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CONSULTING LIMITED

Client: Hyde Park Construction Ltd

Assessment for the Provision Daylight and Sunlight within the Development at Haydon House, 296 Joel Street, Pinner, HA5 2PY

May 2022

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Contents Amendment Record

This report has been issued and amended as follows:

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0	Draft Issue	17th May 2022	LH	SPH
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Contents

1 Background and Scope of Appraisal

1.1 Study Objectives

Herrington Consulting has been commissioned by Hyde Park Construction Ltd to analyse and quantify the provision of natural daylight and sunlight to the habitable rooms within the proposed development at Haydon House, 296 Joel Street, Pinner, HA5 2PY.

1.2 Site Location

The site is situated in the area of Pinner in North- West London and is located within the administrative boundaries of the London Borough of Hillingdon. The location of the site is shown in Figure 1.1 and the site plan included in Appendix A.1 of this report gives a more detailed reference to the site location and layout.

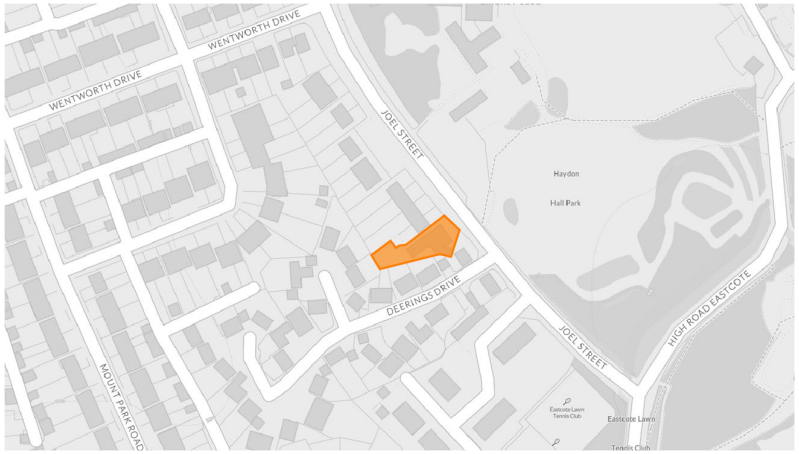

Figure 1.1 – Location map (Contains Ordnance Survey data © Crown copyright and database right 2011)

1.3 The Development

The proposal for development is the conversion of the existing building into 6 new residential flats under permitted development class MA. 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)."*

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.

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

Policy 7.6Bd on 'Standards for privacy, daylight and sunlight' 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'

Furthermore, 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 – Good Quality Homes for All Londoners – Module C - Housing Design Quality and Standards (Pre-consultation Draft Oct 2020)

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 2 – Development Management Policies (Adopted Version January 2020)

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"*

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 The Town and Country Planning (General Permitted Development etc.) (England) (Amendment) Order 2021

Legislation on permitted development related to Class MA (Development consisting of a change of use of a building and any land within its curtilage from a use falling within Class E (commercial, business and service) of Schedule 2 to the Use Classes Order to a use falling within Class C3 (dwellinghouses) of Schedule 1 to that Order) states that MA.2 – (1) Development under Class MA is permitted subject to the following conditions (f) the provision of adequate natural light in all habitable rooms of the dwellinghouses.'

2.5 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.

3.2 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.

3.3 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.

If a significant area of the working plane lies beyond the NSL, i.e. this area of the room has no view of the sky at the working plane height, there is likely to be a poor distribution of daylight within the room. However, this test is relatively simplistic and based purely on geometric parameters. Consequently, no account is taken of the reflectance of light within the room.

The BRE Guidelines do recommend that the NSL test is applied alongside the ADF test, and this is primarily to provide an indication of how well the daylight within the room is distributed. The determination of the level of adequacy of natural daylighting is, however, still predominantly driven by the ADF target values. Notwithstanding this, the NSL test does provide useful information on the way that the daylight is distributed within a room and this is often useful to the designer. The NSL test has therefore been undertaken alongside the ADF analysis and the graphical and numerical outputs are included within the appendix to this report. These results are, however, only used in a qualitative and informative way, rather than a quantitative pass/fail manner.

3.4 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.

3.5 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.

For a typical development to be considered as having very good levels of direct sunlight, the centre point of the window would ideally need to receive more than 25% of APSH for the year, including at least 5% in the winter months between 21st September and the 21st March. The BRE Guidelines also recommend having at least one main window of the proposed development facing within 90 degrees of due south, with priority given to living rooms where sunlight is especially appreciated in the afternoon. Bedrooms and kitchens are generally viewed as less important, where occupants normally prefer sunlight in the mornings.

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.

3.6 Overshadowing

The BRE Guidance suggests that where new development is served by amenity areas, then analysis can be undertaken to quantify the amount of sunlight these amenity areas will enjoy. 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.

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.

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.

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 (CAD Map – March 2022)
- Scheme drawings in AutoCAD format (CIAO Architects – May 2022)
- Aerial photography (Google Maps and Bing)

4.2 Numerical Modelling

The numerical analysis used in this assessment has been undertaken using the Waldrum Tools (Version 5.0.0.9) software package.

4.3 Calculation Assumptions

The following assumptions have been made when undertaking the analysis:

- When assessing the ADF for internal rooms and in the absence of specific information, the following parameters are assumed:
  - 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).
  - 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 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 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 and absolute daylighting values are expressed to one decimal place.

5 Daylight Provision to Proposed New Rooms

5.1 Overview

As discussed in Section 4, the primary test for daylight 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.

5.2 Average Daylight Factor

Using the analytical techniques and assumptions discussed in Sections 3 and 4, the daylighting tests have been applied for the habitable rooms within the proposed development.

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. For example, where a room includes both living and kitchen spaces, then the higher daylighting requirement of the kitchen is adopted as the threshold target.

The Mayor of London SPG – Housing Design Quality and Standards (Pre-consultation Draft 2020) states that '*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'*. Therefore, a target of 1.5% has been applied to all living/kitchen/dining rooms and Studio Apartments in this instance.

It should also be noted that there is potential for the provision of daylight to the new residential rooms within the development to be impacted by surrounding trees. Quantifying the impact that trees have on daylighting is not a straightforward process as the tree canopy only causes partial shade; additionally, the daylight radiating through it varies depending on the time of year and the amount of leaf cover. The BRE Guidelines include specific analytic procedures that allow the impact that trees have on the provision of daylight to be quantified and this is expressed in terms of the Average Daylight Factor (ADF). The ADF value is calculated using a transparency factor for both summer full leaf conditions and winter bare branch conditions. It should also be noted that the surrounding trees have been modelled as simple sphere shapes and therefore does not reflect the individual characteristics of the trees.

The British Standard Code of Practice for Daylighting BS8206-2 sets out the minimum recommended values of ADF for different types of room and these values are included in Table 5.1 for reference. When considering the impact of trees on daylight provision, the BRE Guidelines state the following:

- Where ADF values are exceeded for both summer and winter conditions, the daylight would be considered to be adequate.
- Where the ADF values are below the minimum recommended values for both summer and winter conditions, the daylight would not be considered to be adequate.
- For a room where the ADF value is exceeded in winter but not the summer, daylight provision year-round is likely to be adequate, although it is clear that the trees are having some effect on daylight.

Therefore, the results are summarised in Table 5.1 below under bare branch conditions.

Unit number & Floor level	Room number and use	ADF value achieved (Bare Branch)	Target ADF value	Meets BRE or London SPG criteria
Flat 1 – Ground	R1 – Studio	1.5%	1.5%	Yes
Flat 2 - Ground	R1- LKD	1.5%	1.5%	Yes
	R2 - Bedroom	2.1%	1.0%	Yes
Flat 3 - Ground	R1 - LKD	3.1%	1.5%	Yes
	R2 - Bedroom	3.6%	1.0%	Yes
	R3 – Bedroom	2.1%	1.0%	Yes
Flat 4 - First	R1 - LKD	5.6%	1.5%	Yes
Flat 4 – Second	R1 - Bedroom	4.2%	1.0%	Yes
Flat 5 – First	R1 - LKD	7.0%	1.5%	Yes
	R2 – Bedroom	2.1%	1.0%	Yes
Flat 5 – Second	R1 - Bedroom	4.5%	1.0%	Yes
Flat 6 – First	R1 - LKD	2.8%	1.5%	Yes
	R2 – Bedroom	2.3%	1.0%	Yes
Flat 6 - Second	R1 - Bedroom	2.2%	1.0%	Yes

Table 5.1 – Calculated ADF values – Bare Branch Conditions

From the results in Table 5.1 it can be seen that all rooms within the proposed development exceed the minimum required ADF target values under bare branch conditions prescribed by the BRE Guidelines or Mayor of London SPG -Good Quality Homes for All Londoners – Module C - Housing Design Quality and Standards (Pre-consultation Draft Oct 2020). The results for the habitable rooms under full leaf conditions are presented within Appendix A.3. Furthermore, the

results of the NSL test included in Appendix A.3. indicate that all of the rooms will enjoy good levels of daylight distribution.

6 Sunlight Provision to Proposed Development

6.1 Annual Probable Sunlight Hours Assessment

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 absence of sunlight is more acceptable than when its exclusion seems arbitrary.

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.

Following the approach prescribed by the BRE Guidelines where preference for sunlight is given to the main living area of a proposed unit, in this case, the Living/ Kitchen/ Dining (LKD) and Studio areas, only the LKD and studio rooms within the proposed units have been included in the table of results below. The complete set of results of the APSH analysis which includes the remainder rooms within the units (all bedrooms) are presented on Appendix A.3 of this report.

The results of this analysis are summarised in Table 6.1 for Full Leaf conditions and Table 6.2 for Bare Branch conditions.

Unit and Floor Level	Room Use	Percentage APSH (Room Total)	
		All year	Winter
Flat 1 - Ground	R1 - Studio	11%	1%
Flat 2 Ground	R1 – LKD	14%	2%
Flat 3 – Ground	R1 - LKD	69%	12%
Flat 4 – First	R1 - LKD	75%	17%
Flat 5 – First	R1 – LKD	75%	17%
Flat 6 – First	R1- LKD	92%	25%

Table 6.1 – Results of APSH Analysis (Full Leaf)

Unit and Floor Level	Room Use	Percentage APSH (Room Total)	
		All year	Winter
Flat 1 - Ground	R1 - Studio	15%	2%
Flat 2 Ground	R1 – LKD	17%	2%
Flat 3 – Ground	R1 - LKD	68%	11%
Flat 4 – First	R1 - LKD	75%	17%
Flat 5 – First	R1 – LKD	75%	17%
Flat 6 – First	R1- LKD	92%	25%

Table 6.2 – Results of APSH Analysis (Bare Branch)

The results in Tables 6.1 and 6.2 show that the majority of the main habitable rooms within the 6 proposed units exceed the aspirational target value of 25% annual probable sunlight hours and 5% winter sunlight hours under both full leaf and bare branch conditions with the exception of Flats 1 and 2. Whilst these Flats are falling short of meeting the aspirational BRE targets for sun lighting, these Flats do meet the criteria set out within Standard 32 of the the London Plan. This states that 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*'.

Furthermore, it should be noted that the windows serving Flats 1 and 2 are north facing. Given that the proposals will be a conversion of an existing non-residential space, it has been necessary to have north facing windows in order to make efficient use of the site.

Whilst designers are encouraged to maximise the use of south-facing windows for habitable rooms, this guidance predominately relates to new builds, where the designer has greater degree of control over layouts and orientation. However, where existing buildings are being converted it is widely accepted that the sustainable benefits derived from re-purposing existing building place constraints on the ability of the designer to maximise sunlight to all rooms. This is supported by the NPPF (2021) that states '*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).*"

When taking into consideration this national and regional planning policy, it has been possible to conclude that the main habitable spaces within the proposed development will be well lit throughout the year by direct sunlight.

6.2 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 principal 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 clearly that the residents of the 6 apartments will have access to an amenity space at ground level which lies to the south of the property. This amenity space will receive in excess of 2 hours of direct sunlight to over 50% of its area on the 21st March under full leaf conditions, achieving 54%, and also under bare branch conditions achieving 56%. In reality, the sunlight to the amenity area will be somewhere between the summer and winter scenario on the 21st March.

Therefore, the analysis has also been run on the 21st June with full leaf conditions, to reflect the amount of direct sunlight the amenity area will receive when the trees are most likely to be in full leaf. The results of this indicate that on 21st June, the amenity space will receive in well in excess of 2 hours or more of direct sunlight to over 50% of its space, achieving 91%. Therefore, in exceeding this minimum target on the 21st March and during the summer months when this amenity space is most likely to be used, this space will deliver the principle benefits derived from direct sunlight and as a result will help deliver the amenity benefits provided by outdoor spaces.

7 Conclusions

The detailed analysis undertaken as part of this assessment has examined the provision of natural daylight and sunlight to the habitable rooms for the proposed development at Haydon House, 296 Joel Street, Pinner, HA5 2PY. Using detailed numerical modelling applications, the Average Daylight Factor (ADF) and Annual Probable Sunlight Hours (APSH) have been quantified for each room. In line with the assessment criteria prescribed by the BRE Guidelines, it has been shown that for all rooms, the provision of natural daylight will meet or exceed the minimum required threshold set out in both the BRE Guidelines or the Mayor of London SPG Good Quality Homes for All Londoners – Module C - Housing Design Quality and Standards (Pre-consultation Draft Oct 2020). 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 in each of the proposed units, the main living area will receive well in excess of the ‘all year’ and ‘winter’ target levels of direct sunlight or be compliant with Standard 32 of the London Plan. As a consequence of the light and additional visual interest provided by this direct sunlight, the amenity value of these rooms will be enhanced.

Furthermore, it has been possible to conclude that the amenity space will benefit from direct sunlight, particularly during the summer months when the space is most likely to be used.

Overall, it can be concluded that with respect to daylight and sunlight, the proposed scheme complies with legislation on permitted development Class MA (Development consisting of a change of use of a building and any land within its curtilage from a use falling within Class E (commercial, business and service) of Schedule 2 to the Use Classes Order to a use falling within Class C3 (dwellinghouses) of Schedule 1 to that Order). Specifically, the development will provide an adequate provision of natural light in proposed habitable rooms.

A Appendices

Appendix A.1 – Scheme Drawings

Appendix A.2 – Graphical Model Outputs

Appendix A.3 – Tabulated Results for Daylight & Sunlight Calculations (Provision to New Development)

Appendix A.1 – Scheme Drawings

PROPOSED SITE PLAN
Scale 1:200

0 2.0 4.0 10.0 20.0

Notes
1. All dimensions to be checked on site.
2. All dimensions are to masonry unless otherwise stated (ie not plaster finishes)
3. All information is to be checked and verified by the contractors and sub-contractors for accuracy and fit.
4. Discrepancies or omissions to be brought to the attention of **CIAO** prior to construction.
5. This drawing has been drawn to scale,as shown, for the purpose of obtaining local authority approval
6. For General Notes refer to Drawing No. 4GN-01

Rev	Date	Notes

Client: Westgold Holdings Ltd	**Stage:** Planning	**Date:** 13/05/2022	
Project: Haydon House, 296 Joel Street, HA5 2PY	**Project Ref. No:** 166	**Scale:** 1:200@A3	
Drawing title: Proposed site plan	**Drawing number:** 166-3GA-01	**Drawn By:** FC	**Checked By:** AP

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CIAO
Creative Ideas & Architecture Office

PROPOSED GROUND FLOOR PLAN
Scale 1:100

PROPOSED FIRST FLOOR PLAN
Scale 1:100

KEY

- 2 bedroom 3 people flat
- 1 person studio
- 1 bedroom 2 people flat

0 1.0 2.0 5.0 10.0

Notes

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2. All dimensions are to masonry unless otherwise stated (ie not plaster finished)
3. All discrepancies to be brought to the attention of the contractors for accuracy and fit.
4. Discrepancies or omissions to be brought to the attention of **CIAO** prior to construction.
5. This drawing has been drawn to scale, as shown, for the purpose of obtaining local authority approval
6. For Construction purposes refer to drawing No. 204(P)

Rev	Date	Notes

Client: Westgold Holdings Ltd

Project: Haydon House, 296 Joel Street HA5 2PY

Drawing title: Proposed 1st & 2nd floor plan

Stage: Planning

Project Ref. No: 166

Drawing number: 166-CIA-102

Date: 13/05/2022

Scale: 1:100@A2

Drawn By: FC

Checked By: AP

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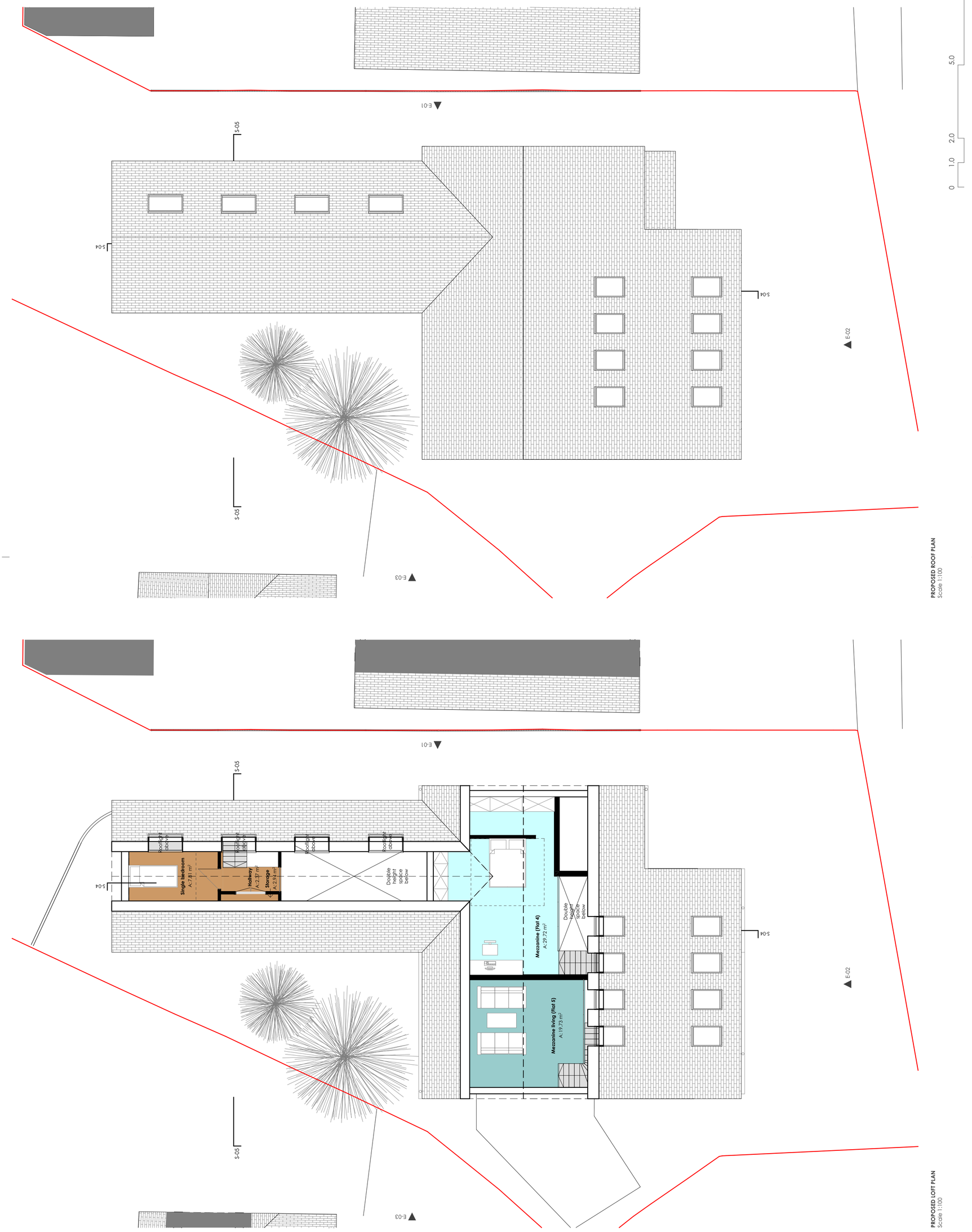
info@ciao.archi
www.ciao.archi



PROPOSED LOFT PLAN
Scale 1:100

Notes

1. All dimensions to be checked on site.
2. All dimensions are to masonry unless otherwise stated (ie not plaster finish).
3. All information is to be checked and verified by the contractors and sub-contractors for accuracy and fit.
4. Discrepancies or omissions to be brought to the attention of **CIAO** prior to construction.
5. This drawing has been drawn to scale, as shown, for the purpose of obtaining local authority approval
6. For General Notes refer to Drawing No. 4GN-01

Rev	Date	Notes

Client: Westgold Holdings Ltd	**Stage:** Planning	**Date:** 13/05/2022	
Project: Hoydon House, 296 Joel Street, HA5 2PY	**Project Ref. No:** 166	**Scale:** 1:100@A2	
Drawing title: Proposed loft & roof plan	**Drawing number:** 166-3GA-03	**Drawn By:** FG	**Checked By:** AP

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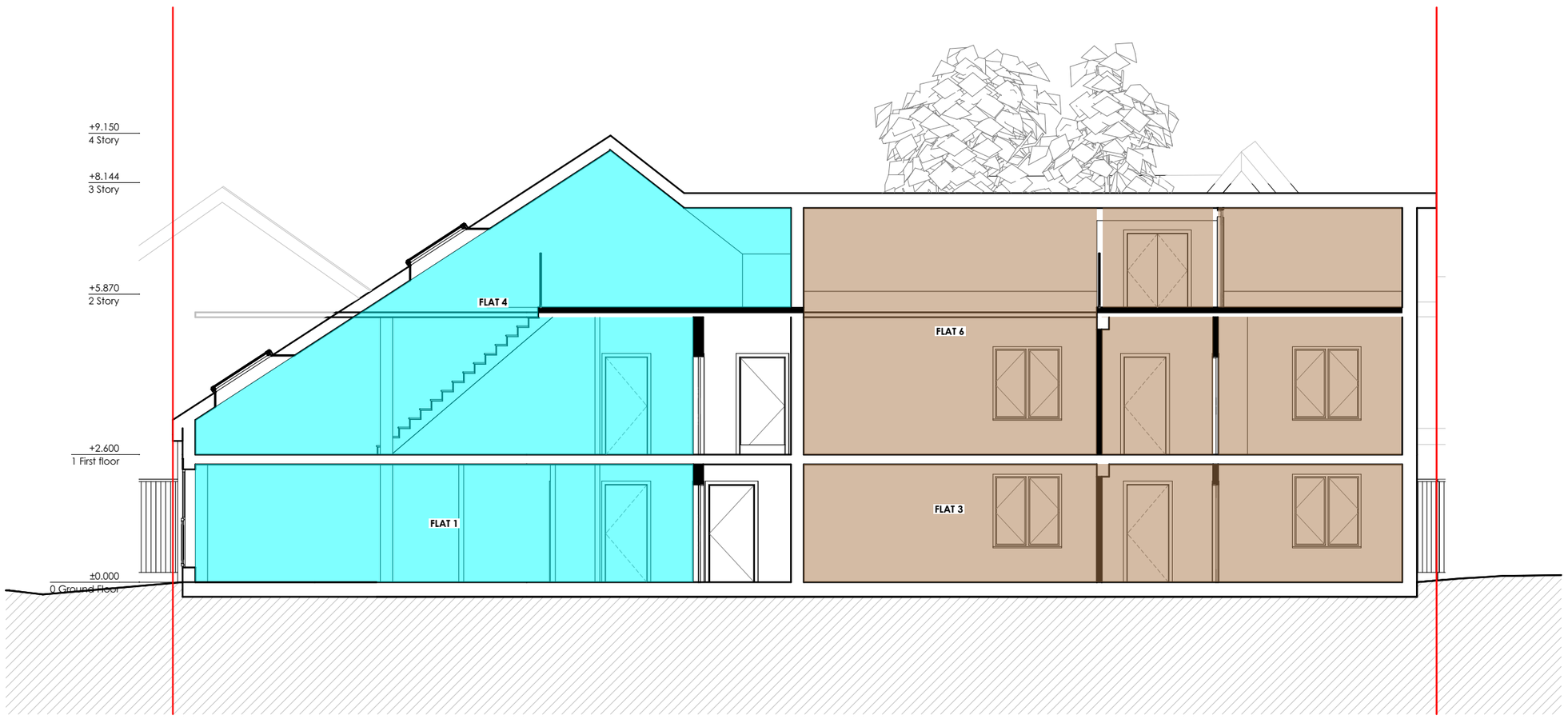
PROPOSED FRONT ELEVATION
Scale 1:100

PROPOSED EAST ELEVATION
Scale 1:100



PROPOSED S-04 SECTION
Scale 1:100

0 2.0 4.0 10.0 20.0

Notes

1. All dimensions to be checked on site.
2. All dimensions are to masonry unless otherwise stated (ie not plaster finishes)
3. All information is to be checked and verified by the contractors and sub-contractors for accuracy and fit.
4. Discrepancies or omissions to be brought to the attention of **CIAO** prior to construction.
5. This drawing has been drawn to scale, as shown, for the purpose of obtaining local authority approval
6. For General Notes refer to Drawing No. 4GN-01

Rev	Date	Notes

Client: Westgold Holdings Ltd	**Stage:** Planning	**Date:** 13/05/2022	
Project: Haydon House, 296 Joel Street, HA5 2PY	**Project Ref. No:** 166	**Scale:** 1:100@A2	
Drawing title: Proposed Section S-04 and east elevation	**Drawing number:** 166-3GA-04	**Drawn By:** FC	**Checked By:** AP

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PROPOSED REAR ELEVATION
Scale 1:100

PROPOSED WEST ELEVATION
Scale 1:100

PROPOSED S-05 SECTION
Scale 1:100

0 2.0 4.0 10.0 20.0

Notes

1. All dimensions to be checked on site.
2. All dimensions are to masonry unless otherwise stated (ie not plaster finishes)
3. All information is to be checked and verified by the contractors and sub-contractors for accuracy and fit.
4. Discrepancies or omissions to be brought to the attention of **CIAO** prior to construction.
5. This drawing has been drawn to scale, as shown, for the purpose of obtaining local authority approval
6. For General Notes refer to Drawing No. 4GN-01

Rev	Date	Notes

Client: Westgold Holdings Ltd	**Stage:** Planning	**Date:** 13/05/2022	
Project: Haydon House, 296 Joel Street, HA5 2PY	**Project Ref. No:** 166	**Scale:** 1:100@A2	
Drawing title: Proposed elevations and section	**Drawing number:** 166-3GA-05	**Drawn By:** FC	**Checked By:** AP

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Appendix A.2 – Graphical Model Outputs

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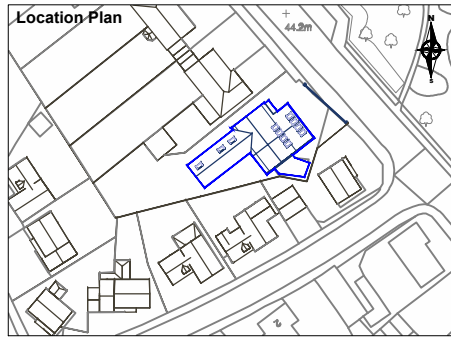
Legend

Proposed Buildings
Surrounding Buildings

Location Plan



Rev	Description	Date
00	First issue	17/05/2022

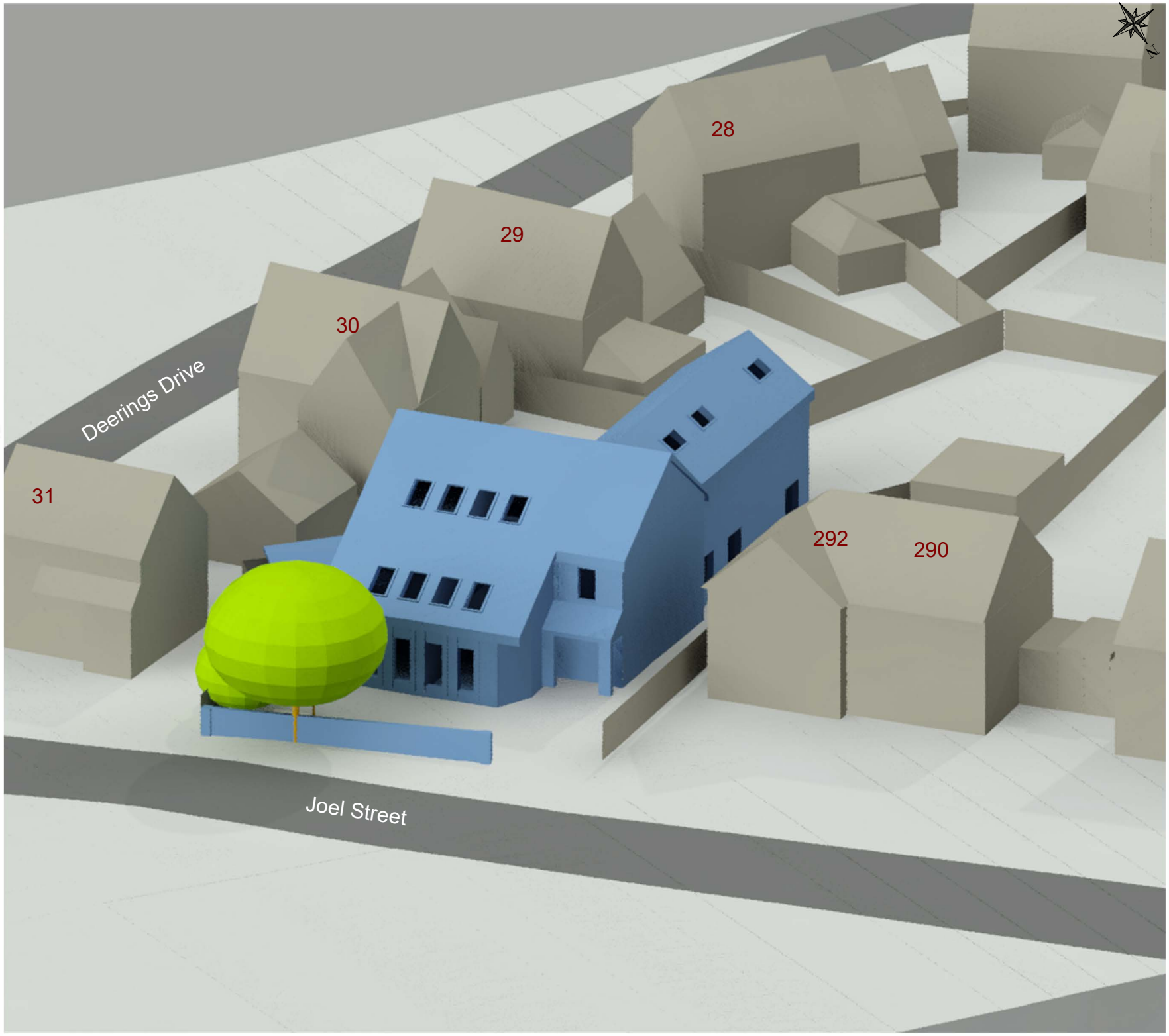
CLIENT
Hyde Park Construction

PROJECT
Haydon House, 296 Joel Street, Pinner

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3450	LH	LR

DWG REF.
3D Model - Location Plan

DWG No.
3450_01



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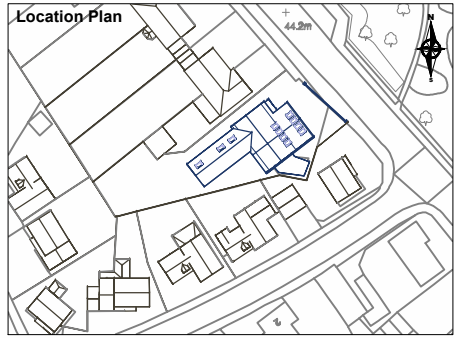
Legend

Proposed Buildings

Surrounding Buildings

Location Plan



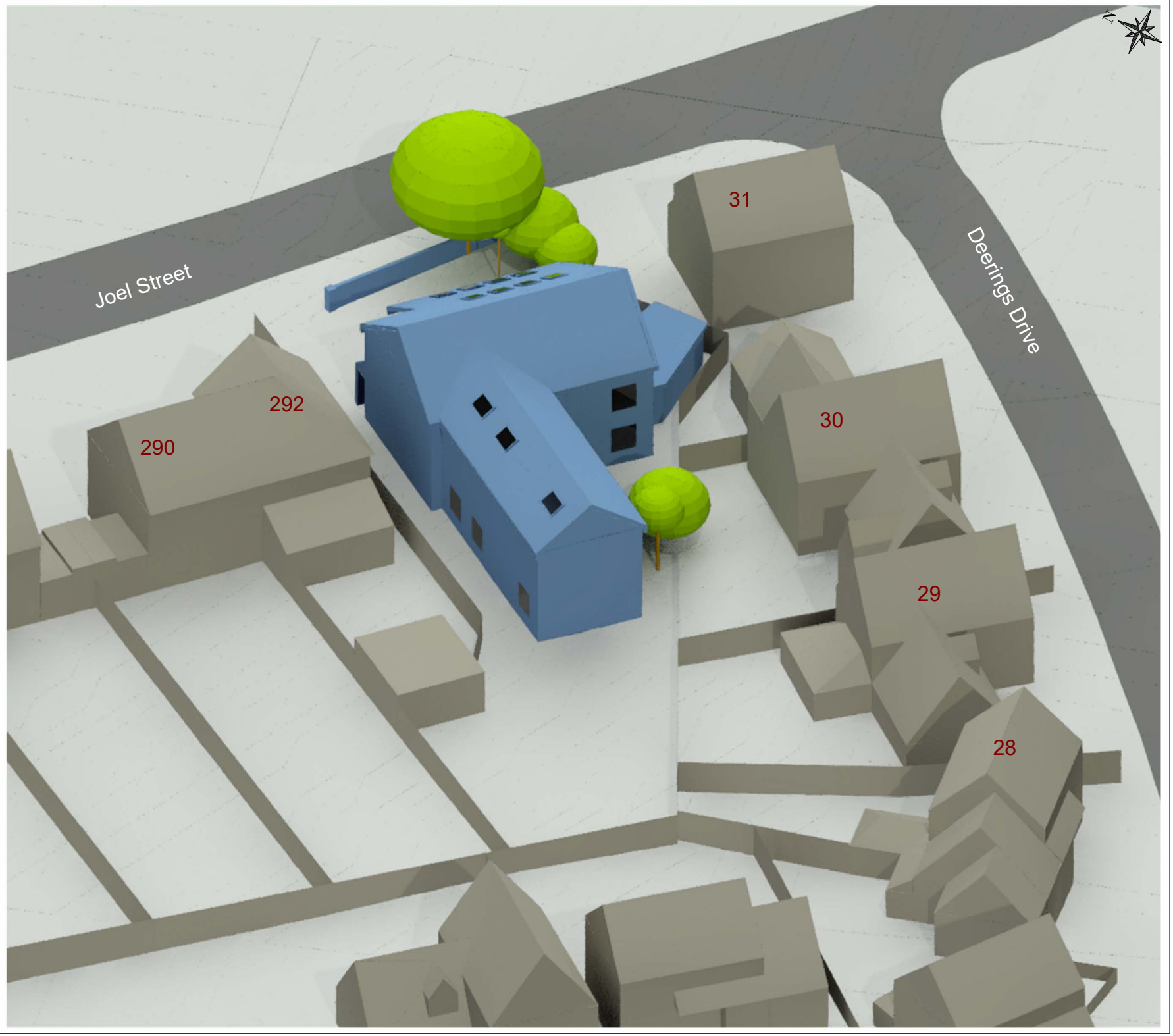
Rev	Description	Date
00	First issue	17/05/2022

CLIENT: Hyde Park Construction

PROJECT: Haydon House, 296 Joel Street, Pinner

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3450	LH	LR

DWG REF.	DWG No.
3D Model - Proposed Site Scenarios	3450_02



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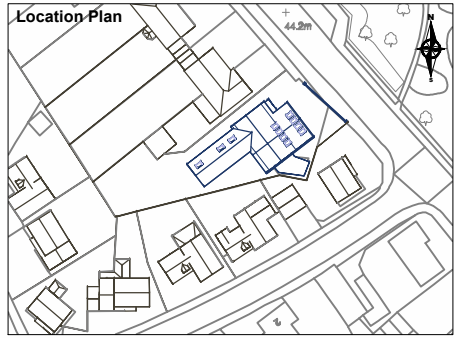
Legend

Proposed Buildings
Surrounding Buildings

Location Plan



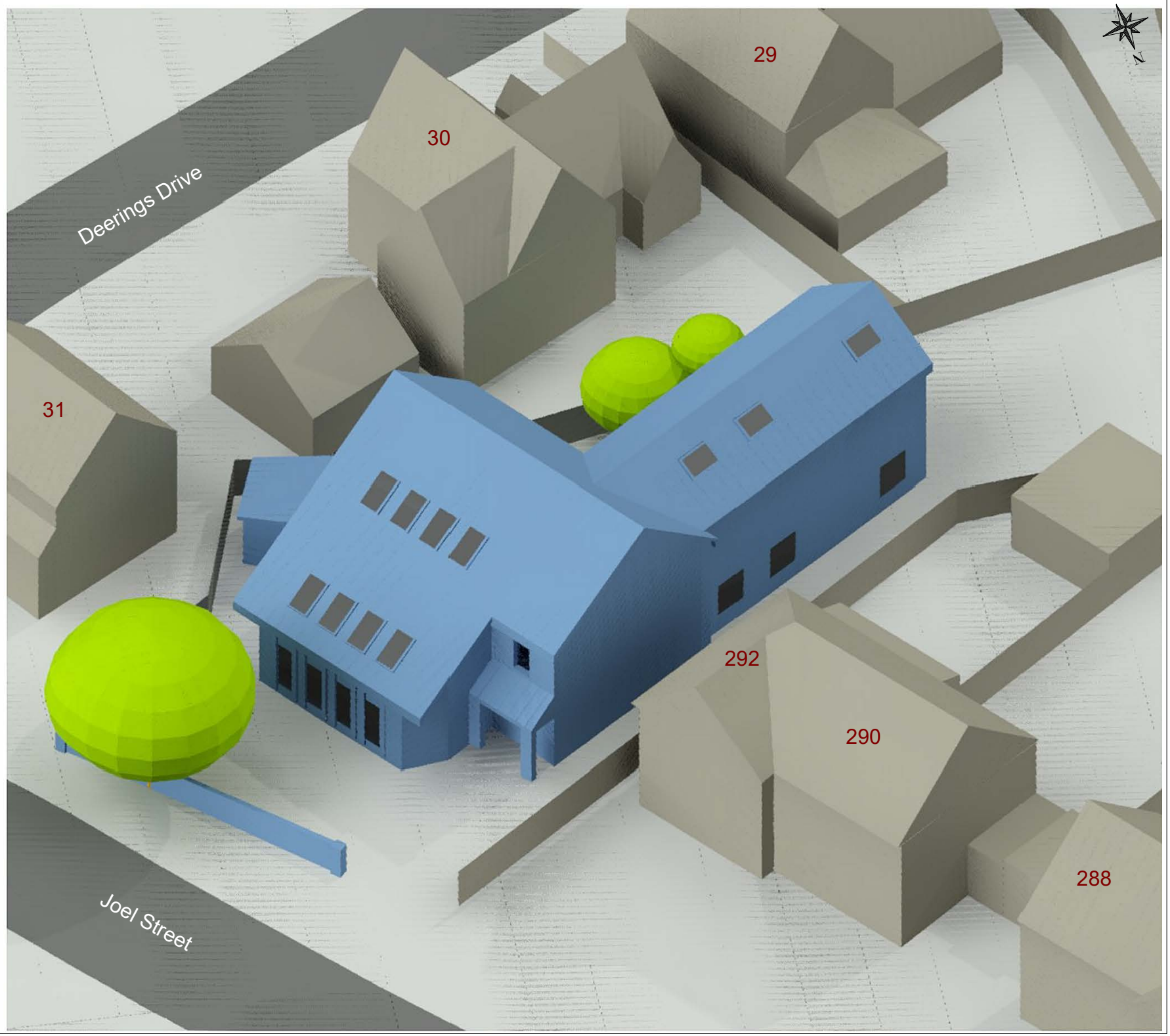
Rev	Description	Date
00	First issue	17/05/2022

CLIENT
Hyde Park Construction

PROJECT
Haydon House, 296 Joel Street, Pinner

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3450	LH	LR

DWG REF.	DWG No.
3D Model - Proposed Site Scenarios	3450_03



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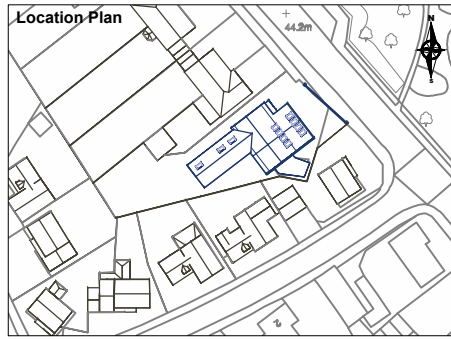
Proposed Buildings
Surrounding Buildings

Location Plan



Rev	Description	Date
00	First issue	17/05/2022

CLIENT
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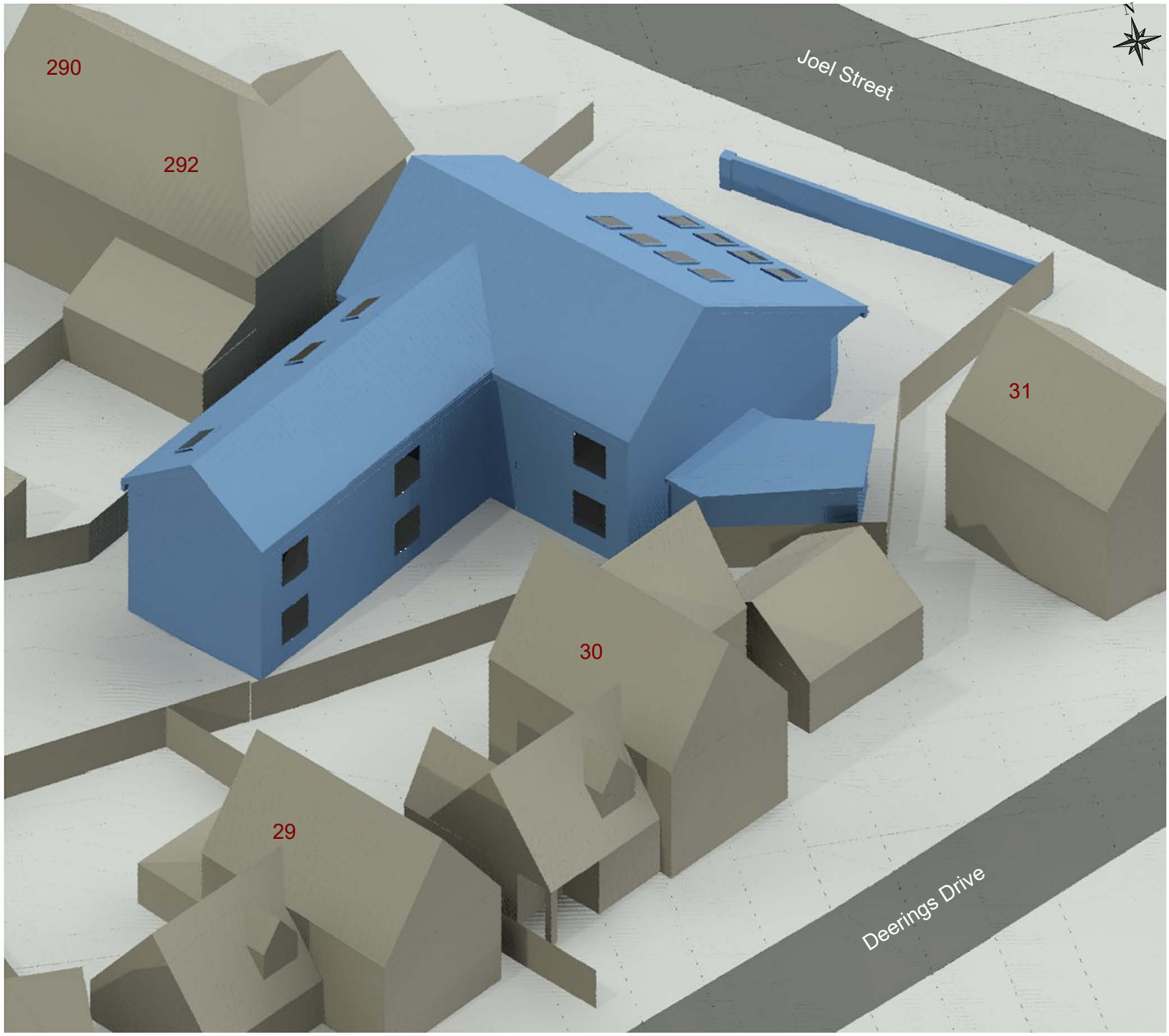
PROJECT
Haydon House, 296 Joel Street, Pinner

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3450	LH	LR

DWG REF.
Location of Window Receptors

DWG No.
3450_04



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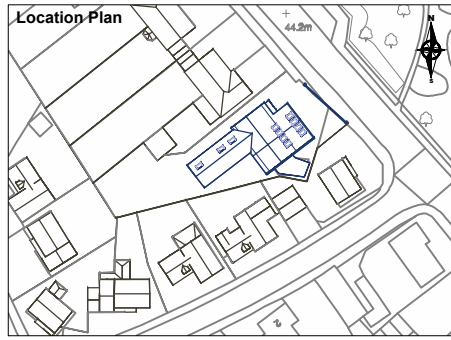
Legend

Proposed Buildings

Surrounding Buildings

Location Plan



Rev	Description	Date
00	First issue	17/05/2022

CLIENT: Hyde Park Construction

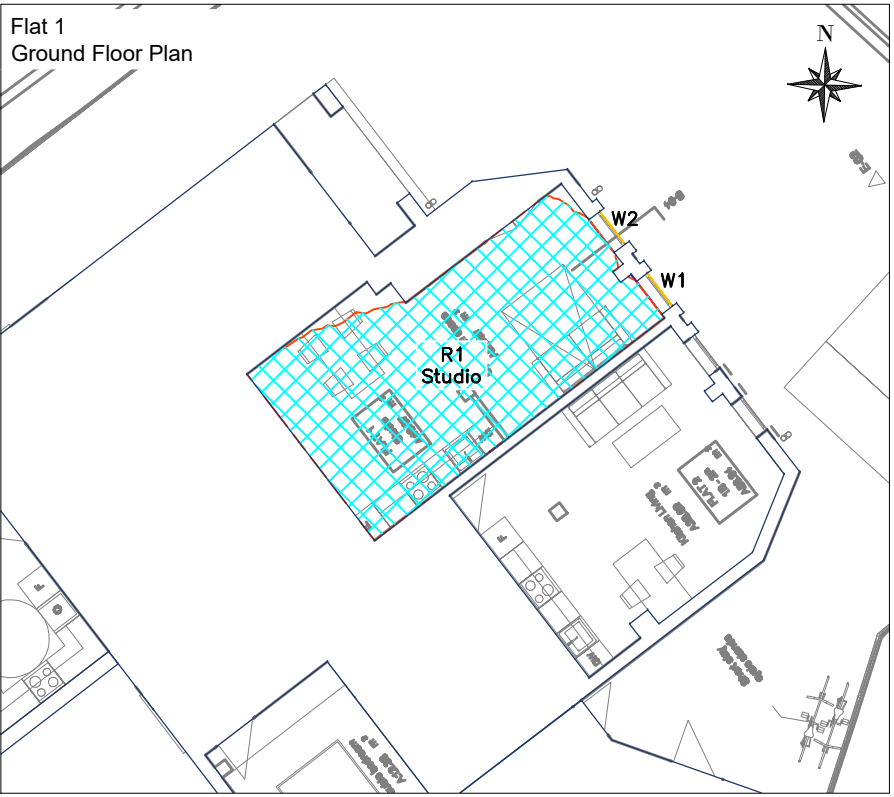
PROJECT: Haydon House, 296 Joel Street, Pinner

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3450	LH	LR

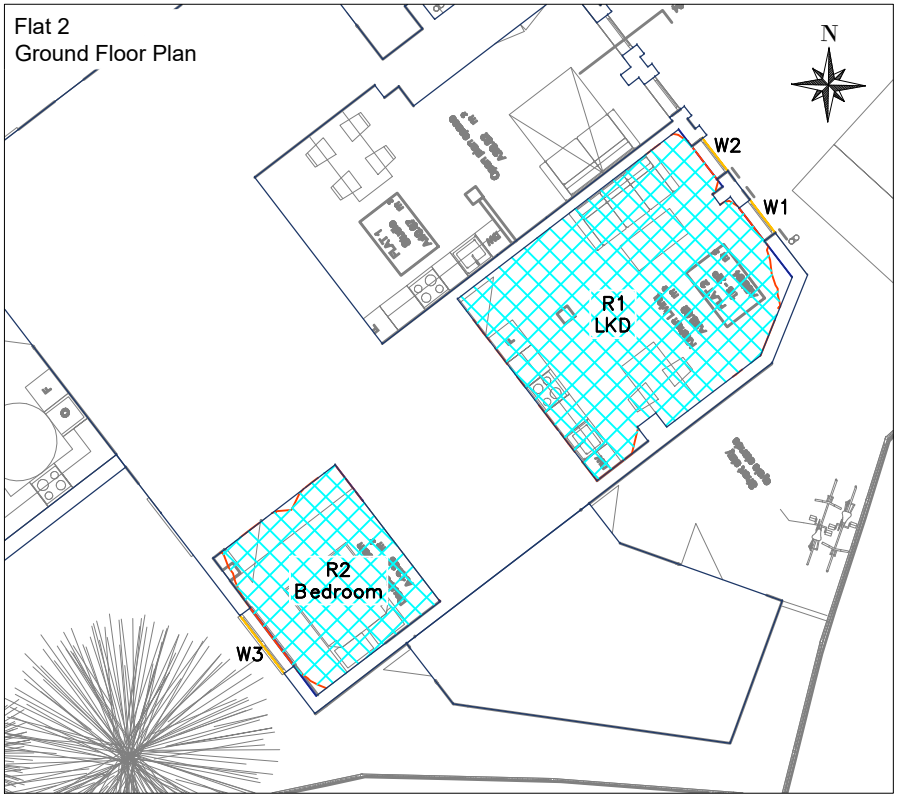
DWG REF.: Location of Window Receptors

DWG No.: 3450_05

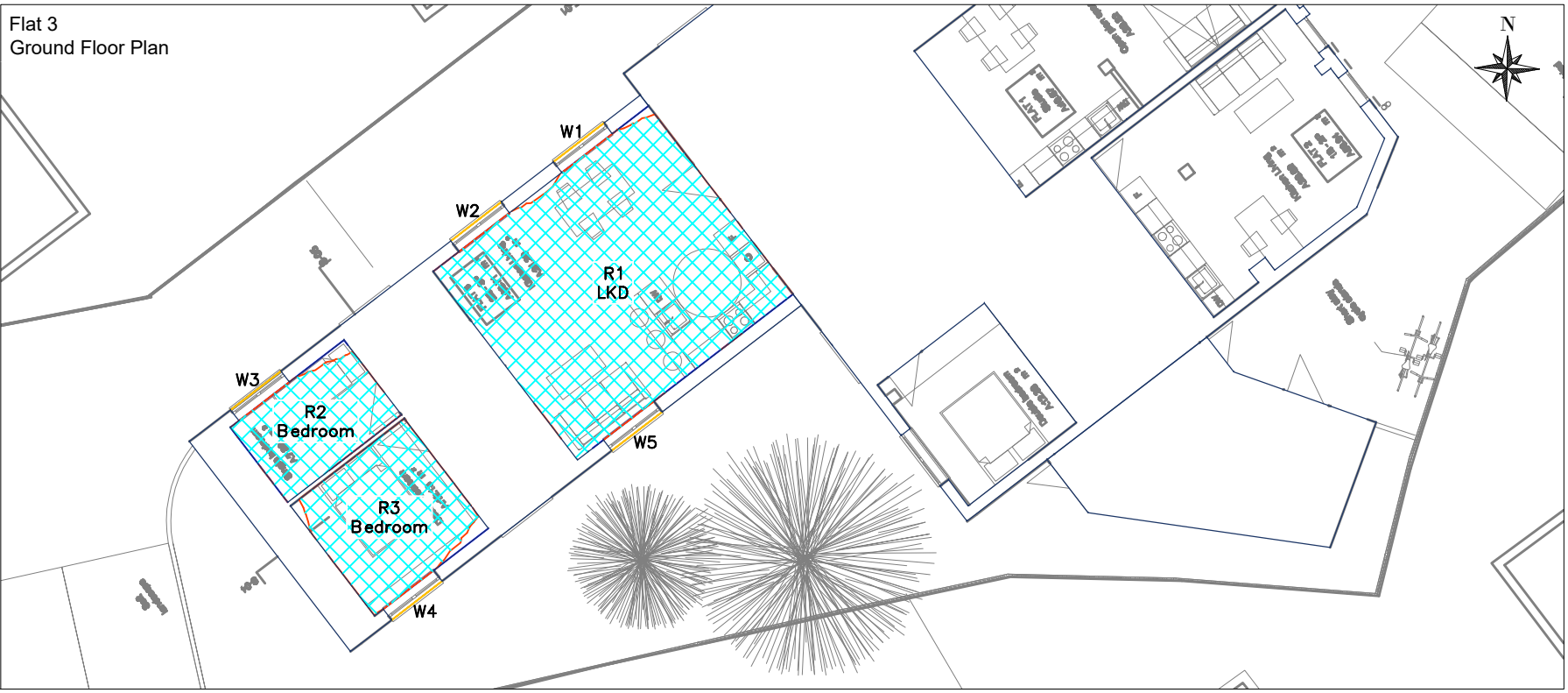
Flat 1
Ground Floor Plan



Flat 2
Ground Floor Plan



Flat 3
Ground Floor Plan



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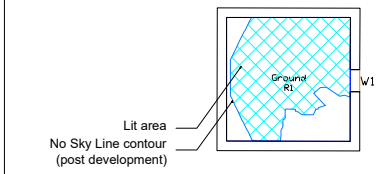
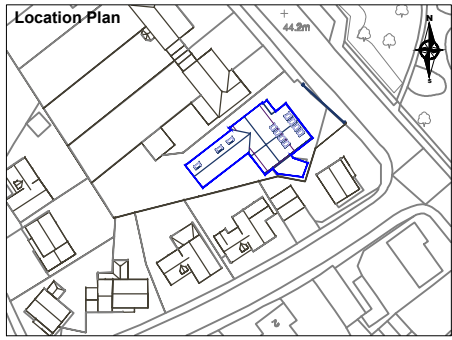


Location Plan



Rev	Description	Date
00	First issue	17/05/2022

CLIENT
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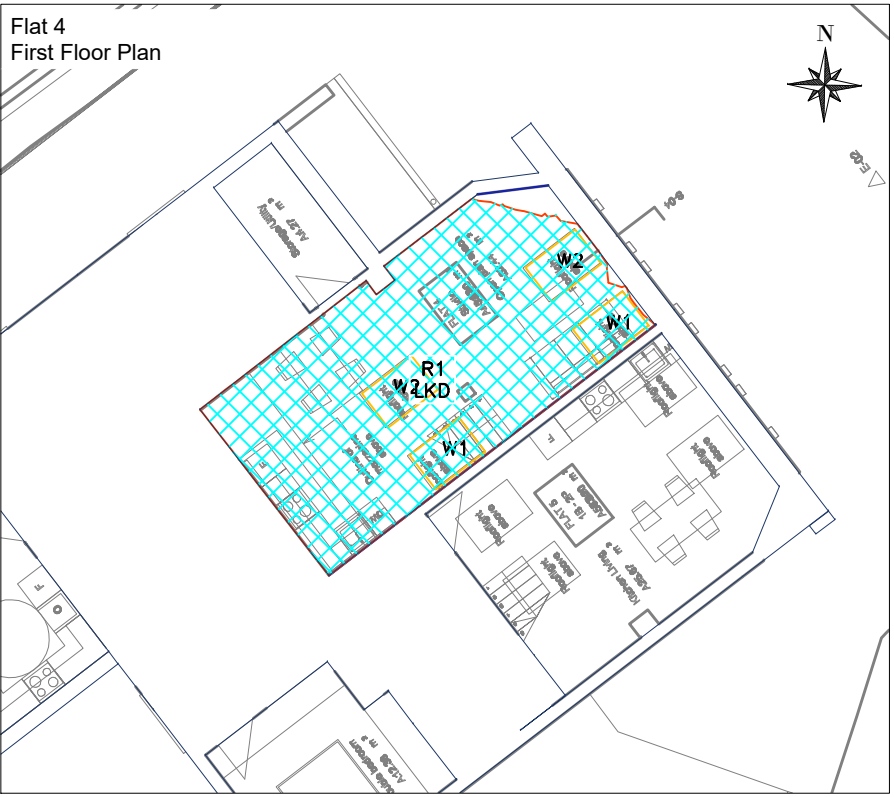
PROJECT
Haydon House, 296 Joel Street, Pinner

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3450	LH	LR

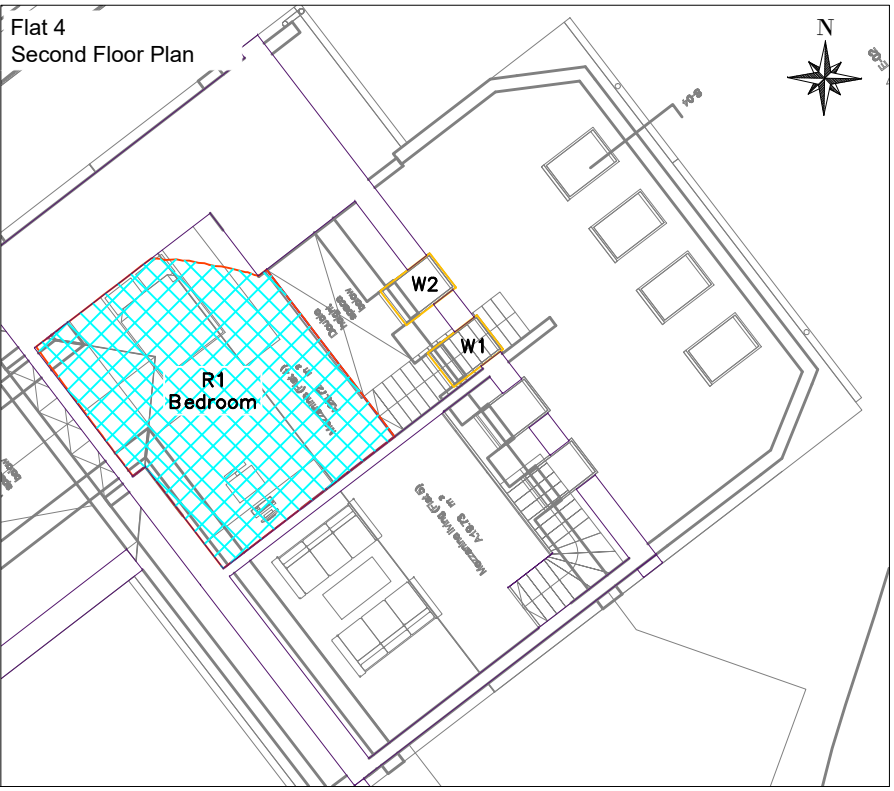
DWG REF.	DWG No.
NSL contours	3450_06

Flat 4
First Floor Plan



Flat 5
First Floor Plan

Flat 4
Second Floor Plan



Flat 5
Second Floor Plan

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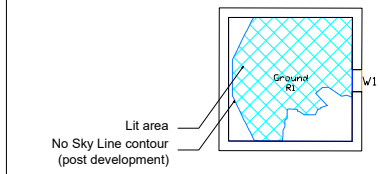
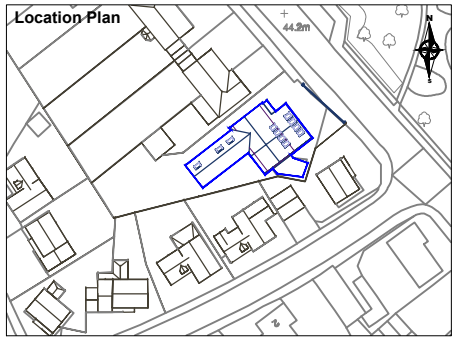


Location Plan



Rev	Description	Date
00	First issue	17/05/2022

CLIENT
Hyde Park Construction

PROJECT
Haydon House, 296 Joel Street, Pinner

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3450	LH	LR

DWG REF.	DWG No.
NSL contours	3450_07

Flat 6
First Floor Plan

Flat 6
Second Floor Plan

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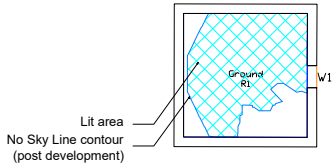
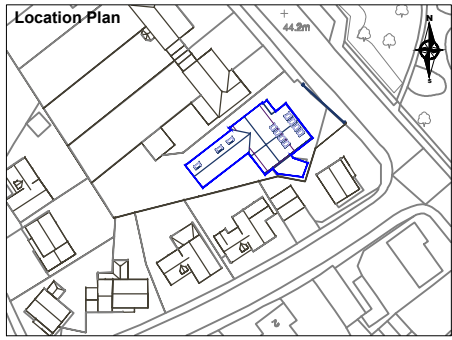


Location Plan



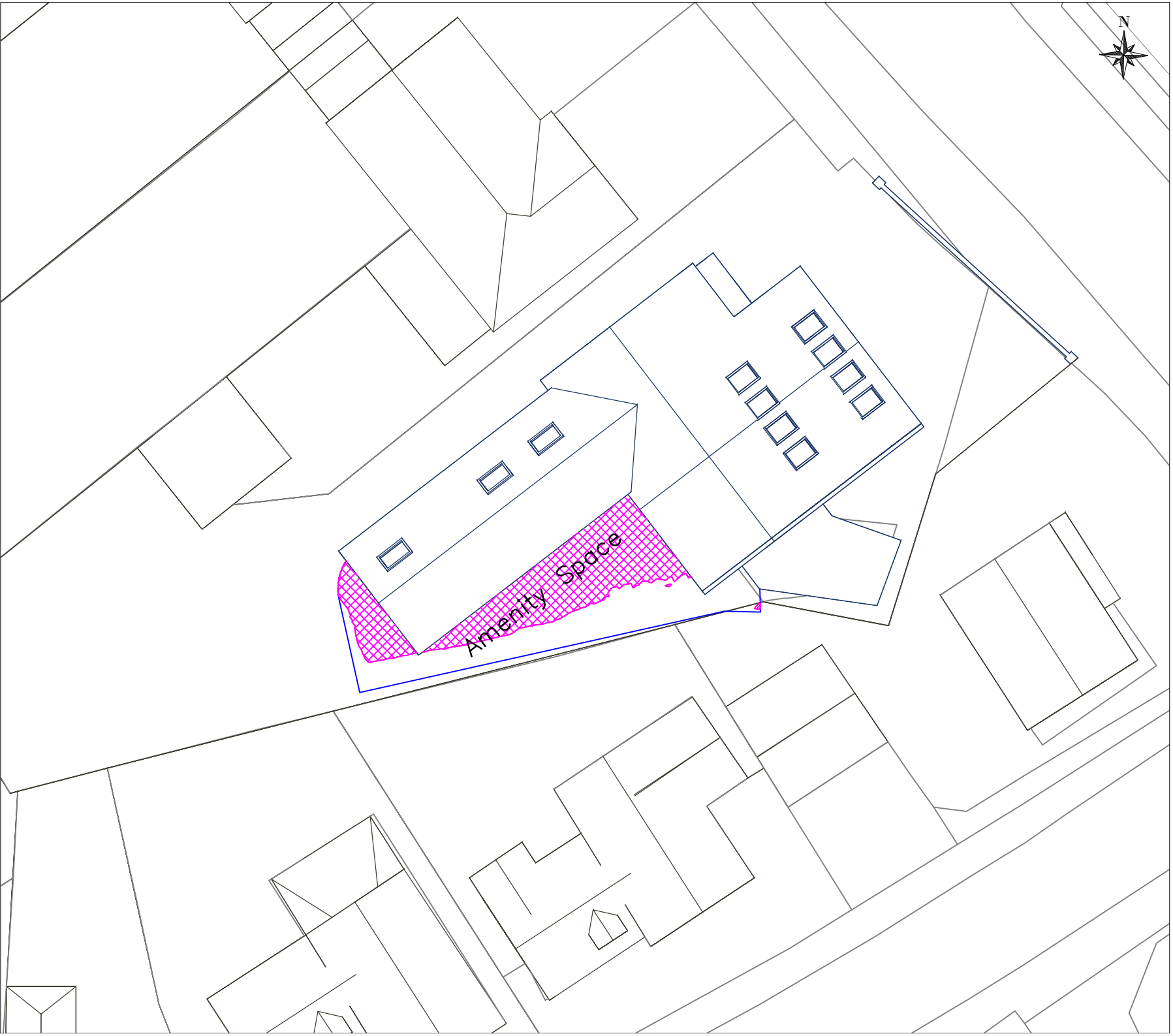
Rev	Description	Date
00	First issue	17/05/2022

CLIENT
Hyde Park Construction

PROJECT
Haydon House, 296 Joel Street, Pinner

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3450	LH	LR

DWG REF.	DWG No.
NSL contours	3450_08



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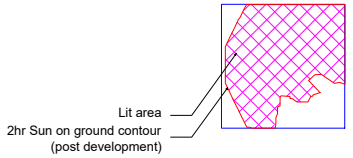
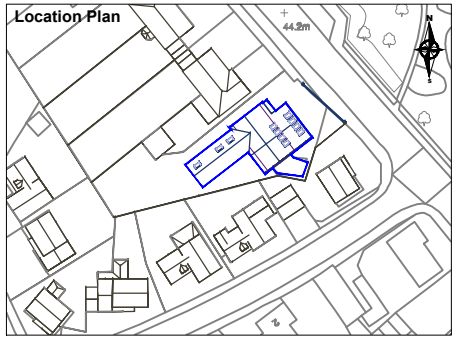
Legend



Location Plan



Rev	Description	Date
00	First issue	17/05/2022

CLIENT
Hyde Park Construction

PROJECT
Haydon House, 296 Joel Street, Pinner

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	3450	LH	LR

DWG REF.
2hr SoG amenity contours

DWG No.
3450_09

Appendix A.3 – Tabulated Results for Daylight and Sunlight Calculations (Provision to New Development)

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Average Daylight Factor - Proposed Scheme Analysis
Date: 13/05/2022
Full Leaf

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 London Plan Criteria
Flat 1													
Ground	R1	Studio	W1-L	0.78	0.92	0.35	57.27	105.01	0.65	0.15	0.0		
		Studio	W1-U	0.78	0.92	0.93	58.73	105.01	0.65	1.00	0.6		
		Studio	W2-L	0.78	0.92	0.35	61.42	105.01	0.65	0.15	0.0		
		Studio	W2-U	0.78	0.92	0.93	62.86	105.01	0.65	1.00	0.7		
											1.4	1.50	NO
Flat 2													
Ground	R1	LKD	W1-L	0.78	0.92	0.35	49.67	94.20	0.65	0.15	0.0		
		LKD	W1-U	0.78	0.92	0.93	51.88	94.20	0.65	1.00	0.6		
		LKD	W2-L	0.78	0.92	0.35	53.25	94.20	0.65	0.15	0.0		
		LKD	W2-U	0.78	0.92	0.93	54.84	94.20	0.65	1.00	0.7		
											1.4	1.50	NO
Ground	R2	Bedroom	W3-L	0.78	0.92	0.17	51.85	50.01	0.65	0.15	0.0		
		Bedroom	W3-U	0.78	0.92	1.51	54.62	50.01	0.65	1.00	2.1		
											2.1	1.00	YES
Flat 3													
Ground	R1	LKD	W1-L	0.78	0.92	0.17	55.08	116.15	0.65	0.15	0.0		
		LKD	W1-U	0.78	0.92	1.51	61.36	116.15	0.65	1.00	1.0		
		LKD	W2-L	0.78	0.92	0.17	63.06	116.15	0.65	0.15	0.0		
		LKD	W2-U	0.78	0.92	1.51	70.62	116.15	0.65	1.00	1.2		
		LKD	W5-L	0.78	0.92	0.17	53.26	116.15	0.65	0.15	0.0		
		LKD	W5-U	0.78	0.92	1.51	56.49	116.15	0.65	1.00	0.9		
											3.1	1.50	YES
Ground	R2	Bedroom	W3-L	0.78	0.92	0.17	65.41	38.20	0.65	0.15	0.1		
		Bedroom	W3-U	0.78	0.92	1.51	71.90	38.20	0.65	1.00	3.6		
											3.6	1.00	YES
Ground	R3	Bedroom	W4-L	0.78	0.92	0.17	56.16	48.97	0.65	0.15	0.0		
		Bedroom	W4-U	0.78	0.92	1.51	58.89	48.97	0.65	1.00	2.3		

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Average Daylight Factor - Proposed Scheme Analysis
Date: 13/05/2022
Full Leaf

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 London Plan Criteria
											2.3	1.00	YES
						Flat 4							
First	R1	LKD	W1	0.78	0.84	0.95	N/A	133.62	0.70	1.00	1.5		
		LKD	W2	0.78	0.84	0.95	N/A	133.62	0.70	1.00	1.5		
		LKD	W1	0.78	0.84	0.95	N/A	133.62	0.70	1.00	1.3		
		LKD	W2	0.78	0.84	0.95	N/A	133.62	0.70	1.00	1.3		
											5.6	1.50	YES
Second	R1	Bedroom	W1	0.78	0.84	0.95	N/A	111.14	0.71	1.00	2.1		
		Bedroom	W2	0.78	0.84	0.95	N/A	111.14	0.71	1.00	2.1		
											4.2	1.00	YES
						Flat 5							
First	R1	LKD	W1	0.78	0.84	0.95	N/A	107.67	0.70	1.00	1.9		
		LKD	W2	0.78	0.84	0.95	N/A	107.67	0.70	1.00	1.9		
		LKD	W1	0.78	0.84	0.96	N/A	107.67	0.70	1.00	1.6		
		LKD	W2	0.78	0.84	0.96	N/A	107.67	0.70	1.00	1.6		
											7.0	1.50	YES
First	R2	Bedroom	W3-L	0.78	0.92	0.17	65.41	60.61	0.65	0.15	0.0		
		Bedroom	W3-U	0.78	0.92	1.51	66.70	60.61	0.65	1.00	2.1		
											2.1	1.00	YES

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Average Daylight Factor - Proposed Scheme Analysis
Date: 13/05/2022
Full Leaf

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 London Plan Criteria
Second	R1	Living Room	W1	0.78	0.84	0.96	N/A	103.51	0.71	1.00	2.3		
		Living Room	W2	0.78	0.84	0.96	N/A	103.51	0.71	1.00	2.3		
											4.5	1.50	YES
						Flat 6							
First	R1	LKD	W1-L	0.78	0.92	0.17	66.98	178.85	0.65	0.15	0.0		
		LKD	W1-U	0.78	0.92	1.51	68.46	178.85	0.65	1.00	0.7		
		LKD	W3	0.78	0.84	0.83	N/A	178.85	0.73	1.00	1.0		
		LKD	W4	0.78	0.84	0.83	N/A	178.85	0.73	1.00	1.0		
											2.8	1.50	YES
First	R2	Bedroom	W2-L	0.78	0.92	0.17	68.98	58.74	0.65	0.15	0.0		
		Bedroom	W2-U	0.78	0.92	1.51	70.39	58.74	0.65	1.00	2.3		
											2.3	1.00	YES
Second	R1	Bedroom	W1	0.78	0.84	0.83	N/A	77.22	0.69	1.00	2.2		
											2.2	1.00	YES

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Daylight Distribution - Proposed Scheme Analysis
Date of Analysis: 13/05/2022
Full Leaf

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Proposed	Meets BRE Criteria
Flat 1						
Ground	R1	Studio	Area m2	25.32	24.51	
			% of room		97.00%	YES
Flat 2						
Ground	R1	LKD	Area m2	22.91	22.59	
			% of room		99.00%	YES
Ground	R2	Bedroom	Area m2	9.89	9.66	
			% of room		98.00%	YES
Flat 3						
Ground	R1	LKD	Area m2	31.20	30.98	
			% of room		99.00%	YES
Ground	R2	Bedroom	Area m2	6.55	6.32	
			% of room		97.00%	YES
Ground	R3	Bedroom	Area m2	9.61	9.26	
			% of room		96.00%	YES

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Daylight Distribution - Proposed Scheme Analysis
Date of Analysis: 13/05/2022
Full Leaf

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Proposed	Meets BRE Criteria
Flat 4						
First	R1	LKD	Area m2	32.47	30.96	
			% of room		95.00%	YES
Second	R1	Bedroom	Area m2	24.15	22.83	
			% of room		95.00%	YES
Flat 5						
First	R1	LKD	Area m2	25.67	24.06	
			% of room		94.00%	YES
First	R2	Bedroom	Area m2	11.09	10.95	
			% of room		99.00%	YES
Second	R1	Living Room	Area m2	21.92	21.58	
			% of room		98.00%	YES
Flat 6						
First	R1	LKD	Area m2	31.20	31.20	
			% of room		100.00%	YES
First	R2	Bedroom	Area m2	11.33	11.05	
			% of room		98.00%	YES
Second	R1	Bedroom	Area m2	19.08	14.83	
			% of room		78.00%	NO

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Daylight & Sunlight - Proposed Scheme Analysis
Date of Analysis: 13/05/2022
Full Leaf

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.	Window Orientation	Annual	Meets BRE Criteria	Winter	Meets BRE Criteria	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
Flat 1													
Ground	R1	Residential	Studio	W1 W2	52°N 52°N	13.49 11.26	NO NO	1.25 1.41	NO NO	11	NO	1	NO
Flat 2													
Ground	R1	Residential	LKD	W1 W2	52°N 52°N	17.74 14.45	NO NO	1.20 2.20	NO NO	14	NO	2	NO
	R2	Residential	Bedroom	W3	232°	43.20	YES	8.20	YES	43	YES	8	YES
Flat 3													
Ground	R1	Residential	LKD	W1 W2 W5	322°N 322°N 142°	17.00 17.00 51.82	NO NO YES	1.00 1.00 10.82	NO NO YES	69	YES	12	YES
	R2	Residential	Bedroom	W3	322°N	18.00	NO	1.00	NO	18	NO	1	NO
	R3	Residential	Bedroom	W4	142°	55.82	YES	13.00	YES	56	YES	13	YES
Flat 4													
First	R1	Residential	LKD	W1 W2	52°N Inc 52°N Inc	71.00 71.80	YES YES	17.00 17.00	YES YES	75	YES	17	YES

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Daylight & Sunlight - Proposed Scheme Analysis
Date of Analysis: 13/05/2022
Full Leaf

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.	Window Orientation	Annual	Meets BRE Criteria	Winter	Meets BRE Criteria	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
Second	R1	Residential	LKD	W1	52°N Inc	75.00	YES	17.00	YES				
				W2	52°N Inc	75.00	YES	17.00	YES	75	YES	17	YES
	R1	Residential	Bedroom	W1	52°N Inc	75.00	YES	17.00	YES				
				W2	52°N Inc	75.00	YES	17.00	YES	75	YES	17	YES
Flat 5													
First	R1	Residential	LKD	W1	52°N Inc	71.60	YES	16.00	YES				
				W2	52°N Inc	71.00	YES	17.00	YES	75	YES	17	YES
	R2	Residential	Bedroom	W3	232°	53.00	YES	17.00	YES	53	YES	17	YES
Second	R1	Residential	LKD	W1	52°N Inc	75.00	YES	17.00	YES				
				W2	52°N Inc	75.00	YES	17.00	YES	75	YES	17	YES
	R1	Residential	Living Room	W1	52°N Inc	75.00	YES	17.00	YES				
				W2	52°N Inc	75.00	YES	17.00	YES	75	YES	17	YES
Flat 6													
First	R1	Residential	LKD	W1	142°	66.00	YES	23.00	YES				
				W3	322°N Inc	71.00	YES	11.00	YES				
				W4	322°N Inc	72.00	YES	11.00	YES	92	YES	25	YES
	R2	Residential	Bedroom	W2	142°	68.00	YES	22.00	YES	68	YES	22	YES
Second	R1	Residential	Bedroom	W1	322°N Inc	72.00	YES	11.00	YES	72	YES	11	YES

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Two hours Sunlight to Amenity - Proposed Scheme Analysis
Date: 13/05/2022
Full Leaf - 21st March

Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Proposed	Meets BRE Criteria
Proposed Building					
Ground	A1	Area m2 Percentage	71.48	38.33 54%	YES

Project Name:Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Two hours Sunlight to Amenity - Proposed Scheme Analysis
Date: 13/05/2022
Full Leaf - 21st June

Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Proposed	Meets BRE Criteria
Proposed Building					
Ground	A1	Area m2 Percentage	71.48	65.29 91%	YES

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Average Daylight Factor - Proposed Scheme Analysis
Date: 13/05/2022
Bare Branch

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 London Plan Criteria
Flat 1													
Ground	R1	Studio	W1-L	0.78	0.92	0.35	61.56	105.01	0.65	0.15	0.0		
		Studio	W1-U	0.78	0.92	0.93	63.18	105.01	0.65	1.00	0.7		
		Studio	W2-L	0.78	0.92	0.35	64.72	105.01	0.65	0.15	0.0		
		Studio	W2-U	0.78	0.92	0.93	66.23	105.01	0.65	1.00	0.7		
											1.5	1.50	YES
Flat 2													
Ground	R1	LKD	W1-L	0.78	0.92	0.35	55.33	94.20	0.65	0.15	0.0		
		LKD	W1-U	0.78	0.92	0.93	57.81	94.20	0.65	1.00	0.7		
		LKD	W2-L	0.78	0.92	0.35	58.39	94.20	0.65	0.15	0.0		
		LKD	W2-U	0.78	0.92	0.93	60.20	94.20	0.65	1.00	0.7		
											1.5	1.50	YES
Ground	R2	Bedroom	W3-L	0.78	0.92	0.17	52.44	50.01	0.65	0.15	0.0		
		Bedroom	W3-U	0.78	0.92	1.51	54.84	50.01	0.65	1.00	2.1		
											2.1	1.00	YES
Flat 3													
Ground	R1	LKD	W1-L	0.78	0.92	0.17	55.08	116.15	0.65	0.15	0.0		
		LKD	W1-U	0.78	0.92	1.51	61.36	116.15	0.65	1.00	1.0		
		LKD	W2-L	0.78	0.92	0.17	63.06	116.15	0.65	0.15	0.0		
		LKD	W2-U	0.78	0.92	1.51	70.62	116.15	0.65	1.00	1.2		
		LKD	W5-L	0.78	0.92	0.17	53.00	116.15	0.65	0.15	0.0		
		LKD	W5-U	0.78	0.92	1.51	55.82	116.15	0.65	1.00	0.9		
											3.1	1.50	YES
Ground	R2	Bedroom	W3-L	0.78	0.92	0.17	65.41	38.20	0.65	0.15	0.1		
		Bedroom	W3-U	0.78	0.92	1.51	71.90	38.20	0.65	1.00	3.6		
											3.6	1.00	YES

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Average Daylight Factor - Proposed Scheme Analysis
Date: 13/05/2022
Bare Branch

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 London Plan Criteria
Ground	R3	Bedroom	W4-L	0.78	0.92	0.17	51.67	48.97	0.65	0.15	0.0		
		Bedroom	W4-U	0.78	0.92	1.51	53.24	48.97	0.65	1.00	2.1		
											2.1	1.00	YES
						Flat 4							
First	R1	LKD	W1	0.78	0.84	0.95	N/A	133.62	0.70	1.00	1.5		
		LKD	W2	0.78	0.84	0.95	N/A	133.62	0.70	1.00	1.5		
		LKD	W1	0.78	0.84	0.95	N/A	133.62	0.70	1.00	1.3		
		LKD	W2	0.78	0.84	0.95	N/A	133.62	0.70	1.00	1.3		
											5.6	1.50	YES
Second	R1	Bedroom	W1	0.78	0.84	0.95	N/A	111.14	0.71	1.00	2.1		
		Bedroom	W2	0.78	0.84	0.95	N/A	111.14	0.71	1.00	2.1		
											4.2	1.00	YES
						Flat 5							
First	R1	LKD	W1	0.78	0.84	0.95	N/A	107.67	0.70	1.00	1.9		
		LKD	W2	0.78	0.84	0.95	N/A	107.67	0.70	1.00	1.9		
		LKD	W1	0.78	0.84	0.96	N/A	107.67	0.70	1.00	1.6		
		LKD	W2	0.78	0.84	0.96	N/A	107.67	0.70	1.00	1.6		
											7.0	1.50	YES
First	R2	Bedroom	W3-L	0.78	0.92	0.17	65.17	60.61	0.65	0.15	0.0		
		Bedroom	W3-U	0.78	0.92	1.51	66.62	60.61	0.65	1.00	2.1		
											2.1	1.00	YES
Second	R1	Living Room	W1	0.78	0.84	0.96	N/A	103.51	0.71	1.00	2.3		
		Living Room	W2	0.78	0.84	0.96	N/A	103.51	0.71	1.00	2.3		
											4.5	1.50	YES

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Average Daylight Factor - Proposed Scheme Analysis
Date: 13/05/2022
Bare Branch

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 London Plan Criteria
Flat 6													
First	R1	LKD	W1-L	0.78	0.92	0.17	66.67	178.85	0.65	0.15	0.0		
		LKD	W1-U	0.78	0.92	1.51	68.45	178.85	0.65	1.00	0.7		
		LKD	W3	0.78	0.84	0.83	N/A	178.85	0.73	1.00	1.0		
		LKD	W4	0.78	0.84	0.83	N/A	178.85	0.73	1.00	1.0		
											2.8	1.50	YES
First	R2	Bedroom	W2-L	0.78	0.92	0.17	65.33	58.74	0.65	0.15	0.0		
		Bedroom	W2-U	0.78	0.92	1.51	69.39	58.74	0.65	1.00	2.2		
											2.3	1.00	YES
Second	R1	Bedroom	W1	0.78	0.84	0.83	N/A	77.22	0.69	1.00	2.2		
											2.2	1.00	YES

Project Name: Haydon house, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Daylight Distribution - Proposed Scheme Analysis
Date of Analysis: 13/05/2022
Bare Branch

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Proposed	Meets BRE Criteria
Flat 1						
Ground	R1	Studio	Area m2	25.32	24.51	
			% of room		97.00%	YES
Flat 2						
Ground	R1	LKD	Area m2	22.91	22.59	
			% of room		99.00%	YES
Ground	R2	Bedroom	Area m2	9.89	9.66	
			% of room		98.00%	YES
Flat 3						
Ground	R1	LKD	Area m2	31.20	30.98	
			% of room		99.00%	YES
Ground	R2	Bedroom	Area m2	6.55	6.32	
			% of room		97.00%	YES
Ground	R3	Bedroom	Area m2	9.61	9.26	
			% of room		96.00%	YES

Project Name: Haydon house, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Daylight Distribution - Proposed Scheme Analysis
Date of Analysis: 13/05/2022
Bare Branch

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Proposed	Meets BRE Criteria
Flat 4						
First	R1	LKD	Area m2	32.47	30.96	
			% of room		95.00%	YES
Second	R1	Bedroom	Area m2	24.15	22.83	
			% of room		95.00%	YES
Flat 5						
First	R1	LKD	Area m2	25.67	24.06	
			% of room		94.00%	YES
First	R2	Bedroom	Area m2	11.09	10.95	
			% of room		99.00%	YES
Second	R1	Living Room	Area m2	21.92	21.58	
			% of room		98.00%	YES
Flat 6						
First	R1	LKD	Area m2	31.20	31.20	
			% of room		100.00%	YES
First	R2	Bedroom	Area m2	11.33	11.05	
			% of room		98.00%	YES
Second	R1	Bedroom	Area m2	19.08	14.83	
			% of room		78.00%	NO

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Daylight & Sunlight - Proposed Scheme Analysis
Date of Analysis: 13/05/2022
Bare Branch

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.	Window Orientation	Annual	Meets BRE Criteria	Winter	Meets BRE Criteria	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
Flat 1													
Ground	R1	Residential	Studio	W1 W2	52°N 52°N	16.37 14.97	NO NO	1.65 1.90	NO NO	15	NO	2	NO
Flat 2													
Ground	R1	Residential	LKD	W1 W2	52°N 52°N	18.96 17.16	NO NO	1.45 2.45	NO NO	17	NO	2	NO
	R2	Residential	Bedroom	W3	232°	42.65	YES	8.20	YES	43	YES	8	YES
Flat 3													
Ground	R1	Residential	LKD	W1 W2 W5	322°N 322°N 142°	17.00 17.00 51.46	NO NO YES	1.00 1.00 10.46	NO NO YES	68	YES	11	YES
	R2	Residential	Bedroom	W3	322°N	18.00	NO	1.00	NO	18	NO	1	NO
	R3	Residential	Bedroom	W4	142°	47.57	YES	13.00	YES	48	YES	13	YES
Flat 4													
First	R1	Residential	LKD	W1 W2	52°N Inc 52°N Inc	72.25 72.80	YES YES	17.00 17.00	YES YES	75	YES	17	YES

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Daylight & Sunlight - Proposed Scheme Analysis
Date of Analysis: 13/05/2022
Bare Branch

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.	Window Orientation	Annual	Meets BRE Criteria	Winter	Meets BRE Criteria	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
Second	R1	Residential	LKD	W1	52°N Inc	75.00	YES	17.00	YES				
				W2	52°N Inc	75.00	YES	17.00	YES	75	YES	17	YES
	R1	Residential	Bedroom	W1	52°N Inc	75.00	YES	17.00	YES				
				W2	52°N Inc	75.00	YES	17.00	YES	75	YES	17	YES
Flat 5													
First	R1	Residential	LKD	W1	52°N Inc	72.35	YES	16.00	YES				
				W2	52°N Inc	72.25	YES	17.00	YES	75	YES	17	YES
	R2	Residential	Bedroom	W3	232°	53.00	YES	17.00	YES	53	YES	17	YES
Second	R1	Residential	LKD	W1	52°N Inc	75.00	YES	17.00	YES				
				W2	52°N Inc	75.00	YES	17.00	YES	75	YES	17	YES
	R1	Residential	Living Room	W1	52°N Inc	75.00	YES	17.00	YES				
				W2	52°N Inc	75.00	YES	17.00	YES	75	YES	17	YES
Flat 6													
First	R1	Residential	LKD	W1	142°	66.00	YES	23.00	YES				
				W3	322°N Inc	71.00	YES	11.00	YES				
				W4	322°N Inc	72.00	YES	11.00	YES	92	YES	25	YES
	R2	Residential	Bedroom	W2	142°	66.90	YES	22.00	YES	67	YES	22	YES
Second	R1	Residential	Bedroom	W1	322°N Inc	72.00	YES	11.00	YES	72	YES	11	YES

Project Name: Haydon House, 296 Joel Street, Pinner
Project No.: 3450
Report Title: Two hours Sunlight to Amenity - Proposed Scheme Analysis
Date: 13/05/2022
Bare Branch

Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Proposed	Meets BRE Criteria
Proposed Building					
Ground	A1	Area m2 Percentage	71.48	40.32 56%	YES