00 14.00	1.00 1.00	YES YES	38.00 38.00						

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Daylight & Sunlight Assessment - VSC and APSh Analysis

Date of Analysis: 19/01/2022

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.	VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
House 6 Abbeyfield Residential Home																		
Ground	R1	Residential	Bedroom	W1	Existing 12.89	1.00	YES	208°	31.00	1.00	YES	3.00	1.00	YES				
				W2	Existing 22.98	0.99	YES	118°	31.00			3.00						
				W3	Existing 23.52	0.99	YES	118°	34.00	0.94	YES	3.00	1.00	YES				
	R2	Residential	Bedroom	W4	Existing 24.23	0.99	YES	118°	32.00			3.00						
				W5	Existing 24.47	0.99	YES	118°	37.00	0.97	YES	5.00	1.00	YES				
				W6	Existing 22.22	1.00	YES	28°N	36.00			5.00						
	R3	Residential	Bathroom	W7	Existing 22.48	0.98	YES	118°	39.00	1.00	YES	6.00	1.00	YES				
				W8	Existing 27.84	0.98	YES	118°	39.00			6.00						
	R4	Residential	Utility Room	W9	Existing 28.01	0.98	YES	118°	41.00	1.00	YES	6.00	1.00	YES				
				W10	Proposed 27.51				41.00			6.00						
First	R1	Residential	Bedroom	W1	Existing 18.96	1.00	YES	208°	42.00	0.98	YES	9.00	0.89	YES				
				W2	Existing 34.52	0.92	YES	118°	46.00			8.00						
				W3	Existing 34.93	0.92	YES	118°	54.00	0.94	YES	12.00	0.75	YES				
	R2	Residential	Bedroom	W4	Existing 35.86	0.94	YES	118°	51.00	0.95	YES	13.00	0.77	YES				
				W5	Existing 36.36	0.94	YES	118°	56.00			9.00						
				W6	Existing 29.49	1.00	YES	28°N	53.00			10.00						
	R3	Residential	Bedroom	W9	Existing 36.91	0.97	YES	118°	61.00	0.98	YES	17.00	0.94	YES				
				W10	Proposed 35.65				62.00			16.00						
	R4	Residential	Bathroom	W7	Existing 32.52	0.96	YES	118°	62.00	0.95	YES	18.00	0.83	YES				
				W8	Existing 31.37	0.96	YES	118°	59.00			15.00						

Project Name: Uxbridge Road, Hayes Project No.: 1768 Report Title: Daylight Assessment - No Sky Line Analysis Date of Analysis: 19/01/2022								
Floor Ref.	Room Ref.	Room Use.	Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria	
832 Uxbridge Road								
First	R1	Residential	Area m2 % of room	13.06 95.52%	12.48 95.52%	1.00	YES	
First	R2	Residential	Area m2 % of room	10.58 97.68%	10.33 97.68%	1.00	YES	
First	R3	Residential	Area m2 % of room	10.21 97.48%	9.95 97.48%	1.00	YES	
First	R4	Residential	Area m2 % of room	8.23 98.14%	8.08 98.14%	1.00	YES	
Second	R1	Residential	Area m2 % of room	19.30 81.33%	15.69 81.33%	1.00	YES	
Hayes Jobcentre								
Ground	R1	Office	Area m2 % of room	281.51 99.56%	280.28 99.55%	1.00	n/a	
Ground	R2	Office	Area m2 % of room	22.09 94.44%	20.86 93.52%	0.99	n/a	
Ground	R3	Office	Area m2 % of room	27.34 93.49%	25.57 93.49%	1.00	n/a	
First	R1	Office	Area m2 % of room	281.51 98.68%	277.79 98.68%	1.00	n/a	
First	R2	Office	Area m2 % of room	27.34 97.96%	26.79 97.96%	1.00	n/a	
814 Uxbridge Road (Eden House)								
Ground	R1	Hallway	Area m2 % of room	11.25 84.22%	9.48 84.21%	1.00	n/a	
First	R1	Residential	Area m2 % of room	9.37 90.76%	8.51 90.76%	1.00	YES	
First	R2	Residential	Area m2 % of room	9.37 90.60%	8.49 90.60%	1.00	YES	
First	R3	Residential	Area m2 % of room	10.87 90.51%	9.84 90.51%	1.00	YES	
First	R4	Residential	Area m2 % of room	12.05 90.64%	10.92 90.64%	1.00	YES	
First	R5	Residential	Area m2 % of room	12.05 89.55%	10.79 89.55%	1.00	YES	
Second	R1	Residential	Area m2 % of room	9.37 89.07%	8.35 89.07%	1.00	YES	
Second	R2	Residential	Area m2 % of room	9.37 89.01%	8.34 89.01%	1.00	YES	
Second	R3	Residential	Area m2 % of room	10.87 96.75%	10.52 96.75%	1.00	YES	
Second	R4	Residential	Area m2 % of room	12.05 89.02%	10.73 89.02%	1.00	YES	

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Daylight Assessment - No Sky Line Analysis

Date of Analysis: 19/01/2022

Floor Ref.	Room Ref.	Room Use.	Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
812 Uxbridge Road							
First	R1	Residential	Area m2 % of room	11.76 49.97%	5.88 49.97%	5.88	1.00 YES
First	R2	Lobby	Area m2 % of room	5.38 100.00%	5.38 100.00%	5.38	1.00 n/a
6-8 Legion House							
Ground	R1	Residential	Area m2 % of room	11.91 88.71%	10.56 88.71%	10.56	1.00 YES
Ground	R2	Residential	Area m2 % of room	11.65 88.43%	10.30 88.43%	10.30	1.00 YES
First	R1	Residential	Area m2 % of room	11.91 98.53%	11.73 98.53%	11.73	1.00 YES
First	R2	Residential	Area m2 % of room	11.65 99.55%	11.60 99.55%	11.60	1.00 YES
Second	R1	Residential	Area m2 % of room	11.91 99.67%	11.87 99.67%	11.87	1.00 YES
House 6 Abbeyfield Residential Home							
Ground	R1	Bedroom	Area m2 % of room	13.28 92.72%	12.31 92.54%	12.29	1.00 YES
Ground	R2	Bedroom	Area m2 % of room	13.28 94.06%	12.49 93.98%	12.48	1.00 YES
Ground	R3	Bathroom	Area m2 % of room	8.14 91.52%	7.45 91.52%	7.45	n/a
Ground	R4	Utility Room	Area m2 % of room	9.71 90.48%	8.78 85.76%	8.33	0.95 n/a
First	R1	Bedroom	Area m2 % of room	13.28 99.65%	13.23 99.65%	13.23	1.00 YES
First	R2	Bedroom	Area m2 % of room	13.28 99.91%	13.27 99.91%	13.27	1.00 YES
First	R3	Bedroom	Area m2 % of room	9.71 96.37%	9.36 96.37%	9.36	1.00 YES
First	R4	Bathroom	Area m2 % of room	8.14 92.47%	7.52 92.47%	7.52	1.00 n/a

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Sunlight Assessment - Two hours Sunlight to Amenity

Date of Analysis: 19/01/2022

Floor Ref.	Amenity Ref.	Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
House 6 Abbeyfield Residential Home						
Ground	A1	Area m2 Percentage	151.73 50%	75.43 50%	75.42 50%	1.00 YES

Appendix A.4 – Tabulated Results for Daylight and Sunlight Calculations (Provision to New Development)

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Daylight Assessment - Average Daylight Factor

Date: 19/01/2022

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Glass Transmittance	Maintenance Factor	Glazed Area	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Req'd Value	Meets BRE Criteria
Plot 1													
Ground	R1	Kitchen	W1	0.78	0.92	1.43	67.97	37.99	0.65	1.00	3.20	3.20	2.00
Ground	R2	Living Room	W2-L	0.78	0.92	2.75	66.33	79.27	0.65	0.15	0.43		
		Living Room	W2-U	0.78	0.92	4.71	69.53	79.27	0.65	1.00	5.17		
First	R1	Bedroom	W1-L	0.78	0.92	0.40	62.86	48.15	0.65	0.15	0.10		
		Bedroom	W1-U	0.78	0.92	1.36	54.27	48.15	0.65	1.00	1.92		
											2.02	1.00	YES
First	R2	Bedroom	W2-L	0.78	0.92	0.55	72.67	55.84	0.65	0.15	0.14		
		Bedroom	W2-U	0.78	0.92	1.87	67.01	55.84	0.65	1.00	2.81		
											2.95	1.00	YES
Second	R1	Bedroom	W1	0.78	0.84	0.69	N/A	73.51	0.71	1.00	1.88		
		Bedroom	W2	0.78	0.92	1.06	77.11	73.51	0.65	1.00	1.40		
											3.28	1.00	YES
Plot 2													
Ground	R1	Kitchen	W1	0.78	0.92	1.43	67.48	37.99	0.65	1.00	3.17	3.17	2.00
Ground	R2	Living Room	W2-L	0.78	0.92	2.75	64.72	79.27	0.65	0.15	0.42		
		Living Room	W2-U	0.78	0.92	4.71	68.97	79.27	0.65	1.00	5.13		
First	R1	Bedroom	W1-L	0.78	0.92	0.40	62.83	48.15	0.65	0.15	0.10		
		Bedroom	W1-U	0.78	0.92	1.36	54.28	48.15	0.65	1.00	1.92		
											2.02	1.00	YES
First	R2	Bedroom	W2-L	0.78	0.92	0.55	72.31	55.84	0.65	0.15	0.13		
		Bedroom	W2-U	0.78	0.92	1.87	66.69	55.84	0.65	1.00	2.80		
											2.93	1.00	YES
Second	R1	Bedroom	W1	0.78	0.84	0.69	N/A	73.52	0.71	1.00	1.88		
		Bedroom	W2	0.78	0.92	1.06	76.91	73.52	0.65	1.00	1.39		
											3.27	1.00	YES
Plot 3													
Ground	R1	Kitchen	W1	0.78	0.92	1.43	67.94	37.99	0.65	1.00	3.19	3.19	2.00
Ground	R2	Living Room	W2-L	0.78	0.92	2.75	64.69	79.27	0.65	0.15	0.42		
		Living Room	W2-U	0.78	0.92	4.71	69.12	79.27	0.65	1.00	5.14		
											5.56	1.50	YES

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Daylight Assessment - Average Daylight Factor

Date: 19/01/2022

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Glass Transmittance	Maintenance Factor	Glazed Area	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Req'd Value	Meets BRE Criteria
First	R1	Bedroom	W1-L	0.78	0.92	0.40	63.58	48.15	0.65	0.15	0.10		
		Bedroom	W1-U	0.78	0.92	1.36	54.90	48.15	0.65	1.00	1.94	2.04	1.00 YES
First	R2	Bedroom	W2-L	0.78	0.92	0.55	72.55	55.84	0.65	0.15	0.13		
		Bedroom	W2-U	0.78	0.92	1.87	66.87	55.84	0.65	1.00	2.81	2.94	1.00 YES
Second	R1	Bedroom	W1	0.78	0.84	0.69	N/A	73.51	0.71	1.00	1.88		
		Bedroom	W2	0.78	0.92	1.06	76.98	73.51	0.65	1.00	1.39	3.28	1.00 YES
Plot 4													
Ground	R1	Kitchen	W1	0.78	0.92	1.43	68.91	37.99	0.65	1.00	3.24		
											3.24	2.00	YES
Ground	R2	Living Room	W2-L	0.78	0.92	2.75	65.42	79.27	0.65	0.15	0.43		
		Living Room	W2-U	0.78	0.92	4.71	70.24	79.27	0.65	1.00	5.22	5.65	1.50 YES
First	R1	Bedroom	W1-L	0.78	0.92	0.40	65.15	48.15	0.65	0.15	0.10		
		Bedroom	W1-U	0.78	0.92	1.36	56.20	48.15	0.65	1.00	1.99	2.09	1.00 YES
First	R2	Bedroom	W2-L	0.78	0.92	0.55	73.64	55.84	0.65	0.15	0.14		
		Bedroom	W2-U	0.78	0.92	1.87	67.74	55.84	0.65	1.00	2.84	2.98	1.00 YES
Second	R1	Bedroom	W1	0.78	0.84	0.69	N/A	73.52	0.71	1.00	1.88		
		Bedroom	W2	0.78	0.92	1.06	77.37	73.52	0.65	1.00	1.40	3.28	1.00 YES
Plot 5													
Ground	R1	Kitchen	W1	0.78	0.92	1.43	64.59	37.99	0.65	1.00	3.04		
											3.04	2.00	YES
Ground	R2	Living Room	W2-L	0.78	0.92	2.75	67.66	79.27	0.65	0.15	0.44		
		Living Room	W2-U	0.78	0.92	4.71	72.55	79.27	0.65	1.00	5.40	5.84	1.50 YES
First	R1	Bedroom	W1-L	0.78	0.92	0.40	65.50	48.15	0.65	0.15	0.10		
		Bedroom	W1-U	0.78	0.92	1.36	56.41	48.15	0.65	1.00	1.99	2.10	1.00 YES
First	R2	Bedroom	W2-L	0.78	0.92	0.55	75.71	55.84	0.65	0.15	0.14		
		Bedroom	W2-U	0.78	0.92	1.87	69.37	55.84	0.65	1.00	2.91	3.05	1.00 YES
Second	R1	Bedroom	W1	0.78	0.84	0.69	N/A	73.52	0.71	1.00	1.88		
		Bedroom	W2	0.78	0.92	1.06	78.05	73.52	0.65	1.00	1.41	3.30	1.00 YES

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Daylight Assessment - Average Daylight Factor

Date: 19/01/2022

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Glass Transmittance	Maintenance Factor	Glazed Area	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Req'd Value	Meets BR Criteria
Plot 6													
Ground	R1	Kitchen	W1	0.78	0.92	1.43	60.89	37.99	0.65	1.00	2.86	2.86	2.00
Ground	R2	Living Room	W2-L	0.78	0.92	2.75	70.64	79.27	0.65	0.15	0.46		
		Living Room	W2-U	0.78	0.92	4.71	75.04	79.27	0.65	1.00	5.58		
First	R1	Bedroom	W1-L	0.78	0.92	0.40	63.71	48.15	0.65	0.15	0.10		
		Bedroom	W1-U	0.78	0.92	1.36	54.83	48.15	0.65	1.00	1.94		
First	R2	Bedroom	W2-L	0.78	0.92	0.55	77.69	55.84	0.65	0.15	0.14		
		Bedroom	W2-U	0.78	0.92	1.87	70.98	55.84	0.65	1.00	2.98		
Second	R1	Bedroom	W1	0.78	0.84	0.69	N/A	73.51	0.71	1.00	1.88		
		Bedroom	W2	0.78	0.92	1.15	79.09	73.51	0.65	1.00	1.55		
											3.43	1.00	YES

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Daylight Assessment - No Sky Line Analysis

Date: 19/01/2022

Floor Ref.	Room Ref.	Room Use.	Room Area	Lit Area Proposed	Meets BRE Criteria
Plot 1					
Ground	R1	Kitchen	Area m2 % of room	6.56 96.00%	6.32 YES
Ground	R2	Living Room	Area m2 % of room	17.80 100.00%	17.78 YES
First	R1	Bedroom	Area m2 % of room	9.37 97.00%	9.07 YES
First	R2	Bedroom	Area m2 % of room	11.51 100.00%	11.47 YES
Second	R1	Bedroom	Area m2 % of room	15.36 93.00%	14.24 YES
Plot 2					
Ground	R1	Kitchen	Area m2 % of room	6.56 96.00%	6.32 YES
Ground	R2	Living Room	Area m2 % of room	17.80 100.00%	17.78 YES
First	R1	Bedroom	Area m2 % of room	9.37 97.00%	9.07 YES
First	R2	Bedroom	Area m2 % of room	11.51 100.00%	11.45 YES
Second	R1	Bedroom	Area m2 % of room	15.37 93.00%	14.25 YES
Plot 3					
Ground	R1	Kitchen	Area m2 % of room	6.56 96.00%	6.32 YES
Ground	R2	Living Room	Area m2 % of room	17.80 100.00%	17.78 YES
First	R1	Bedroom	Area m2 % of room	9.37 97.00%	9.07 YES
First	R2	Bedroom	Area m2 % of room	11.51 100.00%	11.45 YES
Second	R1	Bedroom	Area m2 % of room	15.36 93.00%	14.25 YES

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Daylight Assessment - No Sky Line Analysis

Date: 19/01/2022

Floor Ref.	Room Ref.	Room Use.	Room Area	Lit Area Proposed	Meets BRE Criteria
Plot 4					
Ground	R1	Kitchen	Area m2 % of room	6.56 96.00%	6.32 YES
Ground	R2	Living Room	Area m2 % of room	17.80 100.00%	17.78 YES
First	R1	Bedroom	Area m2 % of room	9.37 97.00%	9.07 YES
First	R2	Bedroom	Area m2 % of room	11.51 100.00%	11.47 YES
Second	R1	Bedroom	Area m2 % of room	15.37 93.00%	14.25 YES
Plot 5					
Ground	R1	Kitchen	Area m2 % of room	6.56 96.00%	6.32 YES
Ground	R2	Living Room	Area m2 % of room	17.80 100.00%	17.78 YES
First	R1	Bedroom	Area m2 % of room	9.37 97.00%	9.07 YES
First	R2	Bedroom	Area m2 % of room	11.51 100.00%	11.47 YES
Second	R1	Bedroom	Area m2 % of room	15.37 93.00%	14.25 YES
Plot 6					
Ground	R1	Kitchen	Area m2 % of room	6.56 96.00%	6.32 YES
Ground	R2	Living Room	Area m2 % of room	17.80 100.00%	17.78 YES
First	R1	Bedroom	Area m2 % of room	9.37 97.00%	9.07 YES
First	R2	Bedroom	Area m2 % of room	11.51 100.00%	11.46 YES
Second	R1	Bedroom	Area m2 % of room	15.36 93.00%	14.25 YES

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Sunlight Assessment - APSH Analysis

Date: 19/01/2022

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.	Window Orientation	Annual	Winter	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
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Plot 1

Ground	R1	Residential	Kitchen	W1	209°	74.00	23.00	74.00	YES	23.00	YES
	R2	Residential	Living Room	W2	29°N	18.00	2.00	18.00	NO	2.00	NO
First	R1	Residential	Bedroom	W1	209°	57.00	21.00	57.00	YES	21.00	YES
	R2	Residential	Bedroom	W2	29°N	14.00	2.00	14.00	NO	2.00	NO
Second	R1	Residential	Bedroom	W1	209° Inc	95.00	30.00	100.00	YES	30.00	YES
				W2	29°N	18.00	2.00				

Plot 2

Ground	R1	Residential	Kitchen	W1	209°	73.00	23.00	73.00	YES	23.00	YES
	R2	Residential	Living Room	W2	29°N	18.00	2.00	18.00	NO	2.00	NO
First	R1	Residential	Bedroom	W1	209°	58.00	22.00	58.00	YES	22.00	YES
	R2	Residential	Bedroom	W2	29°N	14.00	2.00	14.00	NO	2.00	NO
Second	R1	Residential	Bedroom	W1	209° Inc	95.00	30.00	100.00	YES	30.00	YES
				W2	29°N	18.00	2.00				

Plot 3

Ground	R1	Residential	Kitchen	W1	209°	69.00	22.00	69.00	YES	22.00	YES
	R2	Residential	Living Room	W2	29°N	18.00	2.00	18.00	NO	2.00	NO
First	R1	Residential	Bedroom	W1	209°	58.00	22.00	58.00	YES	22.00	YES
	R2	Residential	Bedroom	W2	29°N	14.00	2.00	14.00	NO	2.00	NO
Second	R1	Residential	Bedroom	W1	209° Inc	95.00	30.00	100.00	YES	30.00	YES
				W2	29°N	18.00	2.00				

Plot 4

Ground	R1	Residential	Kitchen	W1	209°	70.00	24.00	70.00	YES	24.00	YES
	R2	Residential	Living Room	W2	29°N	17.00	2.00	17.00	NO	2.00	NO
First	R1	Residential	Bedroom	W1	209°	60.00	24.00	60.00	YES	24.00	YES
	R2	Residential	Bedroom	W2	29°N	14.00	2.00	14.00	NO	2.00	NO

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Sunlight Assessment - APSH Analysis

Date: 19/01/2022

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.	Window Orientation	Annual	Winter	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
Second	R1	Residential	Bedroom	W1 W2	209° Inc 29°N	95.00 18.00	30.00 2.00	100.00	YES	30.00	YES

Plot 5

Ground	R1	Residential	Kitchen	W1	209°	68.00	23.00	68.00	YES	23.00	YES
	R2	Residential	Living Room	W2	29°N	17.00	2.00	17.00	NO	2.00	NO
First	R1	Residential	Bedroom	W1	209°	60.00	24.00	60.00	YES	24.00	YES
	R2	Residential	Bedroom	W2	29°N	14.00	2.00	14.00	NO	2.00	NO
Second	R1	Residential	Bedroom	W1 W2	209° Inc 29°N	95.00 18.00	30.00 2.00	100.00	YES	30.00	YES

Plot 6

Ground	R1	Residential	Kitchen	W1	209°	61.00	21.00	61.00	YES	21.00	YES
	R2	Residential	Living Room	W2	29°N	17.00	2.00	17.00	NO	2.00	NO
First	R1	Residential	Bedroom	W1	209°	56.00	22.00	56.00	YES	22.00	YES
	R2	Residential	Bedroom	W2	29°N	14.00	2.00	14.00	NO	2.00	NO
Second	R1	Residential	Bedroom	W1 W2	209° Inc 29°N	94.00 19.00	29.00 2.00	99.00	YES	29.00	YES

Project Name: Uxbridge Road, Hayes

Project No.: 1768

Report Title: Two hours Sunlight to Amenity

Date: 19/01/2022

Test Date	Floor Ref.	Amenity Ref.	Amenity Area	Lit Area Proposed	Meets BRE Criteria
Plot 1					
21st March	Ground	A1	Area m2 Percentage	68.82 47.04 68%	YES
21st June	Ground	A1	Area m2 Percentage	68.82 65.76 96%	YES
Plot 2					
21st March	Ground	A2	Area m2 Percentage	57.04 21.84 38%	NO
21st June	Ground	A2	Area m2 Percentage	57.04 51.60 90%	YES
Plot 3					
21st March	Ground	A3	Area m2 Percentage	55.88 20.39 36%	NO
21st June	Ground	A3	Area m2 Percentage	55.88 50.47 90%	YES
Plot 4					
21st March	Ground	A4	Area m2 Percentage	54.79 19.31 35%	NO
21st June	Ground	A4	Area m2 Percentage	54.79 49.23 90%	YES
Plot 5					
21st March	Ground	A5	Area m2 Percentage	53.56 18.31 34%	NO
21st June	Ground	A5	Area m2 Percentage	53.56 48.08 90%	YES
Plot 6					
21st March	Ground	A6	Area m2 Percentage	52.59 18.88 36%	NO
21st June	Ground	A6	Area m2 Percentage	52.59 47.99 91%	YES
HMO Shared					
21st March	Ground	A7	Area m2 Percentage	158.95 114.59 72%	YES