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Flood risk, water and environment

Flood Risk Assessment AEG03106_LE67_Thornton_01

Site Address: Clovelly
Merrylees Road
Thornton
Coalville
LE67 1AP

UK Experts in Flood Modelling, Flood Risk
Assessments, and Surface Water Drainage Strategies

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Flood risk, water and environment

Document Issue Record

Project: Flood Risk Assessment

Prepared for: Jennifer Ann Collighan

Reference: AEG03106_LE67_Thornton_01

Site Location: Clovelly, Merrylees Road, Thornton, Coalville, LE67 1AP

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Summary

Development Description	Existing	Proposed
Development Type	Residential Unit (Class C2 use)	Change of use from Class C2 use to a school for special needs children (Class F1 use) and the construction of 9 timber buildings
EA Vulnerability Classification	More Vulnerable	More Vulnerable
Ground Levels	Based on topographic survey the existing ground elevations on site range between 101.82m Above Ordnance Datum (AOD) and 102.81m AOD	Threshold levels of the timber cabins have been surveyed between 102.17m AOD and 102.76m AOD
Surface Water Drainage	N/A ¹	Proposed development to drain as per the existing scenario. Small scale SuDS be included where applicable.
Site Size	Approximately 2280m ²	No change
Risk to Development	Summary	Comment
EA Flood Zone	Flood Zones 1, Flood Zone 2, Flood Zone 3	
Flood Source	Fluvial and Pluvial	Rothley Brook Tributaries
SFRA Available	Yes - Hinckley and Bosworth Level 1 Strategic Flood Risk Assessment (2019)	
Management Measures	Summary	Comment
Ground floor level above extreme flood levels	No	Proposed cabins affected in each of the modelled 3.3%AEP, 1.0%AEP, and 0.1%AEP RoFSW events.
Safe Access/Egress Route	Site specific arrangements to be adhered to	Safe access/egress arrangements for the timber cabins including preventative measures such as monitoring weather conditions and signing up to relevant EA flood and severe weather warning alerts are outlined in the site specific RAMS

Flood Resilient Design		document. Upon receipt of an alert, the evacuation procedures stated in the sites risk assessment should be enacted upon.
	Recommended	Development should be implemented in flood resilient manner in accordance with DCLG <i>Report Improving the Flood Performance of New Buildings - Flood Resilient Construction</i> (2007)
	N/A ¹	Proposed development to drain as per the existing scenario. Small scale SuDS be included where applicable.
Site Drainage Plan	N/A ¹	Proposed development to drain as per the existing scenario. Small scale SuDS be included where applicable.
Flood Warning and Evacuation Plan	Yes	Recommended to sign up to the Rothley Brook and tributaries from Thornton to the River Soar at Rothley, Quorn Brook and tributaries from Newtown Linford to the River Soar at Quorn Environment Agency (EA) flood alert and warning service.
Offsite Impacts	Summary	Comment
Displacement of floodwater	Negligible	Each of the timber cabin buildings have been constructed on raised stilts with voids beneath in order to allow for the free flow of floodwater beneath each of the structures. As such, in isolation, the proposed development should not increase flood risk elsewhere.
Increase in surface run-off generation	N/A ¹	Proposed development to drain as per the existing scenario. Small scale SuDS be included where applicable.
Impact on hydraulic performance of channels	LLFA Consultation Required	Given the proximity of Buildings A to F to the ordinary watercourse (<20m) it is recommended that the client consult the LLFA (Leicestershire County Council) in order to determine whether any further consents are required

¹ not required for this assessment.

² data not available.

1. Introduction

- 1.1. Aegaea were commissioned by Jennifer Ann Collighan to undertake a Flood Risk Assessment (FRA) to facilitate a retrospective planning application for the proposed development. This FRA has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance.
- 1.2. This FRA is intended to support a retrospective planning application and as such the level of detail included is commensurate and subject to the nature of the proposals.

Site Overview

- 1.3. The site of the proposed development is Clovelly, Merrylees Road, Thornton, Coalville, LE67 1AP (Figure 1). It is understood that the proposed development is for the change of use from Class C2 use to a school for special needs children (Class F1 use) and the construction of 9 timber buildings. This is a retrospective planning application.

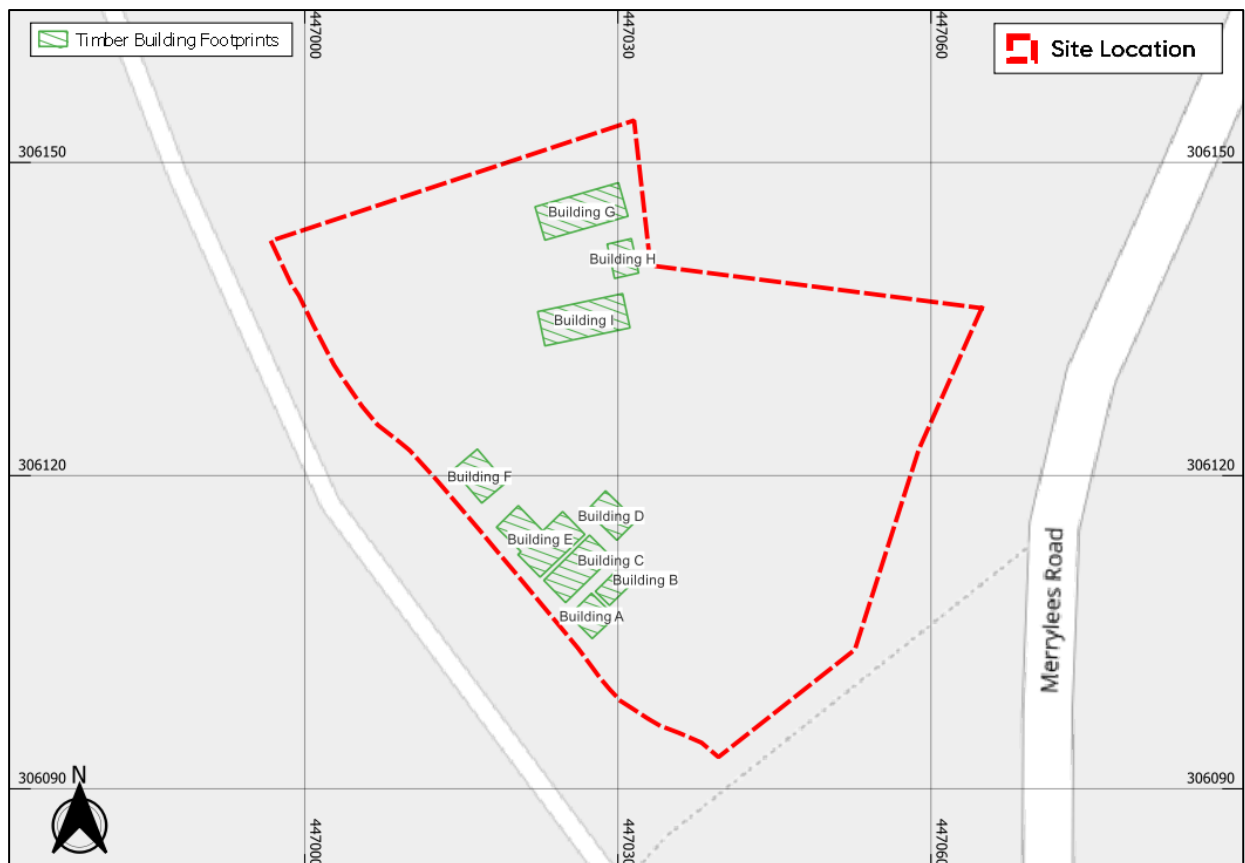


Figure 1: Site Location (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors)

- 1.4. A topographic survey of the site has been completed in May 2021 by Chandler Land and Building Surveys (ref: A21-4431-1) which details the existing ground levels across the site. Based on this survey, site levels vary between 101.82m Above Ordnance Datum (AOD) and 102.81m AOD with the site generally falling from the north to the south and west at the location of the adjacent watercourse. A full copy of the topographic survey is in Appendix A.
- 1.5. In addition to ground levels across the site, the topographic survey includes details of the threshold levels of each of the timber cabins across the site. The threshold levels of each of the cabins are summarised in the table below (where more than 1 threshold level has been provided, the lowest value has been taken);

Table 1: Timber Cabin Threshold Levels from Topographic Survey

Building Ref.	External Ground Levels Adjacent to Building (m AOD)	Threshold Level (m AOD)	Height of Threshold Level above Adjacent Ground Level (m)
Building A	102.04	102.17	0.13
Building B	102.16	102.17	0.01
Building C	102.12	102.24	0.12
Building D	102.01	102.76	0.75
Building E	102.00	102.31	0.31
Building F	102.08	102.23	0.15
Building G	102.43	102.69	0.26
Building H	102.45	102.62	0.17
Building I	102.45	102.74	0.29

- 1.6. Environment Agency Light Detection and Ranging (LiDAR) data Digital Terrain Model (1m resolution) has been utilised to visualise the existing ground levels on the site and within the surrounding vicinity (Figure 2).

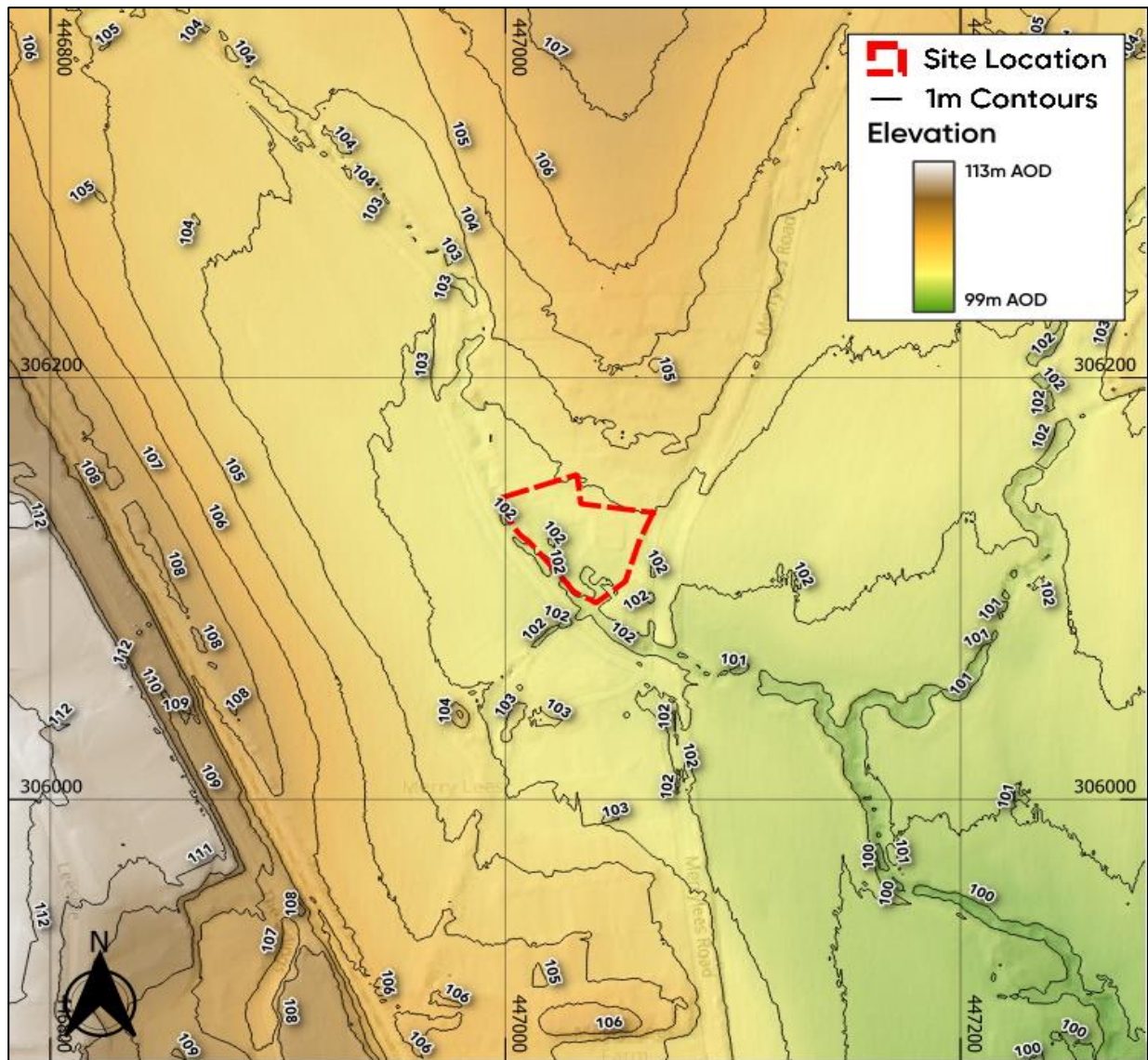


Figure 2: Site Topography (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

- 1.7. Hinckley and Bosworth Borough Council is the Local Planning Authority (LPA) for the site, and Leicestershire County Council is the designated Lead Local Flood Authority (LLFA). The site sits within the Environment Agency's East Midlands region.

Planning Policy and Guidance

1.8. UK government planning guidance states¹ that an FRA is required for developments which are:

- *in flood zone 2 or 3 including minor development and change of use*
- *more than 1 hectare (ha) in flood zone 1*
- *less than 1 ha in flood zone 1, including a change of use in development type to a more vulnerable class (for example from commercial to residential), where they could be affected by sources of flooding other than rivers and the sea (for example surface water drains, reservoirs)*
- *in an area within flood zone 1 which has critical drainage problems as notified by the Environment Agency*

1.9. The site is located within Flood Zone 2 and Flood Zone 3 and therefore, an FRA is required in accordance with the NPPF.

1.10. The objective of this FRA is to demonstrate that the proposals are acceptable in terms of flood risk. This report summarises the findings of the study and specifically addresses the following issues in the context of the current legislative regime:

- Fluvial flood risk
- Surface water flood risk
- Risk of flooding from other sources

¹<https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications#when-you-need-an-assessment>

2. Planning Policy

- 2.1. Inappropriate development in a flood risk area could pose significant risk in terms of personal safety and damage to 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.

National Planning Policy Framework (NPPF)

- 2.2. The National Planning Policy Framework² (NPPF) (DLUHC, 2023) which includes UK Government policy on development and flood risk states:

159. Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.

167. When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

- a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;*
- b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;*
- c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;*

²<https://www.gov.uk/guidance/national-planning-policy-framework>, last updated Sept 2023

- d) *any residual risk can be safely managed; and*
- e) *safe access and escape routes are included where appropriate, as part of an agreed emergency plan.*

168. Applications for some minor development and changes of use should not be subject to the sequential or exception tests but should still meet the requirements for site-specific flood risk assessments set out in footnote 55.

2.3. Footnote 55 of the NPPF states:

A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

2.4. Flood Zones in England are defined as follows:

Table 2: Flood Zone Definitions

Flood Zone	Definition
Zone 1 Low Probability	Land having less than 1 in 1,000 annual probability of river or sea flooding (all land outside Zones 2 and 3).
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
Zone 3b The Functional Floodplain	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

- 2.5. An FRA should be appropriate to the scale, nature, and location of the development. It should identify and assess the risk from all sources of flooding to and from the development and demonstrate how any flood risks will be managed over the lifetime of the development.
- 2.6. An assessment of hydrological impacts should be undertaken, including to surface water runoff and impacts to drainage networks in order to demonstrate how flood risk to others will be managed following development and taking climate change into account.

Local Planning Policy

- 2.7. The Core Strategy prepared by the Local Planning Authority, Hinckley and Bosworth Borough Council, sets out the policies for development in the local area. The proposed site lies under the jurisdiction of this LPA and therefore will be required to adhere to the core strategy policies. The Core Strategy (Adopted 2009)³ document does not contain a specific policy relating to flood risk management but provides the following comments;

A Strategic Flood Risk for the borough has been undertaken which suggests flooding is not a major issue for this borough. Nevertheless, flood mitigation measures, such as sustainable urban drainage, will need to be incorporated into new developments to ensure this issue is suitably addressed.

- 2.8. Moreover, the LPA are in the process of preparing a new Local Plan (2020-2039) which will supersede the current Core Strategy. The draft Local Plan⁴ contains the following policy relating to flood risk management;

CC02 Flood Risk

Planning applications for development proposals that require a Flood Risk Assessment will be required to address the actual and residual risk from all forms of flooding and the impact of climate change. The Flood Risk Assessment should be prepared in accordance with national and local guidance, including the recommendations set out in the Borough Council's Strategic Flood Risk Assessment. Development in areas at risk of flooding will only be supported where it is satisfactorily demonstrated that:

- The Sequential Test has been passed;*
- Where required, the Exception Test has been passed;*

³ https://www.hinckley-bosworth.gov.uk/downloads/file/487/core_strategy_adopted_document

⁴ https://www.hinckley-bosworth.gov.uk/downloads/file/7356/draft_local_plan_2020_-_2039

- *The proposed development will not increase the risk of flooding on site or elsewhere and appropriate floodplain compensation is provided where necessary; and*
- *The proposed development, including the access and egress, will be safe and resilient to flooding for its lifetime, taking into account the relevant climate change allowances.*

Where development is permitted within flood risk areas, it must demonstrate that, where required, it will reduce fluvial and surface water flood risk and manage residual risks, address the impacts of climate change through appropriate flood mitigation and adaptation measures, including enhancements to existing defences.

All development proposals should, wherever possible, include measures to reduce and manage surface water through appropriate sustainable drainage systems (SuDS) so as to minimise and manage flood risk and improve water quality in accordance with Policies CC03 and PMD03.

Sequential and Exception Tests

- 2.9. The Sequential and Exception Tests are applied in specific cases defined by UK Government policy. Their purpose is to drive development to areas of low flood risk and to support developments which improve flood risk for developments in areas at risk of flooding.

Sequential Test

- 2.10. Under the NPPF all new planning applications should undergo a Sequential Test accordance with paragraph 168 and footnotes 55 and 56. This test should be implemented by local planning authorities with a view to location particularly vulnerable new developments outside of the flood plain.
- 2.11. Paragraph 168 of the NPPF states:

168. Applications for some minor development and changes of use should not be subject to the sequential or exception tests but should still meet the requirements for site-specific flood risk assessments set out in footnote 55.

- 2.12. As such, the element of the development proposals which comprise of the change of use from Class C2 use to a school for special needs children (Class F1 use), is not subject to the Sequential Test and Exception Test in line with the NPPF.
- 2.13. The element of the application relating to the construction of 9 timber buildings should not be considered subject to the Sequential Test. This is given that the buildings have been constructed for the continued use of the existing site as a school. Therefore, it would not be suitable to locate the buildings elsewhere.

Exception Test

- 2.14. The Flood Risk Vulnerability Classification table⁵ provided below in Table 2 shows which vulnerabilities are appropriate in each Flood Zone.
- 2.15. The proposed development sits within Flood Zone 3, Flood Zone 2, and Flood Zone 1 and consists of 'More Vulnerable' uses. Table 2 shows that for 'More Vulnerable' developments within Flood Zone 3 are required to implement the Exception Test.

Table 3: 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	✓

⁵<https://www.gov.uk/guidance/flood-risk-and-coastal-change#table2>

- 2.16. For the Exception Test to be passed, the proposed development must meet the following criteria:
- A. It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh the flood risk, as informed by a Strategic Flood Risk Assessment;
 - B. A Flood Risk Assessment demonstrates that the development will be safe, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.
- 2.17. Part A of the Exception Test is outside the scope of this FRA. The planning application submitted by the client is required to be accompanied by an FRA which shows that the development can meet the requirements of the Part B of the Exception Test, with an overall reduction of flood risk to the site and surrounding area.
- 2.18. As mentioned above, the change of use element of the development is not subject to the Exception Test.

Summary

- 2.19. This flood risk assessment has been prepared with due consideration to the above local and national policy.

3. Consultation and Review

Consultation

- 3.1. The site sits within the Environment Agency's East Midlands region. Previously the EA have been consulted on the planning application for the proposed development (ref: LT/2023/128028/01-L01). The EA have stated that they do not hold detailed flood modelling data for the site location and that the flood zones within the vicinity have been constructed using national scale hydraulic modelling.
- 3.2. The ordinary watercourse adjacent to the site is represented in the EA's Risk of Flooding from Surface Water (RoFSW) modelling. Therefore, the RoFSW data has been used as an approximation for analysing the fluvial flood risk from the ordinary watercourse. The EA have stated that a hydraulic modelling exercise could be completed for the ordinary watercourse, however this is not considered to be commensurate with the size of the proposed development.

Documents and Online Mapping

- 3.3. Local Governments and Lead Local Flood Authorities provide documents which contain data and policies on flood risk and new development in their areas. These documents are introduced and briefly summarised below. For the purposes of this FRA, these documents have been reviewed for relevant information and any relevant data is discussed within the appropriate sub heading of this report.
- 3.4. The following sources of information have been reviewed for this assessment:
 - Flood Map for Planning on the Environment Agency website <https://flood-map-for-planning.service.gov.uk/>
 - Long Term Flood Risk Information on the Environment Agency website <https://www.gov.uk/check-long-term-flood-risk>
 - National Planning Policy Framework (NPPF) (Department for Levelling Up, Housing and Communities, 2023)
 - Planning Practice Guidance - Flood Risk and Coastal Change (Department for Levelling Up, Housing and Communities, 2022)
 - Geoindex Onshore (British Geological Survey, 2023)

- Hinckley and Bosworth Local Plan 2006-2026⁶ (Hinckley and Bosworth Borough Council, 2009)
- Leicestershire Preliminary Flood Risk Assessment⁷ (Leicestershire County Council, 2011)
- Hinckley and Bosworth Level 1 Strategic Flood Risk Assessment⁸ (Hinckley and Bosworth Borough Council, 2019)
- Leicestershire Local Flood Risk Management Strategy⁹ (Leicestershire County Council, 2015)

Preliminary Flood Risk Assessment (PFRA)

- 3.5. The PFRA, published in 2011, is a high-level appraisal of flood risk across Lead Local Flood Authority Leicestershire County Council. The flood risk from all sources, including fluvial, surface water, groundwater, and surcharged sewers is evaluated. It is the basis upon which the Local Flood Risk Management Strategy is produced.
- 3.6. The PFRA summarises historical flood incidents in Leicestershire County Council.

Strategic Flood Risk Assessment (SFRA)

- 3.7. The SFRA, published in 2019, provides the evidence base for the Local Planning Authority Hinckley and Bosworth Borough Council Local Plan and guidance for consideration when determining planning applications.
- 3.8. The SFRA seeks to place new development into areas of lower flood risk taking into account current flood risk, future flood risk, and the effect a proposed development would have on the risk of flooding.

⁶ <https://www.hinckley-bosworth.gov.uk/localplandocs>

⁷ https://www.leicestershire.gov.uk/sites/default/files/field/pdf/2016/9/19/prelim_flood_risk_assessment.pdf

⁸ https://www.hinckley-bosworth.gov.uk/downloads/file/6551/strategic_flood_risk_assessment_sfra_2019_main_report

⁹ https://www.leicestershire.gov.uk/sites/default/files/field/pdf/2015/12/8/flooding_strategy_plan.pdf

- 3.9. The SFRA mapping provided by Hinckley and Bosworth Borough Council has been used throughout production of this report as a source of information, particularly pertaining to historical flood incidents.

Local Flood Risk Management Strategy (LFRMS)

- 3.10. The Local Flood Risk Management Strategy sets out roles and responsibilities for flood risk management, assesses the risk of flooding in the area, where funding can be found to manage flood risk, and the policies, objectives, and actions of the Lead Local Flood Authority.
- 3.11. The Leicestershire County Council LFRMS is used within this report to identify any flood management infrastructure and historical incidences of flooding.

4. Sources of Flood Risk

Fluvial

- 4.1. Flooding from watercourses arises when flows exceed the capacity of the channel, or where a restrictive structure is encountered, resulting in water overtopping the banks into the floodplain.

Main Rivers and Ordinary Watercourses

- 4.2. The nearest EA main river to the site is the Rothley Brook located approximately 115m east of the site.
- 4.3. There is an ordinary watercourse located immediately adjacent to the western border of the site boundary. The watercourse flows from north to south past the site and joins the Rothley Brook approximately 115m east of the red line boundary.
- 4.4. There is also shown to be a drainage ditch which flows from north to south immediately adjacent to the eastern border of the site.
- 4.5. Given the proximity of Buildings A to F to the ordinary watercourse (<20m) it is recommended that the client consult the LLFA (Leicestershire County Council) in order to determine whether any further consents are required.

EA Flood Map for Planning

- 4.6. The site is located within Flood Zone 1, Flood Zone 2, and Flood Zone 3 (Figure 3). Each of the Flood Zones are denoted as follows;
- Flood Zone 1 denotes land having less than 1 in 1,000 annual probability of river or sea flooding (all land outside Zones 2 and 3).
 - Flood Zone 2 denotes land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding, and;
 - Flood Zone 3 denotes a risk of flooding from fluvial sources greater than 1 in 100 (1%).
- 4.7. It should be noted that Buildings A to F are located within Flood Zone 3, whilst Buildings G to I are located wholly within Flood Zone 1 as shown in the Figure below.

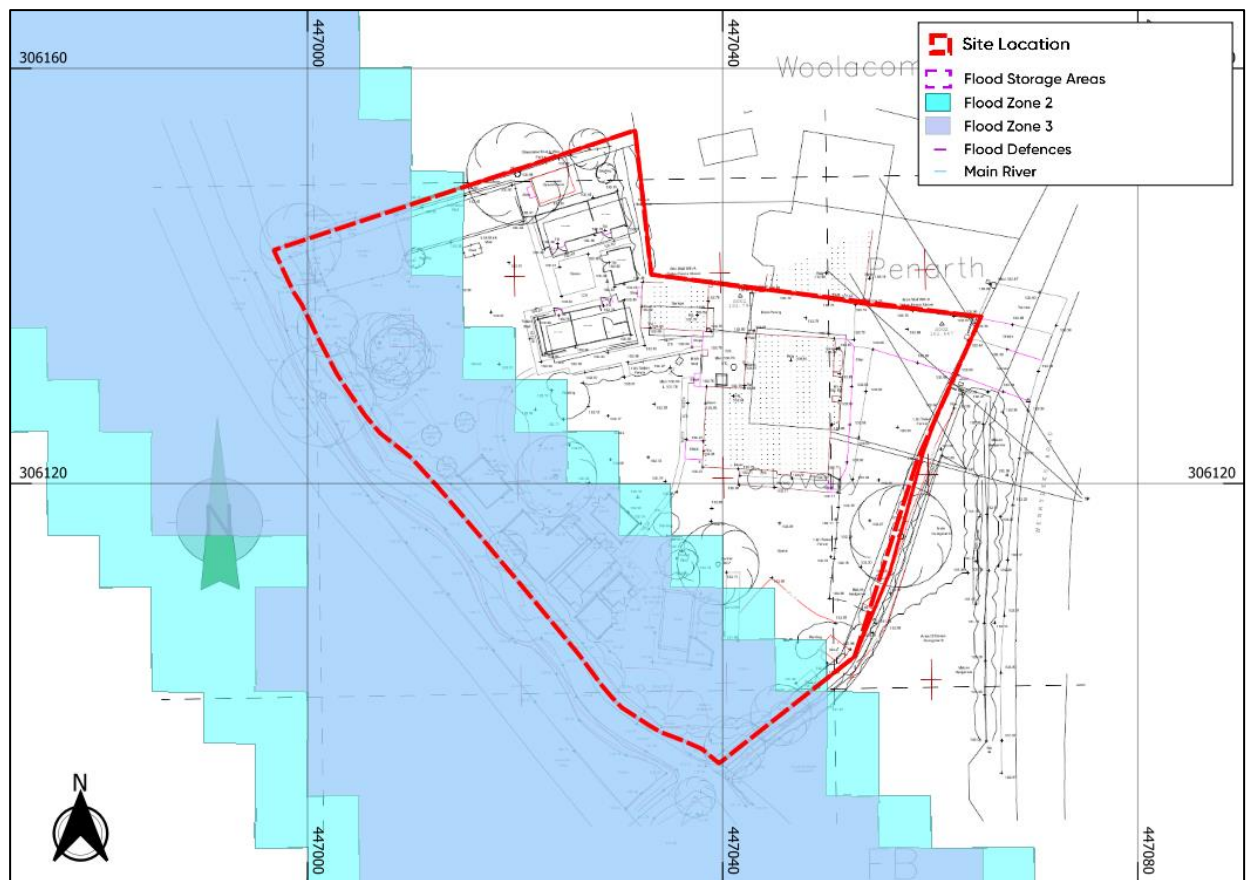


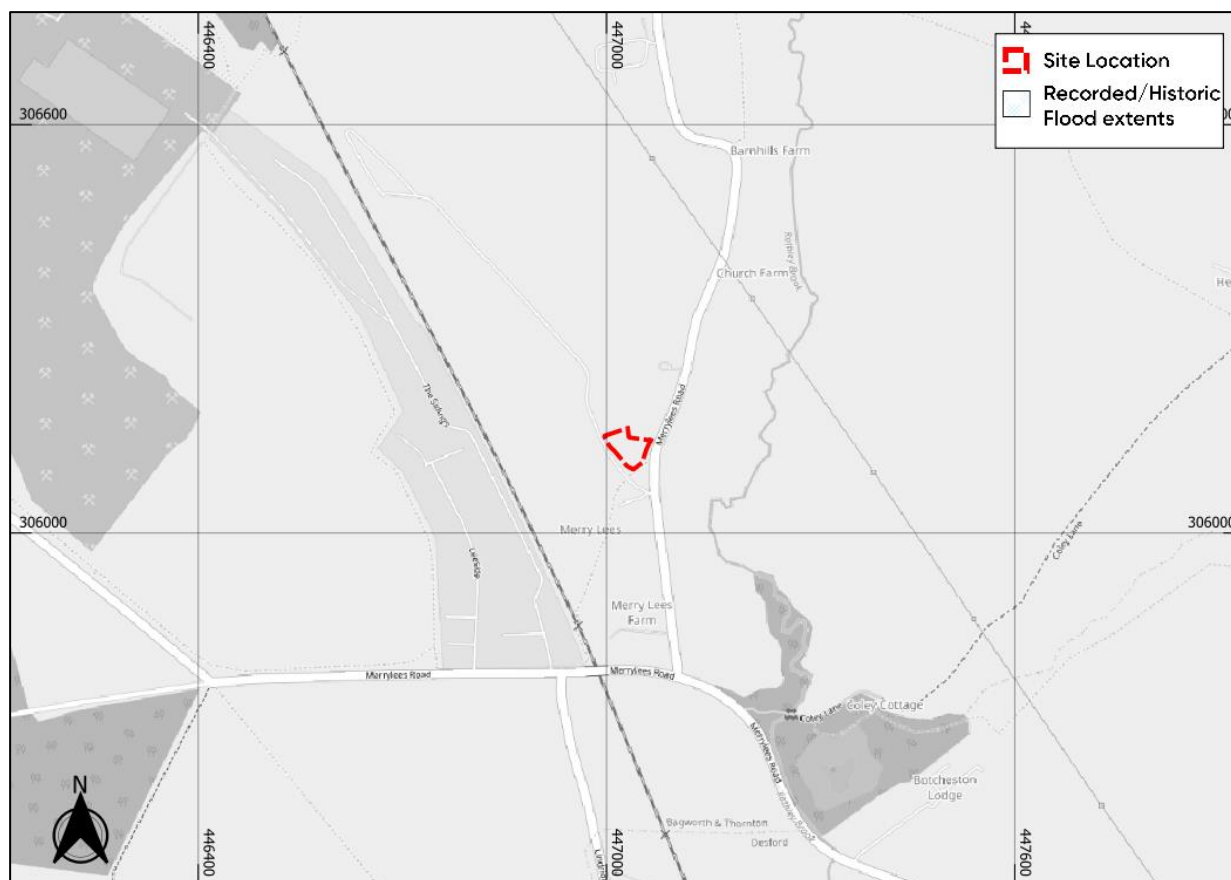
Figure 3: EA Flood Map for Planning (Base map provided by client)

SFRA Mapping

- 4.8. The Hinckley and Bosworth SFRA (2019) does include mapping which delineates the various flood zones within the borough. However, at the time of writing, the PDFs available for download, which include the relevant mapping, are broken and do not correctly display the data relating to flood zones throughout the study area.
- 4.9. The LPA has been contacted to request a repaired version of the mapping, however at the time of writing this request remains outstanding.

Historical Fluvial Flooding

- 4.10. The EA Recorded and Historical Flood Outlines show that the site lies outside the extents of any recorded flood events held by the EA (Figure 4).



RoFSW Mapping Analysis

- 4.11. The EA have stated that they do not hold detailed flood modelling data for the site location and that the flood zones within the vicinity have been constructed using national scale hydraulic modelling.
- 4.12. The ordinary watercourse adjacent to the site is represented in the EA's Risk of Flooding from Surface Water (RoFSW) modelling. Therefore, the RoFSW data has been analysed as an approximation for analysing the fluvial flood risk from the ordinary watercourse. The EA have stated that a hydraulic modelling exercise could be completed for the ordinary watercourse, however this is not considered to be commensurate with the size of the proposed development.
- 4.13. In the modelled 3.3%AEP event (Figure 5), the western half of the site is shown to be affected. Buildings G, H, and I are shown to remain unaffected in this event. A summary of the flood depths at each of the timber cabin locations in the modelled 3.3%AEP event and the maximum

flood depths based on the raised threshold levels (maximum flood depth minus the height of threshold above adjacent ground level (see Table 1)) are summarised in the table below;

Table 4: Modelled 3.3%AEP Flood Depths

Building Ref.	Flood Depths (mm)	Maximum Flood Depths (m) based on raised threshold level
Building A	150mm to 300mm	0.17m
Building B	150mm to 300mm	0.29m
Building C	150mm to 300mm	0.18m
Building D	300mm to 600mm	N/A (Dry)
Building E	300mm to 600mm	0.29m
Building F	300mm to 600mm	0.45m
Building G	N/A	N/A
Building H	N/A	N/A
Building I	N/A	N/A

- 4.14. The hazard rating attributed to the flood extent within the site boundary is shown to range from 'Low' to 'Significant'.

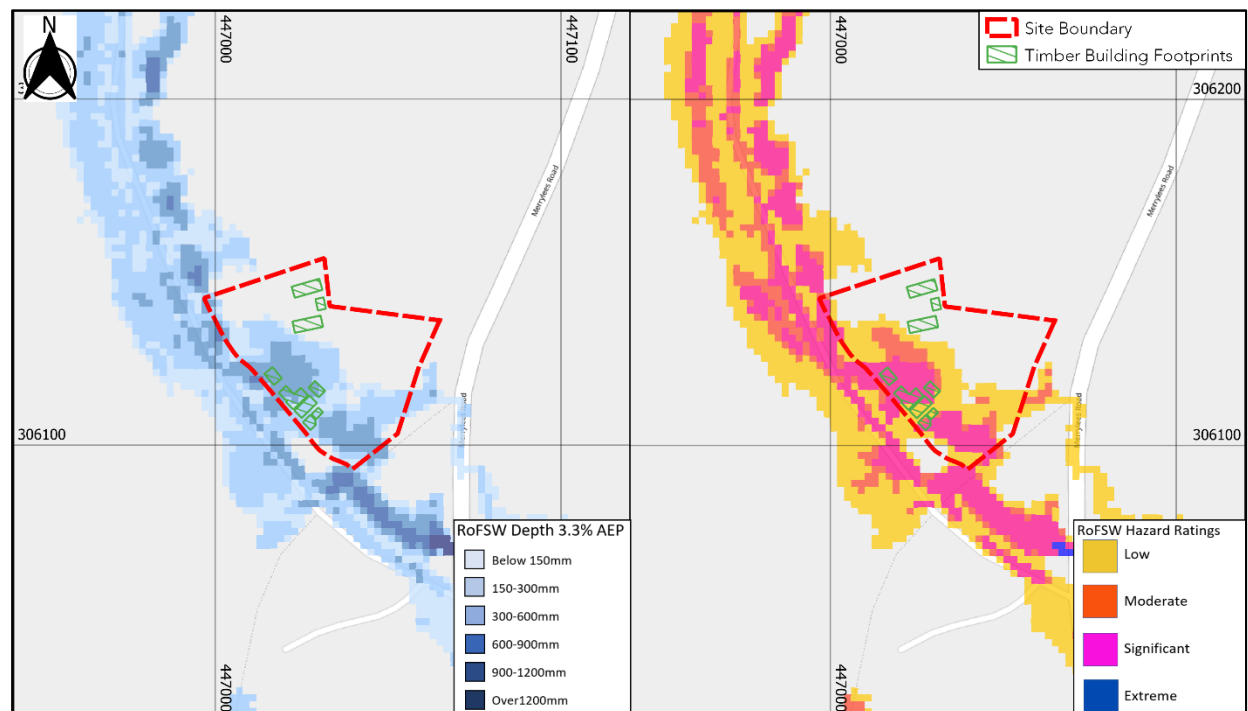


Figure 5: EA Surface Water Flood Risk Mapping 3.3% AEP (Source: Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors, © EA copyright and/or database right 2015)

- 4.15. In the modelled 1.0%AEP event (Figure 6), the western half of the site including Buildings A to F and Building I are shown to be affected. Buildings G and H are shown to remain unaffected in this event. A summary of the flood depths at each of the timber cabin locations in the modelled 1.0%AEP event and the maximum flood depths based on the raised threshold levels (maximum flood depth minus the height of threshold above adjacent ground level (see Table 1)) are summarised in the table below;

Table 5: Modelled 1.0%AEP Flood Depths

Building Ref.	Flood Depths (mm)	Maximum Flood Depths (m) based on raised threshold level
Building A	300mm to 600mm	0.47m
Building B	300mm to 600mm	0.59m
Building C	300mm to 600mm	0.48m
Building D	300mm to 600mm	N/A (Dry)
Building E	300mm to 600mm	0.29m
Building F	300mm to 600mm	0.45m
Building G	N/A	N/A
Building H	N/A	N/A
Building I	150mm to 300mm	0.01m

- 4.16. The hazard rating attributed to the flood extent within the site boundary is shown to range from 'Low' to 'Significant'.

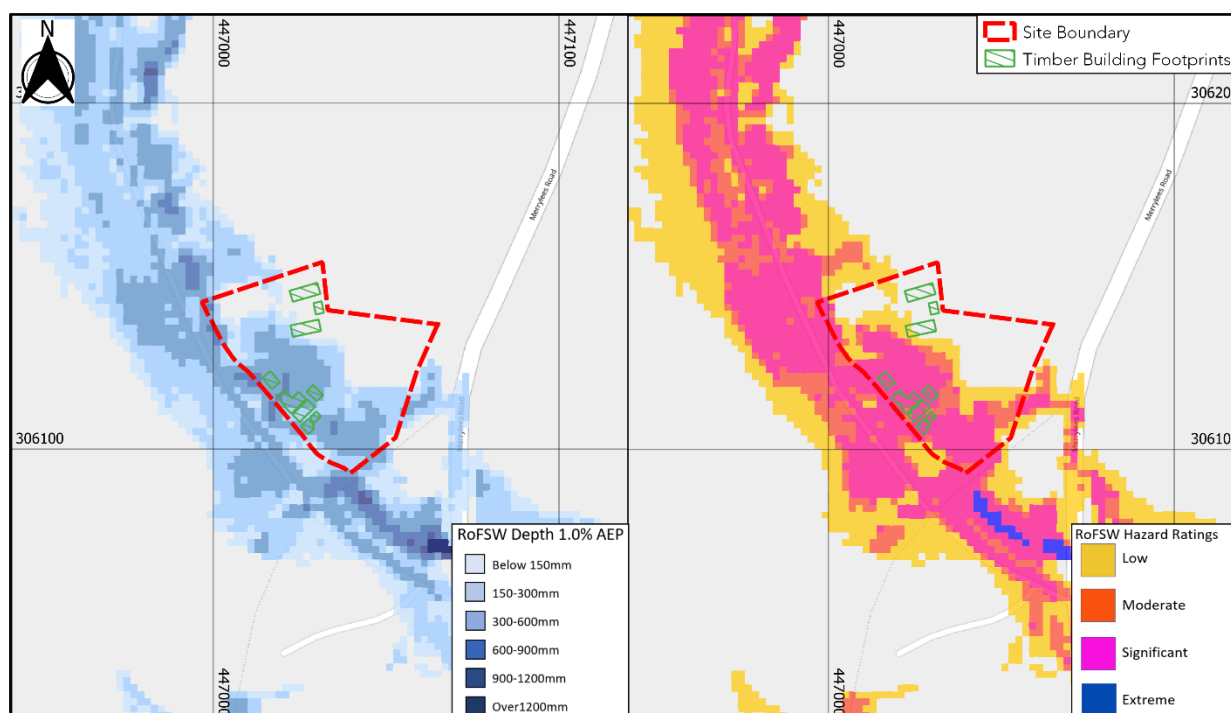


Figure 6: EA Surface Water Flood Risk Mapping 1.0% AEP (Source: Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors, © EA copyright and/or database right 2015)

- 4.17. In the modelled 0.1%AEP event (Figure 7), the majority of the site is shown to be affected. The location of the existing school building toward the entrance of the site, and the location of the carpark are shown to remain unaffected in this event. A summary of the flood depths at each of the timber cabin locations in the modelled 0.1%AEP event and the maximum flood depths based on the raised threshold levels (maximum flood depth minus the height of threshold above adjacent ground level (see Table 1)) are summarised in the table below;

Table 6: Modelled 0.1%AEP Flood Depths

Building Ref.	Flood Depths (mm)	Maximum Flood Depths (m) based on raised threshold level
Building A	600mm to 900mm	0.77m
Building B	600mm to 900mm	0.89m
Building C	600mm to 900mm	0.78m
Building D	600mm to 900mm	0.15m
Building E	600mm to 900mm	0.59m
Building F	600mm to 900mm	0.75m
Building G	300mm to 600mm	0.34m

Building Ref.	Flood Depths (mm)	Maximum Flood Depths (m) based on raised threshold level
Building H	300mm to 600mm	0.43m
Building I	300mm to 600mm	0.31m

- 4.18. The hazard rating attributed to the flood extent within the site boundary is shown to range from 'Low' to 'Extreme'. The arrangements relating to access/egress are covered in section 5 of this report.

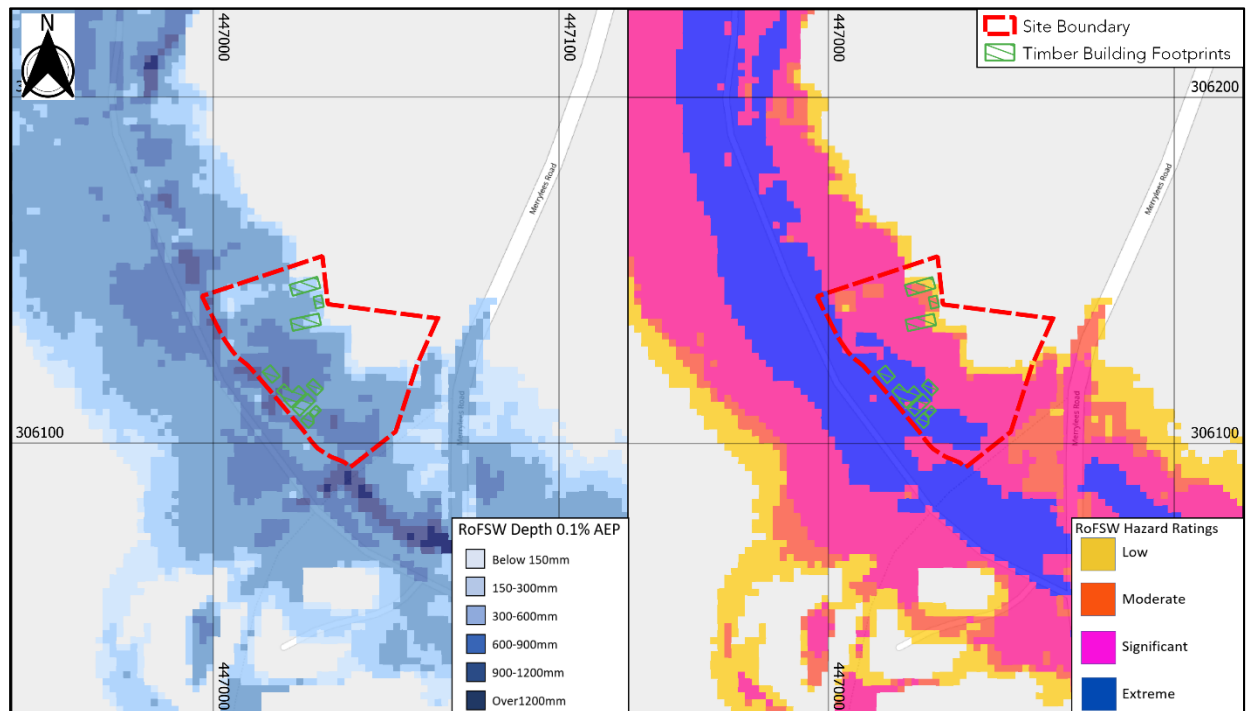


Figure 7: EA Surface Water Flood Risk Mapping 0.1% AEP (Source: Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors, © EA copyright and/or database right 2015)

Climate Change

- 4.19. The site is located within the Soar Management Catchment, which has updated central peak flow river allowances of: 14% for the 2020s, 16% for the 2050s, and 28% for the 2080s. As the development consist of 'More Vulnerable' uses, the peak flow allowance of 28% for the 2080s would be required for fluvial flood flows.
- 4.20. At the time of writing, no detailed modelling data is available from the EA and as such the climate change allowance events have not been analysed for the site. However, based on the small difference between the extent for Flood Zone 2 and Flood Zone 3, it is likely that the change in floodplain in the climate change allowance event would not be significantly more

extensive than that of the existing Flood Zones present within the vicinity of the proposed development.

Fluvial Flood Risk Summary

- 4.21. Based on the information above, the site is considered to be at a high risk of fluvial flooding. As such, appropriate mitigation measures are included in Section 5 of this report.

Tidal

- 4.22. Tidal flooding occurs when a high tide and high winds combine to elevate sea levels. An area behind coastal flood defences can still flood if waves overtop the defences or break through them. Tidal flooding can also occur a long way from the coast by raising river levels. Water may overtop the river bank or river defences when tide levels are high.
- 4.23. The site is a significant distance from any tidal source and above the anticipated extreme tidal levels, even when considering the impacts of climate change. The risk of flooding from tidal sources is low.

Canals

- 4.24. The Canal and River Trust (CRT) generally maintains canal levels using reservoirs, feeders, and boreholes and manages water levels by transferring it within the canal system.
- 4.25. Water in a canal is typically maintained at predetermined levels by control weirs. When rainfall or other water enters the canal, the water level rises and flows out over the weir. If the level continues rising it will reach the level of the storm weirs. The control weirs and storm weirs are normally designed to take the water that legally enters the canal under normal conditions. However, it is possible for unexpected water to enter the canal or for the weirs to become obstructed. In such instances the increased water levels could result in water overtopping the towpath and flowing onto the surrounding land.
- 4.26. Flooding can also occur where a canal is impounded above surrounding ground levels, and the retaining structure fails.
- 4.27. The nearest canal to the proposed development is located at a distance of greater than 1km. Therefore, the site is considered to be at a low risk of canal flooding.

Pluvial

- 4.28. Pluvial flooding can occur during prolonged or intense storm events when the infiltration potential of soils, or the capacity of drainage infrastructure is overwhelmed leading to the accumulation of surface water and the generation of overland flow routes.
- 4.29. Annual surface water flood risk is labelled by the EA as:
- 'High Risk'; >3.3% AEP (annual probability greater than 1 in 30).
 - 'Medium Risk'; 1.1% to 3.3% AEP (annual probability between 1 in 100 and 1 in 30).
 - 'Low Risk'; 0.1% to 1% AEP (annual probability between 1 in 1000 and 1 in 100).
 - 'Very Low Risk'; <0.1% AEP (annual probability less than 1 in 1000).
- 4.30. Examination of the EA's Flood Risk from Surface Water mapping for High Risk, Medium Risk, and Low Risk AEP flood events shows the site is at risk of flooding in each of the modelled surface water flood events (Figure 8).

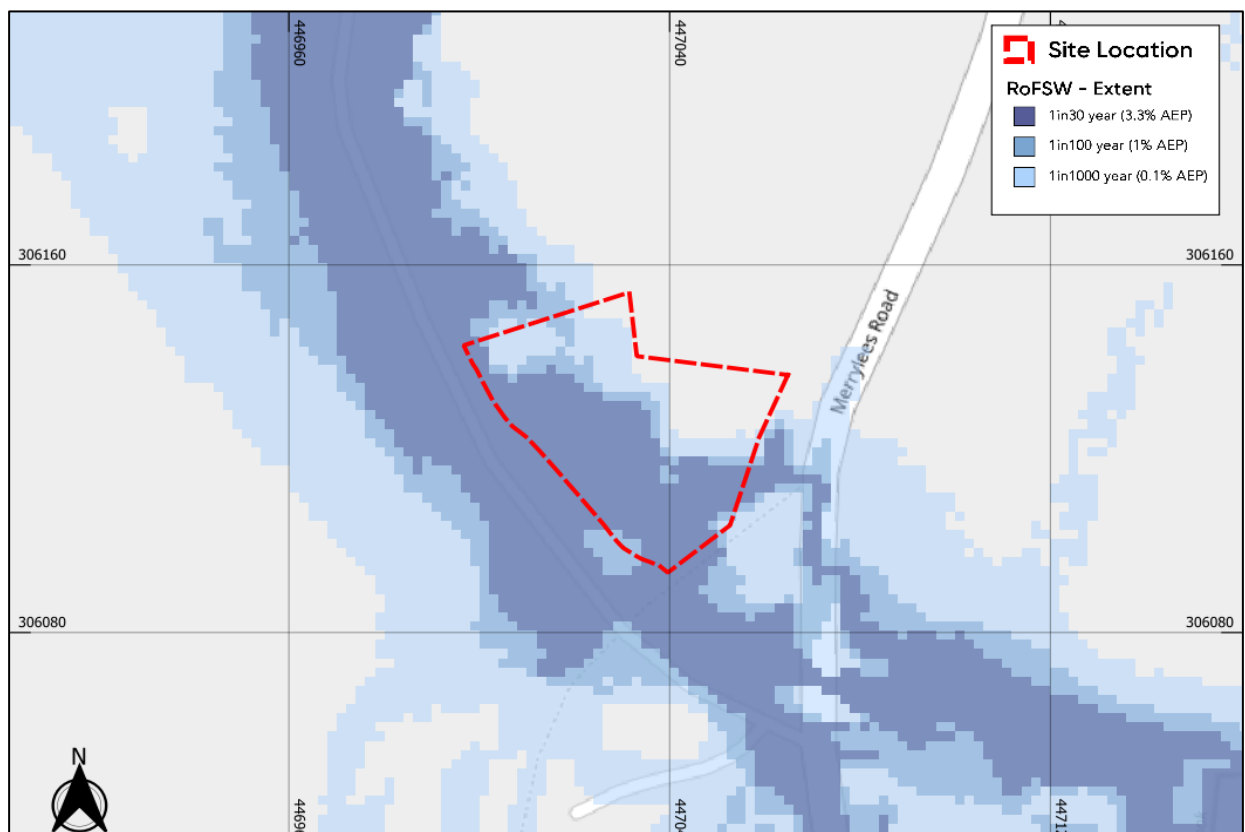


Figure 8: EA Surface Water Flood Risk Mapping (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

4.31. An analysis of the RoFSW mapping has been conducted in the fluvial flood risk section of this report. In summary the site is considered to be at a high risk of pluvial flooding. As such, appropriate mitigation measures are included in Section 5 of this report.

Reservoirs

- 4.32. Flooding can occur from large waterbodies or reservoirs if they are impounded above the surrounding ground levels or are used to retain floodwater. Although unlikely, reservoirs and large waterbodies could overtop or breach leading to rapid inundation of the downstream floodplain.
- 4.33. According to the EA's Flood Risk from Reservoirs mapping (Figure 9) the site is at risk of flooding in the event of a breach at the Thornton reservoir. The reservoir failure model is a 'dry day' scenario meaning that it could be caused by reservoir walls failing due to old age, accident, or because excess flood water has been added to the reservoir.

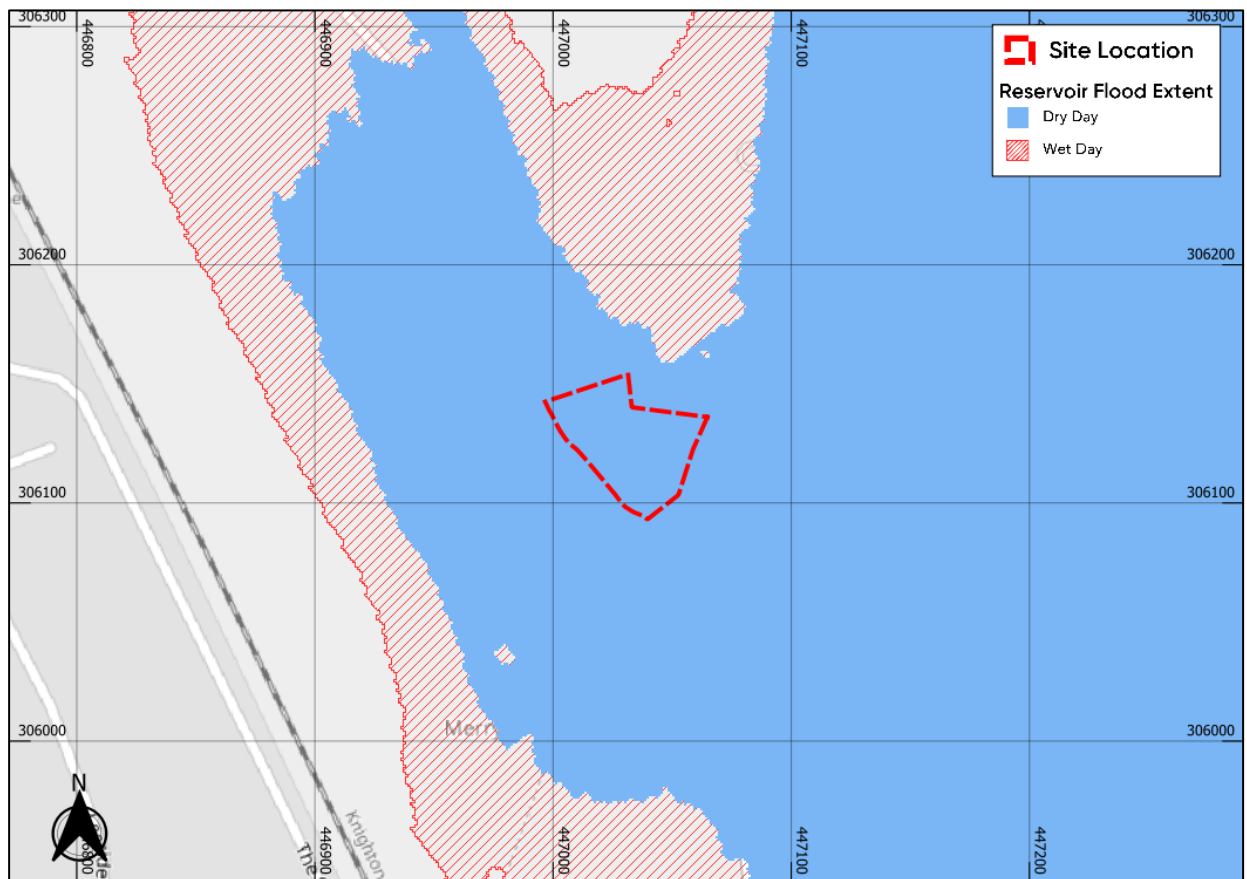


Figure 9: EA Reservoir Flood Risk Mapping (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA).
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- 4.34. All large reservoirs must be inspected and supervised by reservoir panel engineers as detailed by the Reservoirs Act 1975 in England and Wales. The EA are responsible to ensure that reservoirs are inspected regularly, and essential safety work carried out. As reservoirs are highly managed the maximum flood extent provided in the EA Risk of Flooding from Reservoirs mapping is considered a worst-case scenario. As reservoir flooding is unlikely and the modelled flood depths are based on the worst-case scenario, flooding from this source may be considered as a relatively low risk.

Groundwater

- 4.35. Groundwater flooding occurs in areas where underlying geology is permeable, and water can rise within the strata sufficiently to breach the surface.
- 4.36. The British Geological Survey's (BGS) mapping shows superficial deposits of River Terrace Deposits comprised of sand and gravel, and Alluvium comprised of clay, silt, sand, and gravel underlying the site. The bedrock underlying the site is Gunthorpe Member comprised of mudstone.
- 4.37. There are no historic BGS borehole records that include details of the groundwater or standing water level within the vicinity of the site (500m radius).
- 4.38. The SFRA presents the EA's Areas Susceptible to Groundwater Flooding mapping, which assesses the risk of groundwater flooding. The site is within a 1km cell of which is <25% is at risk of groundwater flooding (Figure 10).

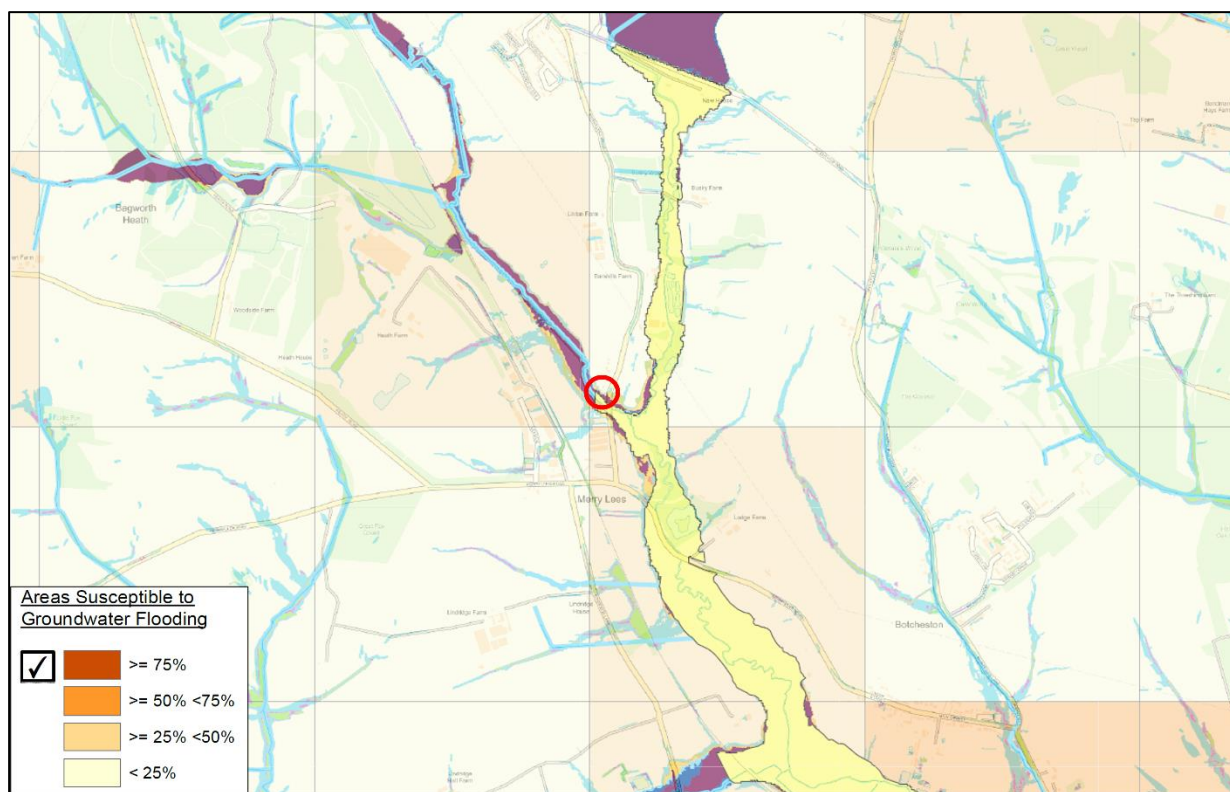


Figure 10: Areas Susceptible to Groundwater Flooding (SFRA, 2019) (Site Located in Red Circle)

- 4.39. The SFRA does not include any record of historical groundwater flooding events within the vicinity of the site.
- 4.40. Based on the information above, the proposed development is considered to be at a low risk of groundwater flooding.

Sewers

- 4.41. Foul or surface water sewers can be a cause of flooding if the drainage network becomes overwhelmed, either by blockage or due to local development beyond the designed capabilities of the drainage system.
- 4.42. The SFRA provides mapping of historical sewer flood incident records kept by the LLFA (Leicestershire County Council) since 2012. The records do not specify the source of flooding. However, the site lies outside the vicinity of any of the recorded incidents.
- 4.43. Local policy documentation does not identify the site as being in a Critical Drainage Area.
- 4.44. Based on the information above, and considering the rural nature of the site, it is understood that the proposed development is considered to be at a low risk of sewer flooding. It is

recommended that any new drainage associated with the scheme be retrofitted with non-return valves and that any new plumbing should be constructed in a closed cell design.

5. Flood Risk Mitigation

Fluvial

- 5.1. Based on the analysis within this report the proposed development is considered to be at a high risk of fluvial flooding. As such mitigation is recommended to manage this risk.
- 5.2. Given that this FRA has been written to support at retrospective planning application it is understood that it would be unfeasible to raise the FFLs of the existing premises.
- 5.3. Based on analysis of the RoFSW, used as an approximation of the fluvial flood risk to the site, in the modelled 1.0% AEP event, Buildings A to F, and Building I are shown to be affected by flooding. Flood depths at the location of the affected buildings, inclusive of the raised threshold levels of the timber cabins, could range up to 0.59m.
- 5.4. It is recommended that appropriate flood resilience and resistance measures should be retrofitted to the restaurant, in accordance with the CLG Report, *Improving the Flood Performance of New Buildings - Flood Resilient Construction* (2007). The DCLG report specifies that flood resistance measures can typically prevent ingress of floodwater to a depth of 600mm. Appropriate measures include:
 - *Raising wiring and power outlets at ground level.*
 - *Air brick covers to be installed (if applicable).*
 - *Flood doors provided at entrances/exits.*
 - *Provision of demountable flood barriers to be erected on receipt of an EA Flood Alert.*
- 5.5. Due to the existing flood risk to the site, the Clovelly House School have in place a full risk assessment (RAMS) relating to 'Clovelly House garden flooding'. The assessment is reviewed annually unless circumstances or guidance changes. The risk assessment includes a comprehensive list of the potential hazards/risk associated with flooding of the site, and the controls and further actions required relating to each hazard/risk. A full copy of the risk assessment can be found in Appendix B.
- 5.6. In summary, the risk assessment provided by the client includes control measures such as;

- Pre-preparing staff and pupils so that it is understood that there is a risk of flooding to the site;
- To inform taxi services if flooding occurs in order to evacuate the site;
- Cabins are to be used only during school times with no sleeping accommodation provided;
- Checking weather conditions regularly;
- Close the school for the day in the event of flooding;
- To encourage children and staff to remain on higher ground [within the school carpark] when the garden is flooded, and;
- Teach children about acceptable risk during flooding.

5.7. The list of controls is not exhaustive and is subject to annual review and updates.

5.8. As a further precaution and risk reduction, the managers of the site should sign up the 'Rothley Brook and Quorn Brook in Leicestershire' EA flood alert service. This service allows managers to register an address, which is at risk of flooding, along with contact details so that in the event of a flood being forecast, the managers will be sent an alert directly to their chosen method of contact.

5.9. Flood warnings/alerts can be enforced at any time of the day or night. Signing up for this service provides managers some notice before a flood event. The amount of time afforded before a flood occurs depends on the site-specific location (e.g. proximity to the source of flooding, topography of the surrounding area) and the flood mechanism (e.g. bank over topping versus a breach event). Flood alerts and warnings provide managers with time to take necessary action, e.g. communication of the risk of flooding to occupants/employees etc, evacuation of occupants offsite or to a safe level, removal of valuable items out of reach of flooding and the mounting of site-specific flood defences.

5.10. Upon receipt of a Flood Alert, the control measures stated in the sites risk assessment should be enacted upon.

Pluvial

5.11. This assessment has identified that, the site as a whole is considered to be at a high risk of surface water (pluvial) flooding. No further mitigation measures are recommended beyond those mentioned to manage the fluvial flood risk.

- 5.12. As a further precaution and risk reduction, staff could sign up to receive Met Office Severe Weather Warning. The Met Office issues weather warnings up to 5 days in advance, through the National Severe Weather Warning Service, when severe weather has the potential to bring impacts to the UK. It is also possible to stay up to date with weather warnings through the Met Office app (available on both android and apple), social media (twitter, Facebook) or email alerts.
- 5.13. During periods of bad weather, site users should monitor local weather reports and sign up for the Met Office UK weather warnings. Warnings can be monitored through an Apple/Android app, Twitter or directly via emails.
- 5.14. On receipt of a Met Office Severe Weather Warning the control measures stated in the sites risk assessment should be enacted upon.

Other Sources

- 5.15. Flood risk to the proposed development from tidal, canal, reservoir, groundwater, and sewer sources is considered to be low and as such, no further specific mitigation is recommended.

Increase to Flood Risk Elsewhere

- 5.16. Each of the timber cabin buildings have been constructed on raised stilts with voids beneath in order to allow for the free flow of floodwater beneath each of the structures. As such, in isolation, the proposed development should not increase flood risk elsewhere.

Safe Access/Egress

- 5.17. Safe access/egress arrangements for the timber cabins including preventative measures such as monitoring weather conditions and signing up to relevant EA flood and severe weather warning alerts are outlined in the site specific RAMS document. Upon receipt of an alert, the evacuation procedures stated in the sites risk assessment should be enacted upon.

6. Conclusions

- 6.1. This FRA has been undertaken with reference to the requirements of NPPF and Planning Practice Guidance with respect to the development at Clovelly, Merrylees Road, Thornton, Coalville, LE67 1AP. It has been written to support a retrospective planning application and has been prepared with due consideration to the nature of the proposed development to provide the appropriate level of detail.
- 6.2. An assessment of the risk of flooding from all sources has been undertaken and is summarised in the table below:

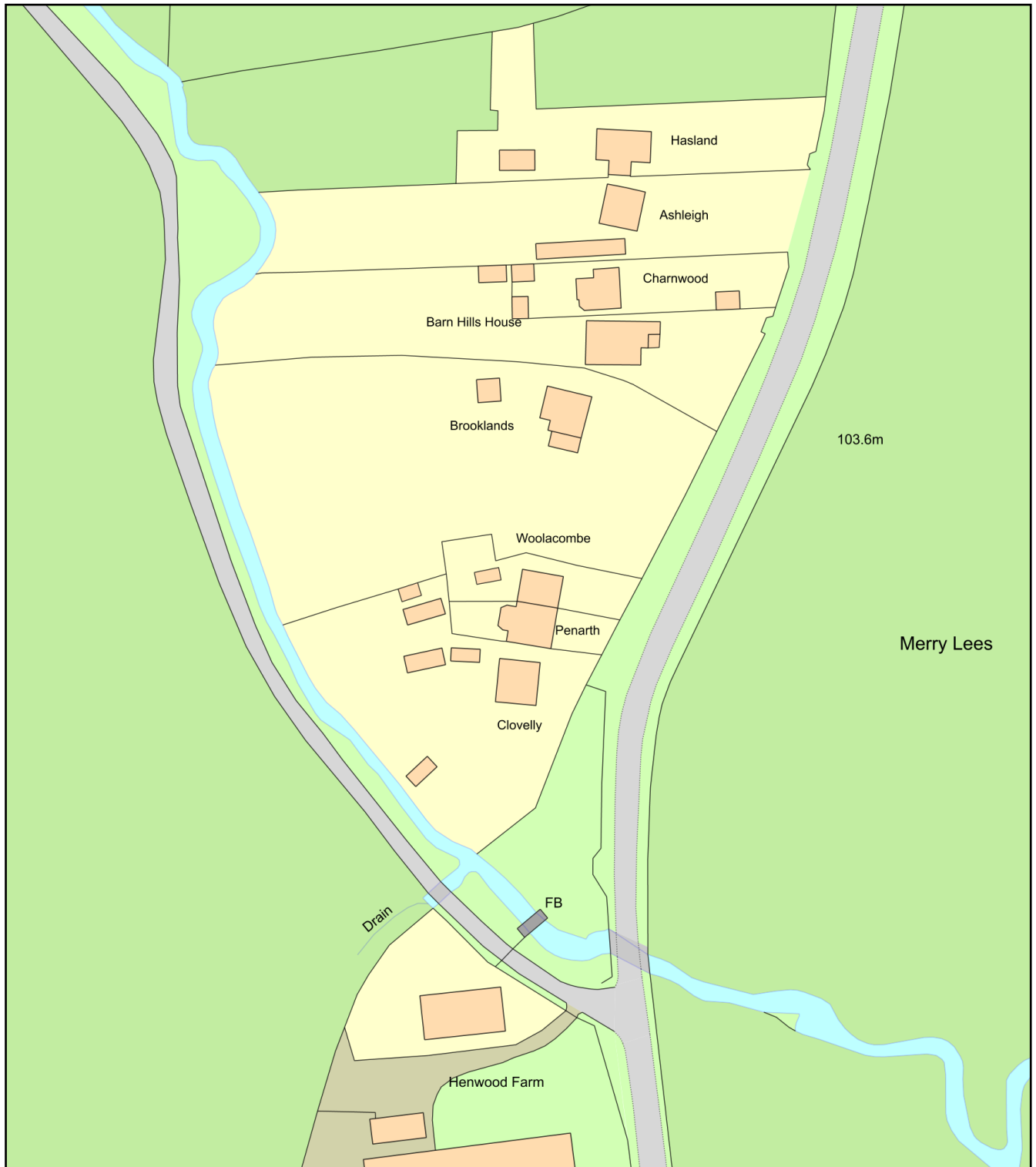
Source of Flooding	Flood Risk Summary
Fluvial	Based on the analysis within this report the proposed development is considered to be at a high risk of fluvial flooding. As such mitigation is recommended to manage this risk. Given that this FRA has been written to support at retrospective planning application it is understood that it would be unfeasible to raise the FFLs of the existing premises. Based on analysis of the RoFSW, used as an approximation of the fluvial flood risk to the site, in the modelled 1.0%AEP event, Buildings A to F, and Building I are shown to be affected by flooding. Flood depths at the location of the affected buildings, inclusive of the raised threshold levels of the timber cabins, could range up to 0.59m. It is recommended that appropriate flood resilience and resistance measures should be retrofitted to the restaurant, in accordance with the CLG Report, Improving the Flood Performance of New Buildings - Flood Resilient Construction (2007). The DCLG report specifies that flood resistance measures can typically prevent ingress of floodwater to a depth of 600mm. Due to the existing flood risk to the site, the Clovelly House School have in place a full risk assessment (RAMS) relating to 'Clovelly House garden flooding'. The assessment is reviewed annually unless circumstances or guidance changes. The risk assessment includes a comprehensive list of the potential hazards/risk associated with flooding of the site, and the controls and further actions required relating to each hazard/risk. A full copy of the risk assessment can be found in Appendix B.

Pluvial	This assessment has identified that, the site as a whole is considered to be at a high risk of surface water (pluvial) flooding. No further mitigation measures are recommended beyond those mentioned to manage the fluvial flood risk. Though, as a further precaution and risk reduction, staff could sign up to receive Met Office Severe Weather Warning.
Tidal Reservoirs Groundwater Sewers Canals	The site is considered to be at low risk from other sources. As such, no further specific mitigation is recommended.

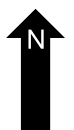
- 6.3. The EA have stated that they do not hold detailed flood modelling data for the site location and that the flood zones within the vicinity have been constructed using national scale hydraulic modelling.
- 6.4. The ordinary watercourse adjacent to the site is represented in the EA's Risk of Flooding from Surface Water (RoFSW) modelling. Therefore, the RoFSW data has been analysed as an approximation for analysing the fluvial flood risk from the ordinary watercourse. The EA have stated that a hydraulic modelling exercise could be completed for the ordinary watercourse, however this is not considered to be commensurate with the size of the proposed development.
- 6.5. Safe access/egress arrangements for the timber cabins including preventative measures such as monitoring weather conditions and signing up to relevant EA flood and severe weather warning alerts are outlined in the site specific RAMS document. Upon receipt of an alert, the evacuation procedures stated in the sites risk assessment should be enacted upon.
- 6.6. Each of the timber cabin buildings have been constructed on raised stilts with voids beneath in order to allow for the free flow of floodwater beneath each of the structures. As such, in isolation, the proposed development should not increase flood risk elsewhere.
- 6.7. This Flood Risk Assessment should be submitted as part of the planning application to satisfy the requirements under NPPF.

Appendix A - Development Proposals and Topographic Survey

Clovelly Site Plan



0 50
Metres



Plan Produced for: Hinckley & Bosworth CC

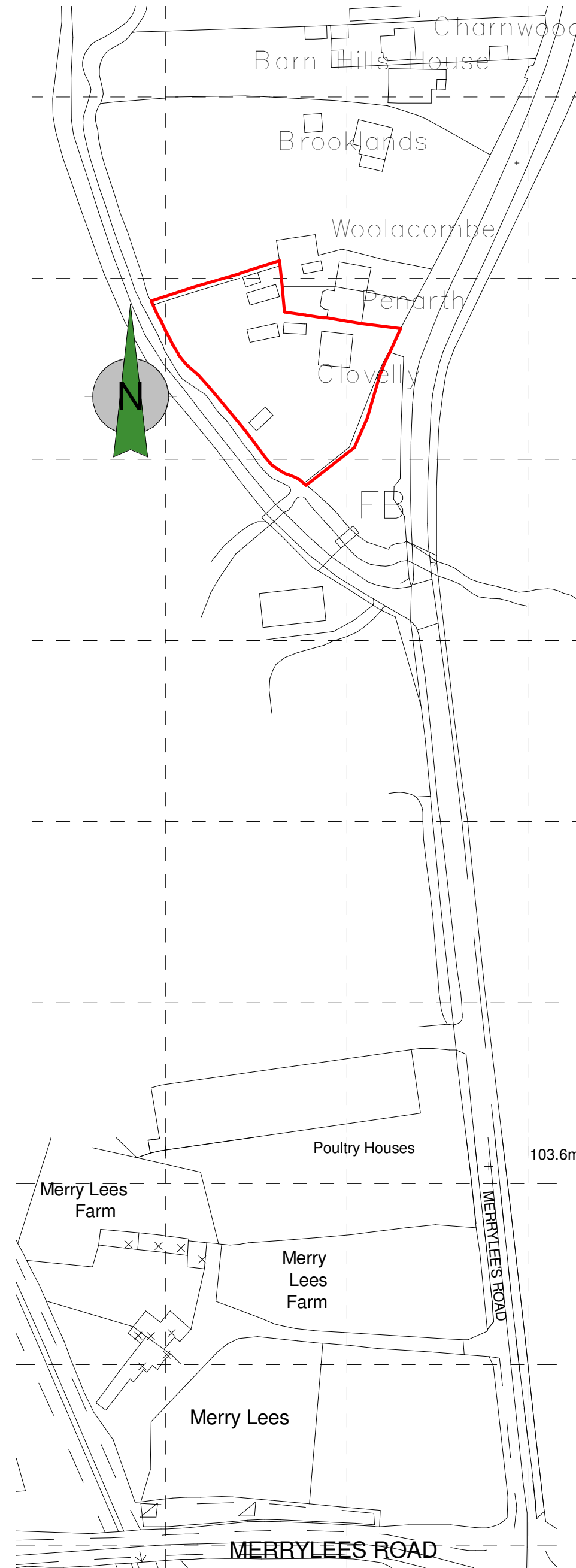
Date Produced: 02 Aug 2023

Plan Reference Number: TQRQM23214171540460

Scale: 1:1250 @ A4



Block Plan 1:500



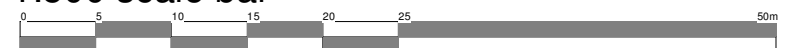
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Site Location Plan 1:1250

1:1250 scale bar



1:500 scale bar

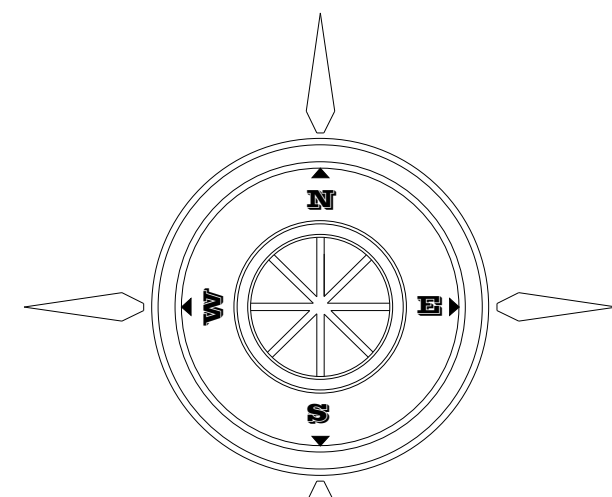


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Client	Clovelly School		
Project Title	Retrospective Planning Clovelly School Merrylees		
Drawing Title	Site Plans		
Scale	1:500 & 1:1250	Date	Jan 22
Author	LJW	Checked by	-
Job No.	21/153	Drawing No.	01
Status	PLANNING		

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The survey has been related to national grid, established using an active commercial RTK network

A true O.S coordinate has been established on one point using OSGB36 and OSGM02. The survey has then been related to another OSGB36 point to create a true O.S bearing (north)

No scale factor has been applied to the survey meaning only 1 point on the survey is a true O.S coordinate.

Station	Eastings	Northings	Levels	Description
8001	447041.972	306137.728	102.794	Pk Nail
8002	447061.598	306134.670	102.647	Pk Nail

Legend

	rock face		conifer screen
	service cover		pit
	bank line		irregular manhole
	fence		speedbump
	cutting or bank		tide
	drain channel		fence
	gate		fence
	hedge		edge of surface
	wall		Station Name and Level
	vegetation line		ground level
	tree		

SC	gate rock	BD	bulb
ME	manhole	ER	earth road
VP	vent pipe	GP	gate post
PE	reading eye	ELEC	electronic
ST	stop sign	FP	fence post
WD	wall end	FL	flag post
TV	television	SH	shrub
WV	water valve	SP	back inlet gully
GS	gate	TR	threshold
FT	fire hydrant	C	gully
WV	water valve	BN	bone hole
IC	inspection cover	IS	iron hole
LB	letter box	PS	flag post
RS	road sign	LH	lamp hole
ES	exit sign	POST	post
LP	lamp post	PS	post
EP	electric pole	TL	traffic light
TP	telegraph post	ST	stop sign



Rev	Date	Description

This plan has been surveyed to the scale shown

Caution should be exercised when enlargements are made

Some services may not have been surveyed due to parked vehicles or other obstructions

All dimensions have been measured or estimated from ground level, unless stated otherwise.

Tree species shown should be treated with caution and expert identification is advised.

Drainage Information has been taken from a surface inspection and should be treated as approximate only.

All critical dimensions should be confirmed onsite prior to the commencement of any works.

PROJECT

Clovelly House School
Merrylees LE67 1AP

TOPOGRAPHICAL SURVEY

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Drawn by	A.T.C	Scale:-	1:200(A0)
		Cad Scale	1:1

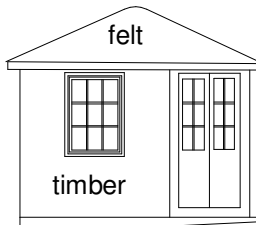
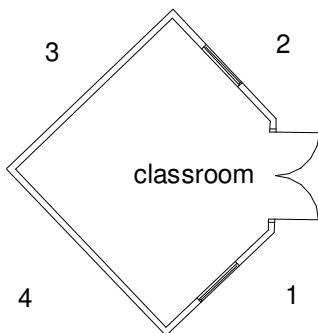
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38 Forest View
Overseal
Swadlincote
Derbyshire
DE12 6GZ

Telephone: 01283 331788

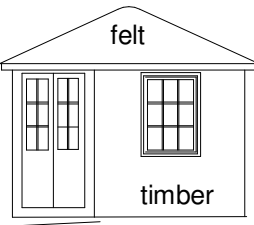
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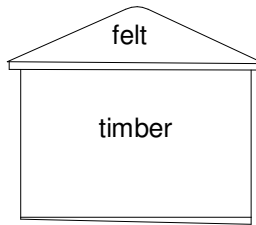
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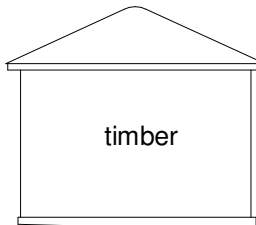
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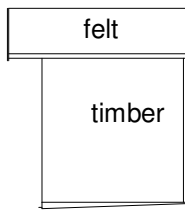
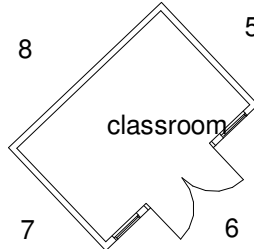


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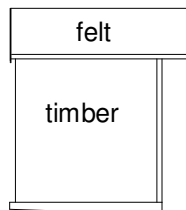
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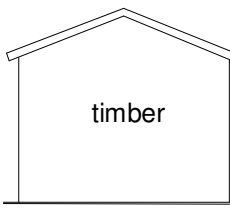
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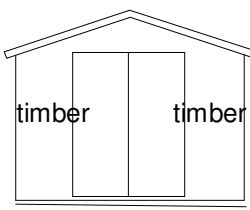
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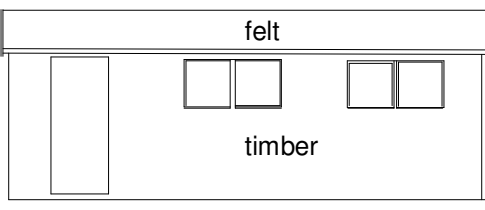
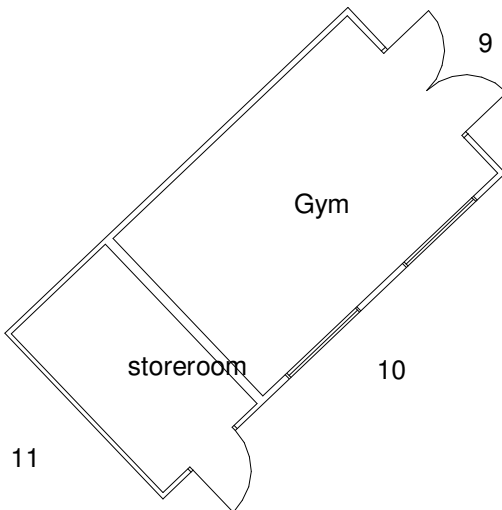


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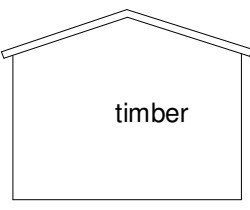


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Building C

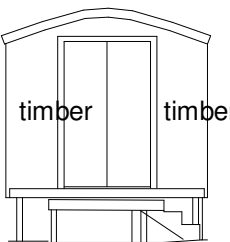
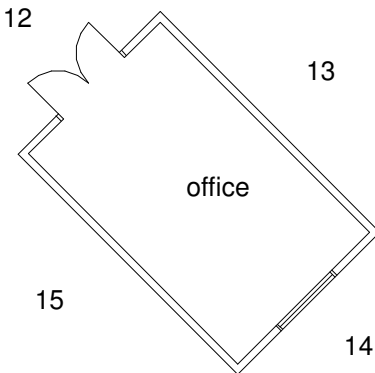


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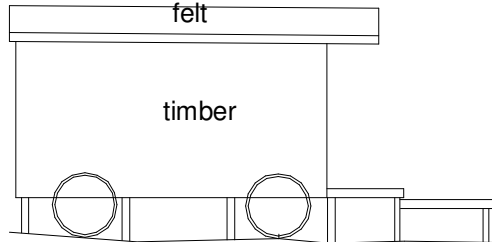


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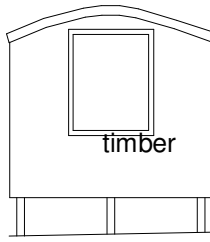
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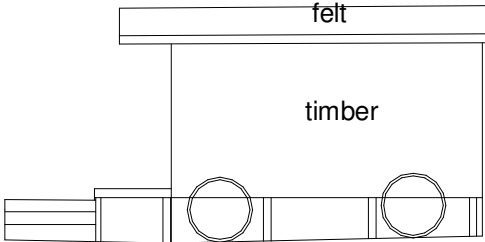
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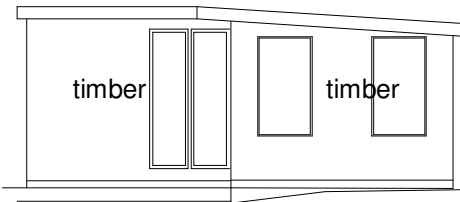
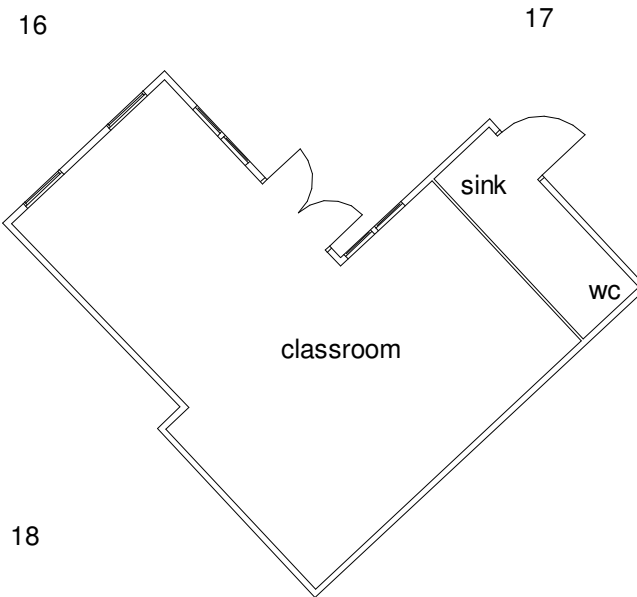


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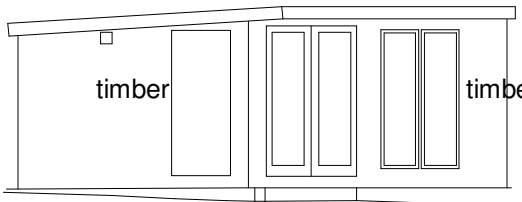
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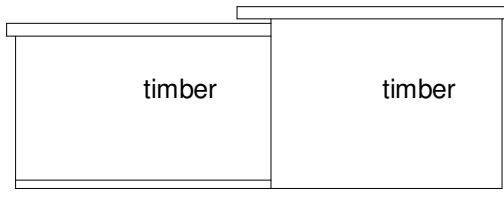


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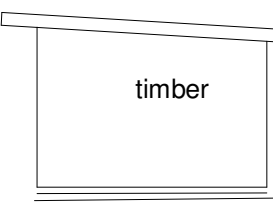
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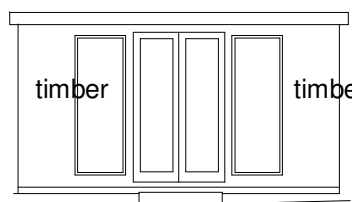
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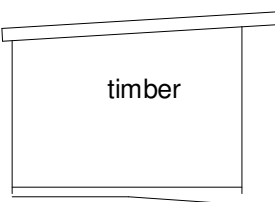
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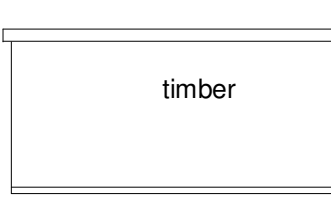
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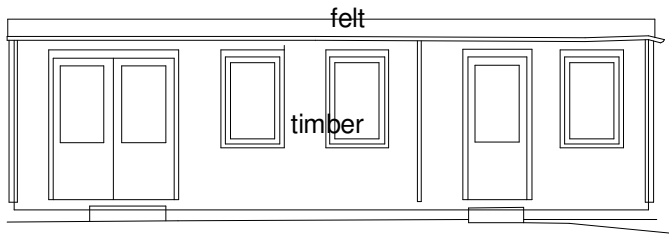
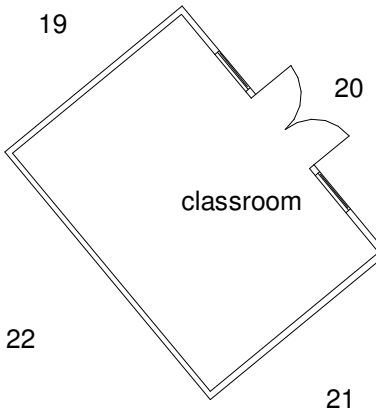


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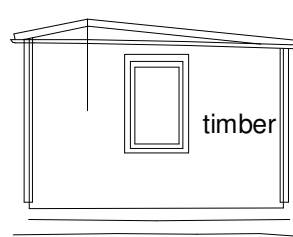


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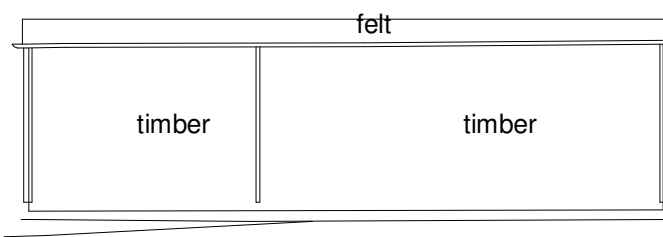
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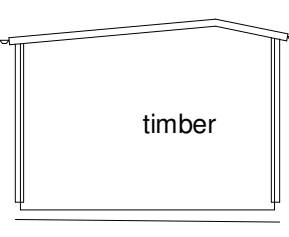
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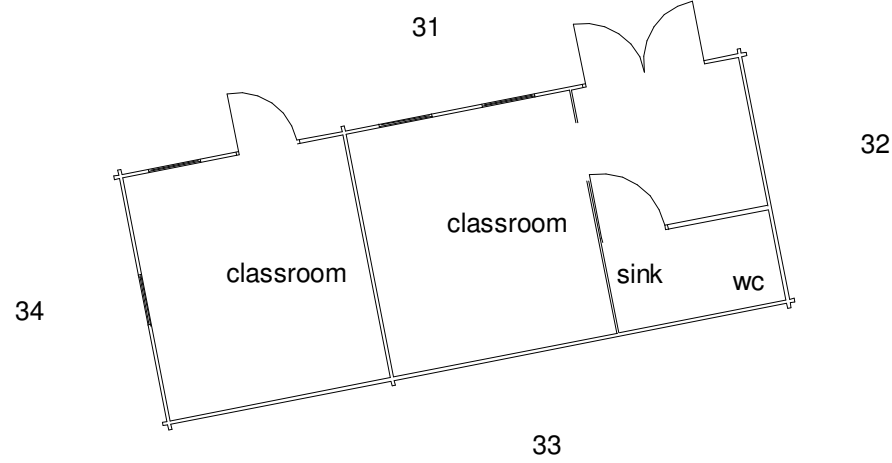


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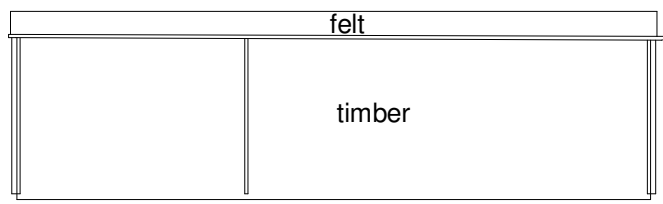
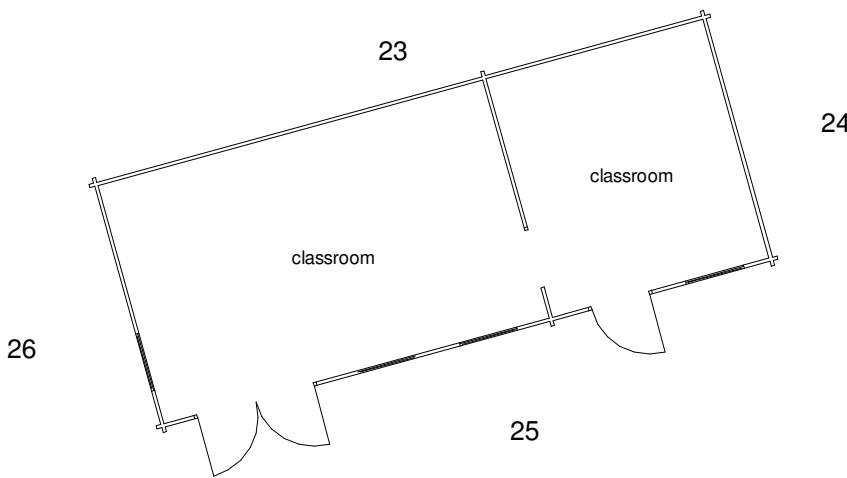


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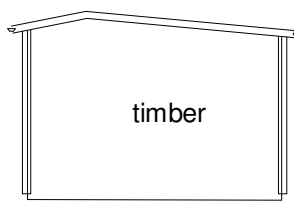
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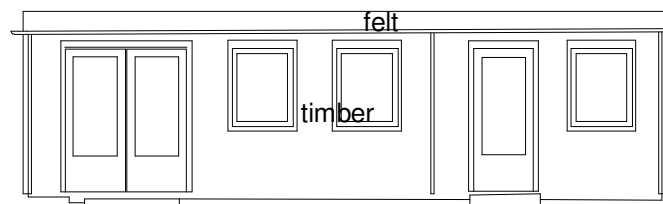
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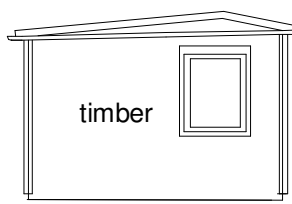
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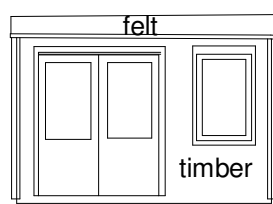
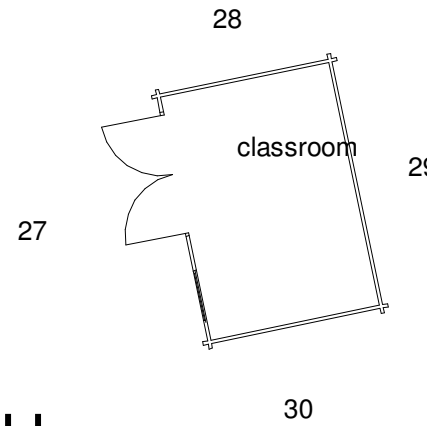


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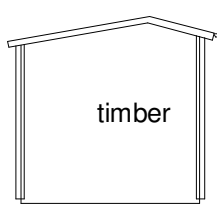


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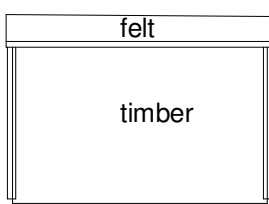
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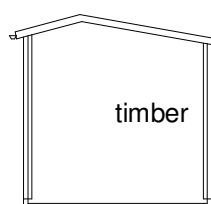
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Client	Clovelly School		
Project Title	Retrospective Planning Clovelly School Merrylees		
Drawing Title	Building Plans and Eles		
Scale	1:100	Date	Jan 22
Author	Other	Checked by	LJW
Job No.	21/153	Drawing No.	02
Status	PLANNING		

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Appendix B - Flood Risk RAMS Provided by Client

Risk Assessment

Brythan House	Clovelly House School	Assessor(s)	J. COLLIGHAN	Date:	September 2023
				Review Date:	Annually, unless circumstances or guidance changes
Assessment of risk for:	Clovelly House garden flooding			Reference No:	

HAZARD/ RISK	THOSE AT RISK	POTENTIAL OUTCOME	WHAT IS THE RISK, WHAT ARE THE CONTROLS, IS FURTHER ACTION REQUIRED?	RISK RATING			ADDITIONAL MANAGEMENT PLAN	ACTION REQ		Date Completed
								By whom?	By when?	
List hazards here.	List groups of people at risk from hazards identified.		List existing risks and controls here or note where information can be found. If needed, list further actions proposed where it is reasonably practicable to do more.	Likelihood	Score	Rating	List the actions proposed where it is reasonably practicable to do more			
Risk of flooding during heavy rains	Adults, children, visitors, contractors	6	RISKS: - The stream may flood its banks - flood water from the south side may rise up in the garden - water may run down the garden from the north side - children and staff may become anxious - flood water may enter buildings and cause damage - flood water may go across the public road may disrupt traffic CONTROLS: - To make all staff and children aware if there is a risk of flooding - for all to use the board walk to stay out of the water - to make alternative plans to move staff and children if necessary - to build up the bank around the stream to minimize flooding - to inform taxis if flooding occurs - No-one sleeps in the cabin overnight - Cabins are used during school times only - Flood water rushes down the stream, but not in the grounds. Flood water in the grounds rises and falls gradually	5	30	Medium		All staff	Ongoing	
Risk of harm to buildings	Adults, young people	6	RISKS: - flood water enters the buildings and causes damage - flood water damages the buildings - buildings become inaccessible during floods CONTROLS: - Buildings in flood zones are temporary timber cabins - Buildings are raised off the ground and are connected by a board-walk	3	30	Medium		All staff	Ongoing	

			- Important documents are stored in upper shelves and drawers to prevent flood damage							
Risk of anxiety among staff and children	Young people, staff, contractors, visitors	6	RISKS: - Pupils are anxious about flood conditions which impacts on their ability to function - Staff are anxious about flooding which spreads to children - Education is disrupted due to anxieties around flooding CONTROLS: - Look at weather conditions beforehand to facilitate planning - prepare staff and children in advance if flooding is expected - have robust plans in place for alternative education or trips out in the event of flooding - close the school for the day in the event of flooding - have a practice evacuation run if flooding is expected - keep parents and families informed	5	30	Medium		Staff- all to be aware and to keep children on supervision	Ongoing, especially during rainy season	
Risk of harm from the stream/ground s Flooding	Young person, staff, visitors	10	RISKS: - people are hampered in their movement around the grounds during floods - someone falls into the stream during flooding and loses footing, gets swept downstream CONTROLS: - To ensure children and staff are aware of the risks when the stream is in flood - To prepare lower sited classrooms for flood in advance - To encourage children and staff to remain on higher ground when the garden is flooded - to teach children about acceptable risk during floods	3	30	Medium	STAFF: - To teach children about the realities of flood and flood management - To have a contingency plan for moving round the grounds during flooding	All staff to be vigilant and monitor weather conditions	Ongoing	
Risk of harm from Stream and ditch	Adults, young people, visitors, contractors	7	RISKS: - to be aware of the risk of stagnant water in the ditch - to be aware of trip hazards when children are working/playing in the stream CONTROLS: - to educate children about the dangers of streams and ditches - to educate children to respect, yet enjoy the features of the stream and ditch - to be wary of the dangers of the stream	3	21	Medium	STAFF: Staff to supervise children when outside	All staff to teach respect for the water features	Ongoing	

			and rushing water after floods - staff members to supervise children when playing in or working around the stream - staff to take weather conditions into account around planning activities involving the stream							
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Potential Outcome (Severity)				
10	8	5	3	1
Fatality	Severe injury	Lost time injury	Minor injury	No injury

Likelihood given precautions in place				
10	8	5	2	1
Certain / imminent	Very likely	Likely	Unlikely	Remote

Risk Rating Table		
Low	Medium	High
1 - 19	20 - 49	50 - 100

Comments (include description of task/activity/process/machine being assessed.)				
This risk assessment will be reviewed termly. If necessary it will be reviewed following an incident or display of new behaviour.				
Assessors - Name	Assessors - Signature	Date	Review date	Reason for Review
Jennifer Collighan	<i>Jennifer Collighan</i>			

I confirm that the significant findings of the assessments in this file have been communicated to me and the control measures explained. I understand the legal requirements for me to comply with the control measures and to co-operate with my employer in the interest of health and safety. I agree to abide with the controls in place and to report any defects or problems with the systems.

Employee Name	Employee Signature	Works Number	Date

Action Plan

Hazard	Action Required	Target Date	Assessors Name	Date Completed