



MTD CONSULTING

**UNITS 5-6 CHURCH
FARM, BATH ROAD,
SHAW**

**FLOOD RISK
ASSESSMENT**

**Mr R Harlow of A Harlow &
Sons**

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1. INTRODUCTION

Introduction

- 1.1. MTD Consulting has been commissioned by the client to provide a site specific Flood Risk Assessment (FRA) to support a proposed planning application for the development site. The This report has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF), the associated Planning Policy Guidelines (PPG) and local policy requirements.
- 1.2. This report is intended to support a planning application and as such the level of detail included is commensurate and subject to the nature of the proposals.

Objectives & Scope

- 1.3. A site-specific FRA assesses the current and future flood risk to and from a development site. It demonstrates how flood risk will be managed now and over the development's lifetime, taking climate change, drainage, and the vulnerability of its intended users into account.
- 1.4. The objectives of a site-specific FRA are to:
- Assess whether a proposed development is likely to be affected by current or future flooding from a range of sources.
 - Assess whether the development will increase flood risk elsewhere.
 - Decide on measures to deal with these effects and risks and assess their appropriateness.
 - Provide enough evidence for the local planning authority to apply (if necessary) the Sequential Test.
 - Decide whether the development will be safe and will pass the Exception Test if applicable.
- 1.5. The scope of this Flood Risk Assessment is to support a planning application.

Limitations

- 1.6. The general limitations of this report are that:
- MTD Consulting Ltd has prepared this Report for the sole use of the Client in accordance with the Agreement under which our services were performed. No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by SDS Consulting Ltd. This Report is confidential and may not be disclosed by the Client nor relied upon by any other party without the prior and express written agreement of SDS Consulting Ltd.
 - A number of data sources have been used in compiling this report. Whilst SDS Consulting believe them to be trustworthy; it is unable to guarantee the accuracy of the information that has been provided by others.
 - This report is based on information available at the time of preparation. There is potential for further information to become available, which may create a need to modify conclusions drawn in this report.



- The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by SDS Consulting Ltd has not been independently verified by SDS Consulting Ltd, unless otherwise stated in the Report.

SDS Consulting Ltd disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to SDS Consulting Ltd's attention after the date of the Report.



2. SITE CONTEXT

Development proposals

- 2.1. The development proposals comprise a conversion of an existing commercial units 5-6 to residential development.
- 2.2. Refer to development plans in **Appendix A**.

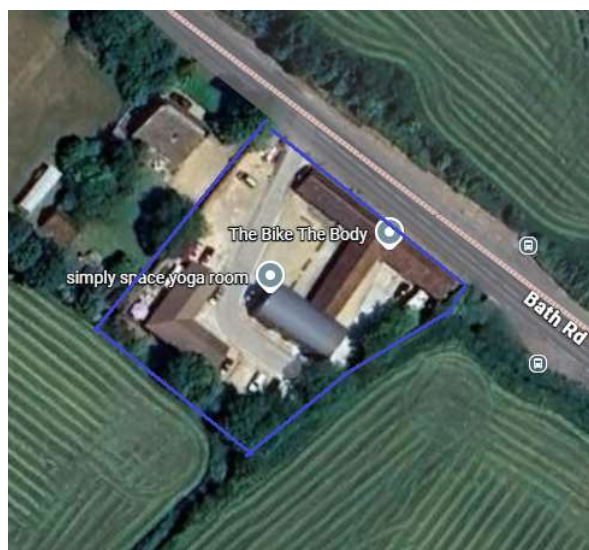
Site Location

- 2.3. The site is located at Church Farm, Bath Road, Shaw, Wiltshire, SN12 8EF. The site is located red in **Figure 1**.

Figure 1 : Site Location Plan



Figure 2 : Land ownership



- 2.4. The site comprises of commercial buildings.

Topography

- 2.5. Refer to MBS Surveys drawing in **Appendix B**. The topography of the site is generally flat with a fall to the north towards Bath Road.

Hydrology

- 2.6. The site falls within the catchment of the South Brook which is located approximately 150m to the north of the site. South Brook is a tributary of the Rover Avon and has confluence to the south of Melksham.
- 2.7. A ditch forms the eastern boundary of the site and is a part of the local irrigation ditch networks that discharge in a northerly direction towards South Brook.

Geology

- 2.8. The British Geological Survey (BGS) mapping indicates bedrock geology of Oxford Clay formation. There are no recorded superficial deposits.

Figure 3: BGS Geology



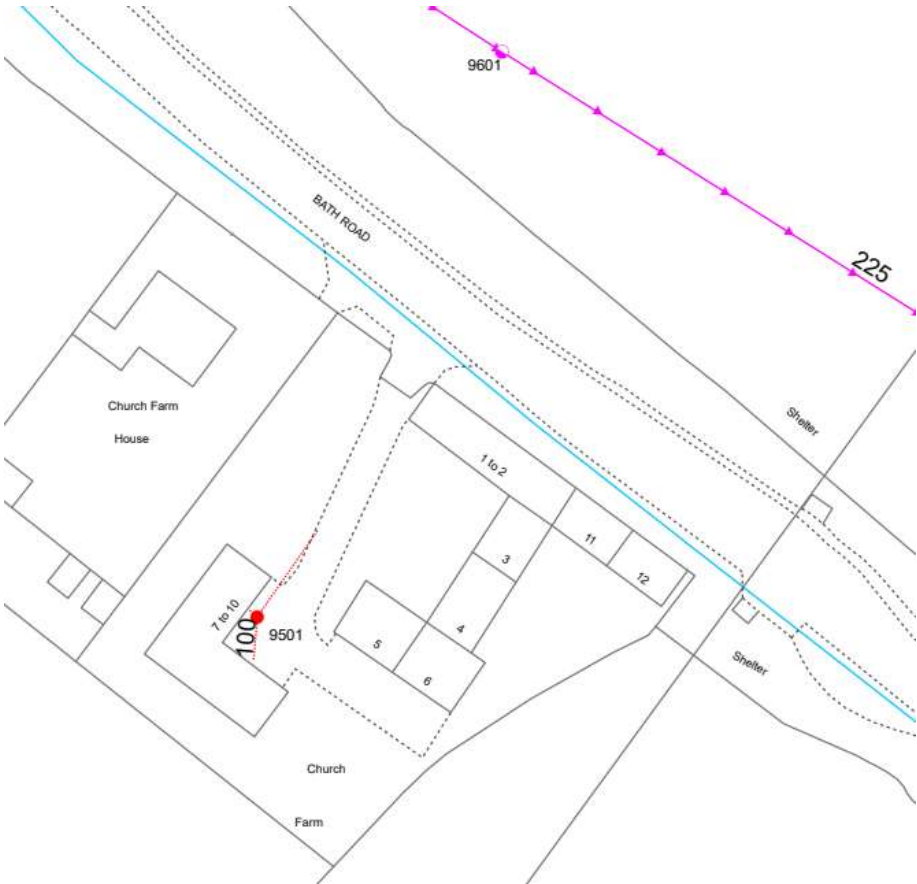
Site Investigation

- 2.9. An intrusive ground investigation has not been undertaken within the site.

Existing Drainage

- 2.10. It is assumed that the surface water drainage for the site discharges to the ground or has direct connection to the ditch to the east of the site.
- 2.11. A Wessex Water foul drain is located in the site and discharges in a northerly direction to the 225mm combined sewer in the fields to the north of the site. Refer to Figure 4 for Wessex Water asset mapping.

Figure 4: Wessex Water asset map



3. FLOOD RISK

- 3.1. Inappropriate development in flood risk areas could pose significant risks in terms of personal safety and damage to the property for the occupiers of the development or for people elsewhere. The approach taken in the assessment of flood risk at the planning stage is set out in national, regional and local planning policy and associated guidance. This section summarises the key policies and guidance relevant to the proposed development.

Sources of Flood Risk

Fluvial Flooding

- 3.2. **Figure 5** provides an extract of the Flood Risk Map for planning which identifies that the site is located in Flood Zone 1.

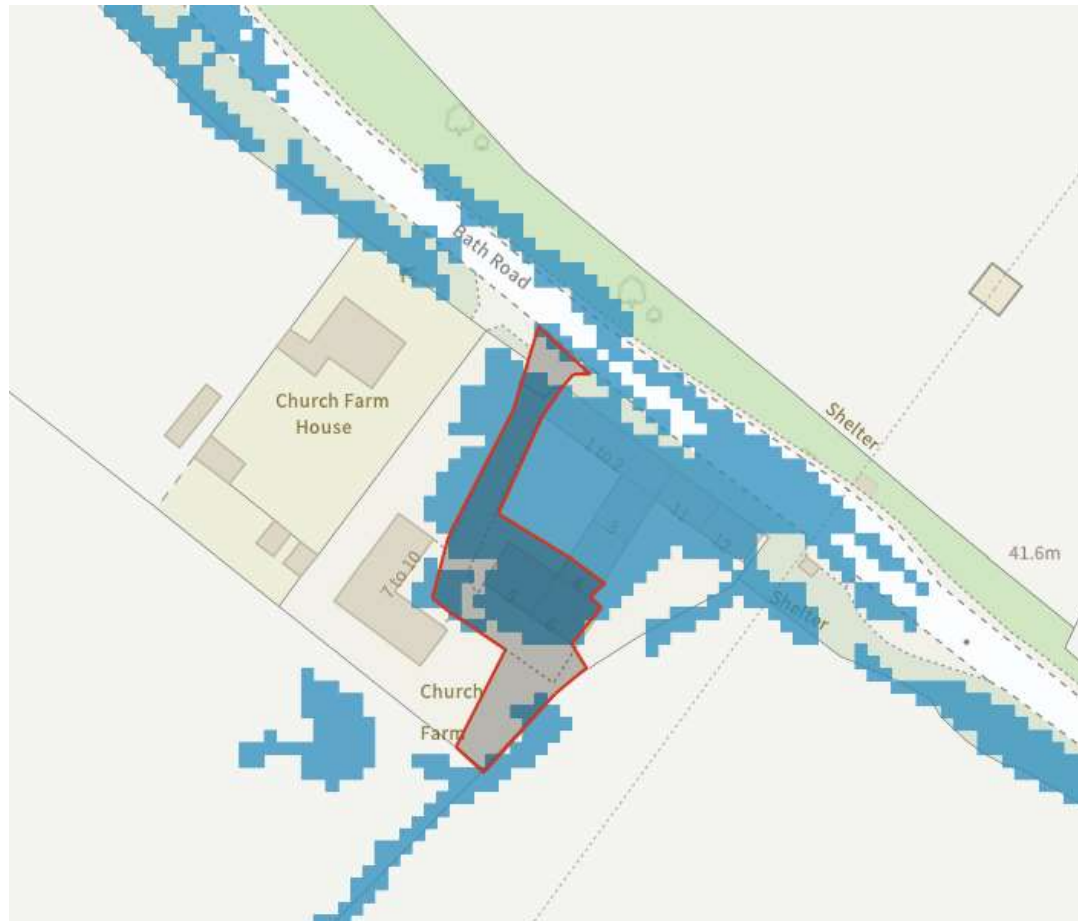
Figure 5: Environment Agency's Flood Map for Planning



Pluvial Flooding

- 3.3. The Environment Agency's Risk of Flooding from Surface Water Map indicates where surface water may be expected to flood or pond. Surface water flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead.
- 3.4. **Figure 6** shows the extent of surface water flood risk as per the Environment Agency mapping. The mapping identifies that surface water flood extents are located within the site and to the north.

Figure 6: Environment Agency - Risk of Flooding from Surface Water Map 1000yr



3.5. Units 5-6 are shown to be affected by the RoFSW extents with ponding located to the courtyard area to the north of the units.

3.6. RoFSW is reviewed in Section 4 of this report

Flooding from Groundwater

3.7. There are no records of groundwater flooding in the site or the surrounding area.

3.8. The Wiltshire Council SFRA Explorer Appendix G identifies that the site is located in an area where there is negligible risk of groundwater flooding

Flooding from Overwhelmed Sewers and Drainage Systems

3.9. There are no recorded flooding incidents of sewer flooding.

Flooding from Artificial Sources

3.10. The Environment Agency's Risk of Flooding from Reservoirs Map indicates the site is unaffected by flooding from any reservoirs.

Sequential Test

3.11. Paragraph 172 of the NPPF states –

All plans should apply a sequential, risk-based approach to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property. They should do this, and manage any residual risk, by:

- (a) applying the sequential test and then, if necessary, the exception test as set out below;*
- (b) safeguarding land from development that is required, or likely to be required, for current or future flood management;*
- (c) using opportunities provided by new development and improvements in green and other infrastructure to reduce the causes and impacts of flooding, (making as much use as possible of natural flood management techniques as part of an integrated approach to flood risk management); and*
- (d) where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to relocate development, including housing, to more sustainable locations.*

3.12. Paragraph 174 of the NPPF states -

Within this context the aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding. The strategic flood risk assessment will provide the basis for applying this test.

3.13. Paragraph 176 of the NPPF states –

Applications for some minor development and changes of use should also not be subject to the sequential test, nor the exception test set out below, but should still meet the requirements for site-specific flood risk assessments set out in footnote 63

3.14. The proposed development is a change of use with no additional development. The application of the sequential test is therefore not required.



4. PLUVIAL FLOOD RISK REVIEW

Surface Water Flood Risk Mapping context

- 4.1. The following provides a broad overview of the RoFSW mapping produced and its limitations.

Environment Agency

- 4.2. The nationally produced surface water flood mapping only indicates where surface water flooding could occur as a result of local rainfall. It does not fully represent flooding that occurs from:

- ordinary watercourses
- drainage systems or public sewers caused by catchment-wide rainfall events
- rivers
- groundwater.

- 4.3. Due to the modelling techniques used, the mapping picks out depressions in the ground surface and simulates some flow along natural drainage channels, rivers, low areas in floodplains, and flow paths between buildings. Although the maps appear to show flooding from ordinary watercourses, they should not be taken as definitive mapping of flood risk from these as the conveyance effect of ordinary watercourses or drainage channels is not explicitly modelled. Also, structures (such as bridges, culverts and weirs) and flood risk management infrastructure (such as defences) are not represented.

Limitations to the DTM used in modelling

- 4.4. The RoFSW is based upon LIDAR 2m resolution grid. A 2m regular grid is fine enough to allow the model to represent some small scale features of the urban landscape such as pathways between buildings that may significantly influence wider inundation patterns. However, although a 2m grid means that the overall patterns of flooding are more representative than they would otherwise be, this does not mean that the mapping is accurate to the nearest 2m, due to the other uncertainties in the modelling.

- 4.5. Building structures are represented by a raise in building footprints of 300mm (on average) – building positions are determined from the OS MasterMap.

- 4.6. The 2m Digital Terrain Model (DTM) does not capture all structures therefore features such as smaller hydraulic structures or flow paths may not be represented in the model. Some flow paths under bridges and through embankments are not captured within the DTM because the top of the feature is represented rather than the opening through it.

- 4.7. Road surfaces, selected from OS MasterMap data, were lowered by 0.125m (the height of a British Standard kerb) to better delineate these important pathways in the hydraulic modelling and mapping. Using this method to represent roads ensures that the principal flood pathways along roads are better represented in the 2m model grid.

Strengths & Limitations

- 4.8. The Environment Agency identify the following strengths within the RoFSW Mapping
- 2 metre model grid used, so many small ground features are taken into account
 - high quality ground level information, which was enhanced to better represent buildings and roads, with manual editing to "flyover features"
 - a wide range of storm scenarios were modelled using three flood probabilities (1:30, 1:100 and 1:1000)
 - the influence of land use and soil type were taken into account



- more accurate local mapping provided by LLFAs was incorporated where it was compatible
- complex processing which reflects LLFA preferences to make the maps as clear as possible, for example in filtering out particularly small areas of flooding whilst retaining potentially significant flooded areas
- depth, velocity, flow direction and hazard maps have been produced

4.9. The Environment Agency identify the following limitations within the RoFSW Mapping

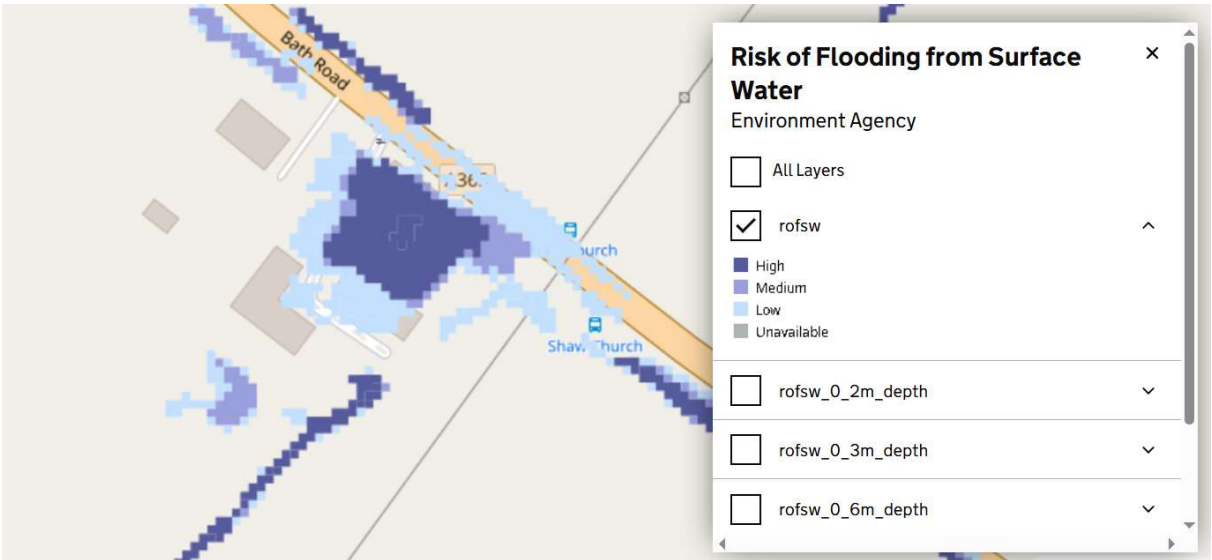
- We assumed a single drainage rate for all urban areas within the nationally produced modelling unless LLFAs were able to give us better local data. Modelled flood extents are particularly sensitive to the way drainage is taken into account. Omitting large subsurface drainage elements such as flood relief culverts and flood storage can also significantly affect the modelled pattern of flooding.
- The nationally produced modelling assumes a free outfall and so does not take into account tide locking or high river levels which may prevent surface water from draining away freely.
- Limited recorded surface water flood data exists for LLFAs, so in many places LLFAs have not yet been able to validate the nationally produced modelling.
- As with many other flood models:
 - The input information, model performance and modelling that we used to create the nationally produced modelling vary for different areas. For example, in many areas, the ground level data is based on detailed LIDAR information, but where this is not available ground levels are much less accurate. Similarly, models of this type tend to perform better in steeper rural areas than in flat urban areas. These variations affect the reliability of the mapped flood extents and, in turn, the suitability for different applications.
 - RoFSW does not take individual property threshold heights into account so the map shows areas that may potentially flood but cannot accurately predict the impacts on individual properties.
 - The flood extents show predicted patterns of flooding based on modelled rainfall. The patterns of flooding from

RoFSW Extents

4.10. **Figure 7** identifies the extent of the mapped RoFSW as displayed on the Environment Agency Defra OGC preview which sets the RoFSW extents shown in **Figure 6**



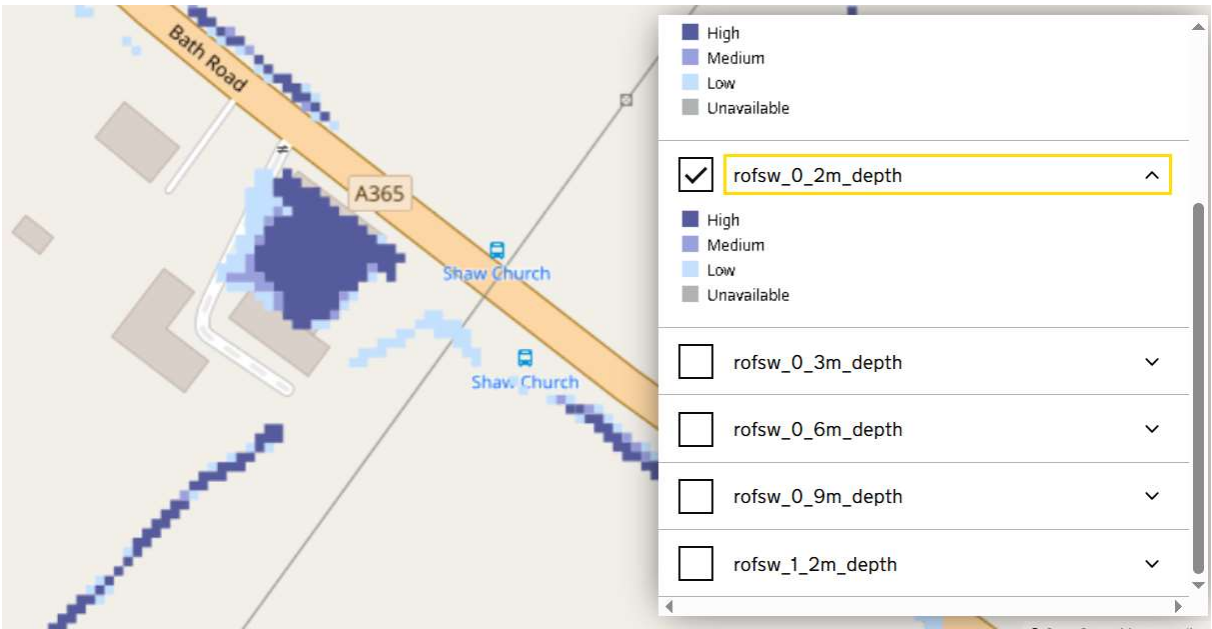
Figure 7 – EA RoFSW extents

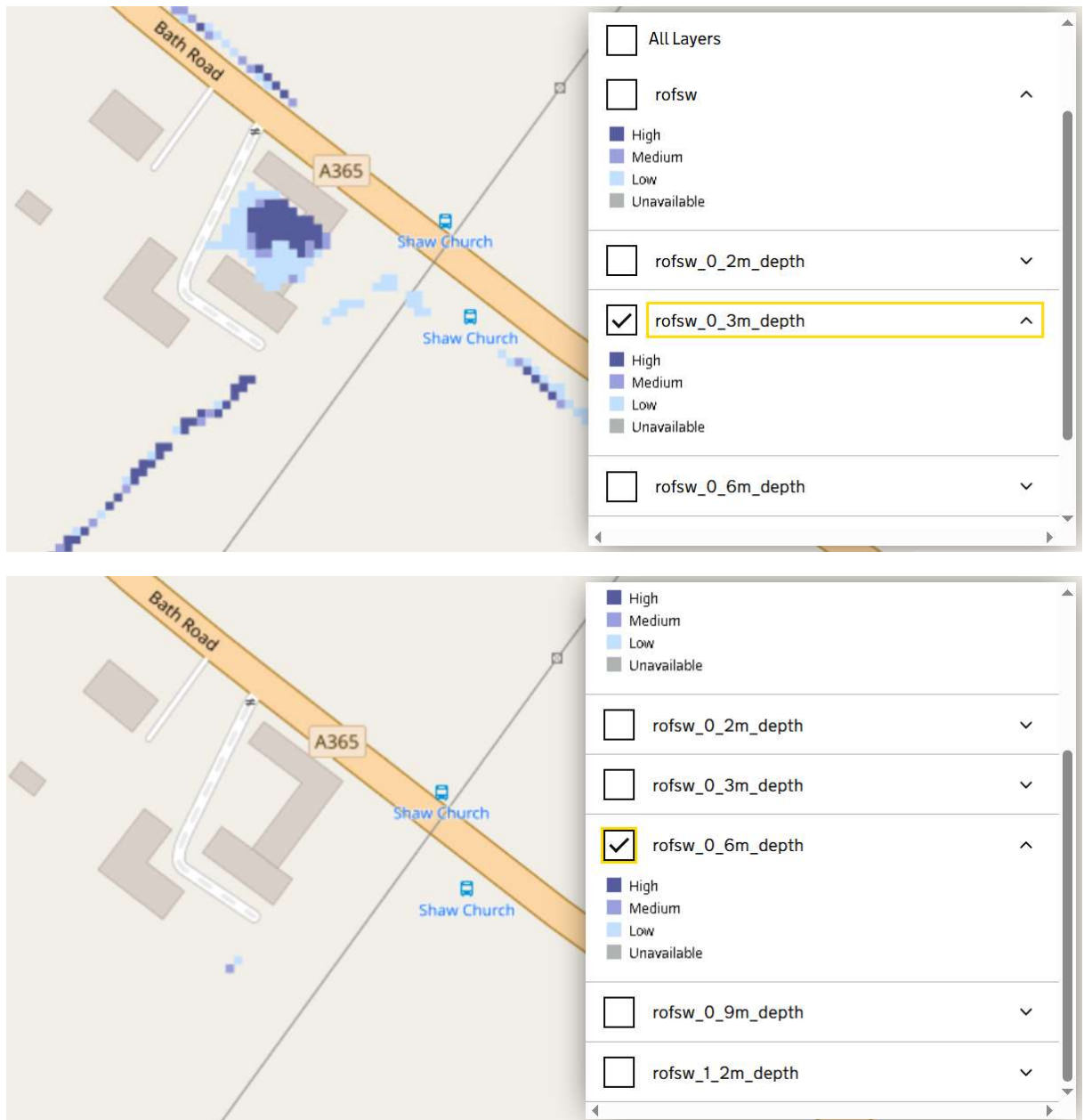


Mapped ROFSW Depths

- 4.11. The predicted RoFSW flood depths show a modelled flood depth of 0.2m and 0.3m within the site. The next assessed flood depth is 0.6m in which there is no RoFSW shown within the site. The flood depth therefore lies between 0.3 and 0.6m in depth according to mapping, refer to **Figure 8**.
- 4.12. It is noted that the RoFSW extents do not travel along the ditch to the east of the site which is identified in the mapping to the south of the site.

Figure 8 – RoFSW Depths





Development Proposals and RoFSW depths

- 4.13. The RoFSW mapping identifies that the buildings to the east of the site essentially trap flows and causes the ponding as mapped.
- 4.14. The lowest elevation in the site is 41.80m AOD located to the central courtyard area. Where applying the flood depths as shown in **Figure 8**, the following flood levels are applicable to the site based upon the low point of the site.

RoFSW Flood depth	RoFSW level
0.2m	42.000
0.3m	42.100
0.35m	42.150
0.4m	42.200
0.45m	42.250

- 4.15. Where assessing the topographical levels of the site and associated flood depths, the RoFSW extents are replicated in **Figure 9**.

Figure 9: Site specific RoFSW extents



- 4.16. Flows to the west of the of the buildings (shown to the north of the site) would discharge off site via the site entrance should water levels exceed 42.350m AOD. Areas to the east of the site would discharge to the north east where levels exceed 42.200m AOD. It is noted that this area would not cause ponding of flows and any RoFSW would discharge off site.
- 4.17. Unit 5-6 has a FFL of 42.5m AOD which is higher than that of the predicted flood depths and extents. The building area to the north of units 5 -6 (within the red line boundary) would have a depth of water adjacent to the building should RoFSW depths exceed 0.2m depth –

this water depth would not affect the units due to the FFL being higher than that of the predicted RoFSW depths..

RoFSW Conclusion

- 4.18. A review of the site specific levels and the predicted RoFSW depths identifies that the extent of RoFSW is not as per the mapped extents shown on the Environment Agency website. The extents depicted in **Figure 9** identify that Unit 5-6 is not affected by RoFSW for areas where the FFL is at 42.500 mAOD. There is a potential that the building area to the north of units 5 -6 (within the red line boundary) would have a depth of water adjacent to the building should RoFSW depths exceed 0.2m depth however this would not enter the property due to the FFL.
- 4.19. The overall conclusion is that the RoFSW mapping for the site is not representative of the site specific levels. The extent and depth of flooding published cannot occur on the site as mapped. The Risk of Flooding from Surface Water is determined to be medium to low risk within the site.



5. FLOOD RISK MANAGEMENT

Flood Risk Vulnerability

- 5.1. Annex 3: Flood Risk Vulnerability Classification categorises different types of development according to their vulnerability to flood risk. Table 2: Flood risk vulnerability and flood zone 'compatibility', maps these vulnerability classes against the flood zones to indicate where development is appropriate and where development should not be permitted.

Figure 10: Extract of Annex 3: Flood Risk Vulnerability Classification

More vulnerable

- Hospitals
- Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.
- Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels.
- Non-residential uses for health services, nurseries and educational establishments.
- Landfill* and sites used for waste management facilities for hazardous waste.
- Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

- 5.2. With reference to Annex 3, the change of use would be classified as 'more vulnerable'.

- 5.3. With reference to NPPF Table 2, the proposed development is appropriate land use in Flood Zone 1

Figure 11: Table 2: Flood Risk Vulnerability and Flood Zone 'Compatibility'

Table 2: Flood risk vulnerability and flood zone 'incompatibility'

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	X	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	X	X	X	✓ *

Key:

✓ Exception test is not required

X Development should not be permitted

Minimum Ground Floor Levels

- 5.4. The FFL of units 5-6 is above that of the predicted RoFSW depths.

Flood Resistance and Resilience Measures & Flood management

- 5.5. The site is located in Flood Zone 1 and the FFL is to be as per existing levels.

- 5.6. For building areas to the north of the unit (shown in the red line boundary) which may be susceptible to RoFSW water adjacent to the building, the following measures are to be considered:

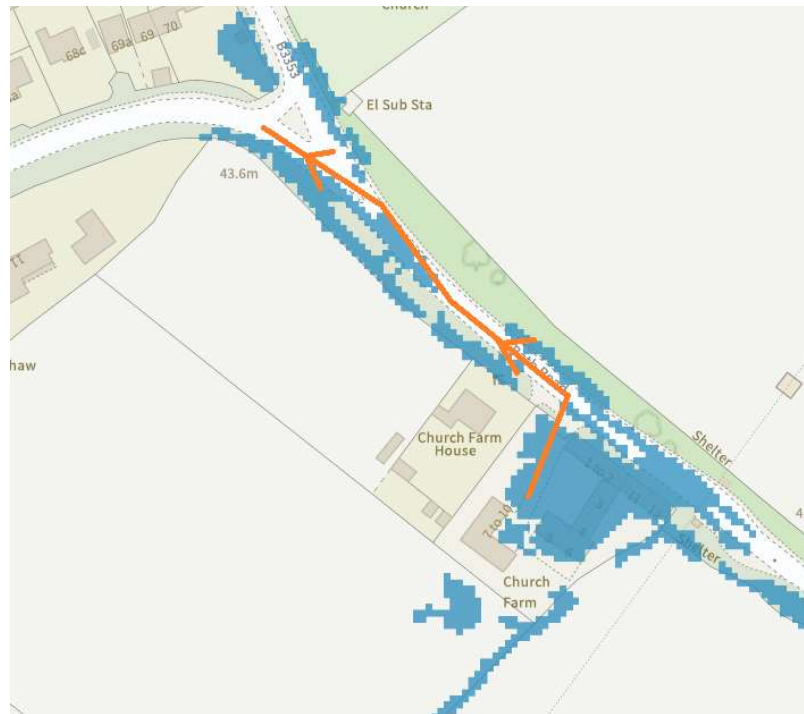


- External waterproofing
- Removal of air bricks / provide flood covers
- Stepped access to the proposed door with pathway adjacent to the building (to allow traversing of the site in times of flood)

Access & Egress

- 5.7. Whilst the RoFSW extents and depths are unlikely to be as per the mapped extent consideration is to be given to the access and egress of the site.
- 5.8. **Figure 12** identifies that egress from the site should be to the west along Bath Road to areas of higher ground.

Figure 12 – Emergency egress route



6. SURFACE WATER MANAGEMENT

6.1. The development proposals do not seek to increase building sizes or increase the external impermeable areas. The change of use to residential is likely to add additional greenfield area thus reducing runoff.

6.2. Due to there being no increase in impermeable areas, it is deemed that there is no requirement for additional surface water drainage design or management. Flood risk and runoff is reduced in the site through the potential implication of greenfield areas.

National Standards for Sustainable Drainage Systems (SuDS)

6.3. To accord with the National Standards for SuDS, whilst retaining the existing drainage systems and discharge methods, consideration is to be given to the implementation of SuDS for the management of everyday rainfall and water quality.

6.4. The client is to consider the viability of rainwater harvesting for use in the building / site. As a minimum, water butts are to be provided to the existing buildings.

6.5. Bio retention areas and rain gardens are to be implemented within the site where applicable to do so to improve water quality and provide additional SuDS measures.



7. CONCLUSIONS

7.1. The development proposals, in which this Flood Risk Assessment is written for, comprise a conversion of existing commercial units 5-6 to residential development located at Church Farm, Bath Road, Shaw, Wiltshire, SN12 8EF. The key conclusions are of this Flood Risk Assessment are:

- The site is located in Flood Zone 1
- The site is shown to be at risk of surface water flooding with the RoFSW mapping identifying ponding between the buildings.
- RoFSW depths have been attributed to the site specific low point of the site.
- Site specific RoFSW depths do not rise above that of the FFL.
- Site specific RoFSW extents entails that water may be adjacent to the external wall should RoFSW depths exceed 0.2m in depth
- Surface water is to remain unchanged noting that there is an overall reduction in impermeable areas. Surface water runoff and flood risk is reduced as a result.
- Water butts are to be implemented with consideration being given to the application of rainwater harvesting.
- Bioretention areas / rain gardens are to be considered for implementation to provide water quality and provide additional SuDS measures.

7.2. It is concluded that the mapped RoFSW extents are indicative only and do not represent the site specific conditions.

7.3. The development proposals do not exacerbate existing site conditions or restrict existing conditions and as such the proposed development would not increase flood risk elsewhere.

7.4. The overall conclusions drawn from this report is that the development would be appropriately safe for its lifetime taking account of the flood risk vulnerability of the site and its users and the development would not increase flood risk elsewhere.



APPENDICIES

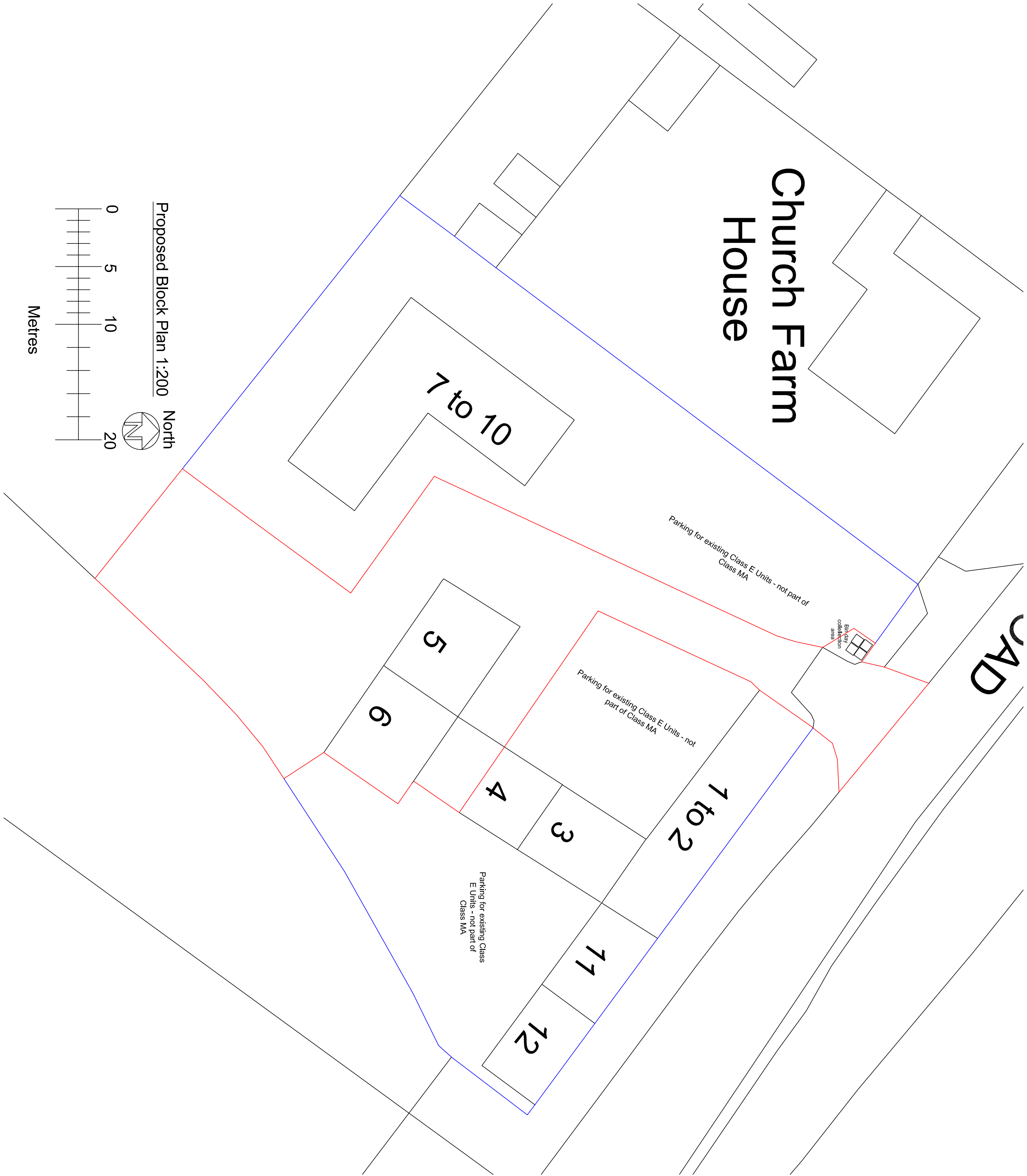


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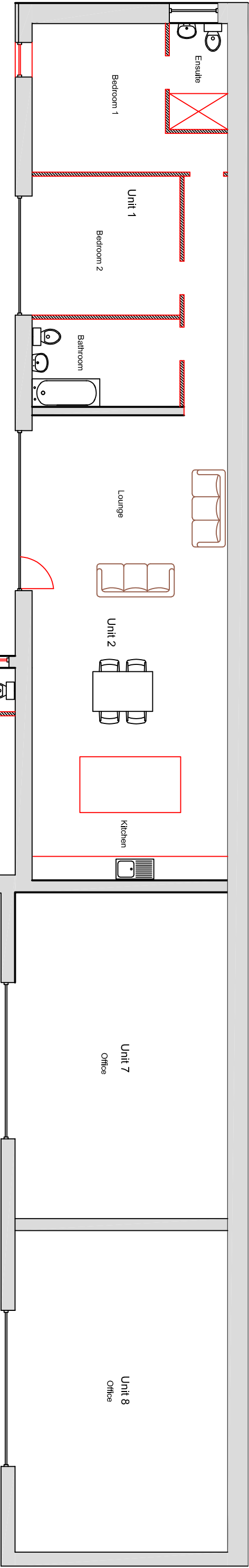
APPENDIX A



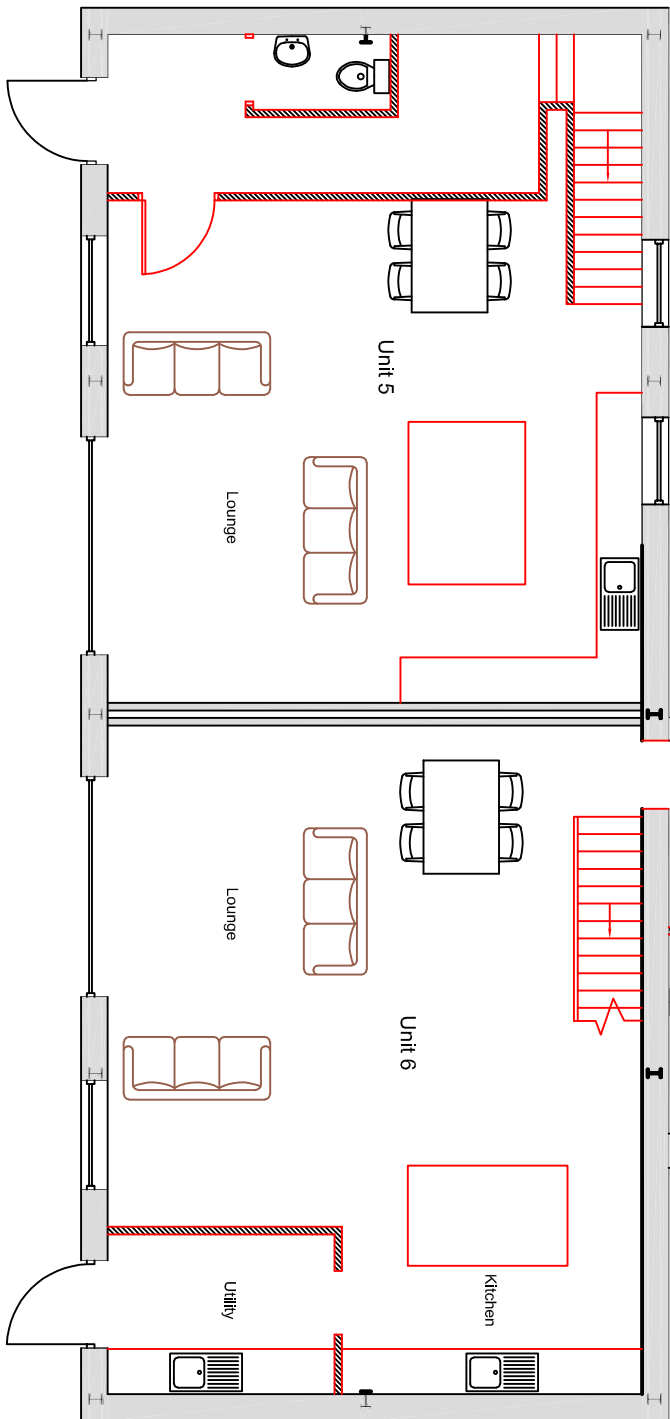
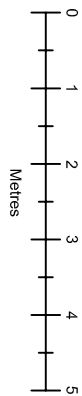
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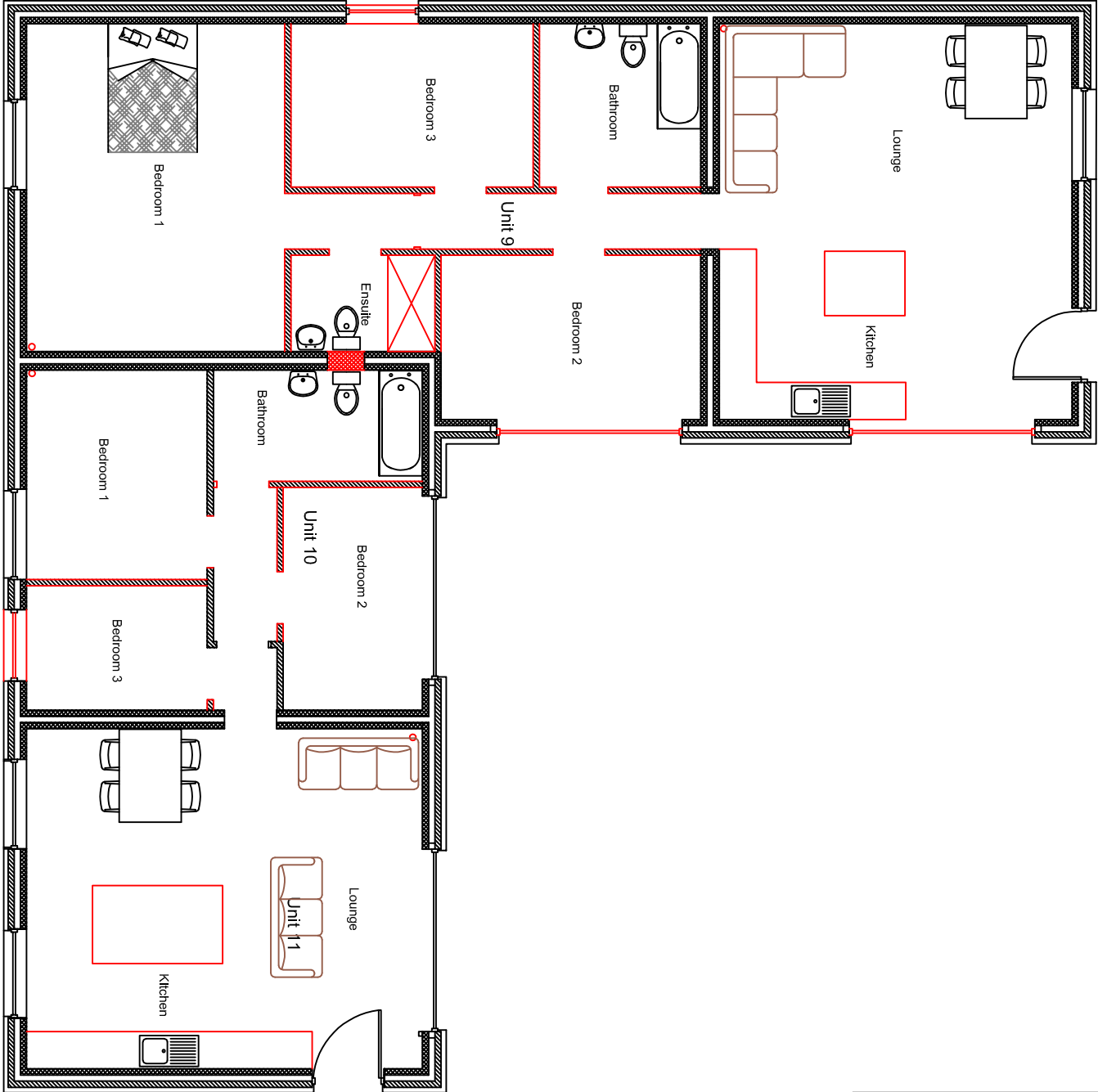
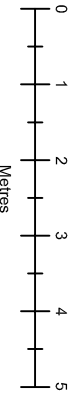
Drawn by		A Harlow & Son 01225 938329
Conversion of Units 5 & 6 to Residential Dwellings at Church Farm		
Bath Road		
Shaw		
Wiltshire		
SN12 8EF		
A1 Paper size		
Scale	1:200	Drawing No AH2018/102
Date	10th Feb 2026	Sheet 4 of 4



Proposed Floor Plan 1:100



Proposed First Floor Plan 1:100



Drawn by A Harlow & Son 01225 938329

Church Farm
Bath Road
Shaw
Wiltshire
SN12 8EF

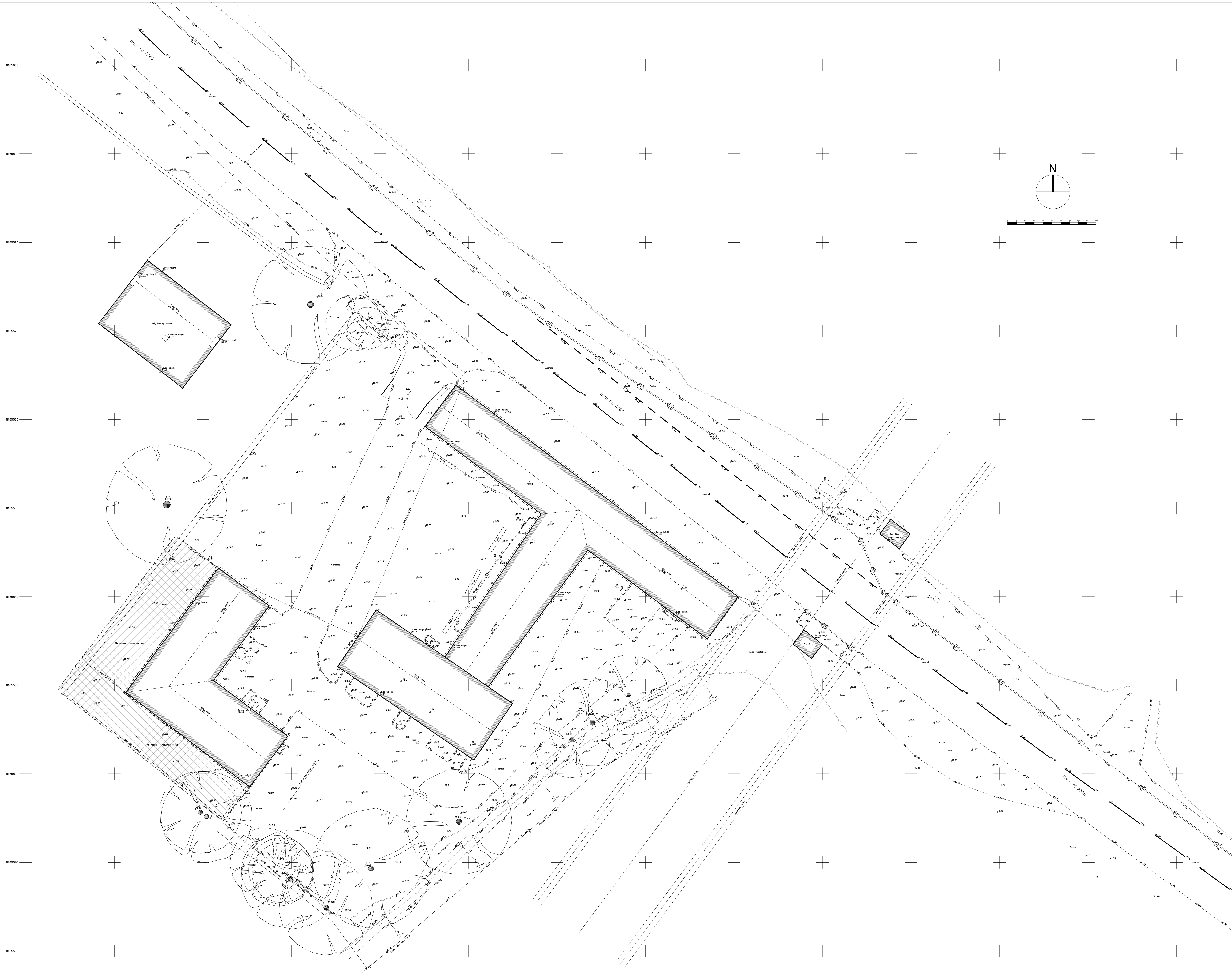
A1 Paper size

Scale	1:100	Drawing No AH2018/102
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APPENDIX B



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Notes :

Abbreviations

AV	Air Valve	LP	Lamp Post
BL	Bollard	M	Meter
BM	Bench Mark	MH	Manhole Cover
BP	Boundary Point	MK	Marker
BT	BT Cover	MS	Milestone
CATV	Cable Television Cover	RG	Ridge Level
CAB	Cabinet	RS	Road Sign
CL	Cover Level	SC	Stop Cock
DP	Rain water pipe	Str	Strainer
EP	Electric Power Pole	SV	Stop Valve
EV	Eaves Level	svp	Soil Vent Pipe
FH	Fire Hydrant	TH	Threshold Level
FL	Floor Level	T-T	Tree Top
FP	Fence Post	TP	Telephone Pole
G	Gully	UTL	Unable To Lift
GP	Gate Post	VP	Vent Pipe
GV	Gas Valve	WM	Water Meter
IC	Inspection Chamber	WO	Wash Out
IL	Invert Level		
KO	Kerb Outlet		

Linetypes

Bank	(top/bottom)	
Building		
Drop kerb		
Electric		
Fence		
Foliage		
FWS	(Estimated Size From Surface)	
Hedge		
Kerb		
Pipe		
Telephone		
Track/Path		
Tree Canopy		
Verge		
Water line		
Wall		
✦ Bore Hole	↔ Double Gates	
✦ Trial Pit	↔ Single Gate	
Station Control	□ ○ △ Manhole	

Rev.	Comments	By	Chkd	Date



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Project Name
Church Farm, Bath Rd, Melksham, SN12 8EF

CAD Drawing Name:
MBS-6014 Church Farm, Bath Road TOPO

Drawing Title :
Site Plan

Client: A Harlow & Son	Date 01/03/26
Agent:	Scale 1:200 @ A1

Drawn by: OW	Checked by: TW	Project Code: MBS - 6014	Revision:
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Grid Orientation: OS GPS	Site Level Datum OS GPS
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All dimensions are to be checked on site where applicable. This drawing must not be scaled, and only written dimensions should be respected.

Tree species and sizes on this drawing are not guaranteed, and if critical should be verified by an arboricultural. Tree spreads are average about the bole, and heights are approximate at the time of the survey.

