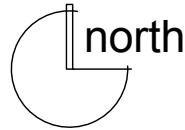
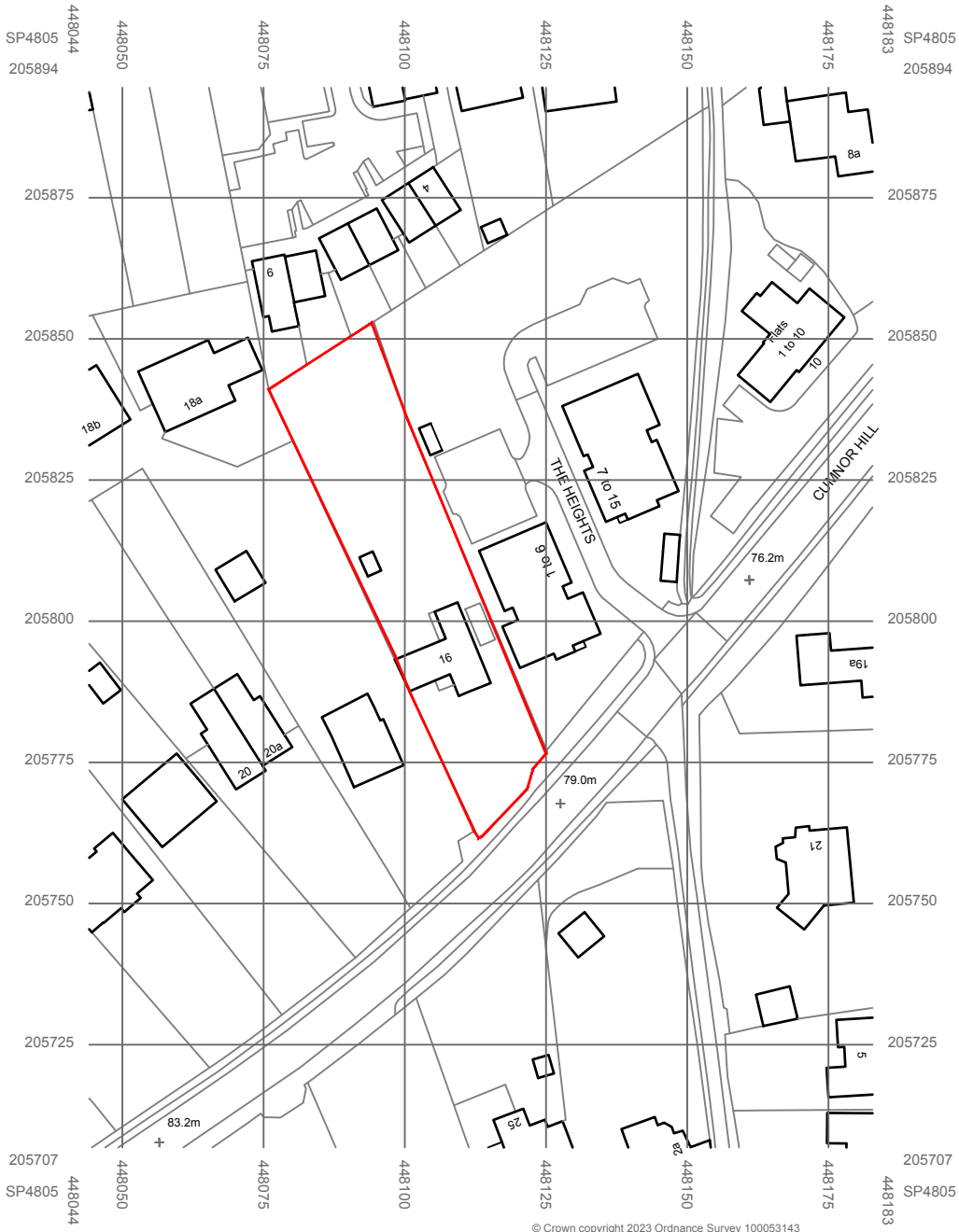
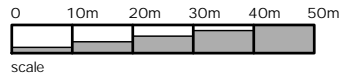


Appendix 2



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16 Cumnor Hill
Oxford
OX2 9HA

LOCATION PLAN

GUY ROBERTS R.I.B.A. 2 THE CROSSING COTTAGES 74 NETHERCOTE ROAD TACKLEY OXON. OX5 3AT T: 07971 970 311 E: info@guyr.co.uk		
scale	date	drawn by
1: 1250@A4	5.7.23	GR
project	dwg. no.	rev.
2309	PA 101	



NOTE: DRAWING BASED UPON MIDLAND SURVEY LTD. TOPOGRAPHIC SURVEY DRAWING 31369

PLANNING ISSUE

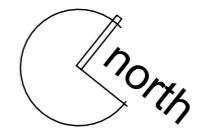
PROPOSED RESIDENTIAL DEVELOPMENT

16 CUMNOR HILL
OXFORD
OXON. OX2 9HA

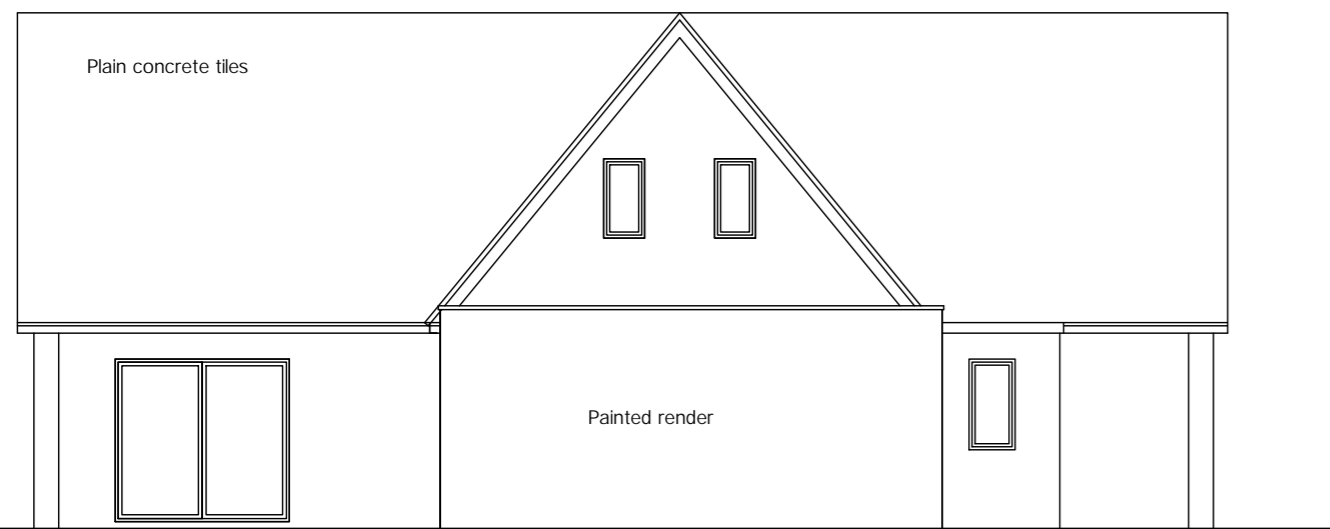
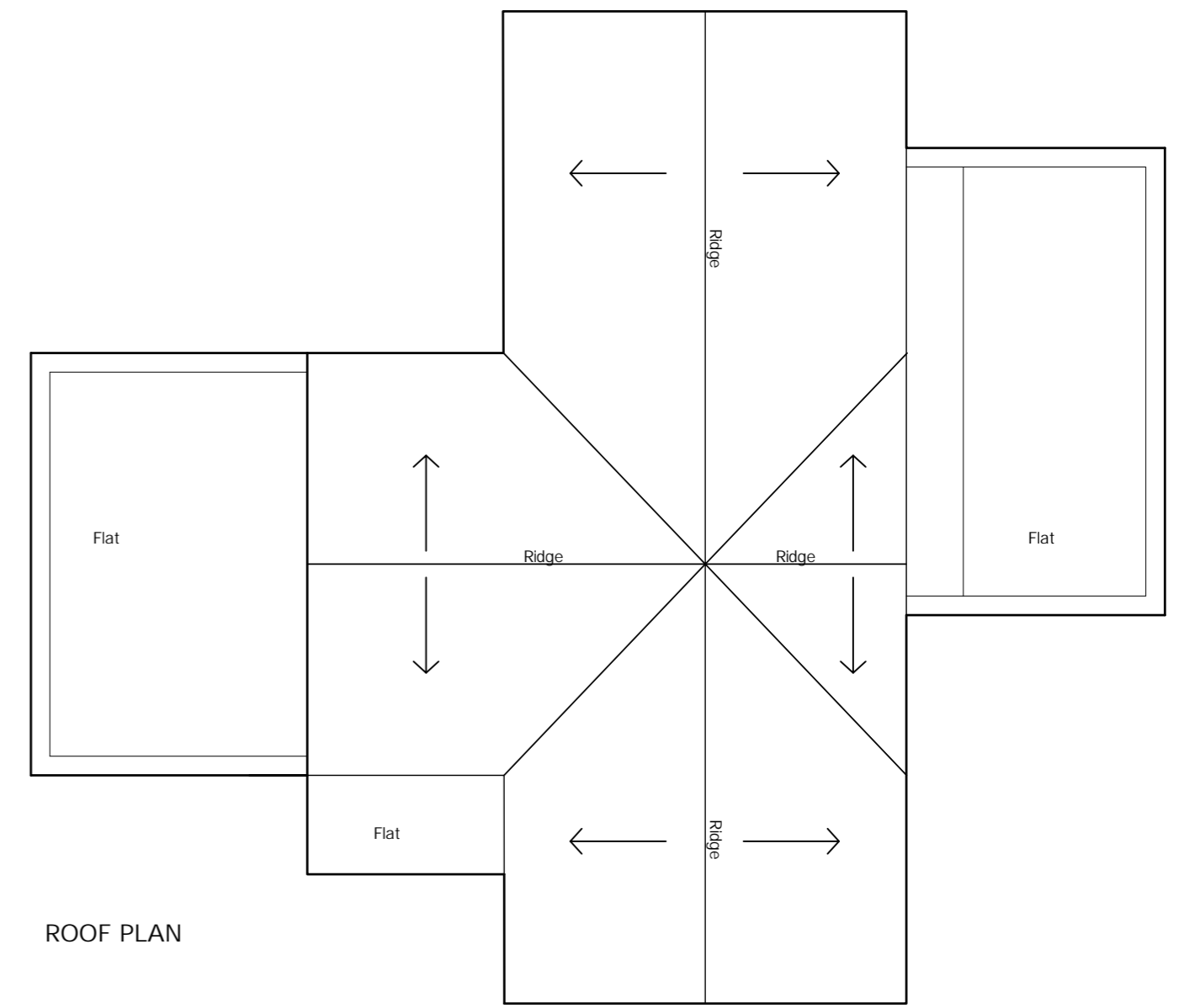
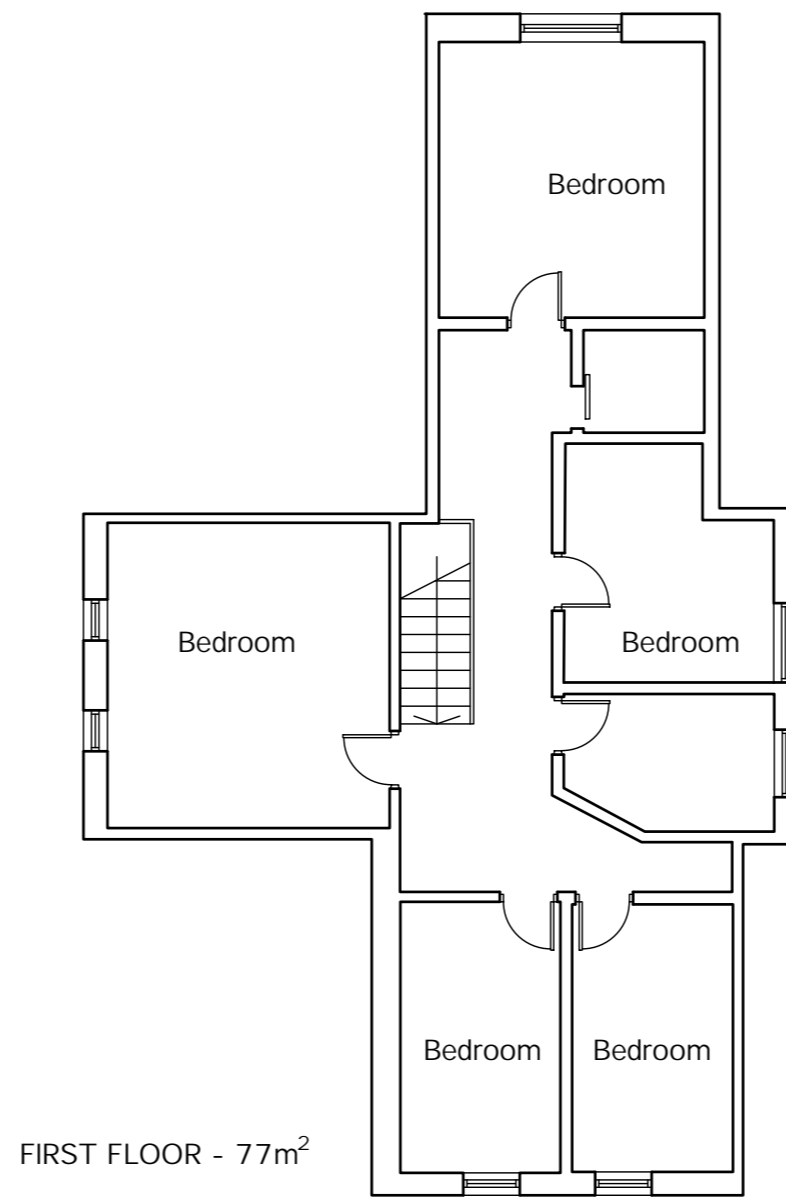
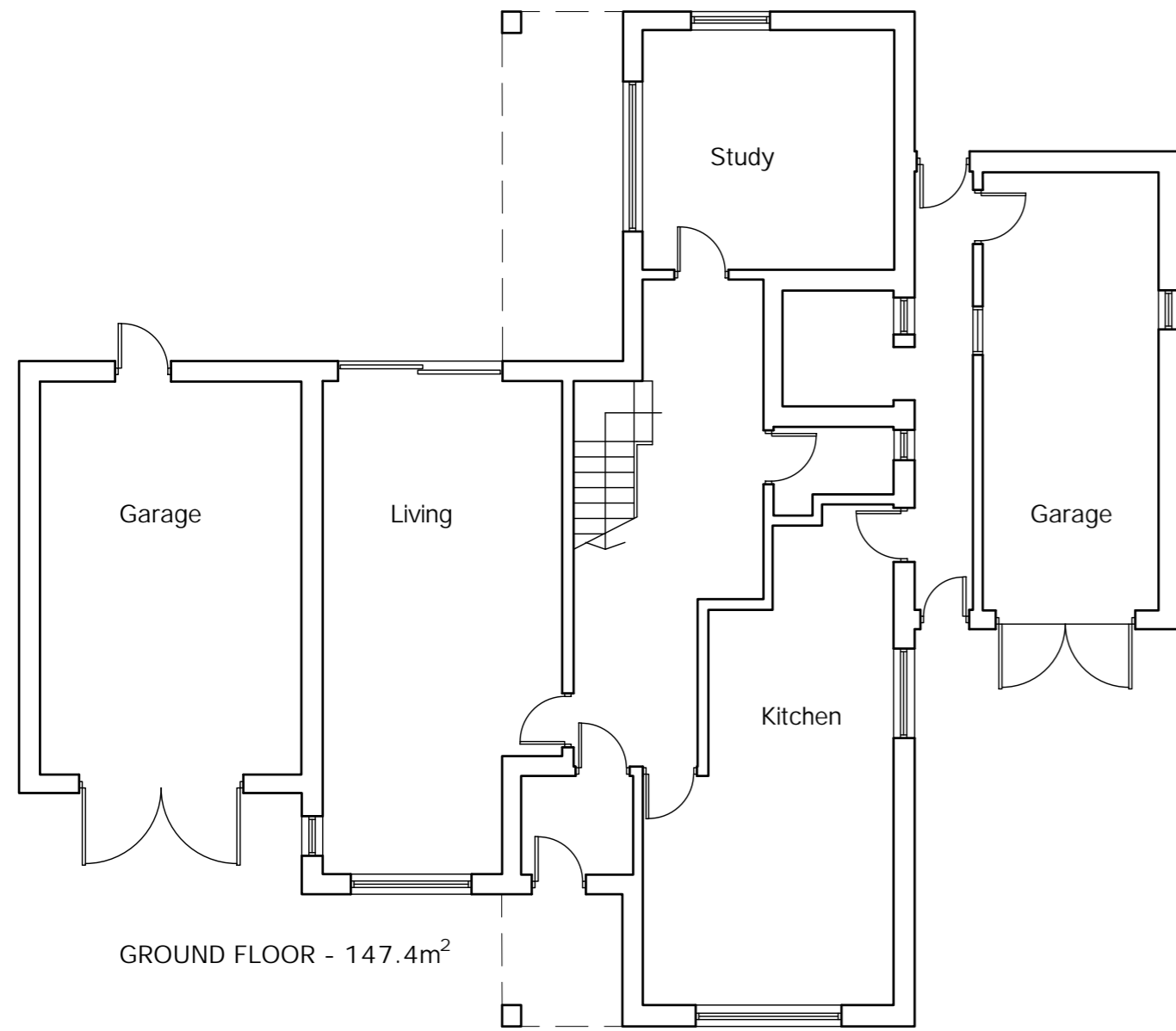
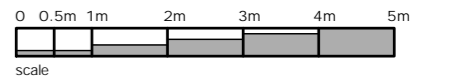
EXISTING:
TOPOGRAPHIC SURVEY

GUY ROBERTS R.I.B.A.
2 THE CROSSING COTTAGES
74 NETHERCOTE ROAD
TACKLEY
OXON. OX5 3AT
T: 07971 970 311
E: info@guyr.co.uk

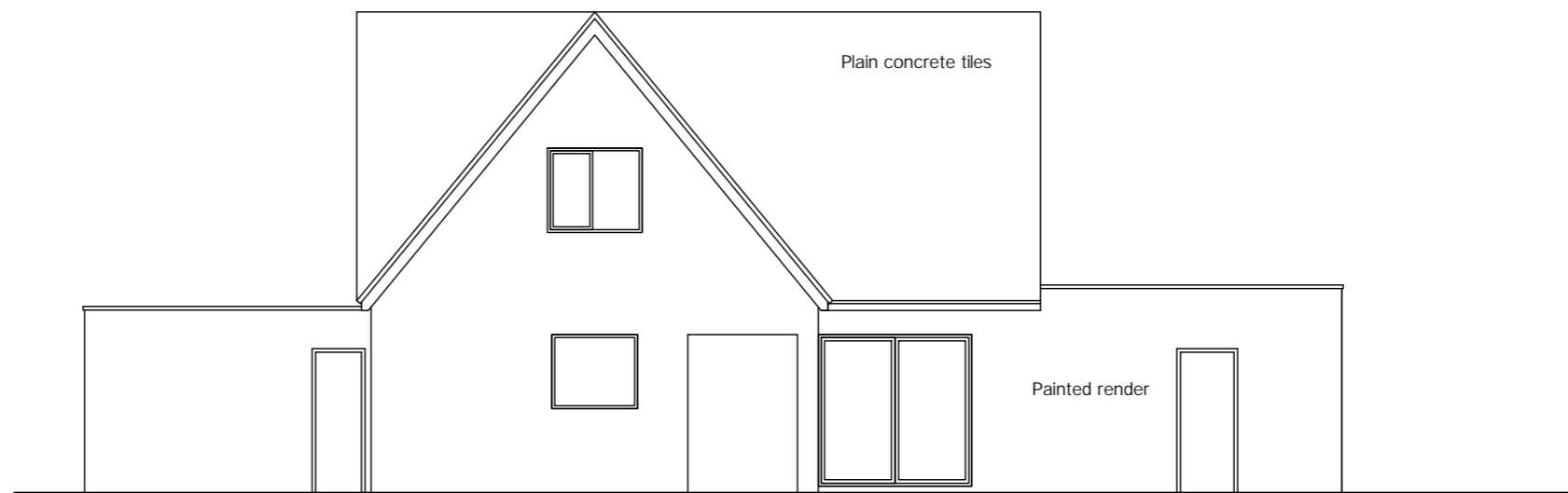
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project	dwg. no.	rev.
2410	PA 102	



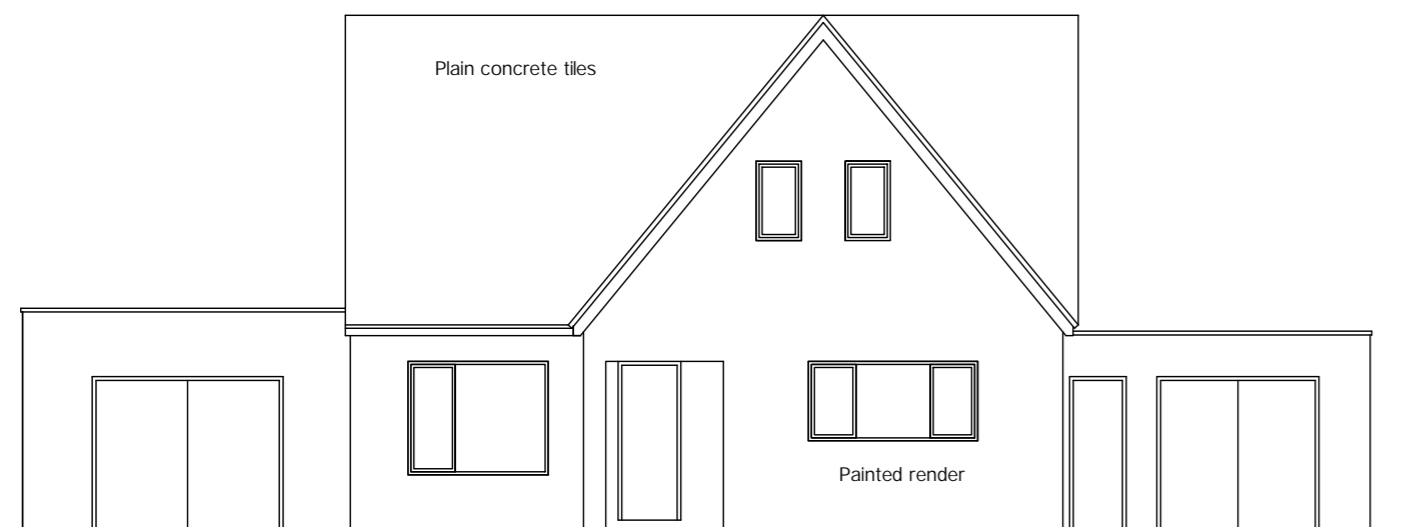
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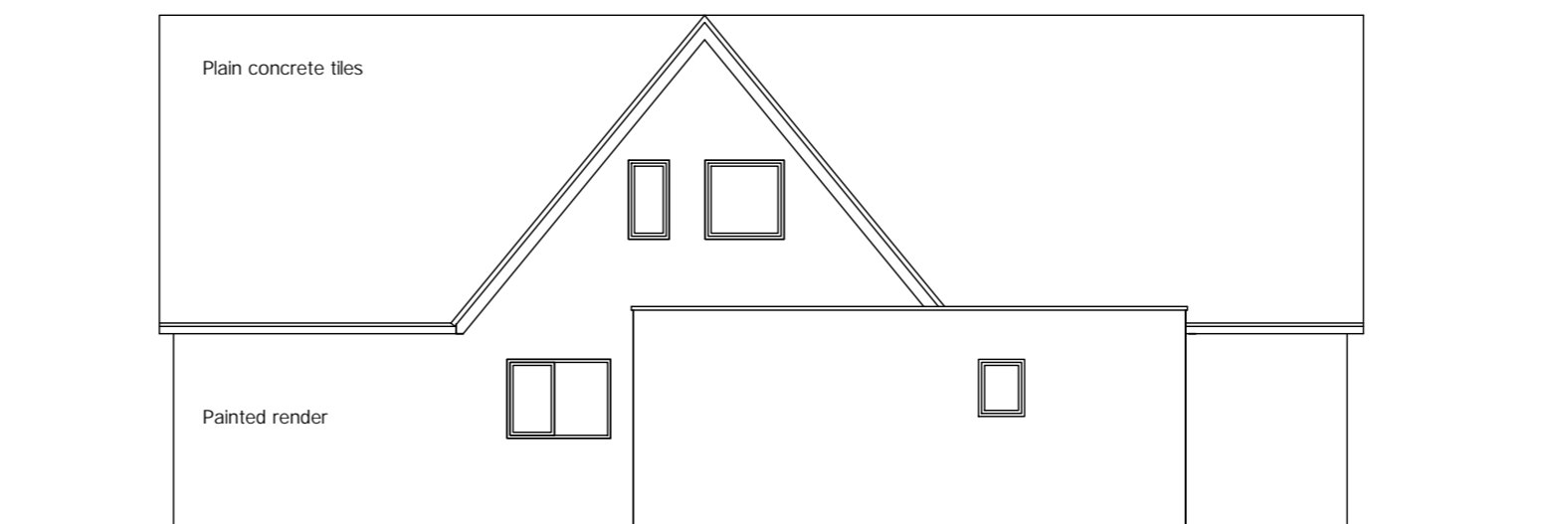
SIDE (WEST)



REAR



FRONT



SIDE (NORTH)

16 CUMNOR HILL OXFORD OX2 6TL		
EXISTING: PLANS + ELEVATIONS		
GUY ROBERTS R.I.B.A. 2 THE CROSSING COTTAGES 74 NETHERCOTE ROAD TACKLEY OXON. OX5 3AT T: 07971 970 311 E: info@guyr.co.uk		
scale	date	drawn by
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project	dwg. no.	rev.
2309	PA 100	

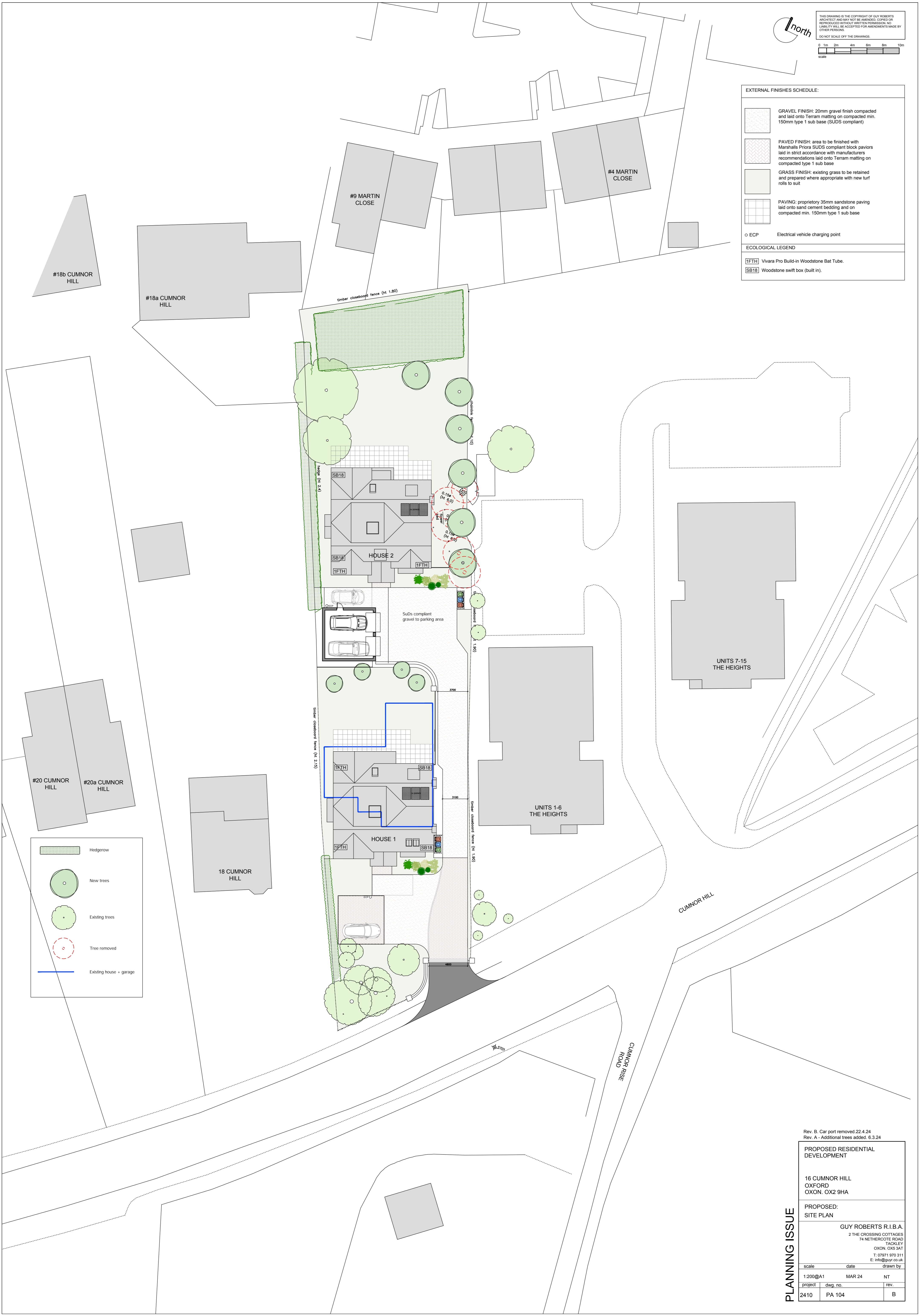
PLANNING

EXTERNAL FINISHES SCHEDULE:

	GRAVEL FINISH: 20mm gravel finish compacted and laid onto Terram matting on compacted min. 150mm type 1 sub base (SUDS compliant)
	PAVED FINISH: area to be finished with Marshalls Flexo SUDS compliant block pavers laid in strict accordance with manufacturers recommendations laid onto Terram matting on compacted type 1 sub base
	GRASS FINISH: existing grass to be retained and prepared where appropriate with new turf rolls to suit
	PAVING: proprietary 35mm sandstone paving laid onto sand cement bedding and on compacted min. 150mm type 1 sub base
	Electrical vehicle charging point

ECOLOGICAL LEGEND

	Vivara Pro Build-in Woodstone Bat Tube.
	Woodstone swift box (built in).



LEGEND

	Hedgerow
	New trees
	Existing trees
	Tree removed
	Existing house + garage

Rev. B - Car port removed 22.4.24
Rev. A - Additional trees added. 6.3.24

PROPOSED RESIDENTIAL DEVELOPMENT

16 CUMNOR HILL
OXFORD
OXON. OX2 9HA

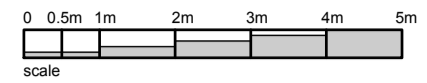
**PROPOSED:
SITE PLAN**

GUY ROBERTS R.I.B.A.
2 THE CROSSING COTTAGES
74 NETHERCOTE ROAD
TACKLEY
OXON. OX5 3AT
T: 07971 970 311
E: info@guyr.co.uk

scale	date	drawn by
1:200@A1	MAR 24	NT
project	dwg. no.	rev.
2410	PA 104	B

PLANNING ISSUE

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FRONT ELEVATION (ALONG CUMNOR HILL)



REAR ELEVATION (CENTRE OF SITE LOOKING TOWARDS CUMNOR HILL)



SIDE ELEVATION (ALONG ACCESS DRIVE)

Rev. A. Car port removed 22.4.24

PROPOSED RESIDENTIAL DEVELOPMENT

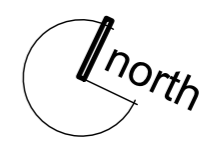
16 CUMNOR HILL
OXFORD
OXON. OX2 9HA

PROPOSED:
SITE SECTIONS

GUY ROBERTS R.I.B.A.
2 THE CROSSING COTTAGES
74 NETHERCOTE ROAD
TACKLEY
OXON. OX5 3AT
T. 07971 970 311
E. info@guy.co.uk

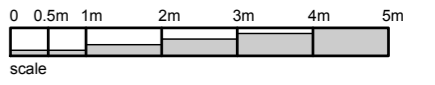
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2410	PA 107	A

PLANNING ISSUE

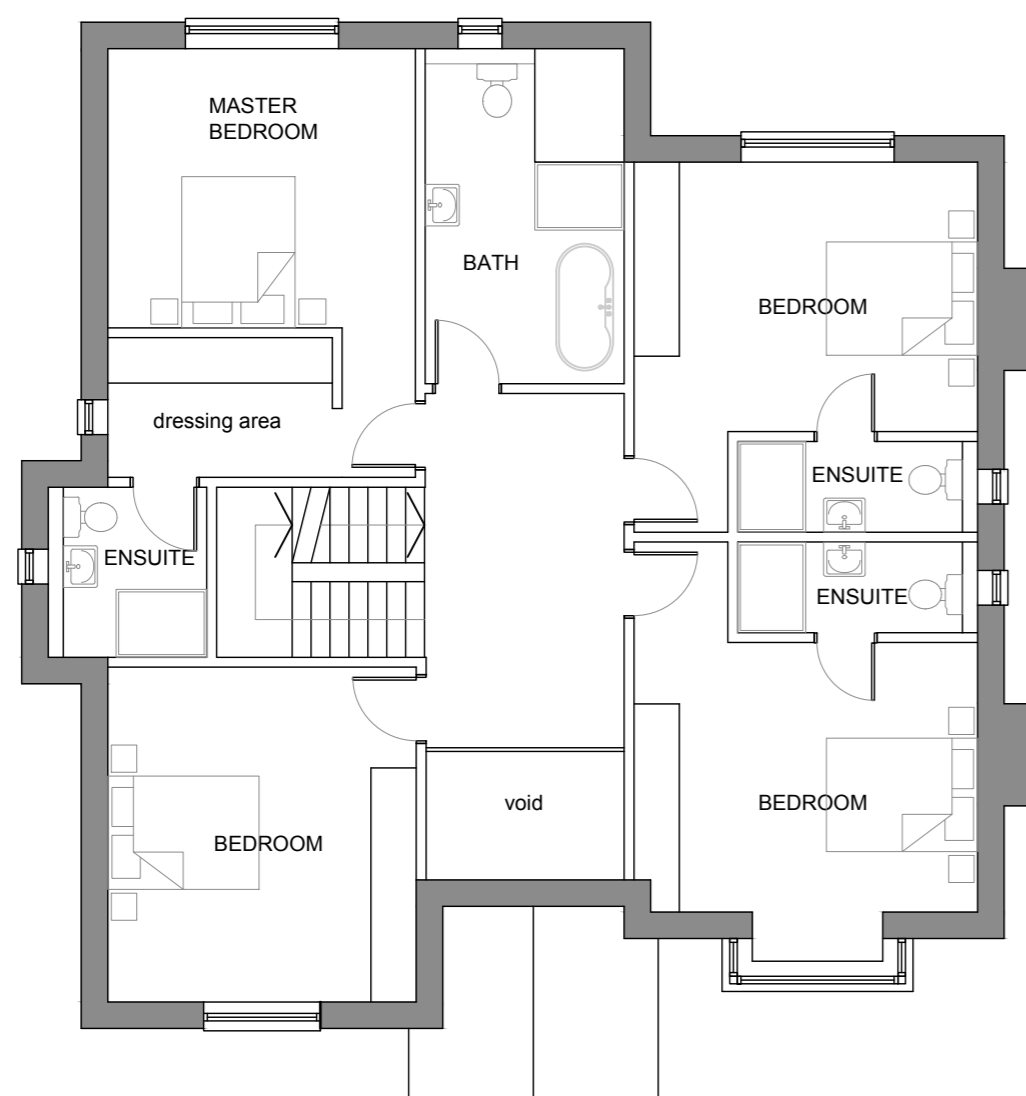


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SECOND FLOOR PLAN



FIRST FLOOR PLAN



GROUND FLOOR PLAN



FRONT ELEVATION (SOUTHEAST)

slates colour: grey

smoothcoat render finish colour: cream
dressed stone string course

buff facing brickwork

timber windows with glazing bars
frame colour: white



SIDE ELEVATION (NORTHEAST)



REAR ELEVATION (NORTHWEST)



SIDE ELEVATION (SOUTHWEST)

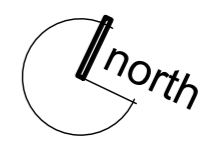
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smoothcoat render finish colour: cream
dressed stone string course

buff facing brickwork

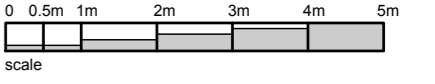
PLANNING ISSUE

PROPOSED RESIDENTIAL DEVELOPMENT	
16 CUMNOR HILL OXFORD OXON. OX2 9HA	
PROPOSED: HOUSE 1: PLANS & ELEVATIONS	
GUY ROBERTS R.I.B.A. 2 THE CROSSING COTTAGES 74 NETHERCOTE ROAD TACKLEY OXON. OX5 3AT T: 07971 970 311 E: info@guyr.co.uk	
scale	date
1:100@A1	JAN 24
project	dwg. no.
2410	PA 105
drawn by	NT
rev.	



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SECOND FLOOR PLAN



slates colour: grey

smoothcoat render finish
colour: cream

dressed stone string course

buff facing brickwork

timber windows with glazing bars
frame colour: white

FRONT ELEVATION (SOUTHEAST)



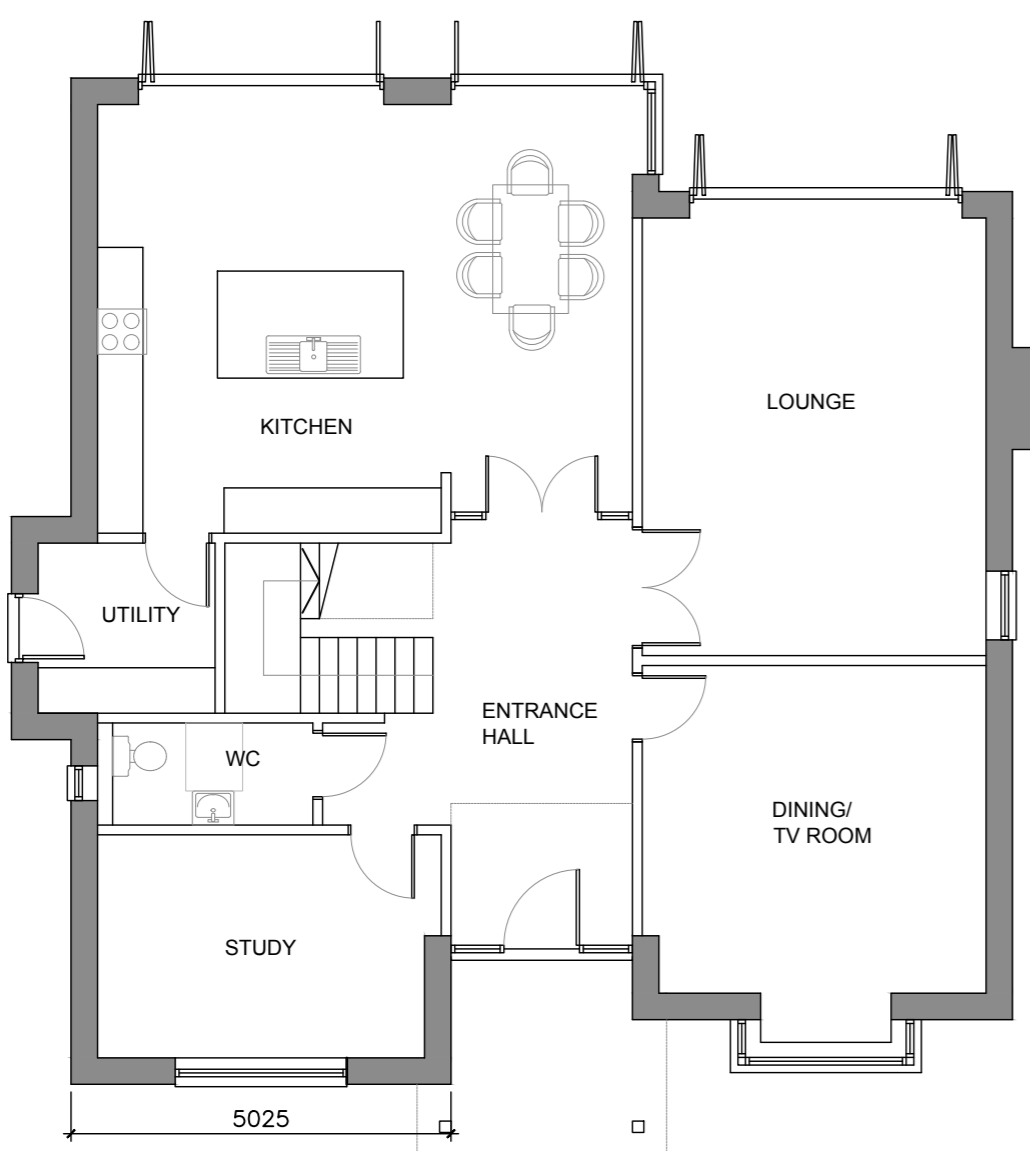
SIDE ELEVATION (NORTHEAST)



FIRST FLOOR PLAN



REAR ELEVATION (NORTHWEST)



GROUND FLOOR PLAN



slates colour: grey

smoothcoat render finish
colour: cream

dressed stone string course

buff facing brickwork

SIDE ELEVATION (SOUTHWEST)

PLANNING ISSUE

PROPOSED RESIDENTIAL DEVELOPMENT			
16 CUMNOR HILL OXFORD OXON. OX2 9HA			
PROPOSED: HOUSE 2: PLANS & ELEVATIONS			
GUY ROBERTS R.I.B.A. 2 THE CROSSING COTTAGES 74 NETHERCOTE ROAD TACKLEY OXON. OX5 3AT T: 07971 970 311 E: info@guyr.co.uk			
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project	dwg. no.	rev.	
2410	PA 206		



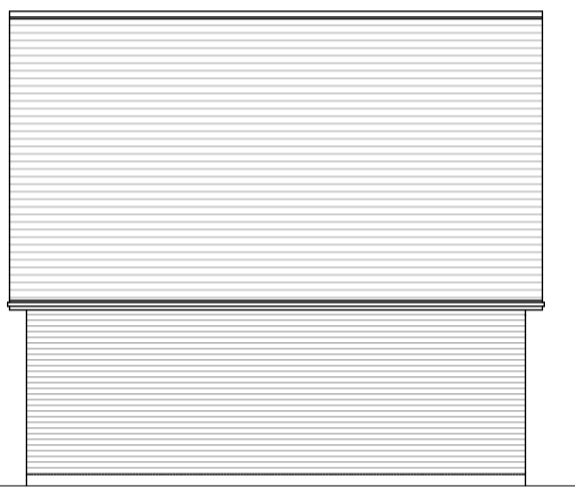
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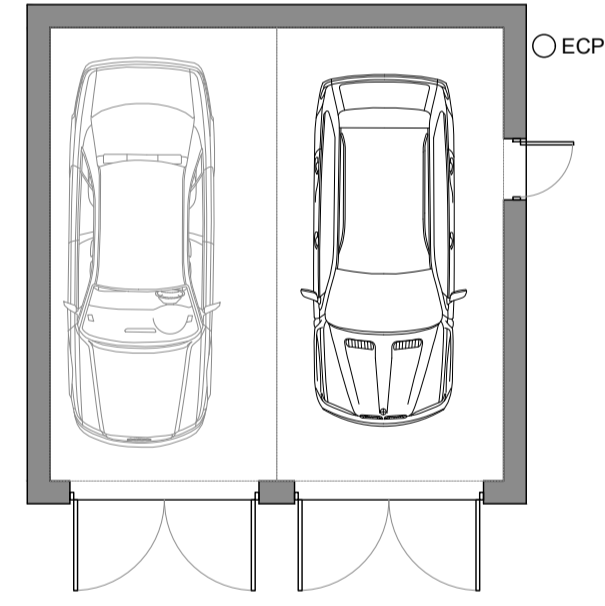
SIDE ELEVATION



REAR ELEVATION



SIDE ELEVATION

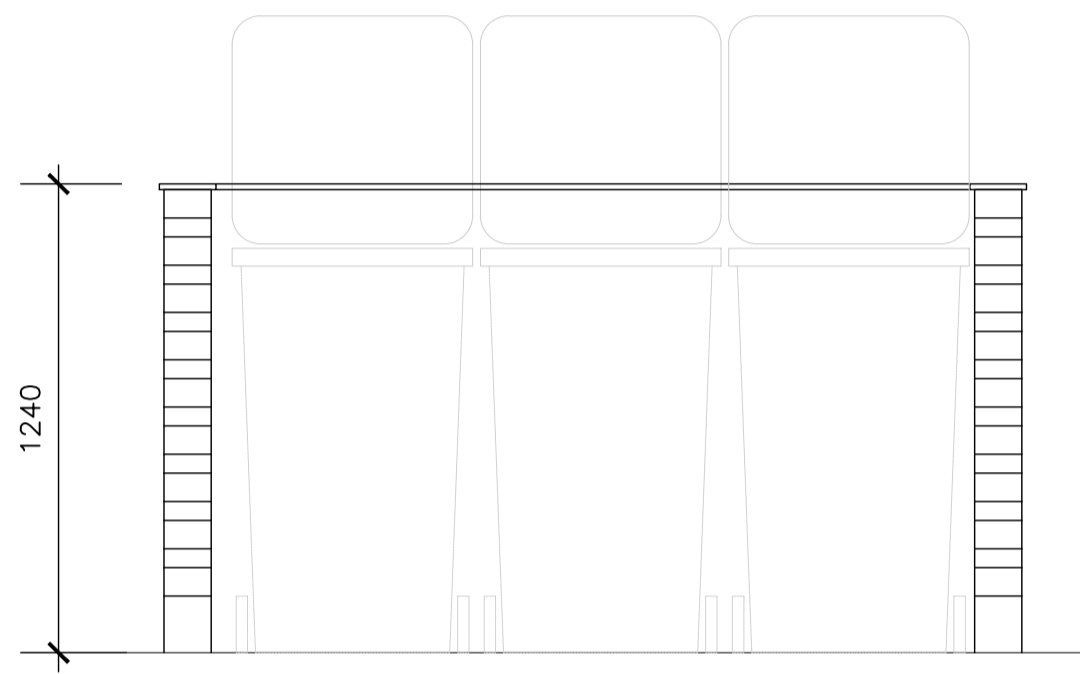
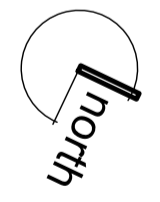
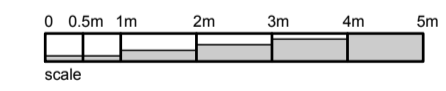


FLOOR PLAN

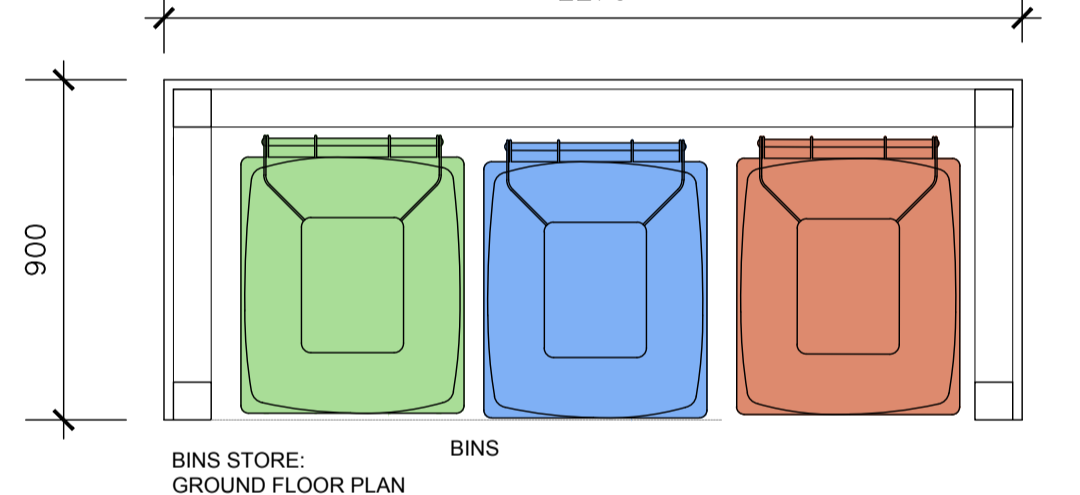
HOUSE 2: GARAGE

GARAGE DETAILS

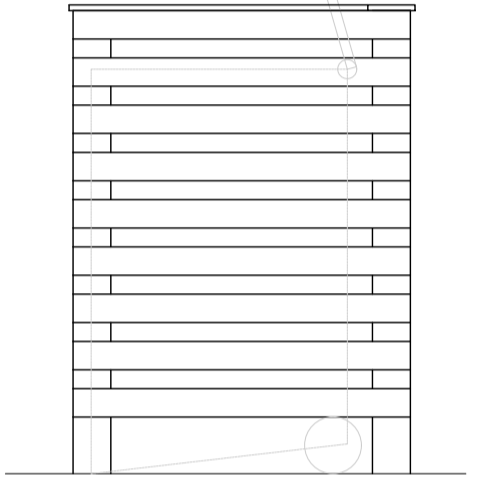
SCALE: 1:100@A1



BINS STORE: FRONT ELEVATION



BINS STORE: GROUND FLOOR PLAN



BINS STORE: SIDE ELEVATION

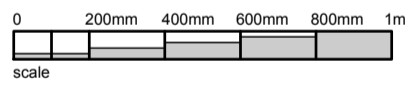
150mm concrete oversite slab and brushed finish laid on 25mm sand blinding on compacted 150mm hardcore sub base

side wall constructed with treated 100 x 50mm SC3 studs @400mm ctrs. and bolted down to sv plate on thickened concrete slab and with 150 x 20mm stained timber weather boarding

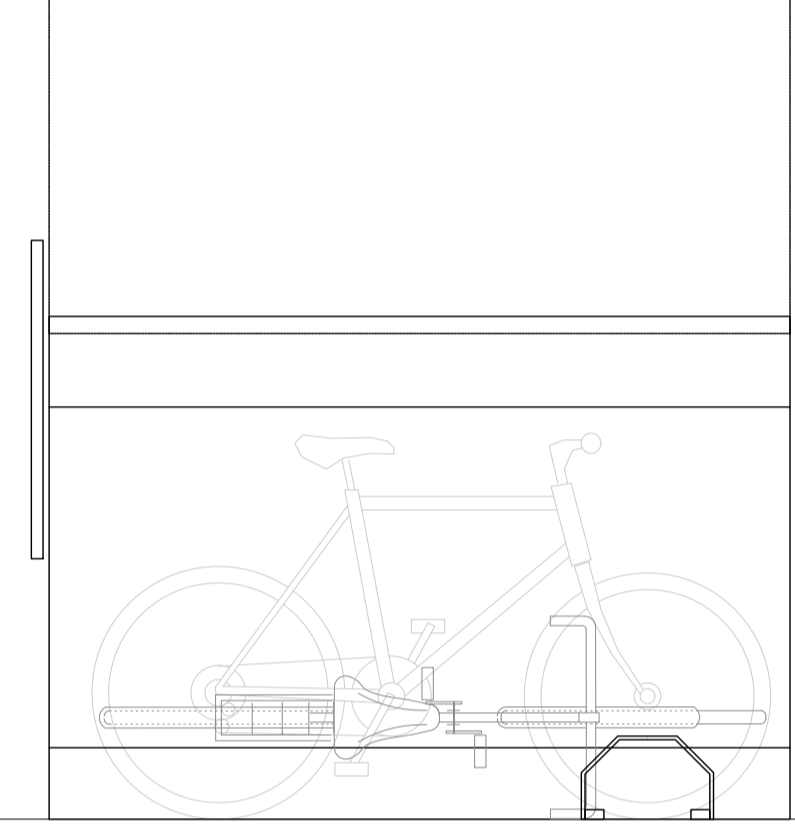
150mm wide perimeter gravel strip with pea shingle back fill and to level min. 50mm below slab level

BIN & CYCLE STORES

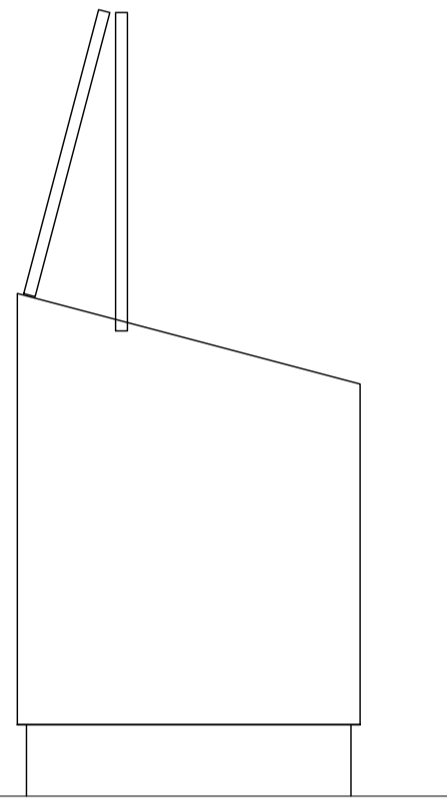
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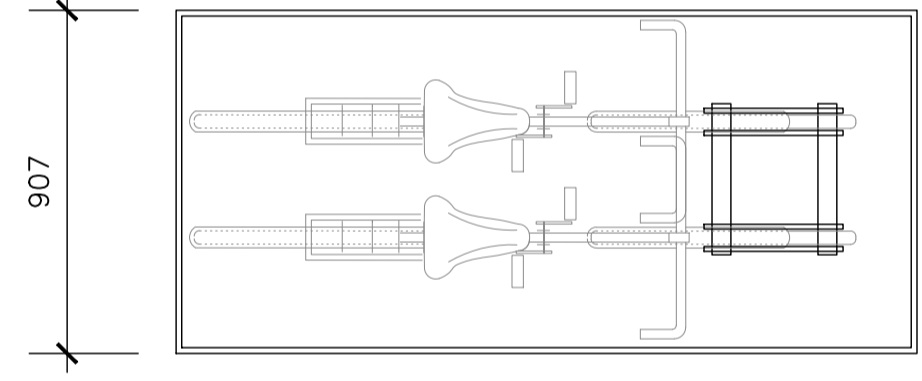
TYPICAL IMAGE OF STYLE FOR CYCLE STORE



CYCLE STORE: FRONT ELEVATION



CYCLE STORE: SIDE ELEVATION



CYCLE STORE: GROUND FLOOR PLAN

Rev. A. Car port removed.22.4.24

PROPOSED RESIDENTIAL DEVELOPMENT		
16 CUMNOR HILL OXFORD OXON. OX2 9HA		
PROPOSED: EXTERNAL WORKS DETAILS		
GUY ROBERTS R.I.B.A. 2 THE CROSSING COTTAGES 74 NETHERCOTE ROAD TACKLEY OXON. OX5 3AT T: 07971 970 311 E: info@guy.co.uk		
scale	date	drawn by
as noted	FEB 24	NT
project	dwg. no.	rev.
2410	PA 108	A

PLANNING ISSUE

Daylight and Sunlight Analysis

16 Cumnor Hill, Botley, Oxford, OX2 9HA

PR11820

Date: 05/09/2024

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Document History

Client: Guy Roberts Architect
Project: 16 Cumnor Hill, Botley, Oxford, OX2 9HA
Document title: Daylight and Sunlight Analysis
ERS reference: PR11820

Revision	Remarks	Author	Checked	Approved	Date
00		NS	Quality checker's initials	SAM (technical check)	05/09/2024

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Executive summary

ERS Consultants Ltd has been appointed to prepare a daylight and sunlight analysis on the potential changes to the light amenity for the neighbouring properties due to the proposed construction of two new houses located at 16 Cumnor Hill, Botley, Oxford, OX2 9HA.

This report will be focusing on the daylight amenity of the neighbouring buildings and will provide a suitable analysis into the impact that the proposed developments will have after being erected.

The analysis carried out by ERS Consultants Ltd is based upon the Building Research Establishment (BR 209 2022 Edition) guidelines 'Site Layout Planning for Daylight and Sunlight', which provides the criteria and methodology for calculation in connection to daylight and sunlight.

The Daylight and Sunlight Assessment is a desktop exercise that is based on the drawings supplied by the architect, previous neighbouring planning applications and Ordnance Survey Maps. Additionally, the Google Earth measurement tool has been utilised where required and architectural residential standards are also used for scale purposes in most cases if the measurement is unknown. We assess the application under the worst-case scenario so that the adjacent building can be assessed with this bias.

The RADIANCE lighting simulation package, developed by the Lawrence Berkeley Laboratory in California, in conjunction with IES VE modeling software and interface has been used to perform the daylight simulations. A dynamic simulation has been undertaken to establish the Calculations of the Annual Sunlight Availability, using IES modeling software (2024 v0.0.0).

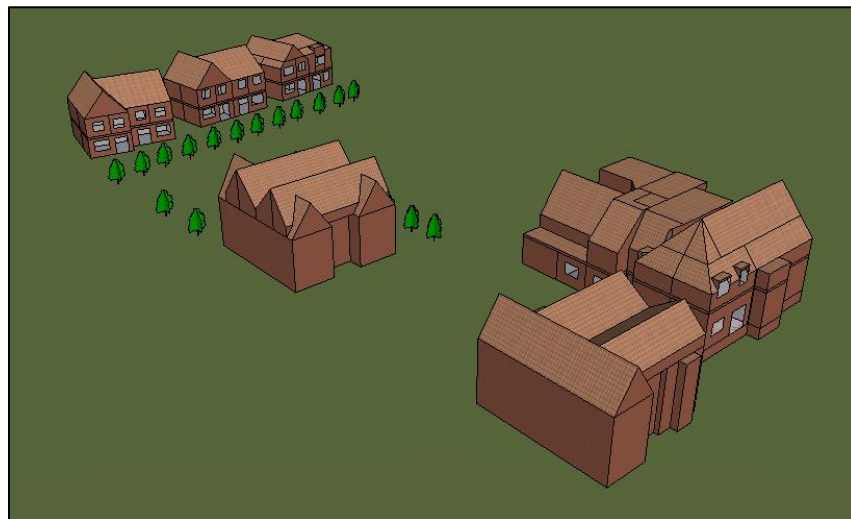


Figure 1: A screenshot of the modelled proposed development in IESVE

Introduction

ERS Consultants Ltd has been appointed to carry out an analysis on the potential changes to the light amenity of the neighbouring properties adjacent to the proposed developments (i.e., two new houses) located at 16 Cumnor Hill, Botley, Oxford, OX2 9HA.

This assessment has been undertaken to determine the impact caused from the proposed design, it looks at the light amenity to the neighbouring as well as the amenity following the design proposal.

Site & Proposal

The approximate site location of the proposed developments is shown in the site plan figure 2 and is highlighted in red.

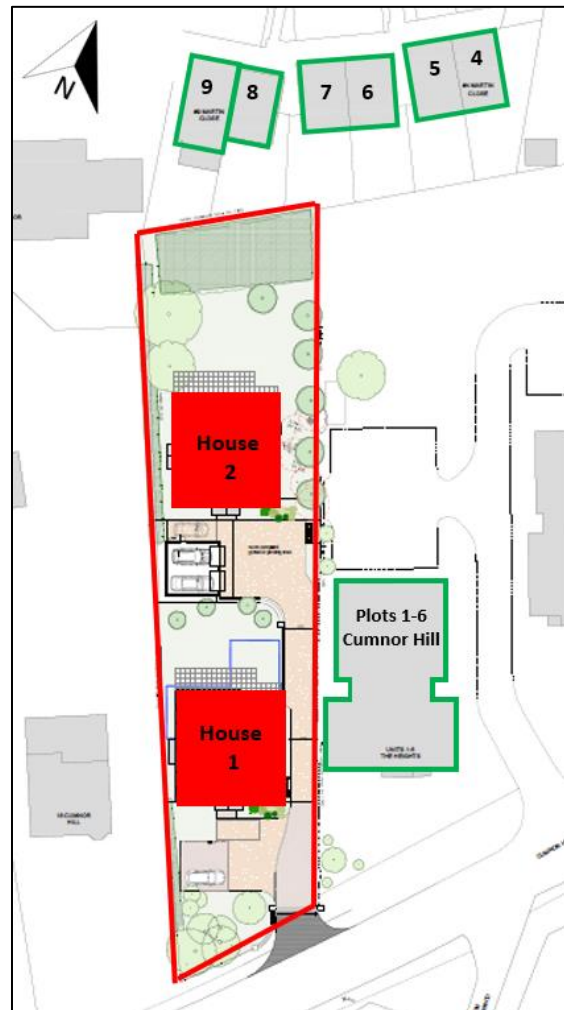


Figure 2: Proposed Site Location

Calculation Methodology

The BRE document; 'Site Layout Planning for Daylight and Sunlight' has been used as the base for this assessment.

The proposed building and the neighbouring buildings have been modeled using Integrated Environmental Solutions Virtual Environment (IES-VE), 2024 v0.0.0. All windows which will be affected by the proposed development within the neighbouring properties have been included within this assessment.

The properties identified and assessed with the greatest potential of change in their natural daylight amenity are the following:

- Plot 1, Cumnor Hill
- Plot 3, Cumnor Hill
- Plot 4, Cumnor Hill
- Plot 6, Cumnor Hill
- Plot 4, Martin Close
- Plot 5, Martin Close
- Plot 6, Martin Close
- Plot 7, Martin Close
- Plot 8, Martin Close
- Plot 9, Martin Close

The neighbouring properties have been assessed under two scenarios:

- Existing Scenario
- Proposed Development

The Daylight and Sunlight Assessment is a desktop exercise that is based on the drawings supplied by the architect, previous neighbouring planning applications and Ordnance Survey Maps. Additionally, the Google Earth measurement tool has been utilised where required and architectural residential standards are also used for scale purposes in most cases if the measurement is unknown. Where the layout of these schemes is available the analysis reflects this in detail, and where no information of the internal layout of the building is clearly defined, a worst-case scenario is utilised. This worst-case scenario will consider the room with fenestration to be all considered as habitable amenity spaces when discussed will be as followed.

Based on the BRE document, the following methods were used for measuring the daylight and sunlight:

- Vertical Sky Component (VSC)
- No Sky Line (NSL)
- Annual Probable Sunlight Hours (APSH)

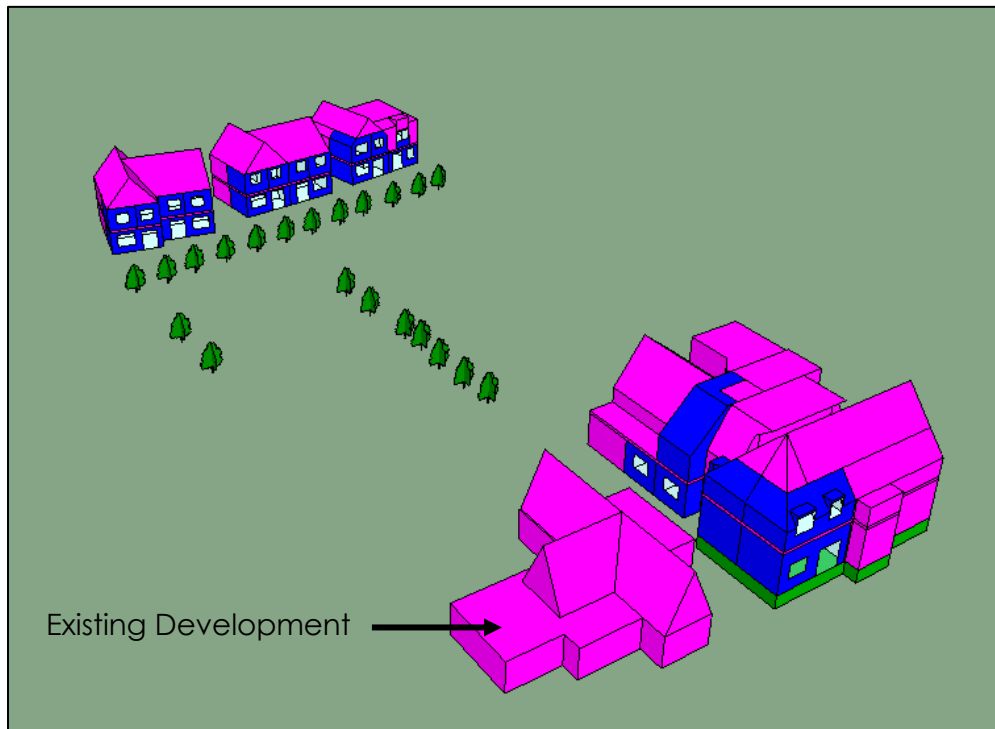


Figure 3: Existing Development and surrounding buildings – IES Model

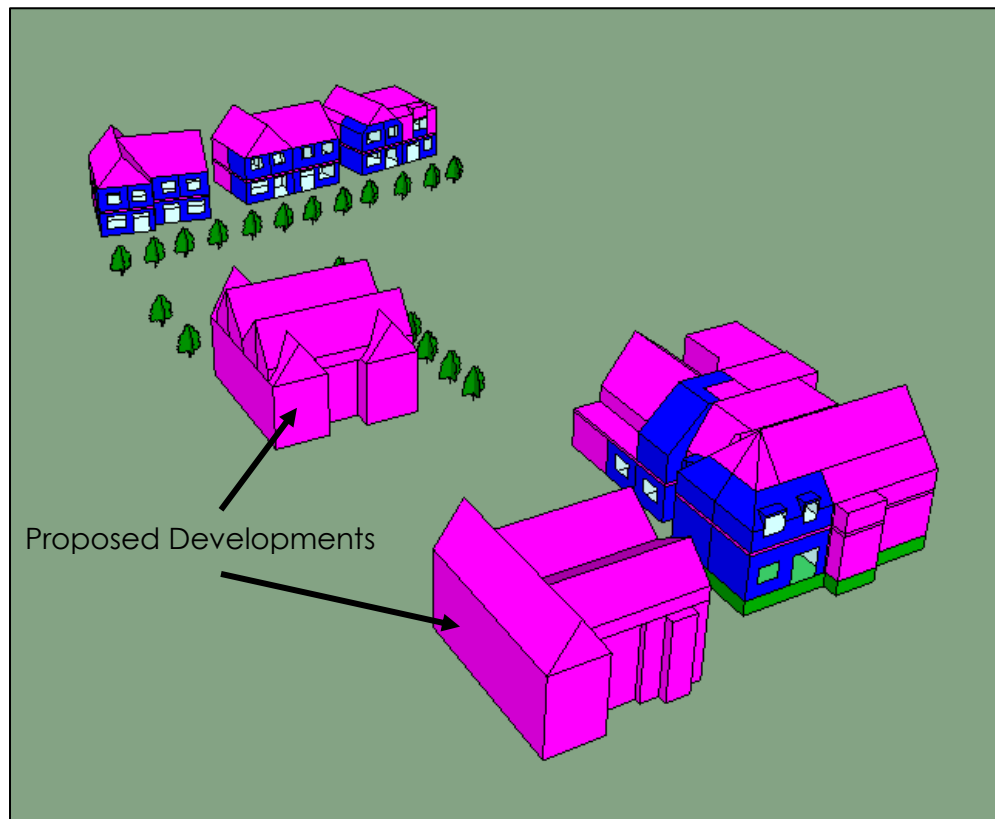


Figure 4: Proposed scenario and surrounding buildings – IES Model

Dynamic Simulation Model

IES-VE 2024 v0.0.0 uses Dynamic Simulation Modelling to simulate the performance of the building at hourly intervals for a full test year.

The model has been constructed based on the drawings provided and researched. Please note that the architectural drawings of the neighbouring buildings were obtained from planning applications where possible and other geographical repositories.

Table 1. Drawings Used	
Proposed Developments Floorplans	
<ul style="list-style-type: none">• 16 CUMNOR_PA101 Location• 16 CUMNOR_PA103 Existing house• 16 CUMNOR_PA104 Rev. B Proposed site plan• 16 CUMNOR_PA105 House 1• 16 CUMNOR_PA106 House 2• 16 CUMNOR_PA107 Rev. A Site sections• 2410 PLANNING 240422	

Based on the site location, project specific details have been used to ensure the correct calculation and weather data are used. Below there is a summary of this:

- Calculation data
- Weather Location: Swindon
- Software: IES-VE 2024 v0.0.0
- Sky Model: CIE Standard Overcast Sky
- Working plane height: 0.850m

It is imperative that, when providing results, the data produced are accurate as possible and, in this study, the closest weather location based on the development site postcode has been fully utilised. In addition, the existing hedge, which is approximately three meters high and encircles the assessed neighbouring buildings, was modelled in the IESVE and taken into account in the analysis in order to increase the assessment's accuracy.

All rooms have been tested against the BRE guidelines for daylight availability. The elevations that have been assessed for the neighbouring properties have been highlighted in yellow in figure 5 below.



Figure 5: Model indicating the elevations of windows tested, highlighted in yellow

Figures 6-11 indicate the windows of the neighbouring properties that have been assessed to identify the impact of the existing and proposed development on their natural daylight.



Figure 6: Plots 1-6, Cumnor Hill (South East Elevation) Windows Tested

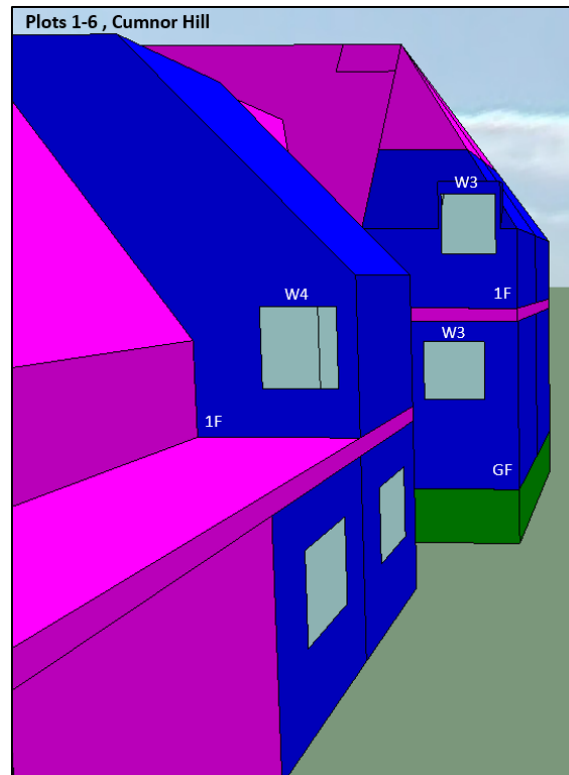


Figure 7: Plots 1-6, Cumnor Hill (North West Elevation) Windows Tested



Figure 8: Plots 1-6, Cumnor Hill (South West Elevation) Windows Tested



Figure 9: Plots 4 & 5, Martin Close (South East Elevation) Windows Tested

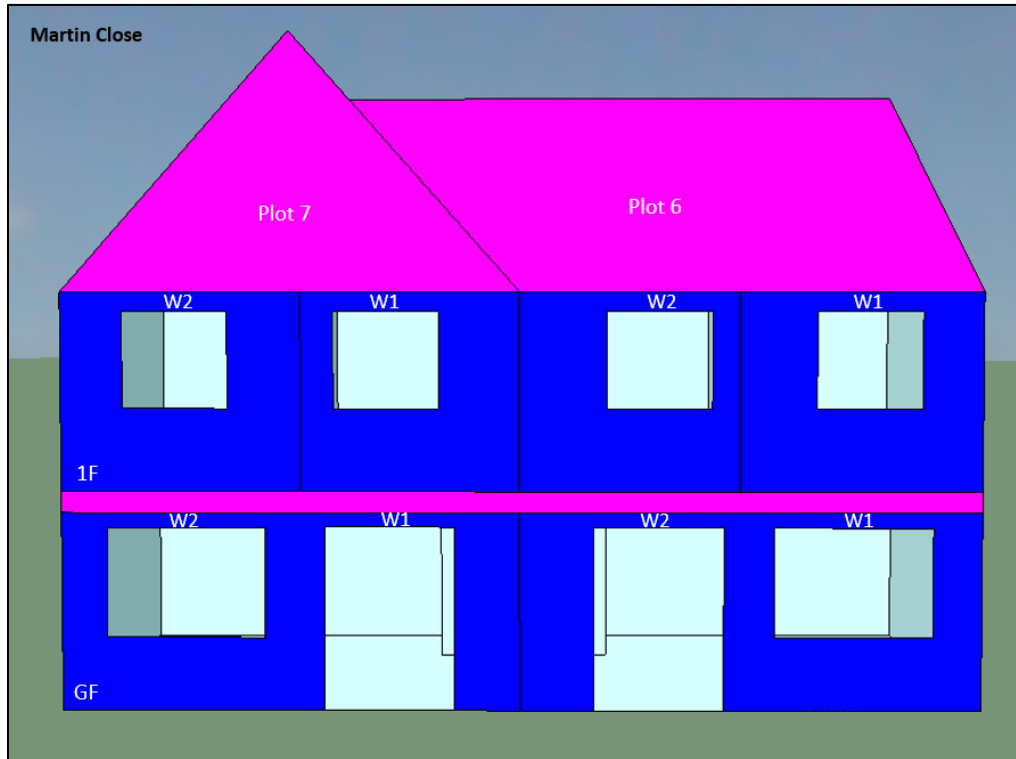


Figure 10: Plots 6 & 7, Martin Close (South East Elevation) Windows Tested



Figure 11: Plots 8 & 9, Martin Close (South Elevation) Windows Tested

Vertical Sky Component (VSC)

The BRE document defines the VSC (Vertical Sky Component) as “the ratio of the direct sky illuminance falling on the vertical wall at a reference point (usually the centre of the window), to the simultaneous horizontal illuminance under an unobstructed sky”.

In more simpler terms the VSC of a window is a measure of the amount of sky that is visible from the vertical center of the window as seen below in figure12.

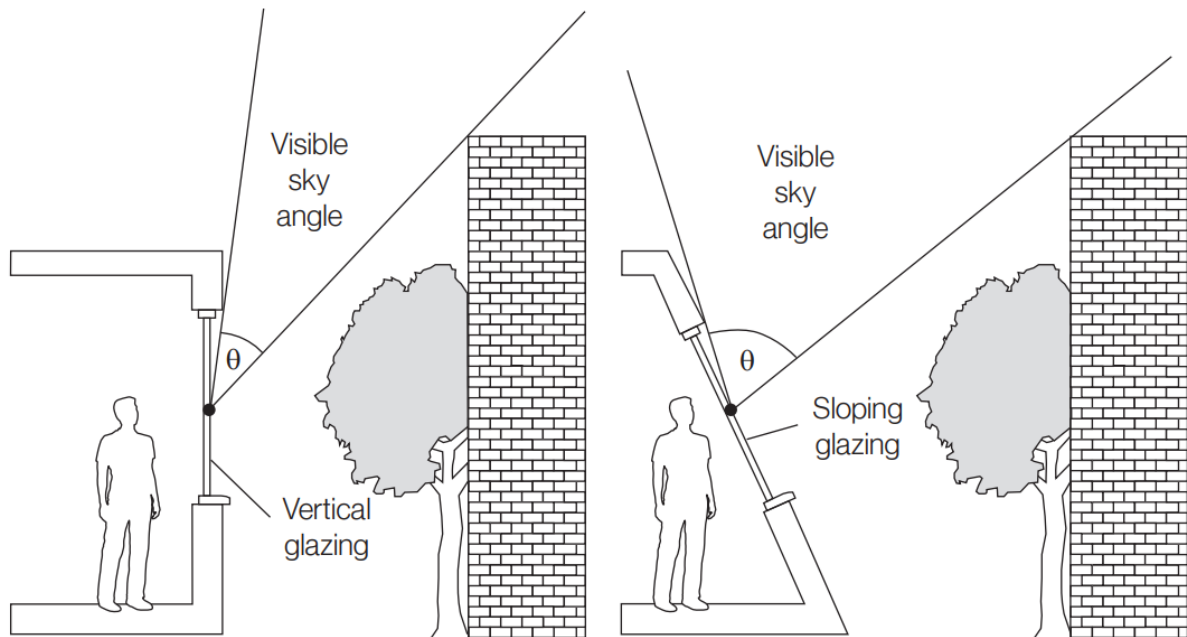


Figure12: Visible sky angle from the center of the window

The BRE guide explains that if any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25° to the horizontal, then the diffuse daylighting of the existing building may be adversely affected (Figure 13). This will be the case if either:

- the VSC measured at the centre of an existing main window is less than 27%, and less than 0.80 times its former value
- the area of the working plane in a room which can receive direct skylight is reduced to less than 0.80 times its former value. This will be explained in details in the No Sky Line (NSL) section.

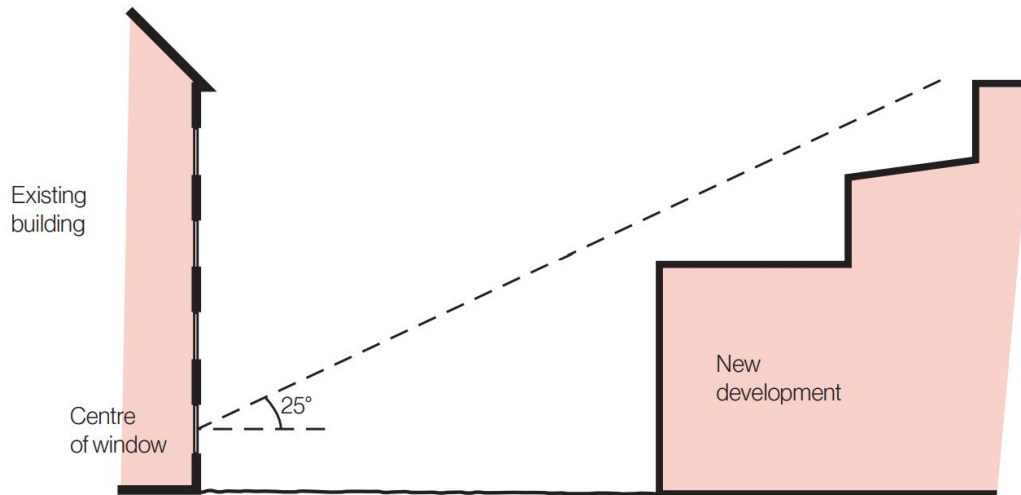


Figure 13: Section in plane perpendicular to the affected window wall.

The recommendations set down in the BRE report, "Site layout for daylight and sunlight, a guide to good practice", would indicate, If VSC is at least 27% (θ is greater than 65° , obstruction angle less than 25°) conventional window design will usually give reasonable results.

If the VSC is between 15% and 27% (θ is between 45° and 65° , obstruction angle between 25° and 45°) special measures (larger windows, changes to room layout) are usually needed to provide adequate daylight.

If the VSC is between 5% and 15% (θ is between 25° and 45° , obstruction angle between 45° and 65°) it is very difficult to provide adequate daylight unless very large windows are used.

If the VSC less than 5% (θ less than 25° , obstruction angle more than 65°) it is often impossible to achieve reasonable daylight, even if the whole window wall is glazed.

Usually the 'given vertical plane' is the outside of a window wall, the VSC does not include reflected light, either from the ground or from other buildings.

The VSC is usually expressed as a percentage and the maximum value is almost 40% for a completely unobstructed vertical wall.

Table 2: Magnitude of change for Vertical Sky Component (VSC) Results		
VSC Values	Ratio of Impact	Daylight Condition
≥27%	N/A	Reasonable
15%-27%	≥0.8	Low/Negligible
	<0.8	Medium
5%-15%	≥0.8	Low/Negligible
	<0.8	High
<5%	≥0.8	Low/Negligible
	<0.8	Inadequate
<p>*Note It should be noted that if there would be a significant loss of light to the main window but the room also has one or more smaller windows, an overall VSC may be derived by weighting each VSC element in accordance with the proportion of the total glazing area represented by its window. Thus, loss of VSC to the room as a whole would meet the guideline.</p>		

Notably, the BRE guide itself, within the introduction, states that the advice given is not mandatory and the guide should not be seen as an instrument of planning policy, its aim being to help rather constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly.

The RADIANCE lighting simulation package in IES-VE 2024 v0.0.0, has been used to perform the daylight simulations.

The results of the VSC for the windows and glazed doors are shown in Table 3, indicating that majority (i.e.,97%) of the neighbouring windows achieve the required vertical sky component of $\geq 27\%$. Although, Bedroom 1 of plot 3 in Cumnor Hill achieves a VSC value of less than 27%, its VSC improves compare to its existing scenario's.

Table 3: Vertical Sky Component (VSC) Results

Level	House	Window/ Orientation	Existing VSC (%)	Proposed VSC (%)	Ratio of Impact (only if VSC<27%)	Daylight Condition
Ground Floor	Cumnor Hill- P3- Kitchen-Dining- Lounge	W1/SE	37.40	37.17	-	Reasonable
		W2/SE	39.76	38.95	-	Reasonable
Ground Floor	Cumnor Hill- P3- Bedroom 1	W3/NW	24.49	24.94	1.00	Reasonable [slightly improved compared to the existing scenario]
Ground Floor	Cumnor Hill- P1- Bedroom 1	W4/SW	29.11	32.65	-	Reasonable
Ground Floor	Cumnor Hill- P1- Bedroom 2	W5/SW	33.25	34.53	-	Reasonable
First Floor	Cumnor Hill- P6- Kitchen-Dining- Lounge	W1/SE	39.89	39.89	-	Reasonable
		W2/SE	39.94	39.84	-	Reasonable
First Floor	Cumnor Hill- P6- Bedroom 1	W3/NW	35.19	34.89	-	Reasonable
First Floor	Cumnor Hill- P4- Bedroom 1	W4/NW	32.40	31.23	-	Reasonable
Ground Floor	Martin Close- P4- Sitting	W1/SE	39.58	38.84	-	Reasonable
		W2/SE	39.40	38.94	-	Reasonable
First Floor	Martin Close- P4- Bedroom 1	W1/SE	39.73	39.30	-	Reasonable
Ground Floor	Martin Close- P5- Sitting	W1/SE	39.45	38.85	-	Reasonable
		W2/SE	39.53	39.02	-	Reasonable
First Floor	Martin Close- P5- Bedroom 3	W1/SE	39.82	39.25	-	Reasonable
First Floor	Martin Close- P5- Bedroom 1	W2/SE	39.62	39.13	-	Reasonable
Ground Floor		W1/SE	39.48	38.57	-	Reasonable

	Martin Close-P6- Sitting	W2/SE	39.27	38.51	-	Reasonable
First Floor	Martin Close-P6- Bedroom 1	W1/SE	39.74	39.10	-	Reasonable
First Floor	Martin Close-P6- Bedroom 3	W2/SE	39.59	39.07	-	Reasonable
Ground Floor	Martin Close-P7- Sitting	W1/SE	39.37	38.40	-	Reasonable
		W2/SE	39.13	38.68	-	Reasonable
First Floor	Martin Close-P7- Bedroom 3	W1/SE	39.62	39.16	-	Reasonable
First Floor	Martin Close-P7- Bedroom 1	W2/SE	39.64	38.80	-	Reasonable
Ground Floor	Martin Close-P8- Sitting	W1/SE	38.87	37.55	-	Reasonable
		W2/SE	35.65	34.26	-	Reasonable
First Floor	Martin Close-P8- Bedroom 1	W1/SE	39.43	38.28	-	Reasonable
First Floor	Martin Close-P8- Bedroom 3	W2/SE	36.78	36.20	-	Reasonable
Ground Floor	Martin Close-P9- Sitting	W1/SE	39.55	38.38	-	Reasonable
		W2/SE	39.37	38.59	-	Reasonable
First Floor	Martin Close-P9- Bedroom 3	W1/SE	39.60	38.96	-	Reasonable
First Floor	Martin Close-P9- Bedroom 2	W2/SE	39.55	39.20	-	Reasonable

No Sky Line (NSL)

The No sky line divides areas of the working plane which can and cannot receive direct skylight (Figure 14). Where room layouts are known (for example if they are available on the local authority's planning portal), the impact on the daylighting distribution in the existing building should be found.

The IES-VE calculation method is to define the sky view factor, which is the factor from the surface to the sky, this is the ratio of the diffuse sky radiation received by the surface to that which would be received by the same surface if it were completely exposed to the sky (The theory assumes that the diffuse sky radiation is isotropic).

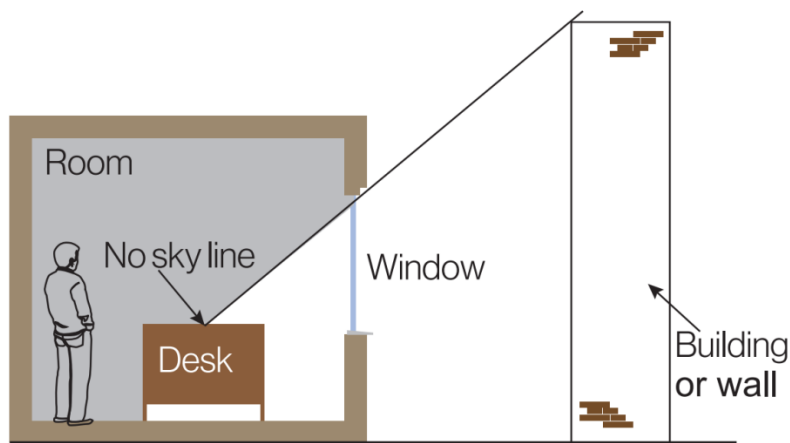


Figure 14: The No Sky Line which is the factor from the working plane to the sky

To illustrate, the no sky line divides those areas of the working plane which can receive direct skylight, from those which cannot. It indicates how good the distribution of daylight is in a room. Areas beyond the no sky line will generally look gloomy.

As aforementioned, the BRE guide explains that the diffuse daylighting of the existing building may be adversely affected if either:

- the VSC measured at the centre of an existing main window is less than 27%, and less than 0.80 times its former value
- the area of the working plane in a room which can receive direct skylight is reduced to less than 0.80 times its former value.

Accordingly, the impact on the daylighting distribution in the existing building should be found by plotting the no sky line in each of the main rooms.

For houses this would include living rooms, dining rooms, and kitchens; bedrooms should also be analysed although they are less important.

In non-domestic buildings each main room where daylight is expected should be investigated.

The BRE guide explains if, following construction of a new development, the no sky line moves so that the area of the existing room, which does receive direct skylight, is reduced to less than 0.80 times its former value this will be noticeable to the occupants, and more of the room will appear poorly lit.

Table 4 Magnitude of change for No Sky Line (NSL) Results	
Ratio of Impact	Magnitude of change
≥0.8	Reasonable
< 0.8	Inadequate

The percentage area of no sky line is shown for each room in Table 5 below. The results indicate that, all of the studied rooms not only achieve high sky view percentage and will maintain it on the working plane level, but also it has been improved in two spaces compared to the existing scenario's.

Table 5: Sky View Area Results

Level	House	Window/ Orientation	Existing Sky view	Proposed Sky view	Ratio of Impact	Magnitude of change
Ground Floor	12-14 Cumnor Hill- P3- Kitchen- Dining-Lounge	W1/SE, W2/SE	1.00	1.00	1.00	Reasonable
Ground Floor	12-14 Cumnor Hill- P3- Bedroom 1	W3/NW	1.00	1.00	1.00	Reasonable
Ground Floor	12-14 Cumnor Hill- P1- Bedroom 1	W4/SW	0.64	1.00	1.00	Reasonable [Improved compared to the existing scenario]
Ground Floor	12-14 Cumnor Hill- P1- Bedroom 2	W5/SW	1.00	1.00	1.00	Reasonable
First Floor	12-14 Cumnor Hill- P6- Kitchen- Dining-Lounge	W1/SE, W2/SE	1.00	1.00	1.00	Reasonable
First Floor	12-14 Cumnor Hill- P6- Bedroom 1	W3/NW	1.00	1.00	1.00	Reasonable
First Floor	12-14 Cumnor Hill- P4- Bedroom 1	W4/NW	0.91	0.94	1.00	Reasonable [Improved compared to the existing scenario]
Ground Floor	Martin Close- P4- Sitting	W1/SE, W2/SE	1.00	1.00	1.00	Reasonable
First Floor	Martin Close- P4- Bedroom 1	W1/SE	0.95	0.95	1.00	Reasonable
Ground Floor	Martin Close- P5- Sitting	W1/SE, W2/SE	1.00	1.00	1.00	Reasonable
First Floor	Martin Close- P5- Bedroom 3	W1/SE	1.00	1.00	1.00	Reasonable
First Floor	Martin Close- P5- Bedroom 1	W2/SE	1.00	1.00	1.00	Reasonable
Ground Floor	Martin Close- P6- Sitting	W1/SE, W2/SE	1.00	1.00	1.00	Reasonable
First Floor	Martin Close- P6- Bedroom 1	W1/SE	1.00	1.00	1.00	Reasonable

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First Floor	Martin Close- P6- Bedroom 3	W2/SE	1.00	1.00	1.00	Reasonable
Ground Floor	Martin Close- P7- Sitting	W1/SE, W2/SE	1.00	1.00	1.00	Reasonable
First Floor	Martin Close- P7- Bedroom 3	W1/SE	1.00	1.00	1.00	Reasonable
First Floor	Martin Close- P7- Bedroom 1	W2/SE	1.00	1.00	1.00	Reasonable
Ground Floor	Martin Close- P8- Sitting	W1/SE, W2/SE	1.00	1.00	1.00	Reasonable
First Floor	Martin Close- P8- Bedroom 1	W1/SE	1.00	1.00	1.00	Reasonable
First Floor	Martin Close- P8- Bedroom 3	W2/SE	1.00	1.00	1.00	Reasonable
Ground Floor	Martin Close- P9- Sitting	W1/SE, W2/SE	1.00	1.00	1.00	Reasonable
First Floor	Martin Close- P9- Bedroom 3	W1/SE	1.00	1.00	1.00	Reasonable
First Floor	Martin Close- P9- Bedroom 2	W2/SE	1.00	1.00	1.00	Reasonable

Annual probable sunlight hours (APSH)

The annual probable sunlight hours (APSH) is a different metric to calculate the loss of sunlight over the year. Here 'probable sunlight hours' means the total number of hours in the year that the sun is expected to shine on unobstructed ground. The sunlight reaching a window is quantified as a percentage of this unobstructed annual total.

Obstruction to sunlight may become an issue if:

- Some part of a new development is situated within 90° of due south of a main window wall of an existing building
- In the section drawn perpendicular to this existing window wall, the new development subtends an angle greater than 25° to the horizontal measured from the centre of the lowest window to a main living room (Figure 12).

The BRE Handbook notes that:

“A south facing window will, in general, receive most sunlight, while a north facing one will receive it only on a handful of occasions (early morning and late evening in summer). East and west facing windows will receive sunlight only at certain times of day”.

For existing residential buildings, the BRE Handbook suggests that: *“all main living rooms of dwellings and conservatories should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun”.*

The BRE guide explains that if a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely affected. This will be the case if the centre of the window:

- receives less than 25% of annual probable sunlight hours and less than 0.80 times its former annual value; or less than 5% of annual probable sunlight hours between 21 September and 21 March and less than 0.80 times its former value during that period;
- and also has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

Notably, BRE guide recommends March 21st as the date to use. Measured on inside face of window wall, 0.3m above sill or 1.2m above floor if that is higher.

Table 6: Magnitude of change for APSH Results			
APSH Values	Ratio of Impact	Reduction in Received sunlight	Magnitude of change
Annual APSH $\geq 25\%$ AND Winter APSH $\geq 5\%$	N/A	N/A	Reasonable
Annual APSH $< 25\%$ OR Winter APSH $< 5\%$	≥ 0.80	N/A	Low/Negligible
	< 0.80	$< 4\%$	Low/Negligible
Annual APSH $< 25\%$ OR Winter APSH $< 5\%$	< 0.80	$\geq 4\%$	High/Require amendment

Table 7: APSH Results										
Level	House	Opening/ Orientation	Existing Average Probable Sunlight Hours		Proposed Average Probable Sunlight Hours					
			Winter	Annual	Winter	Annual	Winter Ratio of Impact	Annual Ratio of Impact	Annual reduction in Received Sunlight	Magnitude of Change
Ground Floor	12-14 Cumnor Hill- P3- Kitchen-Dining-Lounge	W1/SE	8.86	24.58	8.00	23.32	0.90	0.95	-	Low/Negligible
		W2/SE	8.90	27.08	7.00	24.38	0.78	0.90	-	Low/Negligible
Ground Floor	12-14 Cumnor Hill- P1- Bedroom 1	W4/SW	2.05	21.96	3.98	23.85	1.00	1.00	-	Low/Negligible
Ground Floor	12-14 Cumnor Hill- P1- Bedroom 2	W5/SW	3.20	25.39	4.28	24.81	1.00	0.97	-	Low/Negligible
First Floor	12-14 Cumnor Hill- P6- Kitchen-Dining-Lounge	W1/SE	8.90	27.91	8.90	27.91	-	-	-	Reasonable
		W2/SE	8.90	28.08	8.66	27.84	-	-	-	Reasonable
Ground Floor	Martin Close- P4- Sitting	W1/SE	8.22	25.34	8.22	25.34	-	-	-	Reasonable
		W2/SE	8.16	25.25	8.16	25.25	-	-	-	Reasonable

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First Floor	Martin Close-P4- Bedroom 1	W1/SE	8.22	25.34	8.22	25.34	-	-	-	Reasonable
Ground Floor	Martin Close-P5- Sitting	W1/SE	7.51	24.21	8.19	24.90	1.00	1.00	-	Low/Negligible
		W2/SE	8.22	24.66	8.22	24.66	1.00	1.00	-	Low/Negligible
First Floor	Martin Close-P5- Bedroom 3	W1/SE	8.22	25.34	8.22	25.34	-	-	-	Reasonable
First Floor	Martin Close-P5- Bedroom 1	W2/SE	8.22	25.34	8.22	25.34	-	-	-	Reasonable
Ground Floor	Martin Close-P6- Sitting	W1/SE	8.22	26.02	8.22	26.02	-	-	-	Reasonable
		W2/SE	8.21	26.00	8.21	26.00	-	-	-	Reasonable
First Floor	Martin Close-P6- Bedroom 1	W1/SE	8.22	26.00	8.22	26.00	-	-	-	Reasonable
First Floor	Martin Close-P6- Bedroom 3	W2/SE	8.22	25.66	8.22	25.66	-	-	-	Reasonable
Ground Floor	Martin Close-P7- Sitting	W1/SE	8.14	25.76	8.14	25.76	-	-	-	Reasonable
		W2/SE	8.10	25.13	8.10	25.13	-	-	-	Reasonable
First Floor	Martin Close-P7- Bedroom 3	W1/SE	8.22	25.34	8.22	25.34	-	-	-	Reasonable
First Floor	Martin Close-P7- Bedroom 1	W2/SE	8.22	25.78	8.22	25.78	-	-	-	Reasonable
Ground Floor	Martin Close-P8- Sitting	W1/SE	8.17	26.34	8.17	26.34	-	-	-	Reasonable
		W2/SE	6.74	20.30	6.74	20.30	-	-	-	Reasonable
First Floor	Martin Close-P8- Bedroom 1	W1/SE	7.23	26.06	7.23	26.06	-	-	-	Reasonable
First Floor	Martin Close-P8- Bedroom 3	W2/SE	6.05	22.74	6.05	22.74	1.00	1.00	-	Low/Negligible

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Ground Floor	Martin Close-P9- Sitting	W1/SE	9.53	29.84	9.53	29.84	-	-	-	Reasonable
		W2/SE	9.59	30.14	9.59	30.14	-	-	-	Reasonable
First Floor	Martin Close-P9- Bedroom 3	W1/SE	9.59	30.14	9.59	30.14	-	-	-	Reasonable
First Floor	Martin Close-P9- Bedroom 2	W2/SE	9.59	30.14	9.59	30.14	-	-	-	Reasonable

The results of the APSH for the windows are shown in Table 7, indicating that among the 29 studied windows facing *within 90° of due south*, the loss of sunlight for all of them is either reasonable or low/negligible. To illustrate, 76% of the assessed windows achieve annual and winter APSH more than 25% and 5%, respectively. Whereas, the ratio of impact of the new developments on the annual and winter APSH of the 24% of the remaining assessed windows is negligible.

Conclusion

This report presents the impact of the proposed new development located at 16 Cumnor Hill, Botley, Oxford, OX2 9HA on the daylight and sunlight of its neighbouring buildings. The existing hedge, which is approximately three meters high and encircles the assessed neighbouring buildings, was modelled in the IESVE and taken into account in the analysis in order to increase the assessment's accuracy.

The results indicate that the proposed development not only had no adverse effects on the nearby buildings regarding their daylight ratio, but it even enhanced the daylight ratio in several spaces.

Precisely, following the detailed analysis, via the dynamic simulation model development site, the Vertical Sky Component (VSC) and No Sky Line (NSL) results demonstrate an overall compliance as per the BRE standards contained within "BR 209 2022 Edition".

It must be noted that majority (i.e., 97%) of the neighbouring windows achieve the required VSC of $\geq 27\%$. Furthermore, although the VSC of Bedroom 1 in plot 3 of Cumnor Hill is less than 27%, it achieves a higher VSC value compared to its existing scenario.

With regard to the sky view, all of the studied rooms not only achieve high sky view percentage and will maintain it on the working plane level, but also it has been improved in two spaces compared to its existing scenario.

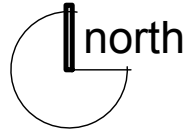
In terms of the Average Probable Sunlight Hours (APSH), among the 29 studied windows facing *within 90° of due south*, 76% of them receive APSH annually and in winter more than 25% and 5%, respectively. Whereas, the ratio of impact of the new developments is negligible on the annual and winter APSH of the 24% of the remaining assessed windows.

Overall, based on the site layout and the proposed drawings, all of the examined neighbouring buildings will retain access to adequate daylight.

Appendix A

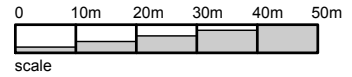
This appendix contains the following reports used in producing the content of this Daylight and Sunlight Analysis

Appendix A- Floor plans, elevations and other drawings used to produce the detailed analysis of this project.



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PROPOSED RESIDENTIAL DEVELOPMENT

16 CUMNOR HILL
OXFORD
OXON OX2 9HA

LOCATION PLAN

GUY ROBERTS R.I.B.A.

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scale	date	drawn by
1:1250@A4	21.02.24	GR
project	dwg. no.	rev.
2410	PA 101	



NOTE: DRAWING BASED UPON MIDLAND SURVEY LTD. TOPOGRAPHIC SURVEY DRAWING 31369

PROPOSED RESIDENTIAL DEVELOPMENT

16 CUMNOR HILL
OXFORD
OXON. OX2 9HA

EXISTING:
TOPOGRAPHIC SURVEY

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project	dwg. no.	rev.
2410	PA 102	

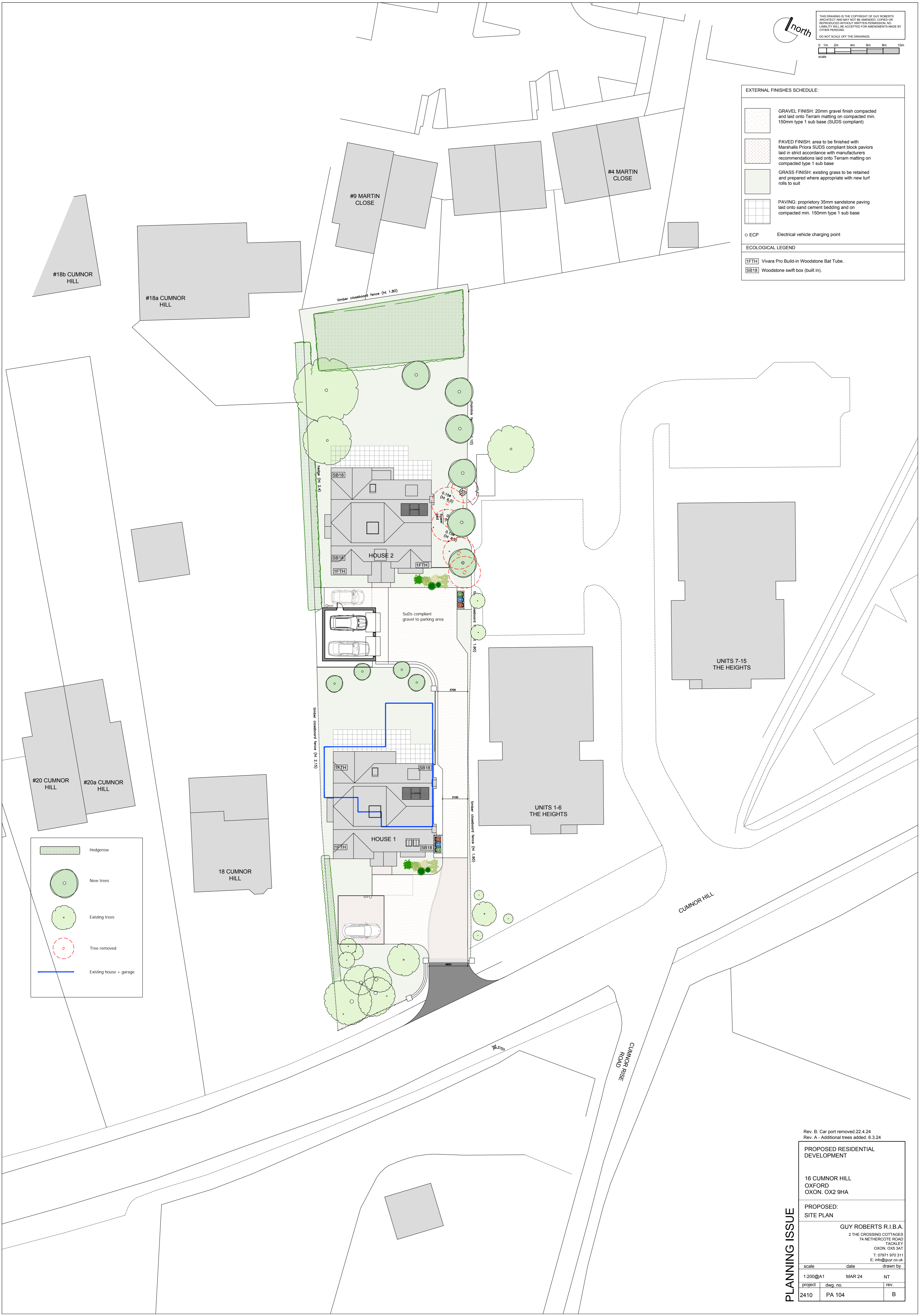
PLANNING ISSUE

EXTERNAL FINISHES SCHEDULE:

	GRAVEL FINISH: 20mm gravel finish compacted and laid onto Terram matting on compacted min. 150mm type 1 sub base (SUDS compliant)
	PAVED FINISH: area to be finished with Marshalls Flexo SUDS compliant block pavers laid in strict accordance with manufacturers recommendations laid onto Terram matting on compacted type 1 sub base
	GRASS FINISH: existing grass to be retained and prepared where appropriate with new turf rolls to suit
	PAVING: proprietary 35mm sandstone paving laid onto sand cement bedding and on compacted min. 150mm type 1 sub base
	Electrical vehicle charging point

ECOLOGICAL LEGEND

	Vivara Pro Build-in Woodstone Bat Tube.
	Woodstone swift box (built in).



Legend:

	Hedgerow
	New trees
	Existing trees
	Tree removed
	Existing house + garage

Rev. B - Car port removed 22.4.24
Rev. A - Additional trees added. 6.3.24

PROPOSED RESIDENTIAL DEVELOPMENT

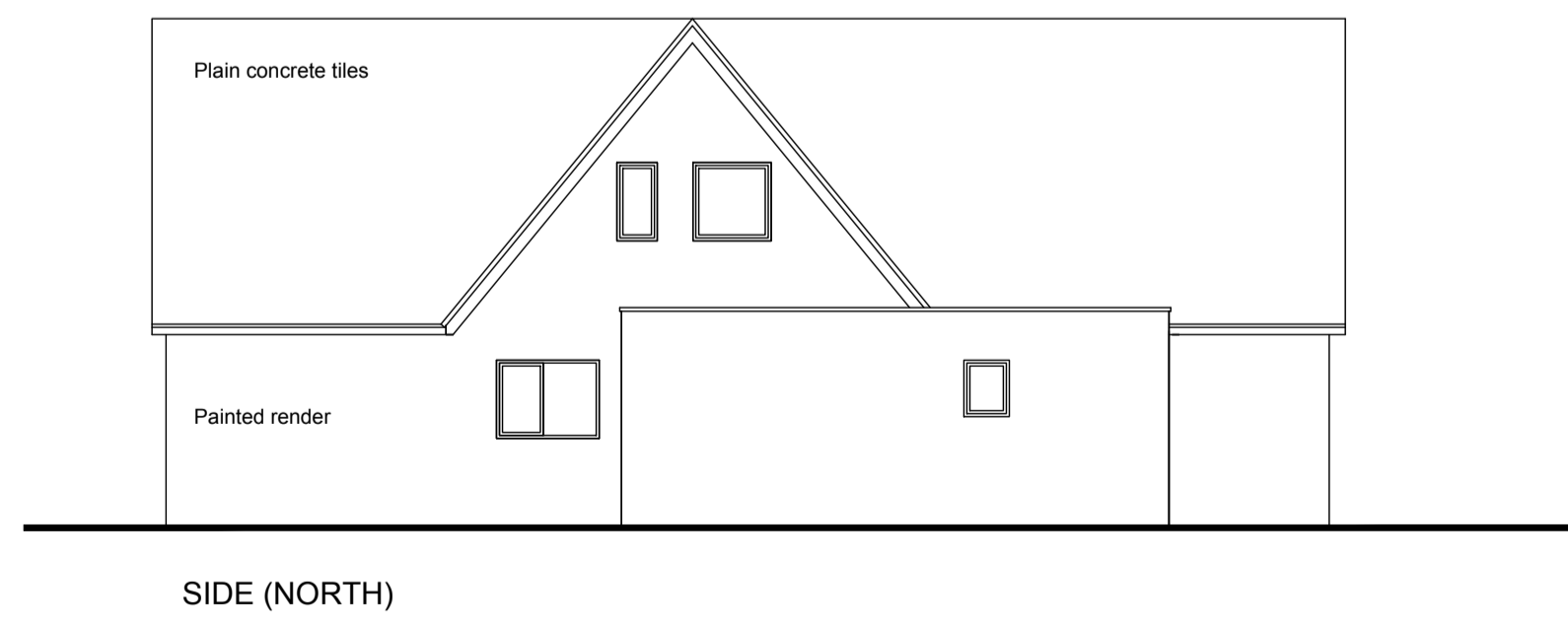
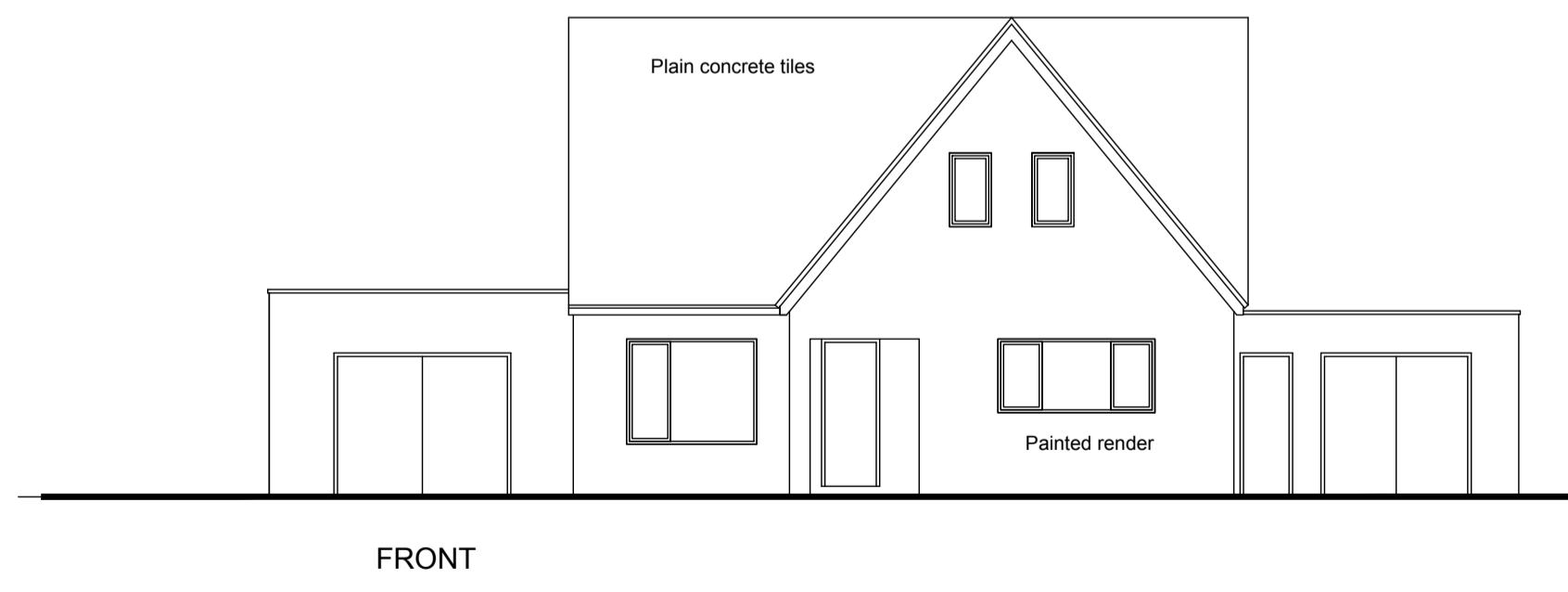
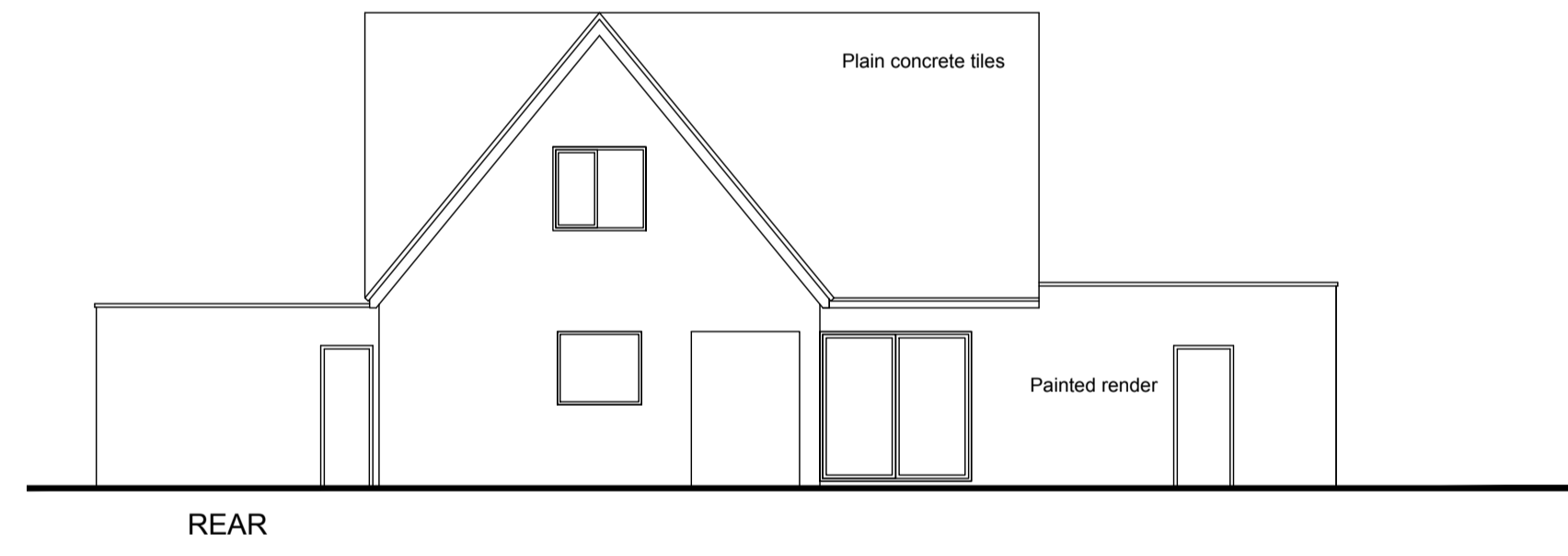
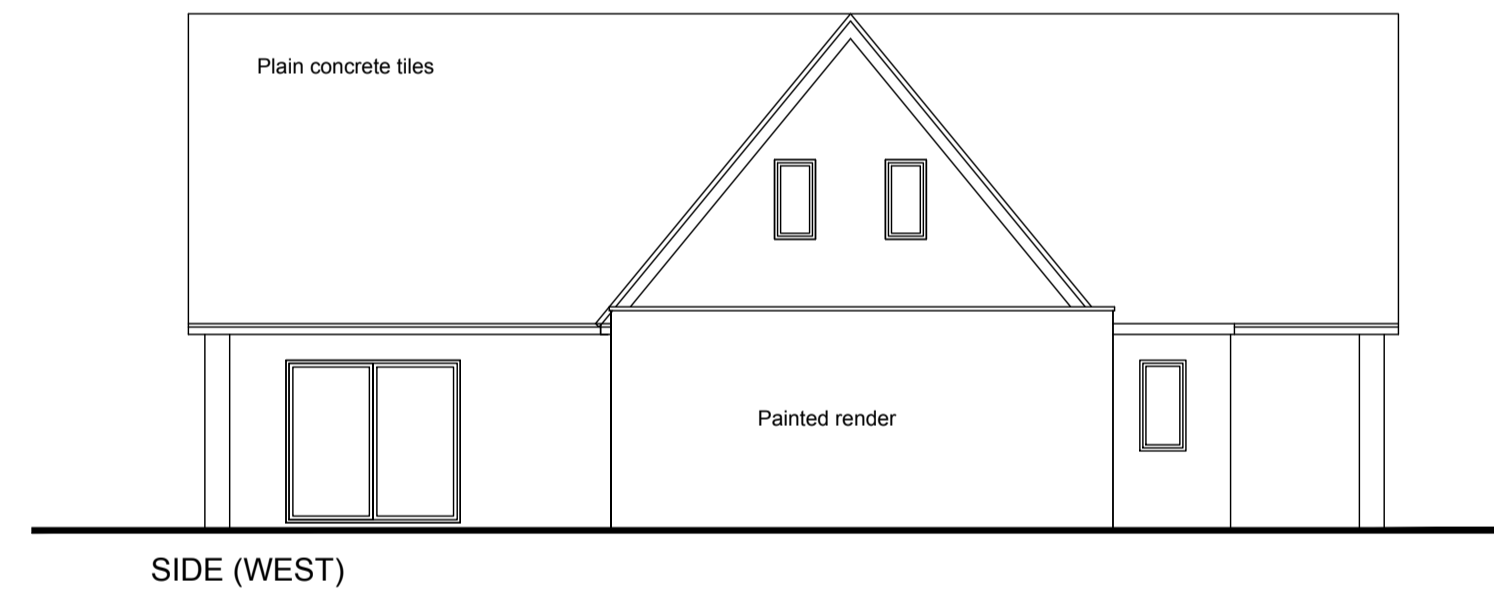
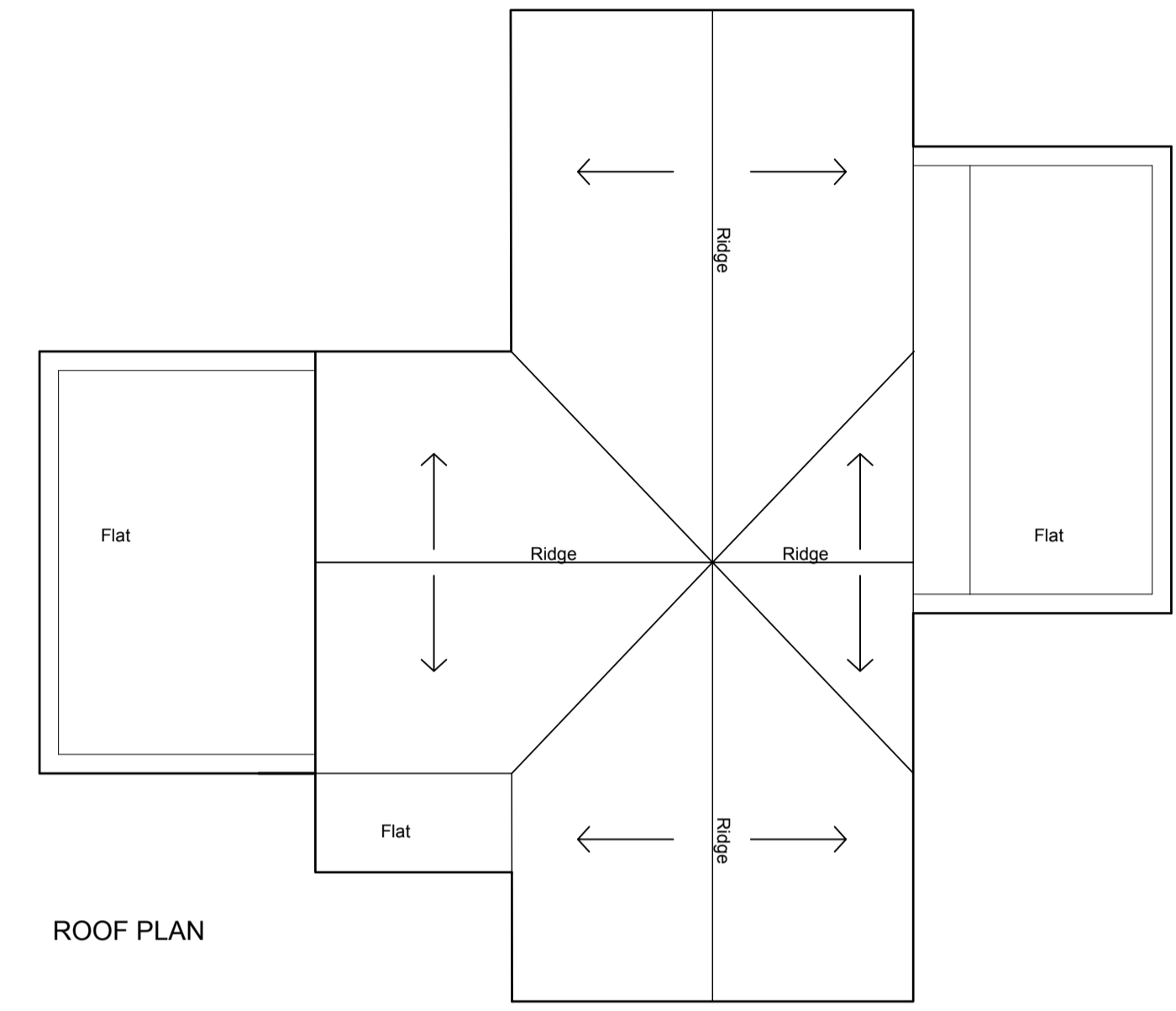
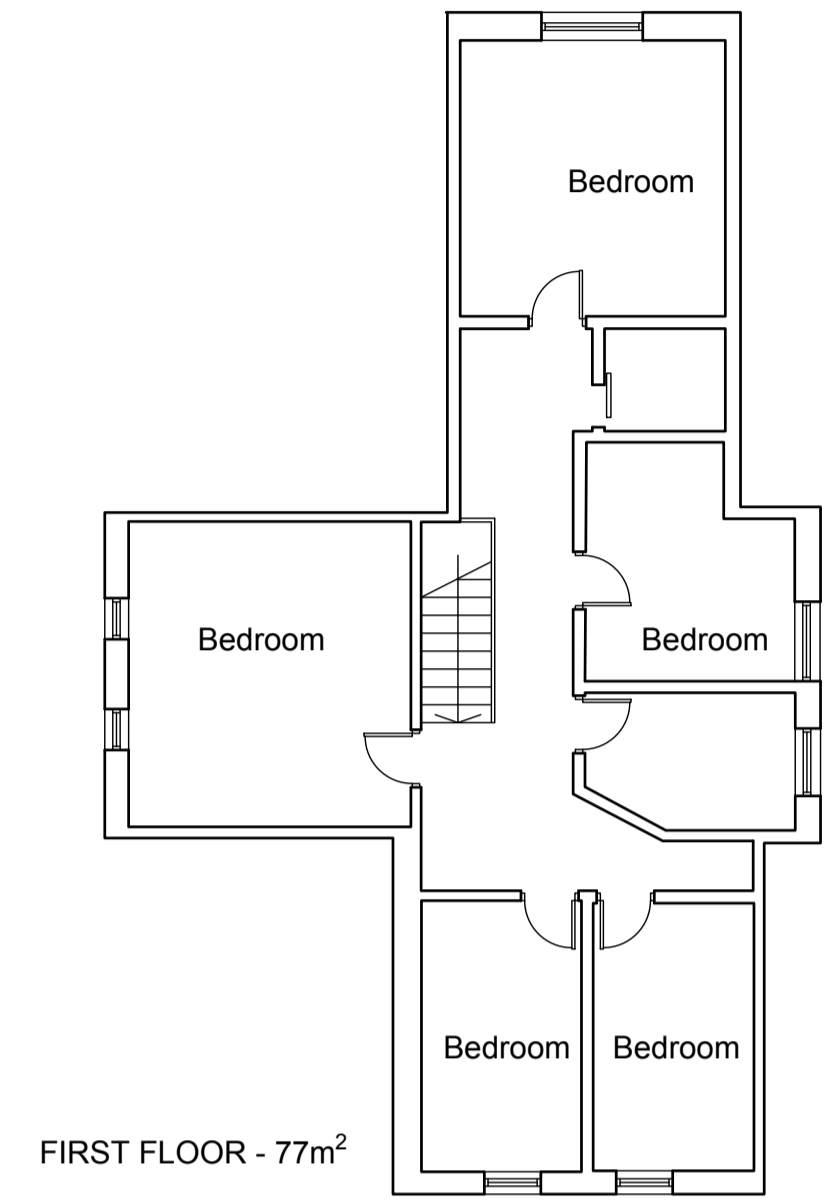
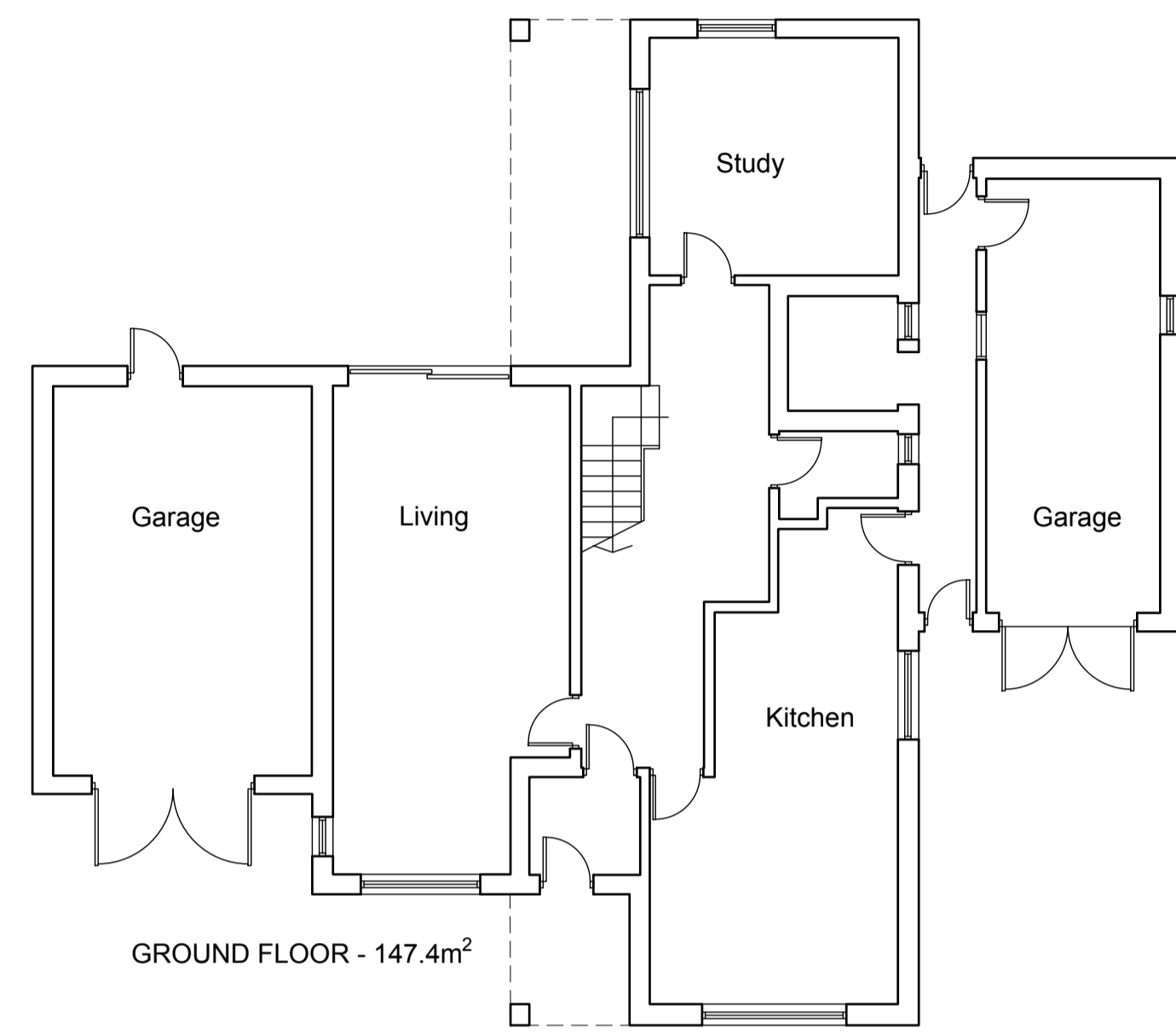
16 CUMNOR HILL
OXFORD
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**PROPOSED:
SITE PLAN**

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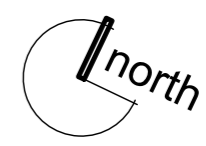
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PLANNING ISSUE



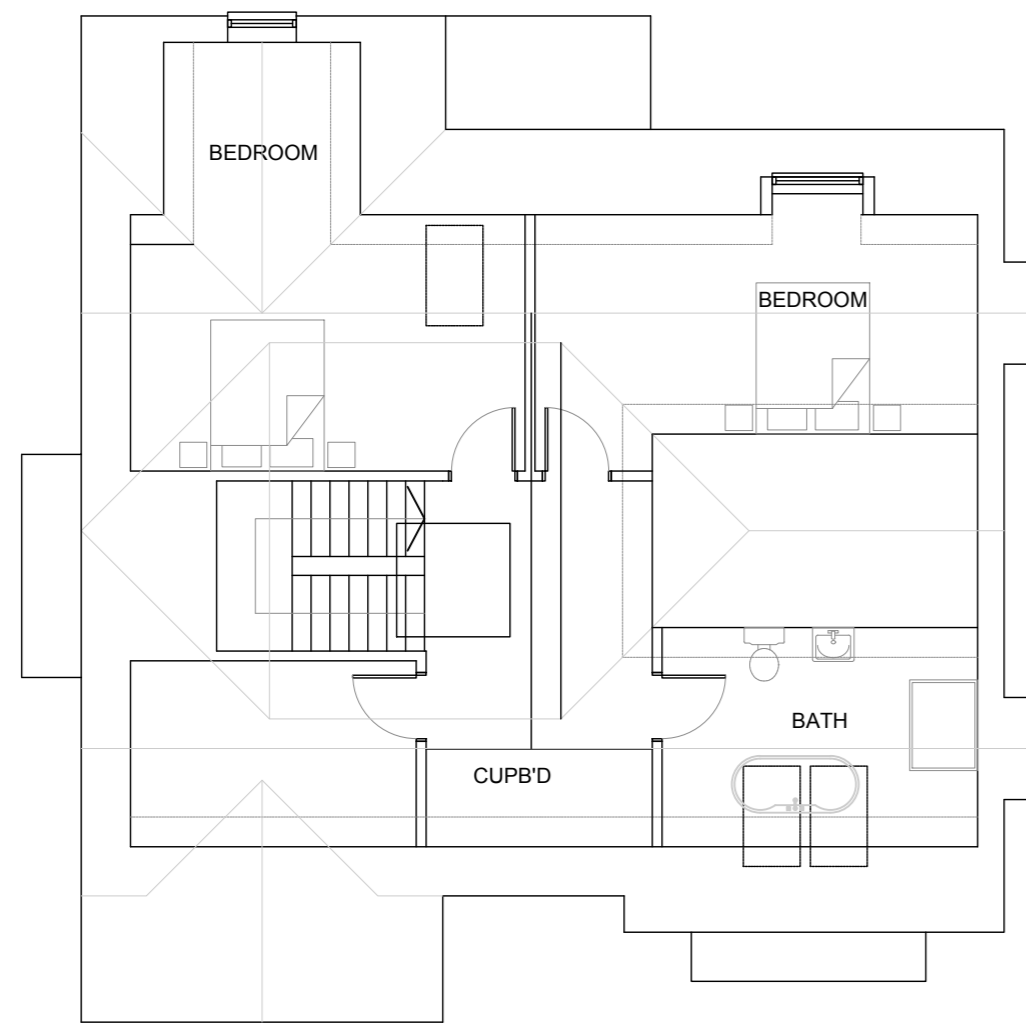
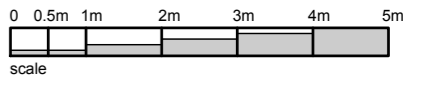
PLANNING ISSUE

PROPOSED RESIDENTIAL DEVELOPMENT		
16 CUMNOR HILL OXFORD OXON. OX2 9HA		
EXISTING HOUSE: PLANS + ELEVATIONS		
GUY ROBERTS R.I.B.A. 2 THE CROSSING COTTAGES 74 NETHERCOTE ROAD TACKLEY OXON. OX5 3AT T: 07971 970 311 E: info@guy.co.uk		
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2410	PA 103	

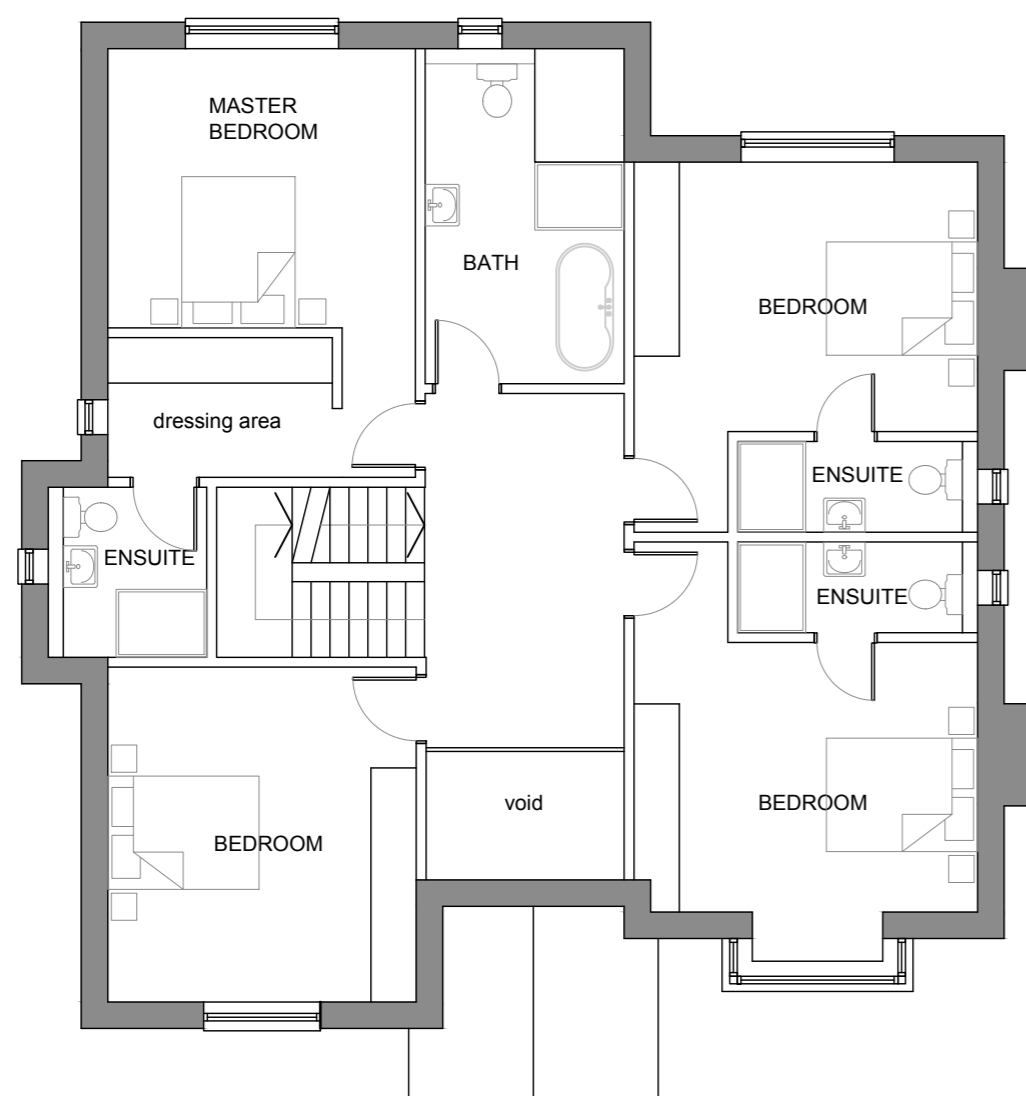


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DO NOT SCALE OFF THE DRAWINGS.



SECOND FLOOR PLAN



FIRST FLOOR PLAN



GROUND FLOOR PLAN



FRONT ELEVATION (SOUTHEAST)

slates colour: grey

smoothcoat render finish colour: cream
dressed stone string course

buff facing brickwork

timber windows with glazing bars
frame colour: white



SIDE ELEVATION (NORTHEAST)



REAR ELEVATION (NORTHWEST)



SIDE ELEVATION (SOUTHWEST)

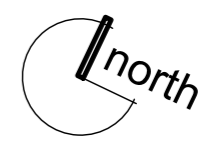
slates colour: grey

smoothcoat render finish colour: cream
dressed stone string course

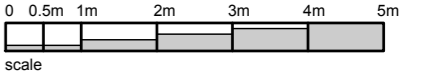
buff facing brickwork

PLANNING ISSUE

PROPOSED RESIDENTIAL DEVELOPMENT	
16 CUMNOR HILL OXFORD OXON. OX2 9HA	
PROPOSED: HOUSE 1: PLANS & ELEVATIONS	
GUY ROBERTS R.I.B.A. 2 THE CROSSING COTTAGES 74 NETHERCOTE ROAD TACKLEY OXON. OX5 3AT T: 07971 970 311 E: info@guyr.co.uk	
scale	date
1:100@A1	JAN 24
project	dwg. no.
2410	PA 105
drawn by	NT
rev.	



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DO NOT SCALE OFF THE DRAWINGS.



SECOND FLOOR PLAN



slates colour: grey

smoothcoat render finish
colour: cream
dressed stone string course

buff facing brickwork

timber windows with glazing bars
frame colour: white

FRONT ELEVATION (SOUTHEAST)



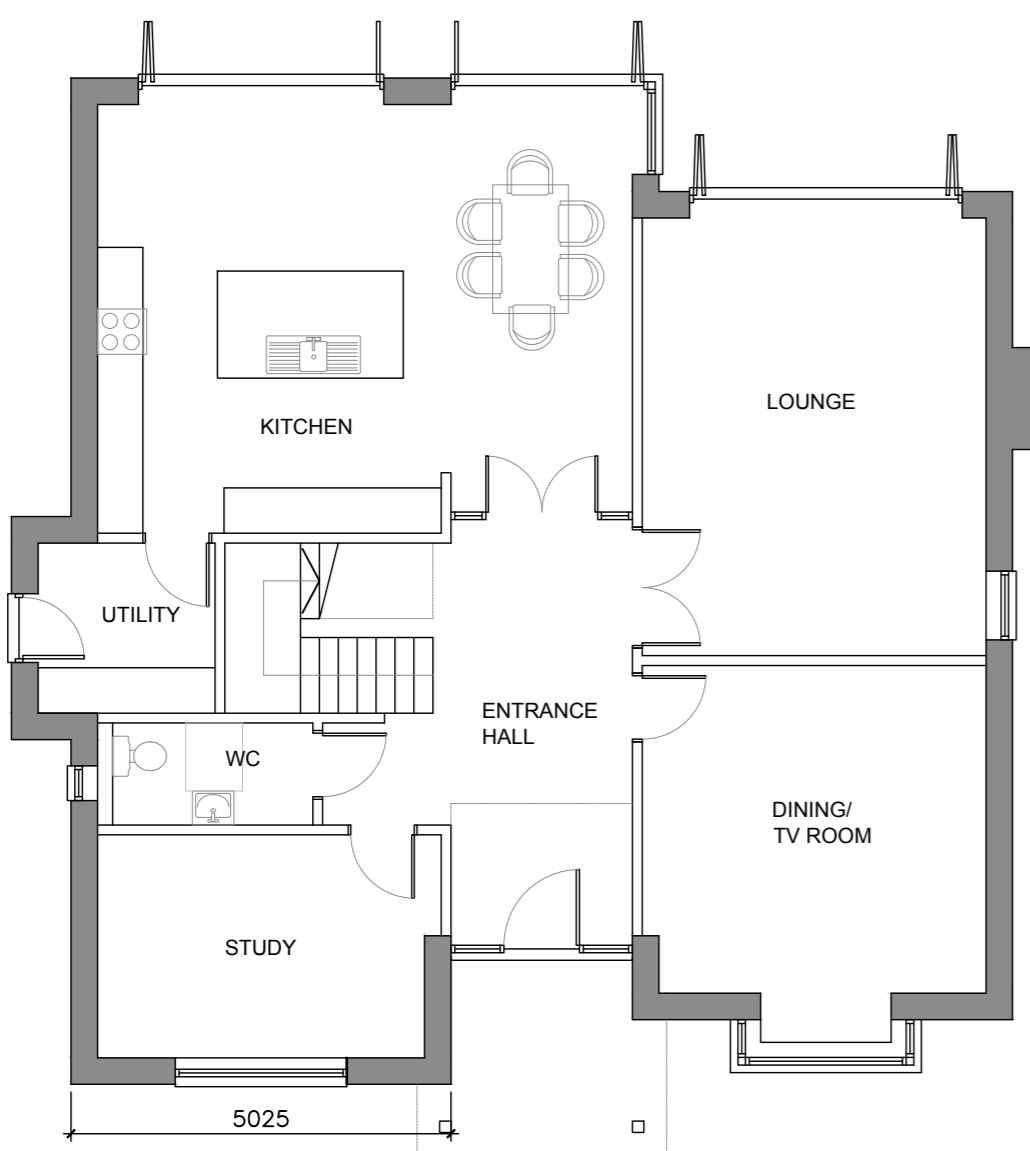
SIDE ELEVATION (NORTHEAST)



FIRST FLOOR PLAN



REAR ELEVATION (NORTHWEST)



GROUND FLOOR PLAN



slates colour: grey

smoothcoat render finish
colour: cream
dressed stone string course

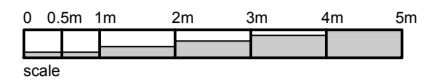
buff facing brickwork

SIDE ELEVATION (SOUTHWEST)

PLANNING ISSUE

PROPOSED RESIDENTIAL DEVELOPMENT			
16 CUMNOR HILL OXFORD OXON. OX2 9HA			
PROPOSED: HOUSE 2: PLANS & ELEVATIONS			
GUY ROBERTS R.I.B.A. 2 THE CROSSING COTTAGES 74 NETHERCOTE ROAD TACKLEY OXON. OX5 3AT T: 07971 970 311 E: info@guyr.co.uk			
scale	date	drawn by	
1:100@A1	JAN 24	NT	
project	dwg. no.	rev.	
2410	PA 206		

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FRONT ELEVATION (ALONG CUMNOR HILL)



REAR ELEVATION (CENTRE OF SITE LOOKING TOWARDS CUMNOR HILL)



SIDE ELEVATION (ALONG ACCESS DRIVE)

Rev. A. Car port removed 22.4.24

PROPOSED RESIDENTIAL DEVELOPMENT

16 CUMNOR HILL
OXFORD
OXON. OX2 9HA

PROPOSED:
SITE SECTIONS

GUY ROBERTS R.I.B.A.
2 THE CROSSING COTTAGES
74 NETHERCOTE ROAD
TACKLEY
OXON. OX5 3AT
T: 07971 970 311
E: info@guyr.co.uk

scale	date	drawn by
1:100@A1	FEB 24	NT
project	dwg. no.	rev.
2410	PA 107	A

PLANNING ISSUE