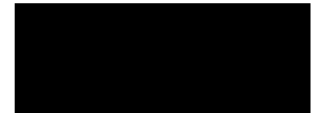


CHARTERED CIVIL ENGINEERS

ABMH Civils Ltd
1 The Grove
Felpham
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Surface Water Drainage Impact Assessment

for

Proposed Commercial Development

**at
The Windmill Inn
Mill Lane
Rustington
West Sussex
BN16 3JP**

Project: FC2912
Date: March 2022
Author: MH
Status: Planning Issue
Revision: -

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Drainage Impact Assessment

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Drainage Impact Assessment

1. Introduction

- 1.1 We have been appointed by Afrim Muca to provide a Surface Water Drainage Impact Assessment (DIA) to accompany the proposed planning application for an extension The Windmill Inn, Mill Lane, Rustington, West Sussex, BN16 3JP
- 1.2 The aim of the report is to review how the existing site is drained and how the proposed site can be drained in accordance with current design practice and the requirements of Arun District Council (ADC).
- 1.3 The report details the existing and proposed flows that are/will be generated and how these proposed storm water flows can be managed and discharged in a safe manner.
- 1.4 The DIA has been based upon the following documentation;

Location and Block Plan – Bayside drawing 044 PL-01
Existing GF/Part Site Plan - Bayside drawing 044 SU-01
Existing Part Site Plan - Bayside drawing 044 SU-02
Existing FF & Roof Plans - Bayside drawing 044 SU-03
Existing Elevations - Bayside drawing 044 SU-04
Proposed GF/Part Site Plan - Bayside drawing 044 PL-02 B
Proposed GF/FF Plans - Bayside drawing 044 PL-03 B
Proposed Roof Plan - Bayside drawing 044 PL-04
Proposed Elevations - Bayside drawing 044 PL-05
Landscape Strategy Masterplan – GHD drawing GHD4020-1
Landscape Strategy Masterplan – GHD drawing GHD4020-2
Southern Water Sewer Records – 794158-1 dated 01/03/22
Topographical Survey HB Surveys Ltd, Ref 21091-02-B-GA dated 08/21

2. Existing Site Use

2.1 Site Setting

2.1.1 The site is located to the eastern side of Mill Lane, between the roundabout junctions with Worthing Road (B2187) and New Road (A259, located to the south and north respectively as shown on the location plan, Bayside drawing 044 PL-01, Appendix A.

2.1.2 The site is occupied by The Windmill Inn, a public house, as shown on Bayside drawings 044 SU-01/02/03/04, Appendix A. the southern portion of the site is occupied by a car park serving the public house, with the public house serving the middle site area, and garden/play areas serving the northern rear area of the site.

2.2 Site Topography

2.2.1 A topographical survey has been carried out by HB Surveys Ltd, Ref 21091-02-B-GA dated August 2021, as shown in Appendix A.

2.2.2 The survey has been undertaken with levels to an arbitrary datum. The site as a whole is generally level, ranging from 9.60m at the north eastern site boundary to 10.73m at the southern site boundary.

2.3 Watercourses

2.3.1 There are no watercourses within the site.

2.3.2 The nearest ditch/stream appears to be situated to some 150m north of the site, between the railway line and the A259 New Road.

2.3.3 No other watercourses or streams are known to be present within or in closer proximity of the site.

2.4 Hydrology & Geology

2.4.1 No geotechnical investigations have been undertaken by the client on site to date at the time of writing this report.

2.4.2 Based on previous experience within close proximity of this locality, the soils are anticipated to be formed of River Terrace Deposits, comprising of brown to light brown slightly silty sandy clay with occasional sub-angular flint gravel with occasional off-white moderately strong coarse chalk gravel and chalk cobbles to approximately 2.0m depth. Beneath this depth, chalk would typically be expected to found.

- 2.4.3 Ground water levels will vary throughout the year but are expected to peak approximately 1.5m below existing ground level following prolonged wet periods.
- 2.4.4 Soil infiltration rates at shallow depths within the River Terrace Deposits are expected to vary considerably but could be anticipated to be between $1-3 \times 10^{-4}$ m/s.
- 2.4.5 Obviously, soil strata, ground water monitoring/levels and soil infiltration rates will need to be determined by the client for this particular site prior to detailed design, but for the purposes of this drainage assessment have been utilised to provide an indication of possible draft drainage solutions for planning purposes only.

2.5 Existing Drainage

- 2.5.1 The topographical survey as shown in Appendix A, shows positive drainage system within the proposed site boundary as expected for a developed site.
- 2.5.2 A CCTV drainage survey is yet to be conducted to establish the actual nature, extent and condition of the drainage system.
- 2.5.3 An assessment of the likely drainage system within the site has been shown on drawing FC2912/01 Appendix A, and given the age of the property it is anticipated that the drainage on site is combined, discharging both foul and storm water runoff from the building to the adopted sewer system within Mill Road.
- 2.5.4 Surface water runoff from the car park may discharge to on site soakaways, though this is yet to be confirmed through a CCTV survey.
- 2.5.5 Southern Water Sewer Records in the locality show designated foul sewers within Mill Lane to the south (flowing south) and to the north (flowing north) of the site.
- 2.5.6 No surface water sewers are indicated, which would suggest that either soakaways are viable in this locality or that the sewer system is in fact acting as a combined system.
- 2.5.7 The sewer records are as shown in Appendix A.

2.6 Indicative Site Flood Risk

- 2.6.1 Initial indications based on flood maps on the EA web site suggest that the site is situated within a Flood Zone 1. An extract of the EA web page indicating this is shown in Appendix A.
- 2.6.2 A detailed flood risk analysis has yet to be undertaken by others at the time of writing this report.

3. Storm Water Drainage

3.1 Existing Storm Water Drainage

- 3.1.1 As highlighted in previous sections the existing building and car park are positively drained, with the building anticipated to be discharged via a combined drain to the designated foul sewer system within Mill Lane.
- 3.1.2 The car park may also be discharged to the designated foul sewer within Mill Lane or to on site soakaways.
- 3.1.3 Existing drainage outlets are yet to be determined through an onsite CCTV survey.

3.2 Proposed Storm Water Drainage

- 3.2.1 The proposed site layout, Bayside drawing 044 PL-02 B, Appendix B, shows the extent of the building works within the site.
- 3.2.2 The landscape strategy masterplan, GHD drawings GHD4020-1 and 2, show the extent of the external hard paved and landscaped areas within the site.
- 3.2.3 The increase in drained areas will result in higher storm water peak flow and volume rates leaving the site from existing situations, if not regulated on site.
- 3.2.4 In line with Building Regulations and good drainage practice the surface water from any new development and hard paved areas would be required to have separate drainage systems, ie foul and storm systems.
- 3.2.5 Furthermore, the outlets for storm water drainage systems should be, in order of priority; to soakaways, watercourses and latterly to sewers.
- 3.2.6 In addition, in order to comply with normal design standards, BS EN 752, stipulates that the system should not surcharge for a storm return period of 1 in 2 years and not flood for a storm return period of 1 in 20 years.
- 3.2.7 However, the storm return period may be required to be increased to 1 in 100 years to accord with PPS 25, including an allowance of plus 40% to take account of climate change. The actual return period to be provided will depend on the planning conditions and Lead Local Flood Authority (LLFA) requirements, which in turn will be governed by the potential flood risk to neighbouring properties downstream of the proposed site.
- 3.2.8 The options for the proposed surface water drainage system outlets are as follows:

3.3 **Option 1: Soakaways (On site)**

- 3.3.1 No geotechnical investigation including infiltration tests or ground water level monitoring on site have been undertaken to date.
- 3.3.2 The site's geotechnical conditions are not to be determined until after planning consent has been granted. However, it is envisaged that the site will have moderate draining soils with infiltration rates in the order of $1-3 \times 10^{-4}$ m/s, combined with ground water tables within 1.5m of the existing ground levels, and thus appear to support the viability of soakaways on site.
- 3.3.3 Therefore, at this stage the use of infiltration drainage to cater for the development is deemed to be potentially viable at this stage, though will be revisited once the information becomes available.
- 3.3.4 The site has a large car park and enables the provision of a shallow blanket soakaway within a porous block pavement system, such as Formpave, to be implemented on site, even with lower than envisaged soil permeability, subject to detailed design and following confirmation of the soil infiltration rates and ground water levels.
- 3.3.5 A preliminary scheme using the access road as one large blanket soakaway is shown on drawing FC2912/02, Appendix B, based on an assumed soil infiltration rate of 1×10^{-4} m/s (0.36m/hr). This scheme provides a 24 hour half drain down for a storm return period of 100 years as required by Ciria Report 156, and provides adequate on site storage for a storm return period of 100 years including a 40% allowance for climate change.
- 3.3.6 Windes calculations, Appendix B, demonstrate the above performance based on the assumed infiltration rate.
- 3.3.7 However, this option is subject to confirmation of soil infiltration rates and ground water table levels.
- 3.3.8 If this option is viable the development will result in no additional runoff or volume of water leaving the site

3.4 **Option 2: Watercourses (On/Adjacent to Site)**

- 3.4.1 There are no watercourses within or adjacent to the site and thus it is deemed to be the unfeasibility to discharge surface water runoff from site to a watercourse.

3.5 **Option 3: Connection to Storm Water Sewer**

- 3.5.1 Given the lack of geotechnical investigation to confirm at present if soakaways are viable or not, the only alternative fall back option to cater for the surface water runoff from site is to discharge it to the surface water sewer adjacent to the site.
- 3.5.2 Discharge rates into the storm sewer system will have to be restricted in line with current standards, ie max 1-2 l/s which is regarded as the minimum flow to avoid blockages within flow controls. with onsite storage provided to cater for a 100 year storm return period with 40% climate change allowance.
- 3.5.3 The actual flow rate permitted to be discharged into the storm drain will have to be agreed with LLFA and Southern Water.
- 3.5.4 Storm water attenuation tank storage is proposed to be provided through utilising the voids within the gravel sub base of a porous block paving system such as Formpave. The granular sub base is lined with an impermeable membrane creating a storage tank. The flows from the attenuation tank can then be controlled to the storm sewer using a number of recognised flow controls.
- 3.5.5 Formpave has the added advantage of providing the storage at a relatively shallow depth enabling a gravity connection to the sewer, as well as providing enhanced water treatment prior to discharging the runoff to the sewer.
- 3.5.6 The proposed scheme would be similar to that indicated on FC2912/02, but would have a flow control restricting the discharge of surface water flows prior to a connection to the diverted sewer within the site.
- 3.5.7 Connection to the sewer is subject to approval by Southern Water following planning process.
- 3.5.8 It should be highlighted that in this instance there would be an increase in peak storm flows from site to the existing sewer, 1-2 l/s, and as such capacity within the existing storm sewer network should not be taken for granted.
- 3.5.9 A sewer capacity check with Southern Water could be undertaken to gauge if the sewer has capacity issues at present, though would be resisted by Southern Water until such time as the infiltration options were fully explored.
- 3.5.10 Should capacity issues exist then the developer should be aware that Southern Water may only grant approval for a storm connection on the proviso that the developer enters into a Section 98 Sewer Requisition Notice in which the developer pays for any upgrades to the existing sewer infrastructure in order to cater for the proposed increased flows from site.

4. Flood Risk

- 4.1 The EA website indicates that the site is situated within a flood zone 1, which is the lowest category for flood risk from watercourses and the sea, Appendix A. Although other sources of flooding may be present, ie adjacent sewers, these are subject to a detailed FRA that is yet to be undertaken by others.
- 4.2 The proposed storm water management scheme will effectively manage the runoff from the site, catering for storm return periods up to 1 in 100 years taking into account climate change. Thus, the actual risk of flooding to the site and its neighbours will be no greater than existing and may in some instances be regarded as betterment.
- 4.3 It is suggested that the ground floor level of the new building be situated a minimum of 225mm above the adjacent natural/proposed finished ground levels so as to provide suitable flood protection from overland flood flows.
- 4.4 Furthermore, the onsite proposed levels should be designed so as to provide flood flow routes away from and around the building during inclement weather.

5. Summary

- 5.1 The report has demonstrated that a surface water drainage solution can be achieved for the proposed development, within and adjacent to the site.
- 5.2 Two options are currently being considered for addressing the surface water runoff from the site.
- 5.3 The first option proposes a preliminary scheme using the proposed car park as one large blanket soakaway, based on an assumed soil infiltration rate of 1×10^{-4} m/s (0.36 m/hr). This scheme provides a 24-hour half drain down for a storm return period of 100 years as required by Ciria Report 156, and provides adequate on site storage for a storm return period of 100 years including a 40% allowance for climate change.
- 5.4 However, this option is subject to confirmation of soil infiltration rates and ground water table levels. If this option is viable the development will result in no additional runoff or volume of water leaving the site
- 5.5 The second option proposes to form a storm water attenuation storage tank through utilising the voids within the gravel sub base of a porous block paving system such as Formpave. The granular sub base is lined with an impermeable membrane creating a storage tank. The flows from the attenuation tank can then be controlled to the storm sewer using a number of recognised flow controls.
- 5.6 Discharge rates into the storm sewer system will have to be restricted in line with current standards, ie max 1-2 l/s which is regarded as the minimum flow to avoid blockages within flow controls. with onsite storage provided to cater for a 100-year storm return period with 40% climate change allowance.
- 5.7 This second option again will result in an increase in flows from the site to the sewer system, and as such capacity within the existing foul sewer network should not be taken for granted.
- 5.8 A sewer capacity check with Southern Water could be undertaken to gauge if the foul sewer has capacity issues at present. Should capacity issues exist then the developer should be aware that Southern Water may only grant approval for afoul/combined connection on the proviso that the developer enters into a Section 98 Sewer Requisition Notice in which the developer pays for any upgrades to the existing sewer infrastructure in order to cater for the proposed increased flows from site.
- 5.9 The net effect of these proposed measures will be that the storm water runoff will be controlled thus maintaining the flood protection within the site and to adjacent neighbours and properties.
- 5.10 The viability of Option 1 will be explored first following the planning process, prior to pursuing Option 2.

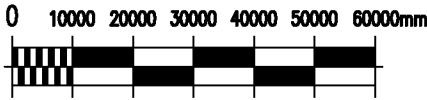
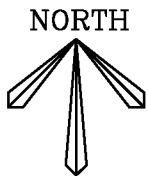
- 5.11 In line with Building Regulations the Local Building Control office/NHBC will be contacted to determine if any special drainage considerations are required to be adhered with, such as rodent control, sealed systems etc, though none are deemed likely.
- 5.12 On the basis of the findings within this report, and the proposed outline drainage designs, we are of the opinion that adequate drainage provision can be provided for the development without increasing flood risk to neighbours or their property. On this basis we trust that the above meets with your approval.

A

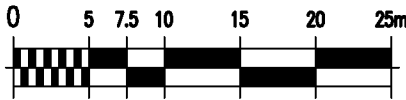
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Existing Drainage Layout Plan – ABMH FC2912/01
Extracts from EA Website – Flood Risk Map



LOCATION (1:1250)



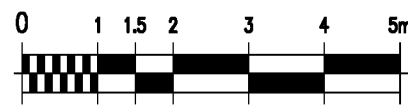
BLOCK PLAN (1:500)



ADJOINING PROPERTIES

MILL LANE

ADJOINING PROPERTIES



REV.	AMENDMENT	BY	DATE
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CLIENT'S NAME

Mr A Muca

JOB TITLE

Windmill Inn
Mill Lane, Rustington

DRAWING TITLE

Existing Ground Floor / Part Site Plan Survey

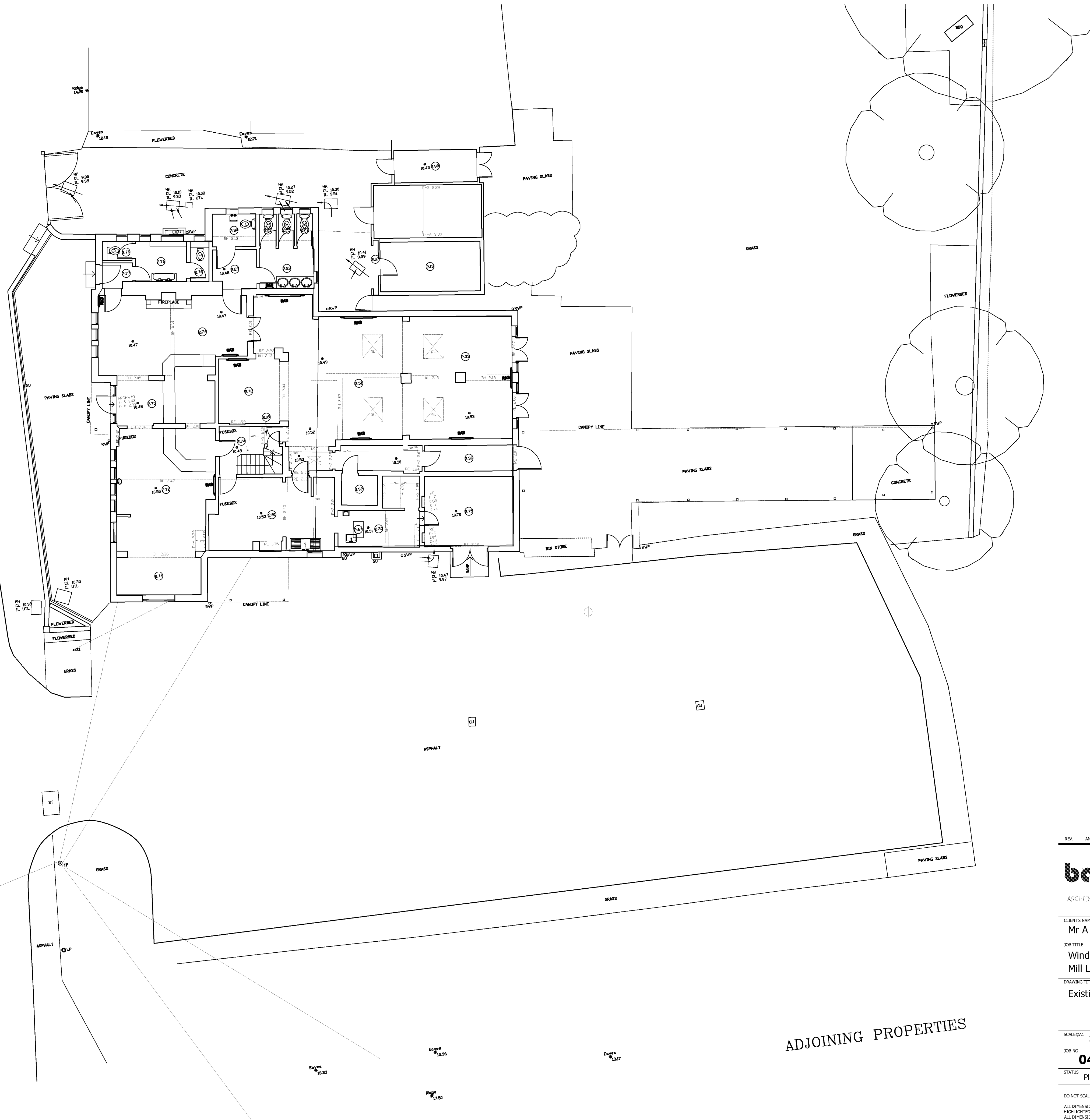
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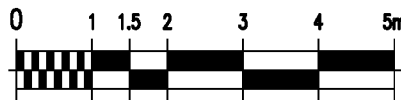
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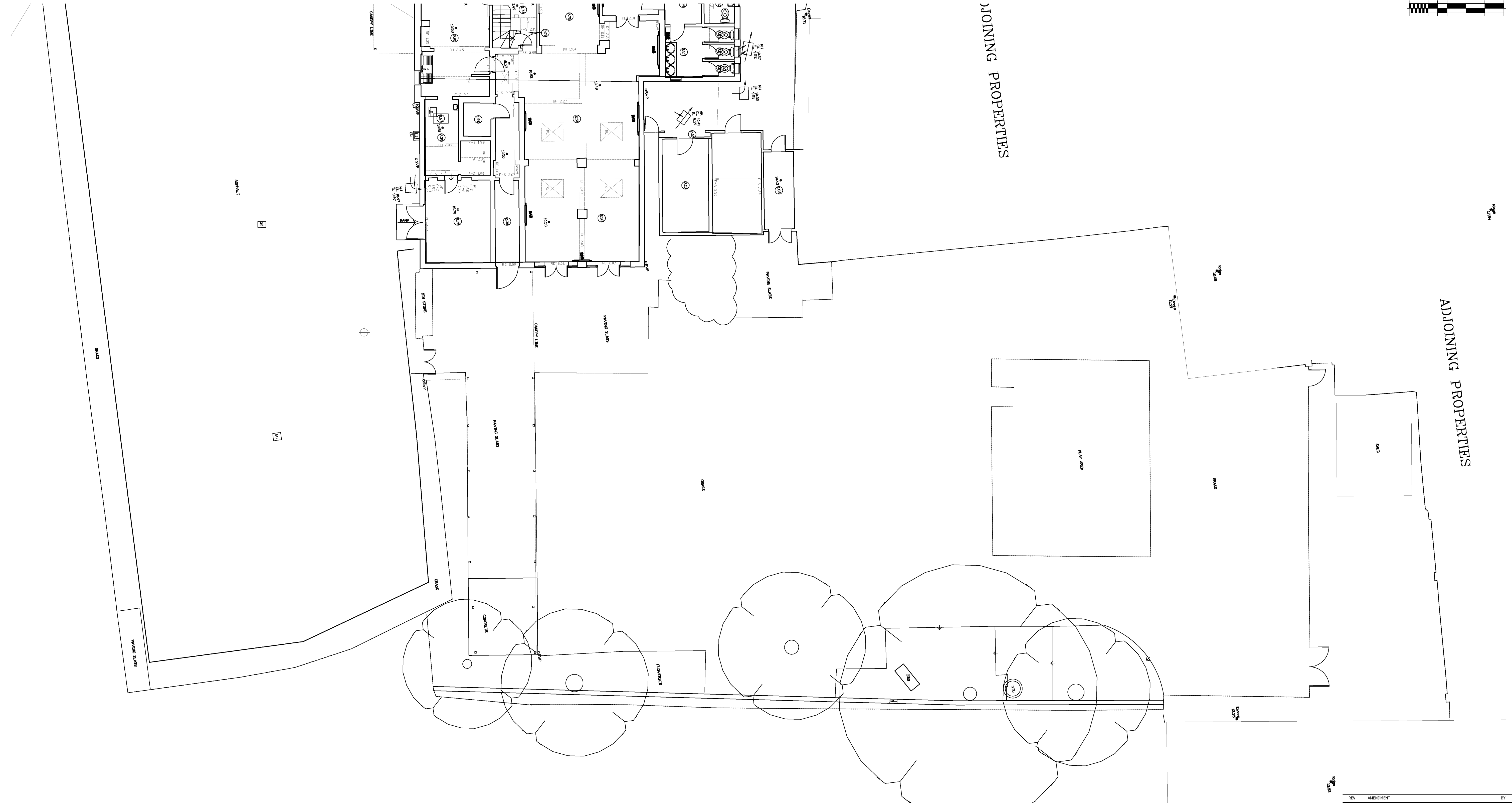
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CLIENT'S NAME
Mr A Muca

JOB TITLE
Windmill Inn
Mill Lane, Rustington

DRAWING TITLE
Existing Part Site Plan

SCALE@A1 1:100 DATE 12/21

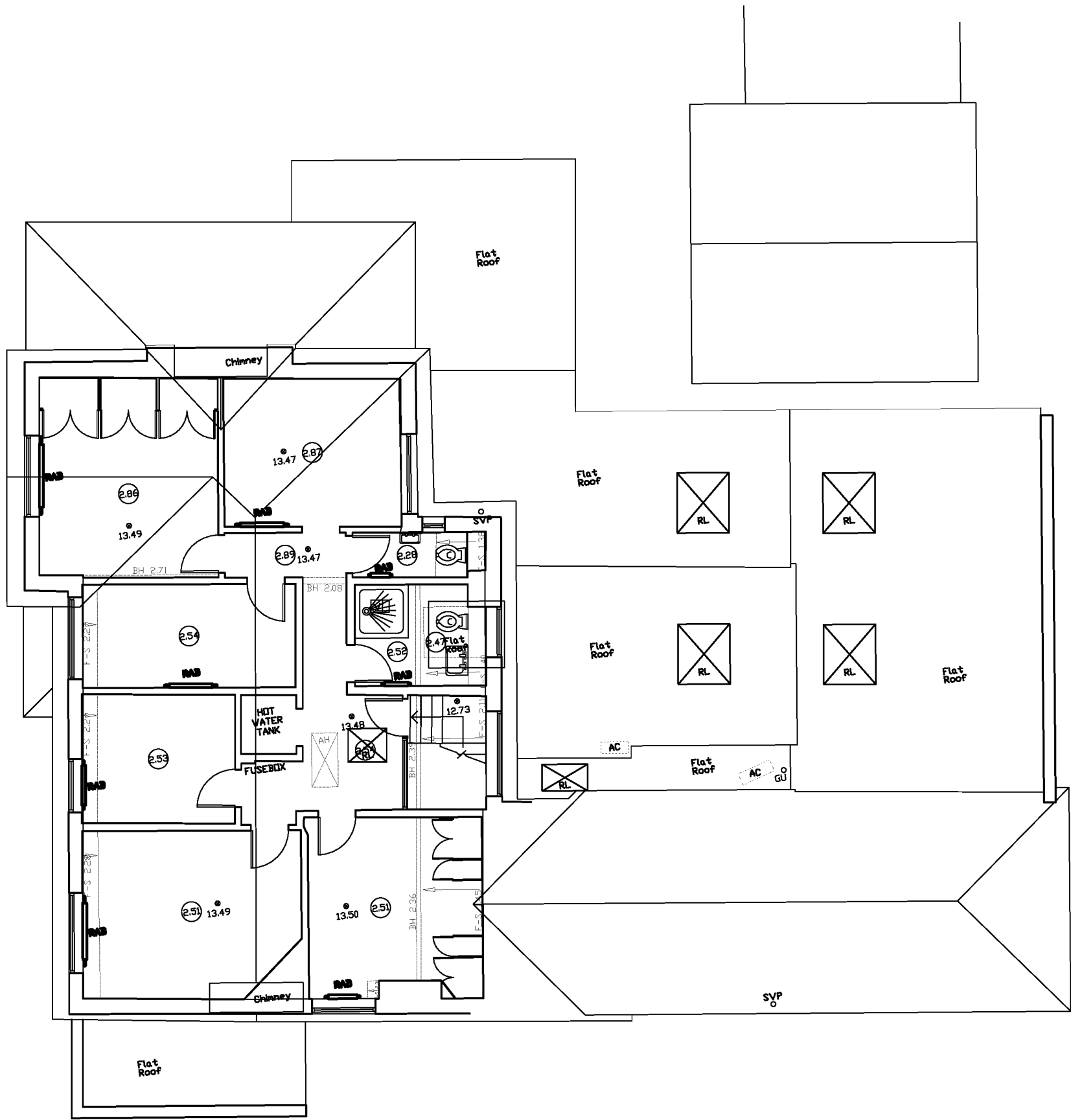
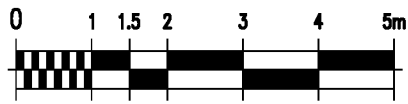
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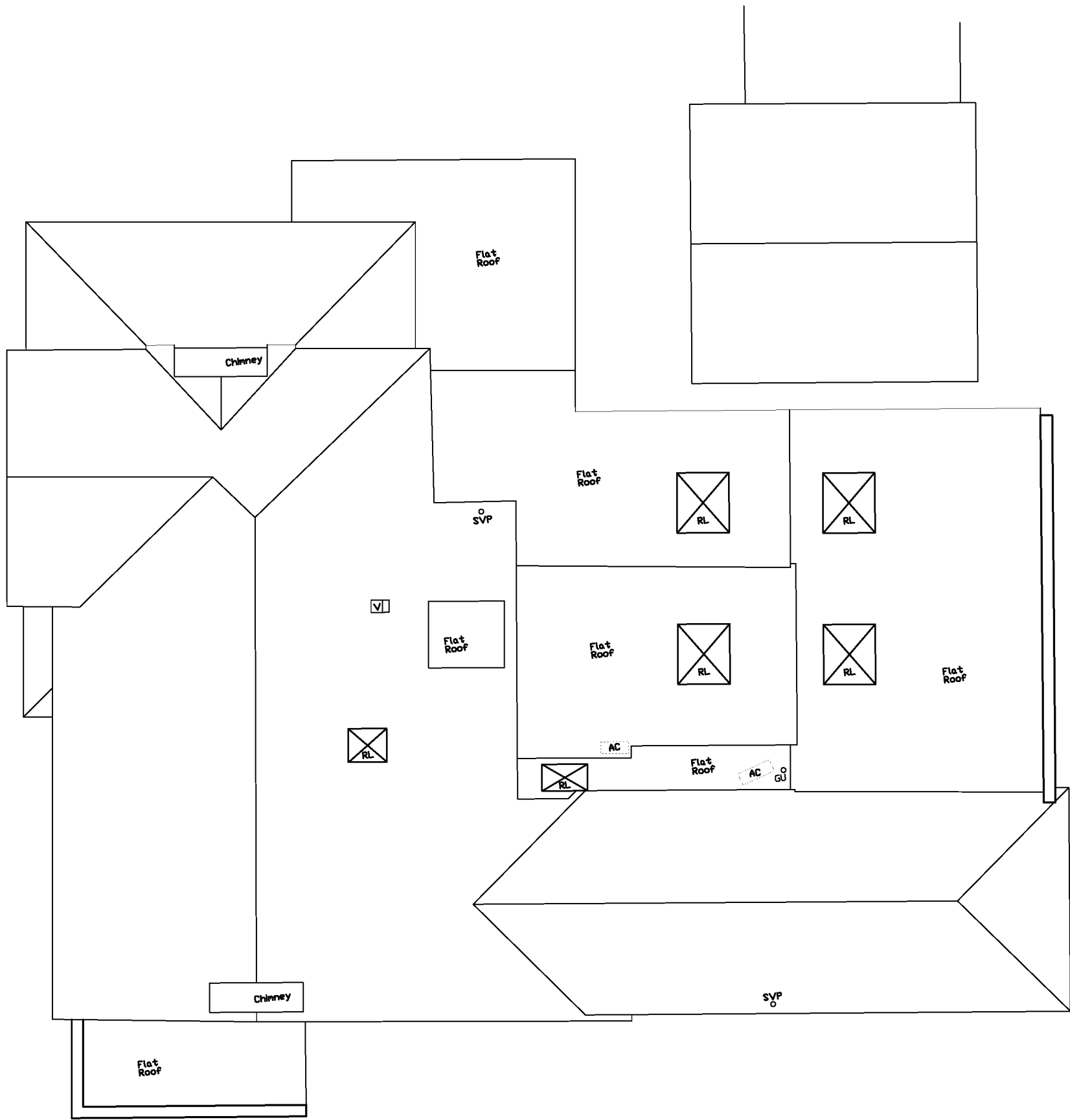
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FIRST FLOOR



ROOF PLAN

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CLIENT'S NAME
Mr A Muca

JOB TITLE
Windmill Inn
Mill Lane, Rustington

DRAWING TITLE
Existing First Floor & Roof Plans

SCALE: A1 1:100 DATE 12/21

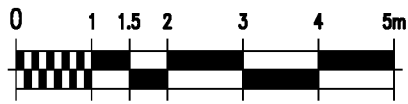
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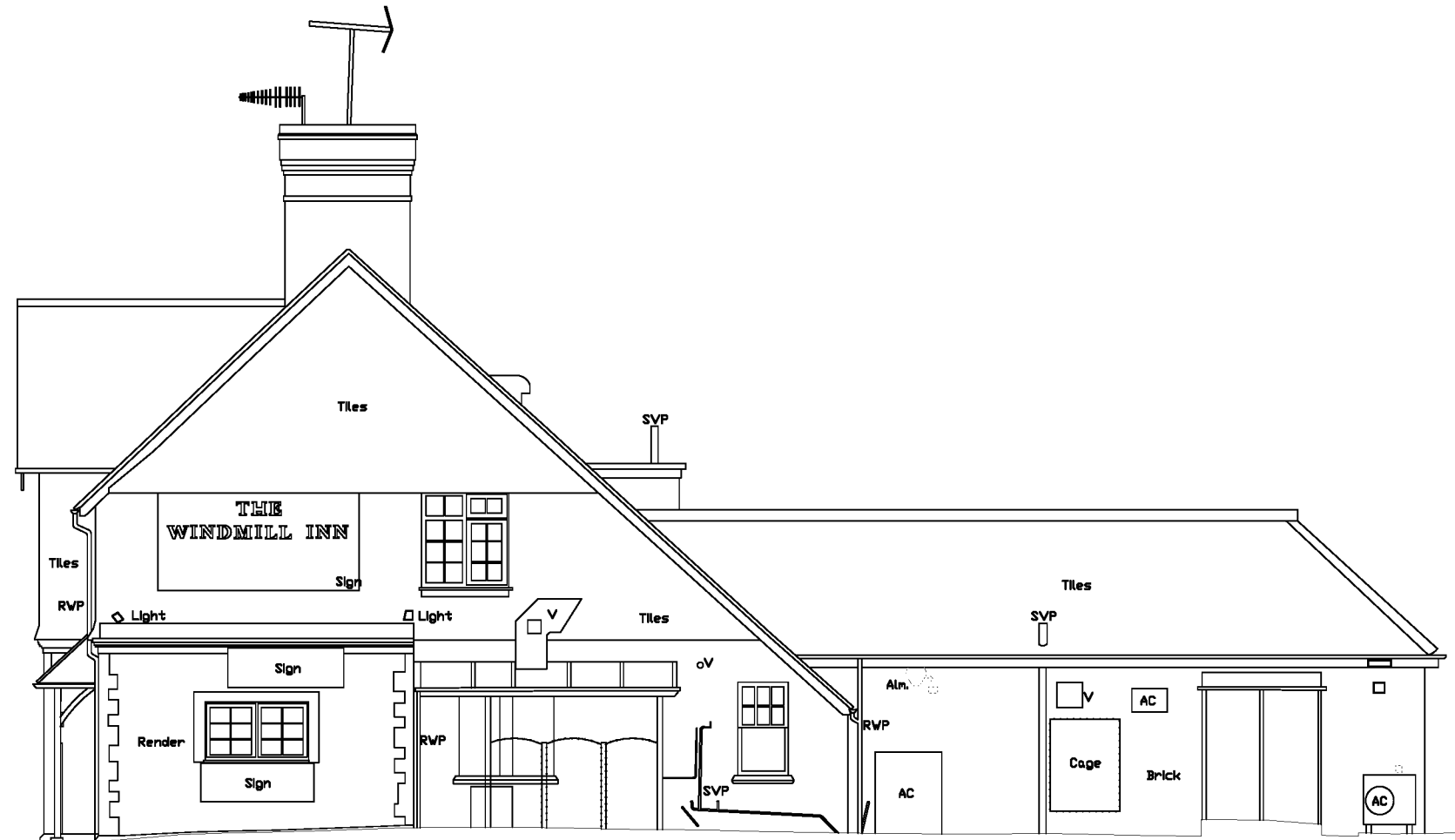
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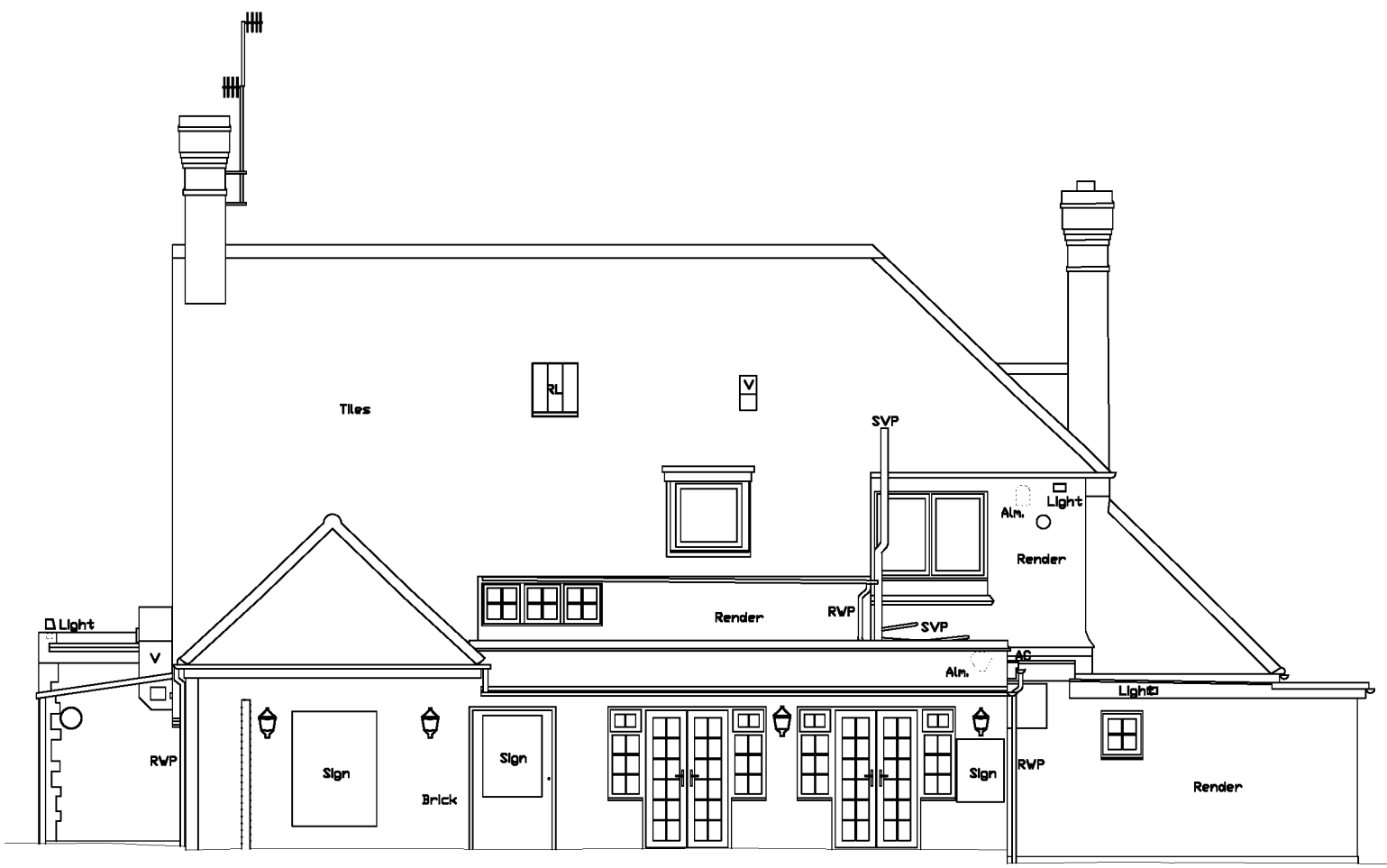




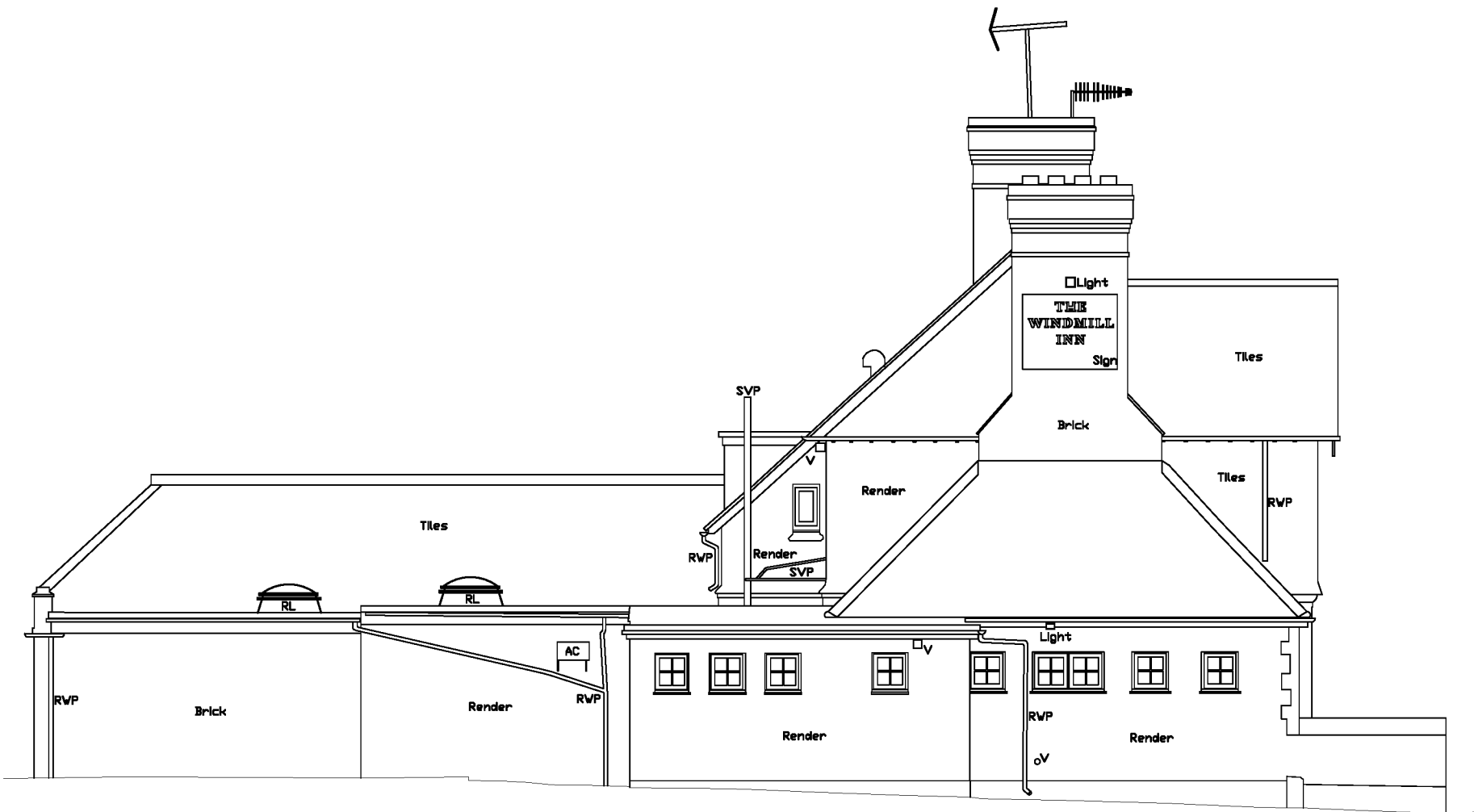
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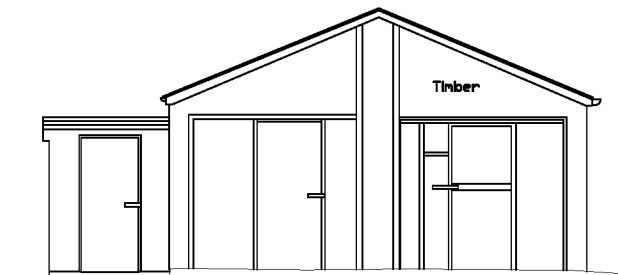
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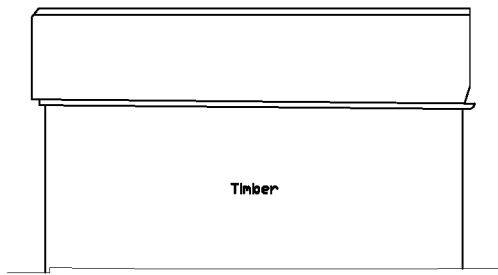
EAST ELEVATION



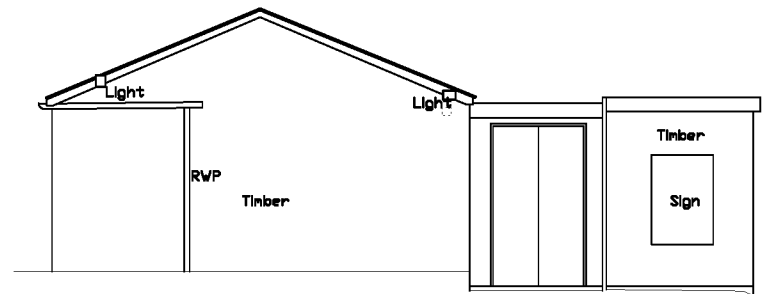
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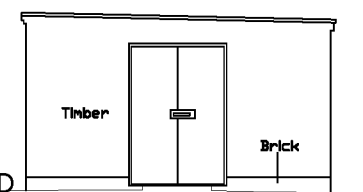
STORES BUILDING
WEST ELEVATION



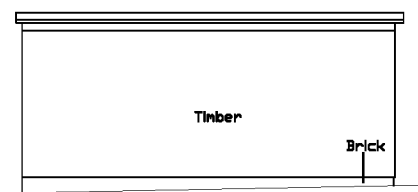
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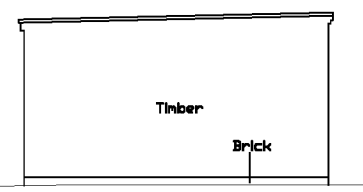
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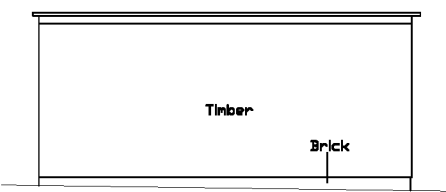
SHED
EAST ELEVATION



NORTH ELEVATION



WEST ELEVATION



SOUTH ELEVATION

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CLIENT'S NAME
Mr A Muca

JOB TITLE
**Windmill Inn
Mill Lane, Rustington**

DRAWING TITLE
Existing Elevations

SCALE: A1 1:100 DATE 12/21

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Date: 01/03/22

Scale: 1:500

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Data updated: 17/01/22

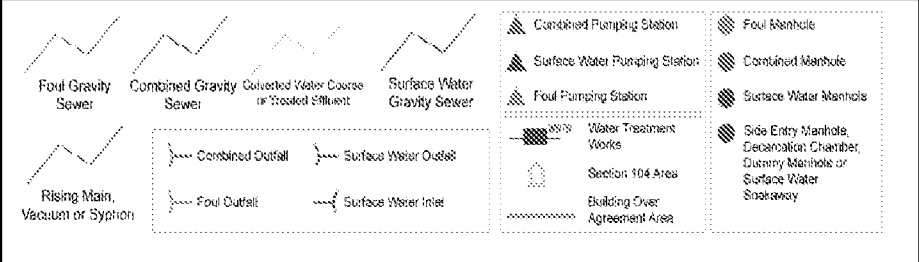
Our Ref: 794158 - 1

Wastewater Plan A3

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2022 Ordnance Survey 100031673. This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

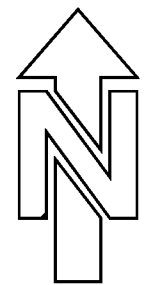
WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.



studio@bayside-architectural.co.uk

Windmill Inn





APPROXIMATE
DIRECTION
OF NORTH

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Drawing Naming Convention:

Job No\Code\Dwg type\Location\Re

Code: 02 = Existi

Dwg Type: B = Building E = Elevation
 S = Section T = Topographical

Location: B = Basement C = Ceiling Plan
 E = External F = Front

G = Ground S = Side
1 = First R = Rear

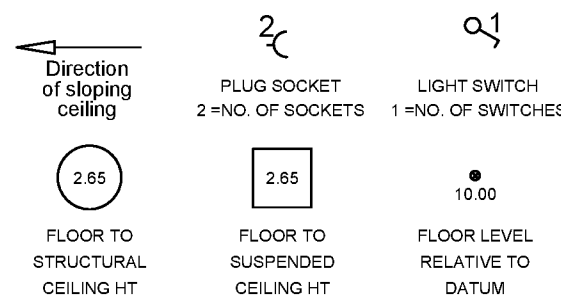
R = Roof
M = Mezzanine

Ref	Ref to individual dwg I.D. (e.g. Revision)
1	1
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Standard Abbreviations (where applicable):

Building Survey		Land Survey	
AB	AIR BRICK	B	BOLLARD
ACU	AIR CONDITIONING UNIT	BS	BRICK SETTS
AH	AIR HEAT	BT	BT COVER
AP	APPER PANEL	CA	CAMERA
AV	AIR VALVE	CAMV	CABLE TV COVER
BI	BRIK HT	CL	COVER LEVEL
BR	BOLTER	EL	ELECTRIC COVER
BSL	BEST OFF LEVEL	EP	ELECTRIC POLE
CB	CLIPBOARD	ER	ERD ROAD
CC	CEILING CHANG	FB	FLOWERED
CH	CH	FI	FIRE HYDRANT
CH	CH TO CEILING	FW	FOUL WATER
CH	CH TO CEILING	GA	GALTY
CH	CH TO SPRING HT	GV	GAZ VALVE
CH	CH DOOR BASE HT	IC	INSPECTION COVER
CH	CH DOOR HT	IN	INVERT LEVEL
CH	CH DOOR HT	LI	LAMP POST
CH	CH DOOR HT	LP	MANHOLE
FAB	FIRE ALARM BELL	OH	OVERHEAD TELECO
FX	FIX EXTINGUISHER	P	POST
F	FLOOR TO AHEAD HT	PM	PARKING METER
F	FLOOR TO AHEAD HT	P	POST
F	FLOOR TO AHEAD HT	PI	PIPE
F	FLOOR TO SPRING HT	RO	RODING EYE
F	QUICKS EXTERNA AREA	RO	ROAD SIGN
GA	GROSS INTERNAL AREA	RTW	RETAINING WALL
GU	GUTTER	RA	RAIN WATER PIPE
H	HT HEATER	SA	SITE AREA
HW	HOT WATER TANK	SI	SIGN
NA	N/A	STU	TREE STUMP
NTS	NOT TO SCALE	SV	STOP VALVE
RD	ROAD	SV	SOIL VENT PIPE
RE	RECESS HED HEIGHT	SW	STORM WATER
RFV	RAISED FLOOR VOID	TOP	TOP OF POINCE
RL	RAISED FLOOR VOID	TOP	TOP OF WALL
R	RAISED FLOOR VOID	TP	TELEGRAPH POLE
R	RAISED FLOOR VOID	UN	UNABLE TO LIFT
SPO	SPOIL PIPE	VP	VENT PIPE
SVP	SPOIL VENT PIPE	WM	WATER METER
		WT	WATER TAP

Symbols (where applicable):



Notes:

The Survey has been computed on an arbitrary grid

All Levels are in meters and relate to an arbitrary site datum.

Station X1	Value 10.000m
------------	---------------

All direction arrows indicate UP unless otherwise stated.

Drainage pipe sizes (where shown) have been gauged from the surface (for safety reasons) and should be regarded as approximate only.

Visible features in the vicinity of any boundaries, as shown on this survey, may not represent the extent of legally conveyed ownership.

Whilst every effort has been made to determine wall materials, no guarantee is given. Materials should be regarded as assumed unless verified by a qualified third party.

Tree spread and height are approximate. Species should be regarded as assumed unless verified by a qualified third party.

Rev	Date	By	Description
-----	------	----	-------------



HB Surveys Ltd
Land & Measured Building Surveyors

Spring House, 60 Poplar Way, Midhurst, West Sussex GU29 9TA
t. 01730 814884 info@hbsurveys.com

Client:

Bayside Architectural Design Ltd

Projects:	
-----------	--

The Windmill Inn,
Mill Lane, Rustington

Drawing Title:

Topographical & Ground Floor Plan

Date:	Scale:	Surveyor:	Drawn:	Checked:
Aug 2021	1:200@A1	KR	KR	HB

Job No:	Drawing No:	Sheet No:	Rev:
21091	21091-02-B-GA	1 of 5	

NOTES

1. This drawing is to be read in conjunction with drawing Nos. FC2912/01-25.

NOTE THE FOLLOWING:

Existing Drainage information based on the following:

- Existing drainage runs assumed based on limited topographical information - tbc through CCTV survey
- CCTV Drainage Report
 - Yet to be undertaken
- Southern Water Sewer Records
 - SW Ref: 794158-1 dated 01/03/22

Legend

---	Existing Foul Sewer
---	Existing Surface Sewer
---	Existing Foul/Combined Drain
---	Existing Surface Drain
---	Existing Surface Culvert
---	Site Boundary

-	Issued For BUDGET/APPROVAL ONLY	02/03/22
REV	DESCRIPTION	DATE



abmh
ABMH Civils Ltd
1 The Grove, Felpham, Bognor Regis, West Sussex PO22 7EY
Mark Mob: 07781 950000
Email: mark@abmh.co.uk / Web: www.abmh.co.uk

PROJECT	PROPOSED EXTENSION THE WINDMILL INN (PH) MILL LANE, RUSTINGTON W SUSSEX, BN16 3JP				
DRAWING	EXISTING DRAINAGE LAYOUT				
SCALE	1:125	DATE	MAR 22	INITIAL	MH
REV	-	CHD	-	REV	-
This drawing is produced using AutoCAD. Only written dimensions are to be respected. © ABMH Civils Ltd. Title to this drawing remains with ABMH Civils Ltd. Removal of this title block also removes all warranties and infringes copyright.					



Flood map for planning

Your reference
Windmill Inn

Location (easting/northing)
505621/102955

Created
1 Mar 2022 17:13

Your selected location is in flood zone 1, an area with a low probability of flooding.

This means:

- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence **which** sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2021 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>

Flood map for planning

Your reference

Windmill Inn

Location (easting/northing)

505621/102955

Scale

1:2500

Created

1 Mar 2022 17:13

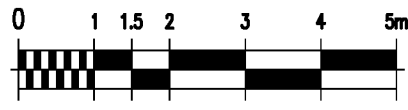
-  Selected point
-  Flood zone 3
-  Flood zone 3: areas benefiting from flood defences
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Flood storage area

0 20 40 60m

Page 2 of 2

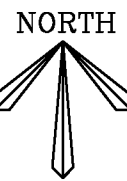
B

Proposed GF/Part Site Plan - Bayside drawing 044 PL-02 B
Proposed GF/FF Plans - Bayside drawing 044 PL-03 B
Proposed Roof Plan - Bayside drawing 044 PL-04
Proposed Elevations - Bayside drawing 044 PL-05
Landscape Strategy Masterplan – GHD drawing GHD4020-1
Landscape Strategy Masterplan – GHD drawing GHD4020-2
Existing and Proposed Impermeable Areas – ABMH FC2912/04
Proposed Drainage Layout Plan – ABMH FC2912/02
Windes Calculations 100year SRP + 40%CC



Bedroom	Premium Room	Bed spaces	Area m ²
1	Yes	3	28.6
2		3	21.8
3		2	20
4	Yes	2	21.4
5	Yes	2	21.4
6		2	21.6
7		2	19.5
8	Yes	2	21.3
9		2	21.6
10	Yes	2	21.4
11		2	19.5
12		2	18.5
13	Yes	2	21.8
14		2	21.3
15	Yes	3	25.7
16	Yes	2	21.4
17	Yes	3	27.6
18 - Disabled		2	25.4
19	Yes	2	21.6
20		2	18.4

Overall Floor Areas:		
Ground	673 m ²	
First	459.2 m ²	
Second	81.6 m ²	
TOTAL	1213.8 m²	



REV. AMENDMENT BY DATE

bayside

ARCHITECTURAL DESIGN LIMITED

19 Pyrford Close
Nyetimber, Bognor Regis
West Sussex PO21 3NL
Tel: 01243 263320
studio@bayside-architectural.co.uk
www.bayside-architectural.co.uk

CLIENT'S NAME
Mr A Muca

JOB TITLE
Windmill Inn
Mill Lane, Rustington

DRAWING TITLE
Proposed Ground Floor / Part Site Plan

SCALE: A1 1:100 DATE 12/21

JOB NO 044 DRAWING NO PL-02 REV B

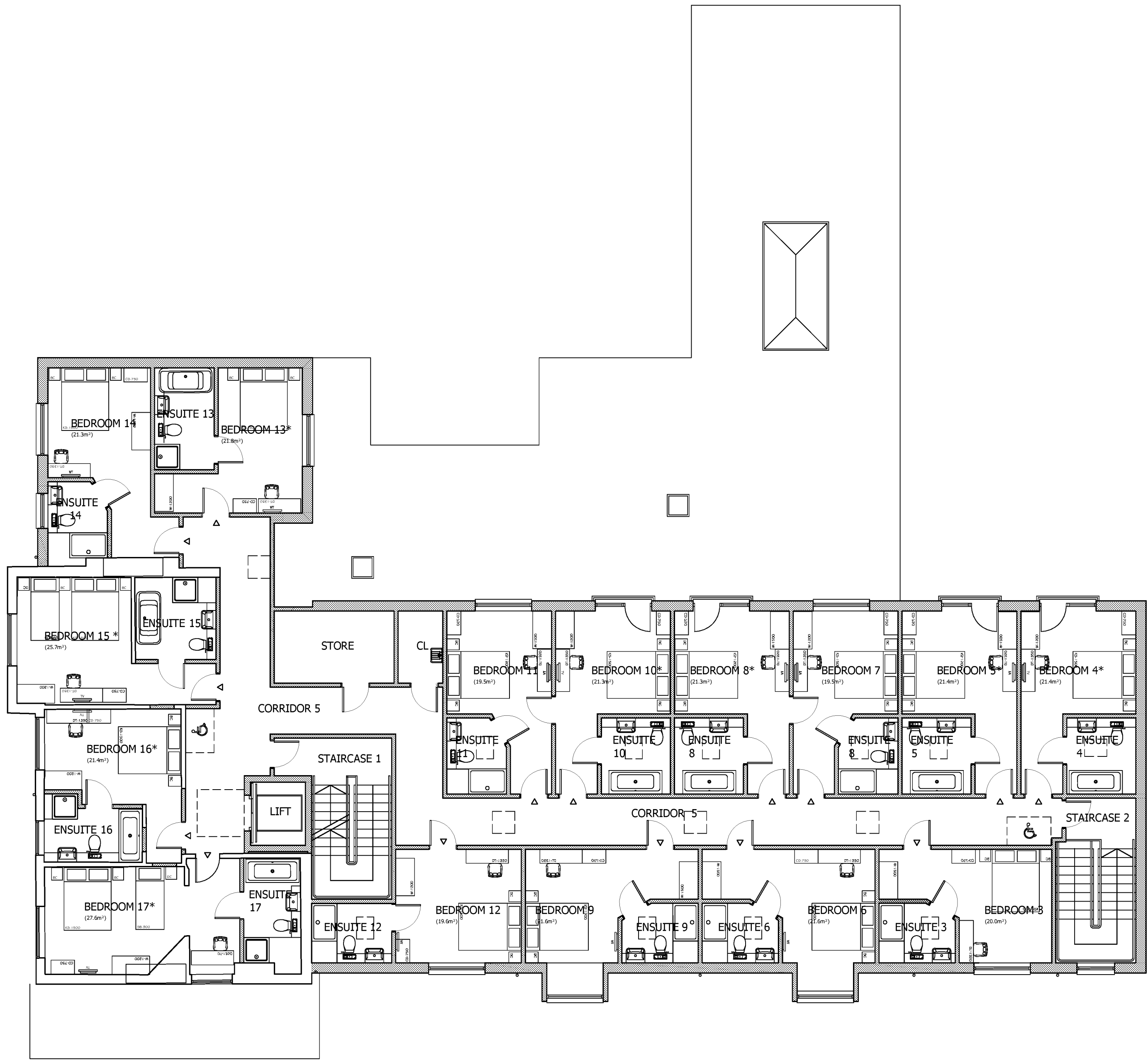
STATUS Planning DRAWN SCB

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ALL DIMENSIONS MUST BE CHECKED ON SITE BY CONTRACTOR. ANY DISCREPANCIES SHOULD BE HIGHLIGHTED AS SOON AS POSSIBLE FOR CONFIRMATION BEFORE WORK PROCEEDS.
ALL DIMENSIONS ARE IN MILLIMETERS. IF IN DOUBT ASK.

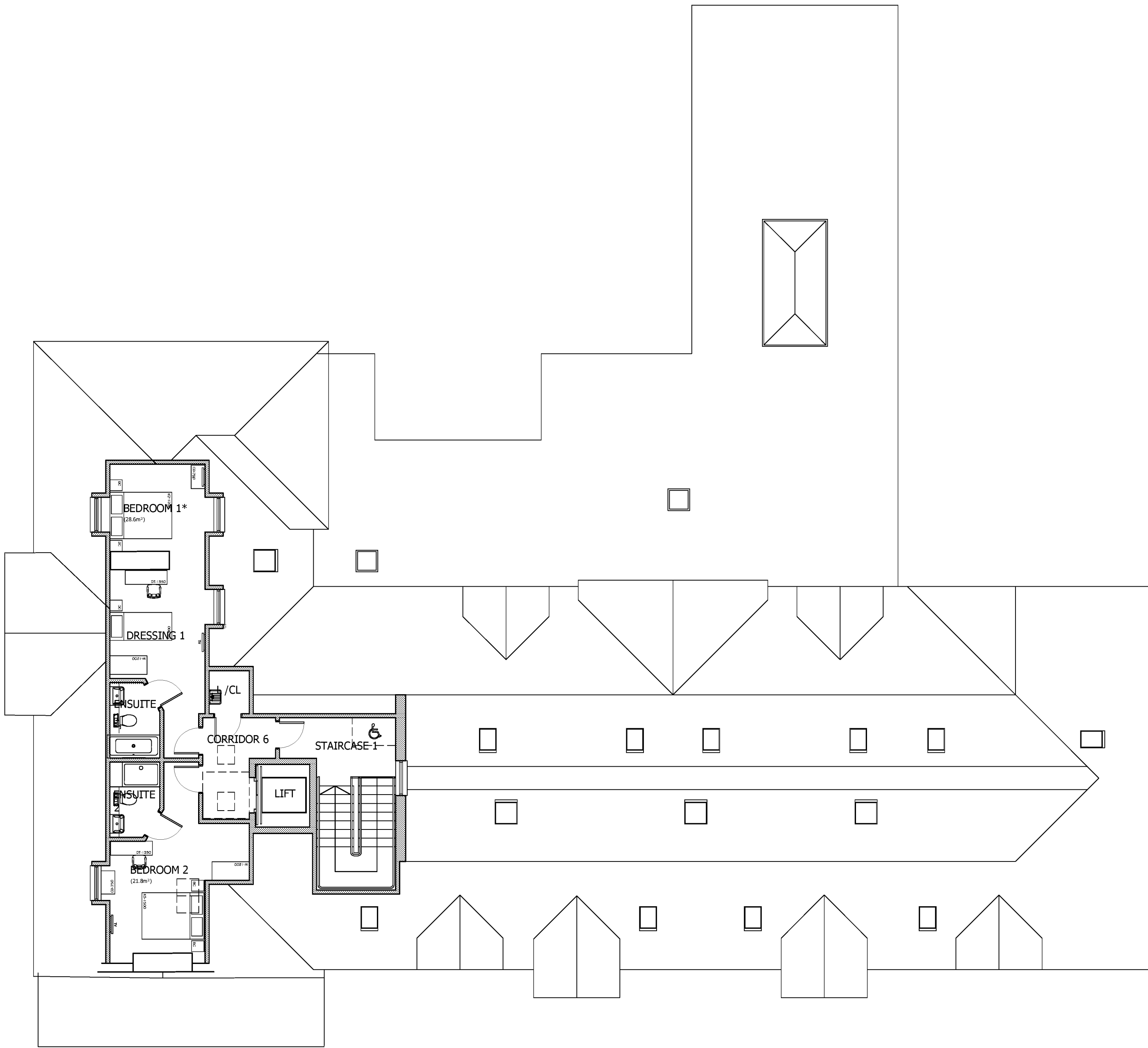
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CIAT

CHARTERED PRACTICE



FIRST FLOOR



SECOND FLOOR

Bedroom	Premium Room	Bed spaces	Area m²
1	Yes	3	28.6
2		3	21.8
3		2	20
4	Yes	2	21.4
5	Yes	2	21.4
6		2	21.6
7		2	19.5
8	Yes	2	21.3
9		2	21.6
10	Yes	2	21.4
11		2	19.5
12		2	18.5
13	Yes	2	21.8
14		2	21.3
15	Yes	3	25.7
16	Yes	2	21.4
17	Yes	3	27.6
18 - Disabled		2	25.4
19	Yes	2	21.6
20		2	18.4

Overall Floor Areas:

Ground	673 m²
First	459.2 m²
Second	81.6 m²
TOTAL	1213.8 m²

REV.	AMENDMENT	BY	DATE
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19 Pyrford Close
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West Sussex PO21 3NL
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studio@bayside-architectural.co.uk
www.bayside-architectural.co.uk

CLIENT'S NAME
Mr A Muca

JOB TITLE
Windmill Inn
Mill Lane, Rustington

DRAWING TITLE
Proposed First & Second Floor Plans

SCALE/A1	1:100	DATE	12/21
----------	-------	------	-------

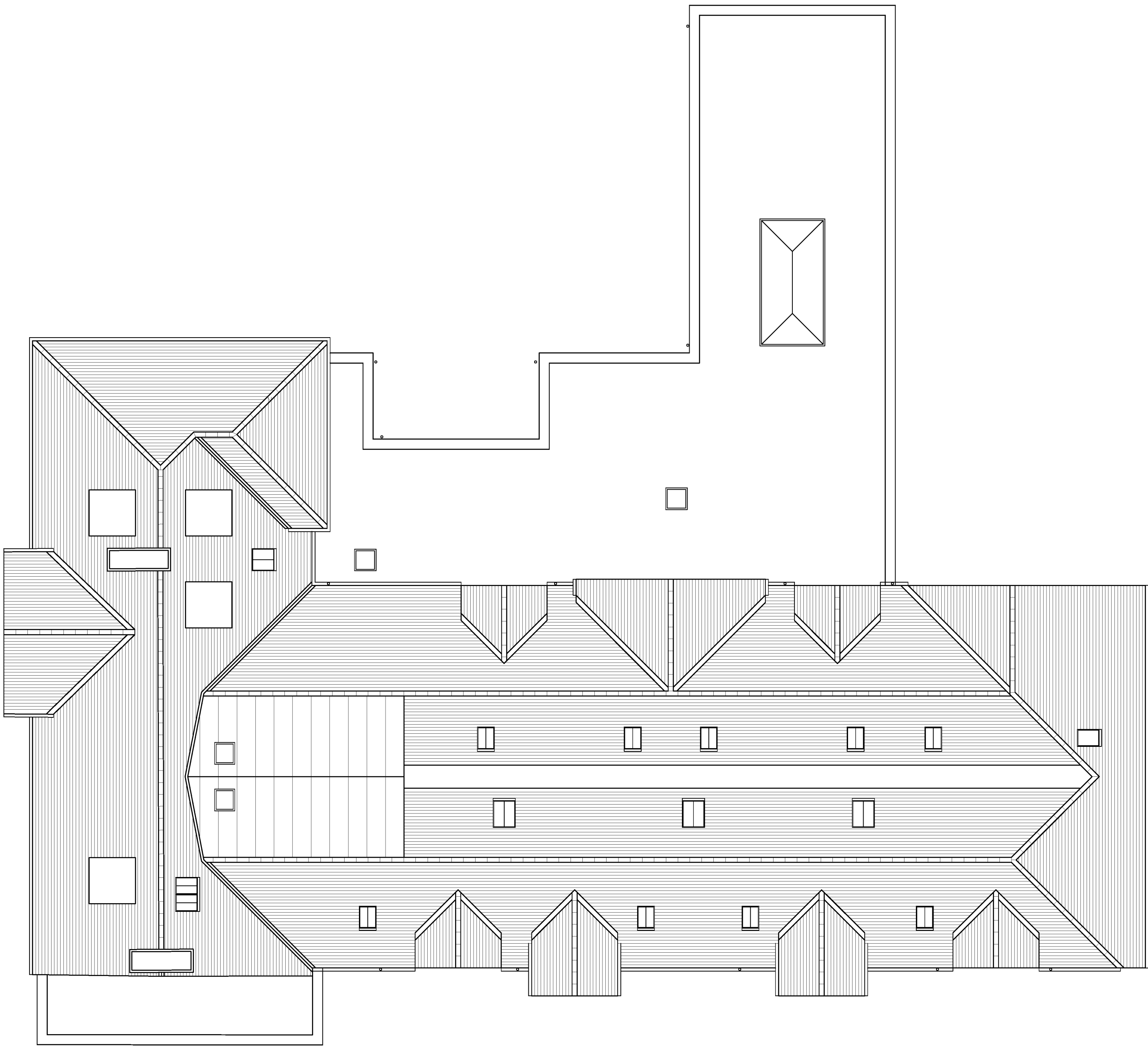
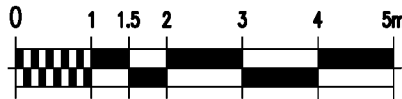
JOB NO	044	DRAWING NO	PL-03	REV	B
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STATUS	Planning	DRAWN	SCB
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ROOF PLAN

REV.	AMENDMENT	BY	DATE
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CLIENT'S NAME
Mr A Muca

JOB TITLE
Windmill Inn
Mill Lane, Rustington

DRAWING TITLE
Proposed Roof Plan

SCALE: A1 1:100 DATE 12/21

JOB NO 044 DRAWING NO PL-04 REV -

STATUS Planning DRAWN SCB

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WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION

PROPOSED MATERIALS

ROOF - PLAIN TILE TO MATCH EXISTING,
MEMBRANE TO FLAT

WALLS -
TIMBER WEATHERBOARD, (TWB)
FACING BRICKWORK, (FB)
PLAIN TILE HANGING AND (PTH)
RENDER (R)

WINDOWS/DOORS - WHITE ALUMINIUM OR
TIMBER DOUBLE GLAZED
WITH ZINC DORMERS (Z)

REV.	AMENDMENT	BY	DATE
------	-----------	----	------

bayside
ARCHITECTURAL DESIGN LIMITED

19 Pyrford Close
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www.bayside-architectural.co.uk

CLIENT'S NAME
Mr A Muca

JOB TITLE
**Windmill Inn
Mill Lane, Rustington**

DRAWING TITLE
Proposed Elevations

SCALE: A1 1:100 DATE 12/21

JOB NO 044 DRAWING NO PL-05 REV -

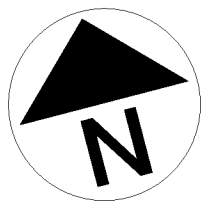
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DO NOT SCALE FROM THIS DRAWING EXCEPT FOR PLANNING PURPOSES ONLY.
ALL DIMENSIONS MUST BE CHECKED ON SITE BY CONTRACTOR. ANY DISCREPANCIES SHOULD BE
HIGHLIGHTED AS SOON AS POSSIBLE FOR CONFIRMATION BEFORE WORK PROCEEDS.
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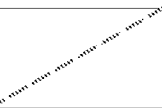
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WINDMILL INN LANDSCAPE STRATEGY

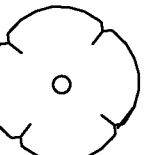


LEGEND



Site Boundary

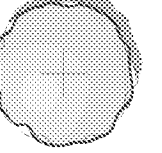
SOFT LANDSCAPE



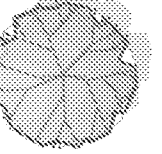
Trees and hedgerows to be retained and protected in accordance with BS: 5837:2012



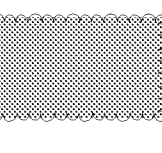
Trees to be removed prior to construction.



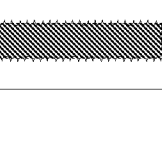
Proposed Standard Tree



Proposed Multi-stem Tree

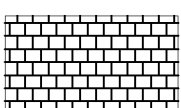


Proposed Ornamental Planting Mix to include species found within the RHS 'Plants for Pollinators' list.

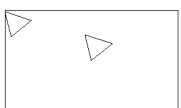


Proposed Hedgerow

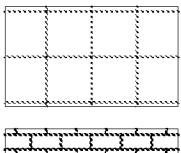
Paving



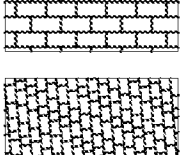
Natural Sandstone Paving Units



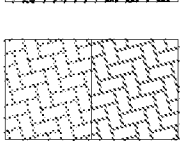
Gravel



Sawn/Smooth Limestone Paving units



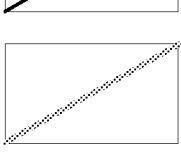
Clay Brick Pavers



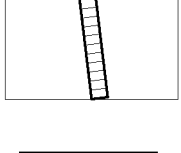
Granite cobble setts



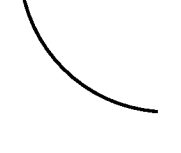
Permeable Block Paving



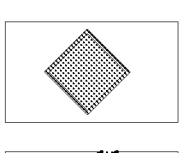
Proposed Close Board Fencing



Proposed Feature Fencing

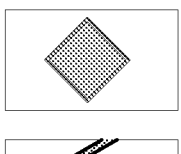


Proposed Low Level Brick Wall/Planter Edge

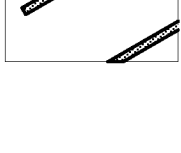


Proposed gate to storage area

FURNITURE & FEATURES



Planters to be timber or fibreglass



Timber Pergola

Proposed feature timber fencing would be inset from the existing boundary to provide a more visually appealing boundary and backdrop to planting.

Play equipment removed and donated to local charity or school.

Shed/Storage building to be replaced and relocated to be close to utility rooms. Area fenced off for security and to prevent views from garden.

Low level brick wall (Approx 450mm height) also used for the front edge of planting beds.

Slope gradient no greater than 1:21 to be considered level access for fire escape routes.

Planting used to soften building from streetside as well as increase filtering of views through to bedroom.

Paved courtyard with planter/bench and climbing plants up fence.

Paved area linked to pool to provide outdoor lounging space/poolside drinks. Multistem trees planted in pots provide shade and help filter views through from the garden and restaurant. Hedging provides additional enclosure and privacy.

Planted buffer to soften northern boundary from neighboring properties.

Outdoor BBQ Area with bar

Proposed decking area to receive good sun throughout the day. Area can also be used for events.

Enhanced vegetated buffer to Eastern boundary to better screen hotel garden from adjacent properties.

Open lawn space for informal recreation/summer activities.

Pergola provides threshold into garden space and frames boundary planting when viewed from patio areas.

Low maintenance/management willflower meadow to increase biodiversity on site and provide buffer between active spaces and neighboring properties.

Enhanced vegetated buffer to Eastern boundary to better screen hotel garden from adjacent properties.

Narrow hedging in planters to define spaces.

Outdoor dining spillout. Possible smokers dining area. Area kept separate from the pool area to provide a sense of privacy for pool users.

Mix of Standard and Multi-Stem trees provide multi-level filtering of views to adjacent properties and create interesting focal points from patio areas.

Vegetation provides visually pleasing backdrop when entering the car park and reinforces the boundary.

Indicative Signage Location

TURNING ONLY

Standard trees with 1.2m clearstem would frame entrance to car park. Planting to be maintained at 600mm height maximum for visibility splay.

Bin-Store clad in timber to make more visually appealing from streetside.

Permeable Block Pavers used for car park. Different colours/tones used to delineate different function/use.

REV.	DESCRIPTION	DATE
-	FIRST ISSUE	25/02/2022

PLANNING ISSUE

Production Title:
Unit 4, Roundstone Barn
Roundstone Farm
Littlehampton Road
Ferring
BN12 6PW
01903 774 774
info@gardenhousedesign.co.uk

Drawing Title:
Landscape Strategy Masterplan
1 of 2

Drawn by:
KG

Date:
25/02/2022

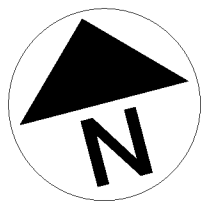


Project name:
Windmill Inn, Rustington

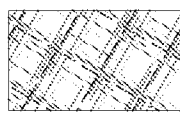
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1:100@A1

Drawing Number:
GHD4020

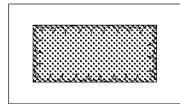
WINDMILL INN LANDSCAPE STRATEGY



LEGEND

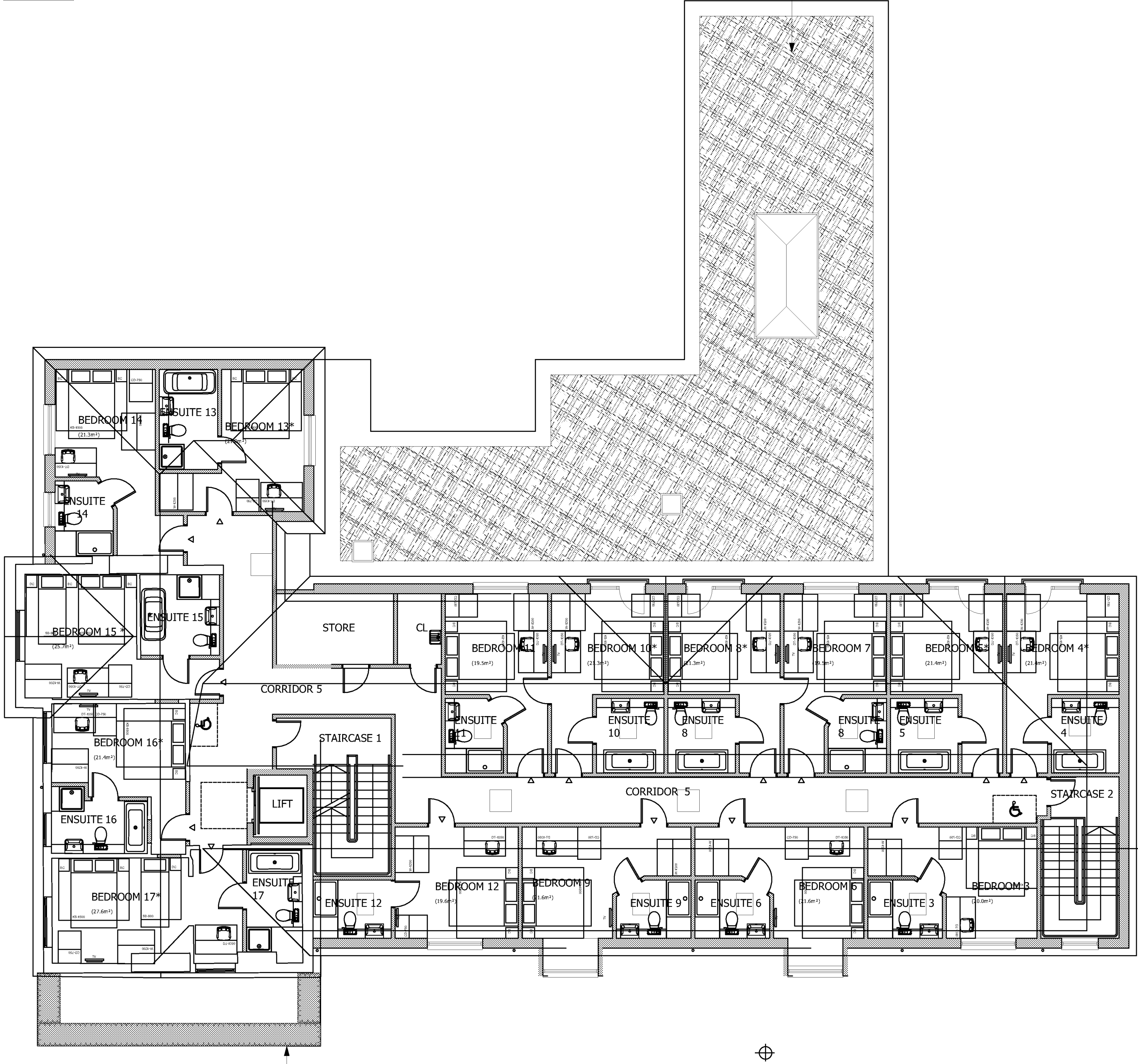


Proposed Grass area to be Turfed



Planters to be secured to flat roof and planted with trailing habit plant species.

The addition of a sedum roof would soften view from upper levels and neighboring properties, as well as increase biodiversity on site.



FIRST FLOOR

Low level planters with trailing plants to hang over roof edge, visually enhancing the entrance.

WINDMILL INN INDICATIVE PLANT SPECIES

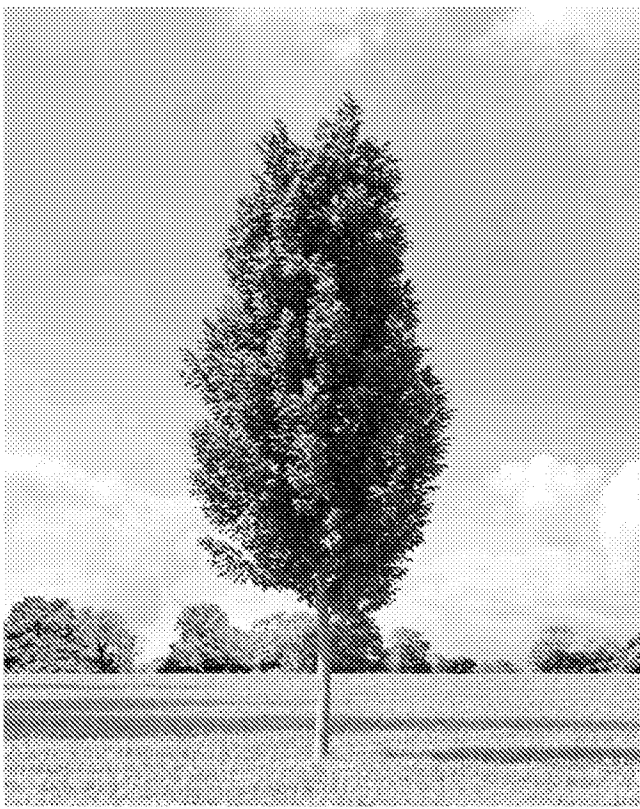
TREES-STANDARD



Prunus padus 'Albertii'



Acer campestre 'Elsrijk'



Carpinus betulus 'Frans Fontaine'

TREES-MULTISTEM



Amelanchier lamarkii



Malus 'Evereste'

SHRUBS, GRASSES AND PERRENIALS



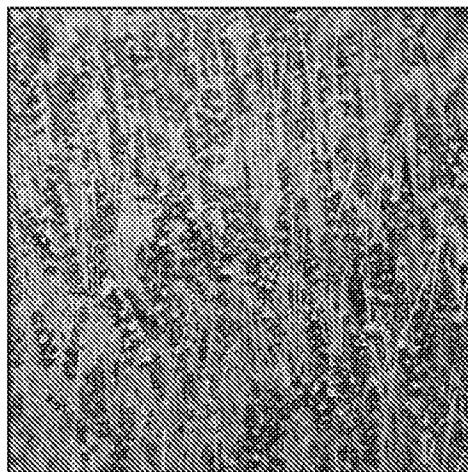
Hydrangea quercifolia



Pittosporum tobira 'Nanum'



Rosmarinus officinalis



Lavandula 'Hidcote'



Vinca minor



Native Wildflower



Stipa tenuissima



Sedum 'Brilliant'



Sedum nemorosa 'Caradonna'



Erigeron karvinskianus



Epimedium rubrum

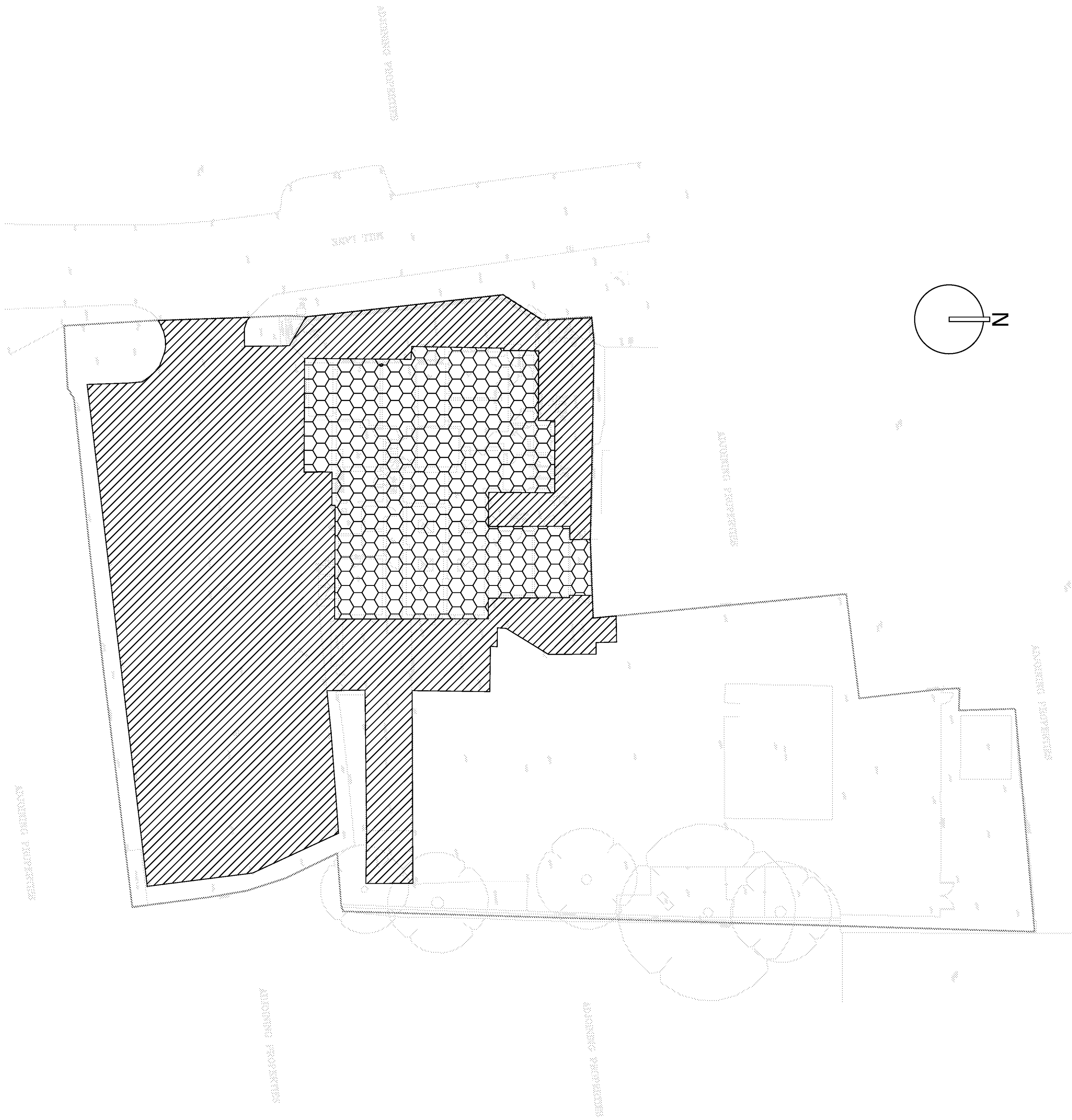


Verbena bonariensis

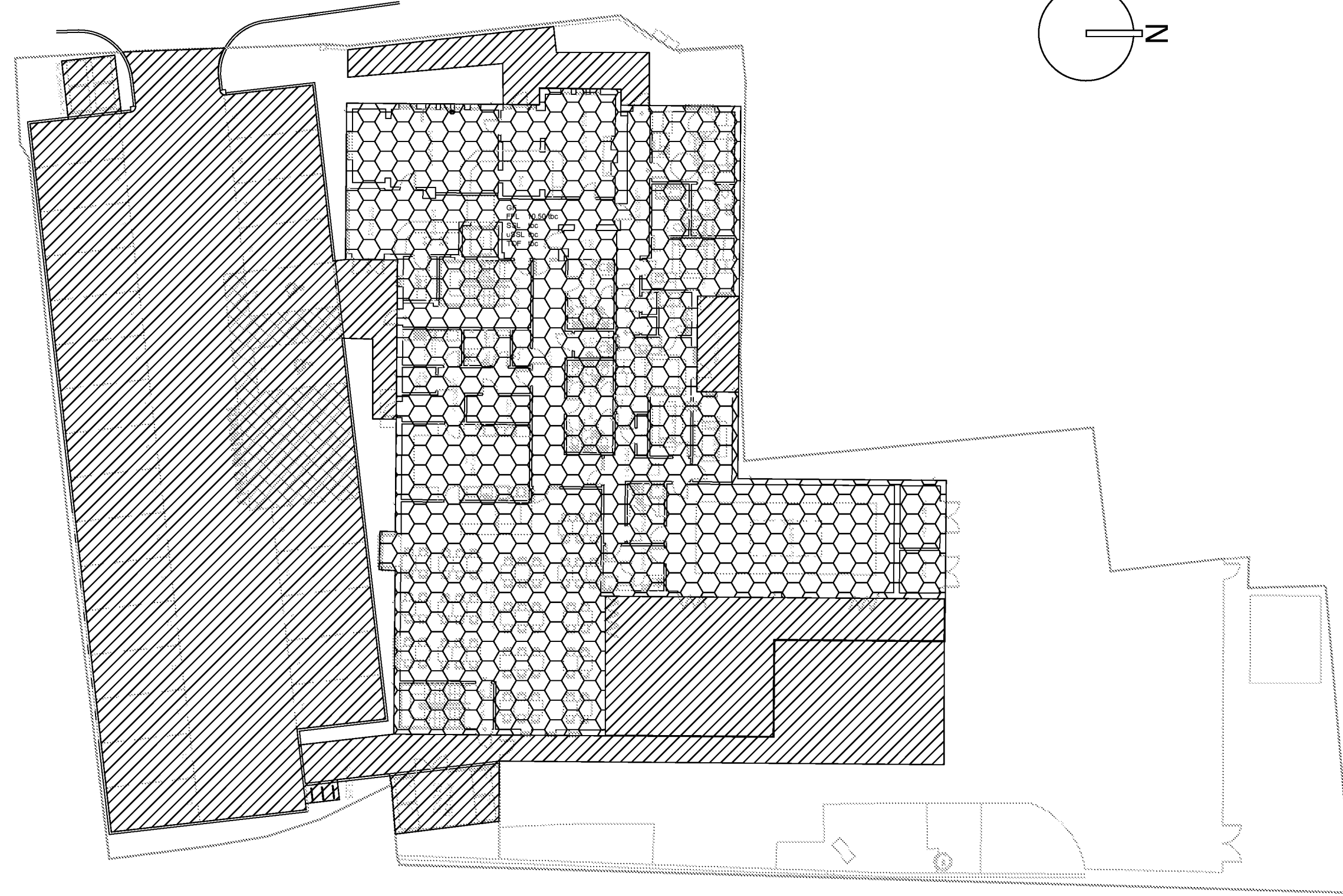
REV.	DESCRIPTION	DATE
-	FIRST ISSUE	25/02/2022

PLANNING ISSUE

Production Title: Unit 4, Roundstone Barn Roundstone Farm Littlehampton Road Ferring BN12 6PW 01903 774 774 info@gardenhousedesign.co.uk	garden house design
Drawing Title: Landscape Strategy Masterplan -2of2	Project name: Windmill Inn, Rustington
Drawn by: KG	Scale: 1:100@A1
Date: 25/02/2022	Drawing Number: GHD4020-2



	Site Area	= 2472 m ²
	Existing Building Area	= 357 m ²
	Existing Impermeable Paved Area	= 953 m ²
	Total Existing Impermeable Area	= 1310 m ²



	Proposed Building Area	= 718 m ²
	Proposed Impermeable Paved Area	= 950 m ²
	Total Impermeable Area	= 1668 m ²

SUBJECT TO THE APPROVAL OF:
LPA/LLFA/EA
BUILDING CONTROL/NHBC

NOTES

1. This drawing is to be read in conjunction with drawing Nos. FC2912/01-25.

-	Issued For BUDGET/APPROVAL ONLY	02/03/22
REV	DESCRIPTION	DATE



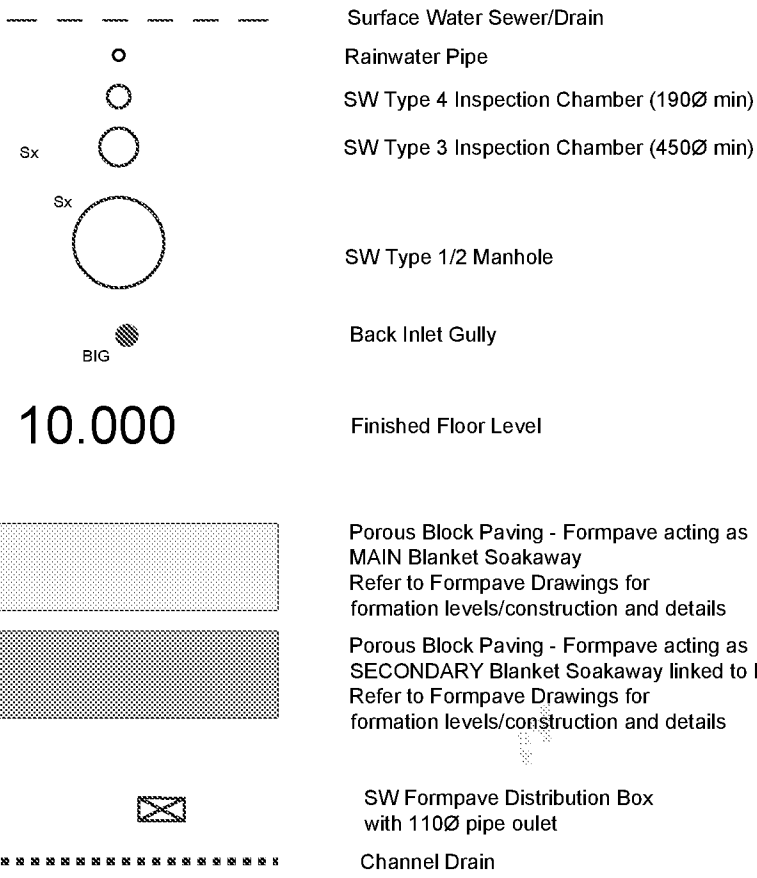
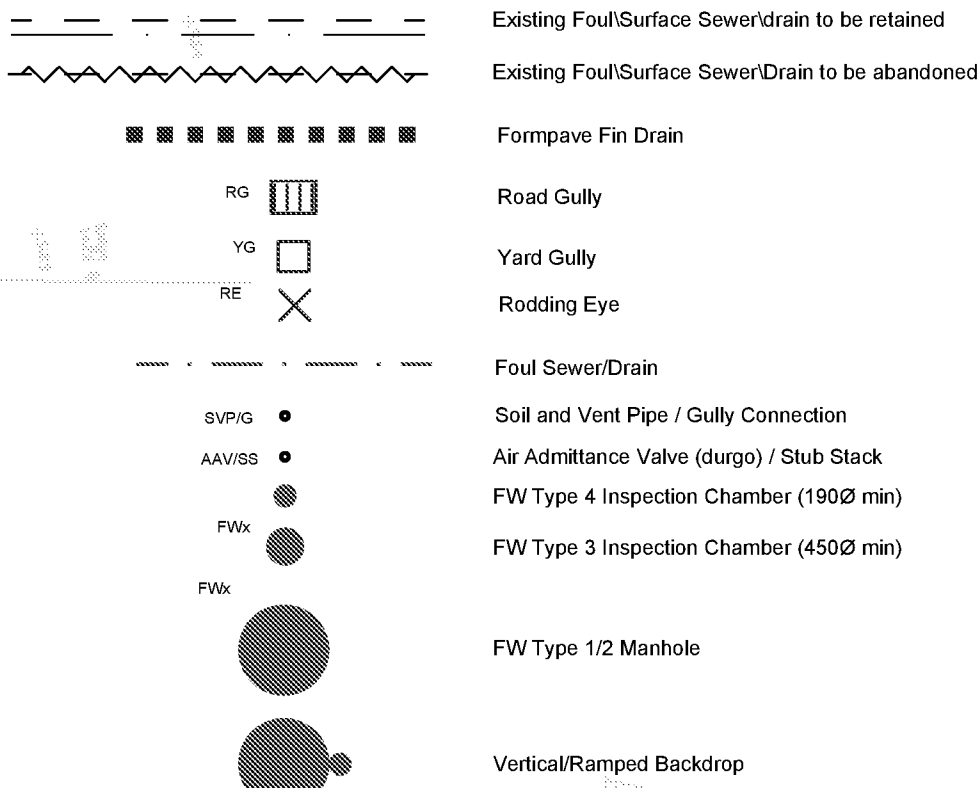
ABMH Civils Ltd
1 The Grove, Felpham, Bognor Regis, West Sussex PO22 7EY
Mark Mob: 07761 950000
Email: mark@abmh.co.uk / Web: www.abmh.co.uk

PROJECT	PROPOSED EXTENSION THE WINDMILL INN (PH) MILL LANE, RUSTINGTON W SUSSEX, BN16 3JP							
DRAWING	EXISTING & PROPOSED IMPERMEABLE AREAS							
SCALE	1:250	DATE	MAR 22		INITIAL	MH	REV	-
	1:250	DATE	MAR 22		INITIAL	MH	CHD	-

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3ITRARY DATUM - TBC ON SITE

Legend (Scale 1:100)



1. SW Drainage Design

- 1.1. Soakaways would appear to be viable based on previous experience on other sites in the near vicinity to this site.
- 1.2. In line with B Regs it is envisaged that shallow blanket soakaways, utilising Formpave porous paving system, will be viable to serve the site even with low infiltration rates.
 - 1.2.1. Proposed design
 - 1.2.1.1. Drained area 1840 m² = 1670m² x 10% urban creep
 - 1.2.1.2. SRP 100yr + 40% CC
 - 1.2.1.3. FOS 5
 - 1.2.1.4. SIR 1x10⁻⁴m/s (0.38m/hr) Assumed Rate
TBC on site through on site testing
 - 1.2.1.5. Ground Water Max assumed to be 2.0m BGL @ max 4.95m
TBC on site through on site testing
 - 1.2.1.6. Soil infiltration rates and ground water levels to be determined through winter monitoring and testing to BRE365, approved by the LPA/LLFA
 - 1.2.1.7. Subbase 30% min Voids Ratio
 - 1.3. Should blanket soakaways not be viable due to high ground water tables or low SIR's then a connection to the sewer system would be sought at low discharge rates, typically 1-2/s, subject to LPA/LLFA/Southern Water approvals.

SW Blanket Soakaway (Secondary)
using Hanson Formpave Porous Aquaslab Paving System with
min 200mm dp gravel sub base layer with level formation.
Formpave Design and Details
Formpave Ref: F60xxx-D1A & D100 TBC
CL 10.35 - 10.48
TOSL 10.37
BOS 10.17 - level formation
SRP 100yr + 40% CC
FOS 5
SIR 1x10⁻⁴m/s (0.38m/hr) Assumed Rate
TBC on site through on site testing
Ground Water Max assumed to be 2.0m BGL @ max 6.30m
TBC on site through on site testing
Subbase 30% min Voids Ratio
Connected to main blanket soakaway

SW Blanket Soakaway (Main)
using Hanson Formpave Porous Block Paving System with temp
80mm DBM running course and min 350mm dp gravel sub base
layer with level formation.
Formpave Design and Details
Formpave Ref: F60xxx-D1A & D100 TBC
CL 10.30
TOSL 10.09
BOS 9.74 - level formation
Drained area 1840 m² (including 10% urban creep)
SRP 100yr + 40% CC
FOS 5
SIR 1x10⁻⁴m/s (0.38m/hr) Assumed Rate
TBC on site through on site testing
Ground Water Max assumed to be 2.0m BGL @ max 8.30m
TBC on site through on site testing
Subbase 30% min Voids Ratio
Formpave Area 624 m²
Storage Provided 65.5 m³
Storage Required 50.0 m³

NOTES

- This drawing is to be read in conjunction with drawing Nos. FC2912/01-25.
- Existing onsite drainage is shown on drawing FC2912/01
- All adopted drainage and connections to the sewer system are to be constructed in accordance with 'Sewers for Adoption' 7th Edition or as stipulated in the Southern Water Addendum.
- Connections to the adopted drainage system are subject to the approval of Southern Water the Drainage Authority. Diverted, divested, build close to/over sewers, and new sewers are subject to SW approval. All other drainage is to remain private.
- All pipes to be adopted, or connecting to adopted sewers, and/or situated under highway to be vitrified clay to BS EN 295 & BS65 (SW5 only), or concrete pipes to BE EN 1916 & BS5911 Part 1, or Thermoplastic Structured wall sewer pipes to WIS 4-35-01 (class 8N/5m) and be capable of withstanding 4000 PSI jetting pressure.
- Cover levels shown are approximate. Covers and frames shall be set to finished ground levels and falls.
- All drainage to be constructed to BS EN 752:1999 and subject to the approval of Building Control/LPA and the Environment Agency.
- Gully and channel drain positions are liable to amendment when the design levels have been determined.
- All downpipes are to be sealed, ie connected directly to the stormwater drain. Access points to be provided 1m above ground level for external RWP's and 1m above FFL for internal RWP's.
- All below ground concrete to accord with AGC site classification of AG-4 - refer to Geotechnical investigation.
- Aco channel drain to be K1005 with grade C250 Quicklock 'heelguard' cast iron grating or equivalent, where adjacent to kerbing or within pedestrian areas. Elsewhere Aco channel drain to be Road Drain 100 Class F. All channel drain outlets to have oil traps
- The Contractor should construct works in accordance with the Local Authority specification for the works they are to undertake.
- Road gully pipes are to be 150mm dia. with concrete surround and flexible joints, all other un-referenced pipes are assumed to be 100mm dia.
FW min gradient - 1 in 40 (100 dia) no WC's connected
FW min gradient - 1 in 80 (100 dia) min 1 WC connected
FW min gradient - 1 in 150 (150 dia) min 5WC's
SW min gradient - 1 in 100 (100/150 dia)
- If any sub soil drainage systems are uncovered during the Works contact the Engineer for instructions. Generally sub soil drains affected are to be diverted around new Works and connected into the surface water drainage system. Pipe diameters and gradients are to be maintained.
- Before commencing construction the Contractor must check the invert levels of existing sewers to which connections are made. In addition the Contractor must locate and determine invert levels of the existing spurs to which connections are proposed. Additional spur/manhole connections are to be agreed with the relevant adopting authority. Any discrepancies are to be notified to the Engineer immediately, prior to construction.
- Road reinstatements are to be to the Highway Authority approval.
- No private areas are to drain onto adoptable areas and vice versa.
- All redundant drainage to be abandoned once the Contractor and Client have satisfied themselves that no connections remain live. Drains and sewers less than 1.5m deep which are in open ground should as far as is practicable be removed. Other pipes should be sealed at both ends and at any other point of connection and solidly filled at intervals not exceeding 25m with Class G3 or G4).

SUBJECT TO THE APPROVAL OF:
LPA - planning conditions
BUILDING CONTROL/NHBC
SW Approvals S185/106

Subject to confirmation of the following:
Foundations
External Levels
CCTV Drainage Survey
SIR testing to BRE365
GWL monitoring
SW S106 Sewer Connections
Formpave Design

NOTE THE FOLLOWING:

Southern Water Agreements

1. SW Approvals
 - 1.1. Sec 106 Sewer Connections for FW flows/connections
 - 1.1.1. SW Ref: xx dated xx

Hydrobrake Flow Controls

2. Flow control Device (MH-SWxx) restricting flows to this @ 6.15m head
 - 2.1. HRD Hydrobrake: SHE-0058-1000-0150-1000
 - 2.2. Refer to HRD Quote Ref: xx dated xx

Formpave Design - Blanket Soakaway Porous Block Paving

3. Refer to Formpave Design and details
 - 3.1. Formpave Dwgs: F60xxx-D1 & D100-TBC

CCTV Reports

1. Refer to drawing FC2912/01

-	Issued For BUDGET/APPROVAL ONLY	02/03/22
REV	DESCRIPTION	DATE

abmh
ABMH Civils Ltd
1 The Grove, Felpham, Bognor Regis, West Sussex PO22 7EY
Mark Mob: 07781 950000
Email: mark@abmh.co.uk / Web: www.abmh.co.uk

PROJECT						PROPOSED EXTENSION THE WINDMILL INN (PH) MILL LANE, RUSTINGTON W SUSSEX, BN16 3JP					
DRAWING						PROPOSED DRAINAGE LAYOUT (DRAFT)					
SCALE		DATE		INITIAL		MH		REV		-	
1:125		MAR 22		INITIAL		MH		CHKD		-	
FC2912/02											
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ABMH				Page 1																																																																																																																																																																																																																			
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Date 03/03/2022 14:42 File FC2912 Rustington Inn -...		Designed by MH Checked by																																																																																																																																																																																																																					
Micro Drainage		Source Control 2019.1																																																																																																																																																																																																																					
<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 36 minutes. <table><thead><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr></thead><tbody><tr><td>15 min Summer</td><td>9.922</td><td>0.182</td><td>12.5</td><td>34.1</td><td>O K</td></tr><tr><td>30 min Summer</td><td>9.958</td><td>0.218</td><td>12.5</td><td>40.8</td><td>O K</td></tr><tr><td>60 min Summer</td><td>9.972</td><td>0.232</td><td>12.5</td><td>43.5</td><td>O K</td></tr><tr><td>120 min Summer</td><td>9.959</td><td>0.219</td><td>12.5</td><td>41.0</td><td>O K</td></tr><tr><td>180 min Summer</td><td>9.933</td><td>0.193</td><td>12.5</td><td>36.2</td><td>O K</td></tr><tr><td>240 min Summer</td><td>9.906</td><td>0.166</td><td>12.5</td><td>31.1</td><td>O K</td></tr><tr><td>360 min Summer</td><td>9.858</td><td>0.118</td><td>12.5</td><td>22.1</td><td>O K</td></tr><tr><td>480 min 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Summer</td><td>9.748</td><td>0.008</td><td>1.9</td><td>1.4</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>9.747</td><td>0.007</td><td>1.7</td><td>1.2</td><td>O K</td></tr><tr><td>15 min Winter</td><td>9.948</td><td>0.208</td><td>12.5</td><td>38.9</td><td>O K</td></tr></tbody></table> <table><thead><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr></thead><tbody><tr><td>15 min Summer</td><td>124.633</td><td>0.0</td><td>16</td></tr><tr><td>30 min Summer</td><td>83.789</td><td>0.0</td><td>28</td></tr><tr><td>60 min Summer</td><td>53.779</td><td>0.0</td><td>46</td></tr><tr><td>120 min Summer</td><td>33.337</td><td>0.0</td><td>80</td></tr><tr><td>180 min Summer</td><td>24.832</td><td>0.0</td><td>114</td></tr><tr><td>240 min Summer</td><td>20.006</td><td>0.0</td><td>146</td></tr><tr><td>360 min Summer</td><td>14.706</td><td>0.0</td><td>206</td></tr><tr><td>480 min Summer</td><td>11.818</td><td>0.0</td><td>264</td></tr><tr><td>600 min Summer</td><td>9.966</td><td>0.0</td><td>318</td></tr><tr><td>720 min Summer</td><td>8.665</td><td>0.0</td><td>370</td></tr><tr><td>960 min Summer</td><td>6.943</td><td>0.0</td><td>492</td></tr><tr><td>1440 min Summer</td><td>5.071</td><td>0.0</td><td>734</td></tr><tr><td>2160 min Summer</td><td>3.696</td><td>0.0</td><td>1100</td></tr><tr><td>2880 min Summer</td><td>2.949</td><td>0.0</td><td>1468</td></tr><tr><td>4320 min Summer</td><td>2.142</td><td>0.0</td><td>2192</td></tr><tr><td>5760 min Summer</td><td>1.705</td><td>0.0</td><td>2936</td></tr><tr><td>7200 min Summer</td><td>1.427</td><td>0.0</td><td>3664</td></tr><tr><td>8640 min Summer</td><td>1.235</td><td>0.0</td><td>4392</td></tr><tr><td>10080 min Summer</td><td>1.093</td><td>0.0</td><td>4976</td></tr><tr><td>15 min Winter</td><td>124.633</td><td>0.0</td><td>16</td></tr></tbody></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	9.922	0.182	12.5	34.1	O K	30 min 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600 min Summer	9.966	0.0	318																																																																																																																																																																																																																				
720 min Summer	8.665	0.0	370																																																																																																																																																																																																																				
960 min Summer	6.943	0.0	492																																																																																																																																																																																																																				
1440 min Summer	5.071	0.0	734																																																																																																																																																																																																																				
2160 min Summer	3.696	0.0	1100																																																																																																																																																																																																																				
2880 min Summer	2.949	0.0	1468																																																																																																																																																																																																																				
4320 min Summer	2.142	0.0	2192																																																																																																																																																																																																																				
5760 min Summer	1.705	0.0	2936																																																																																																																																																																																																																				
7200 min Summer	1.427	0.0	3664																																																																																																																																																																																																																				
8640 min Summer	1.235	0.0	4392																																																																																																																																																																																																																				
10080 min Summer	1.093	0.0	4976																																																																																																																																																																																																																				
15 min Winter	124.633	0.0	16																																																																																																																																																																																																																				
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ABMH		Page 2			
1 The Grove Felpham West Sussex PO22 7EY	SW BLANKET SOAKAWAY WINDMILL INN RUSTINGTON				
Date 03/03/2022 14:42 File FC2912 Rustington Inn -...	Designed by MH Checked by				
Micro Drainage					
Source Control 2019.1					
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	9.992	0.252	12.5	47.2	O K
60 min Winter	9.987	0.267	12.5	50.6	Flood Risk
120 min Winter	9.982	0.242	12.5	45.3	O K
180 min Winter	9.940	0.200	12.5	37.5	O K
240 min Winter	9.897	0.157	12.5	29.4	O K
360 min Winter	9.827	0.087	12.5	16.3	O K
480 min Winter	9.790	0.050	12.5	9.4	O K
600 min Winter	9.783	0.043	10.7	8.0	O K
720 min Winter	9.777	0.037	9.3	7.0	O K
960 min Winter	9.770	0.030	7.6	5.6	O K
1440 min Winter	9.762	0.022	5.6	4.1	O K
2160 min Winter	9.756	0.016	4.1	3.0	O K
2880 min Winter	9.753	0.013	3.2	2.4	O K
4320 min Winter	9.750	0.010	2.4	1.8	O K
5760 min Winter	9.748	0.008	1.9	1.4	O K
7200 min Winter	9.746	0.006	1.6	1.2	O K
8640 min Winter	9.746	0.006	1.4	1.0	O K
10080 min Winter	9.745	0.005	1.2	0.9	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	83.789	0.0	30		
60 min Winter	33.778	0.0	48		
120 min Winter	33.337	0.0	86		
180 min Winter	24.832	0.0	122		
240 min Winter	20.006	0.0	156		
360 min Winter	14.706	0.0	212		
480 min Winter	11.818	0.0	252		
600 min Winter	9.966	0.0	312		
720 min Winter	8.665	0.0	372		
960 min Winter	6.943	0.0	492		
1440 min Winter	5.071	0.0	730		
2160 min Winter	3.696	0.0	1084		
2880 min Winter	2.949	0.0	1472		
4320 min Winter	2.142	0.0	2200		
5760 min Winter	1.705	0.0	2848		
7200 min Winter	1.427	0.0	3568		
8640 min Winter	1.235	0.0	4456		
10080 min Winter	1.093	0.0	5136		
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1 The Grove Felpham West Sussex PO22 7EY	SW BLANKET SOAKAWAY WINDMILL INN RUSTINGTON	
Date 03/03/2022 14:42 File FC2912 Rustington Inn -...	Designed by MH Checked by	
Micro Drainage Source Control 2019.1		

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.184

Time (mins)	Area
From:	To: (ha)
0	4 0.184

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1 The Grove Felpham West Sussex PO22 7EY	SW BLANKET SOAKAWAY WINDMILL INN RUSTINGTON																	
Date 03/03/2022 14:42 File FC2912 Rustington Inn -...	Designed by MH Checked by																	
Micro Drainage	Source Control 2019.1																	
<u>Model Details</u> Storage is Online Cover Level (m) 10.300 <u>Infiltration Blanket Structure</u> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.36000</td> <td>Diameter/Width (m)</td> <td>15.6</td> </tr> <tr> <td>Safety Factor</td> <td>5.0</td> <td>Length (m)</td> <td>40.0</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Cap Volume Depth (m)</td> <td>0.350</td> </tr> <tr> <td>Invert Level (m)</td> <td>9.740</td> <td></td> <td></td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.36000	Diameter/Width (m)	15.6	Safety Factor	5.0	Length (m)	40.0	Porosity	0.30	Cap Volume Depth (m)	0.350	Invert Level (m)	9.740		
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