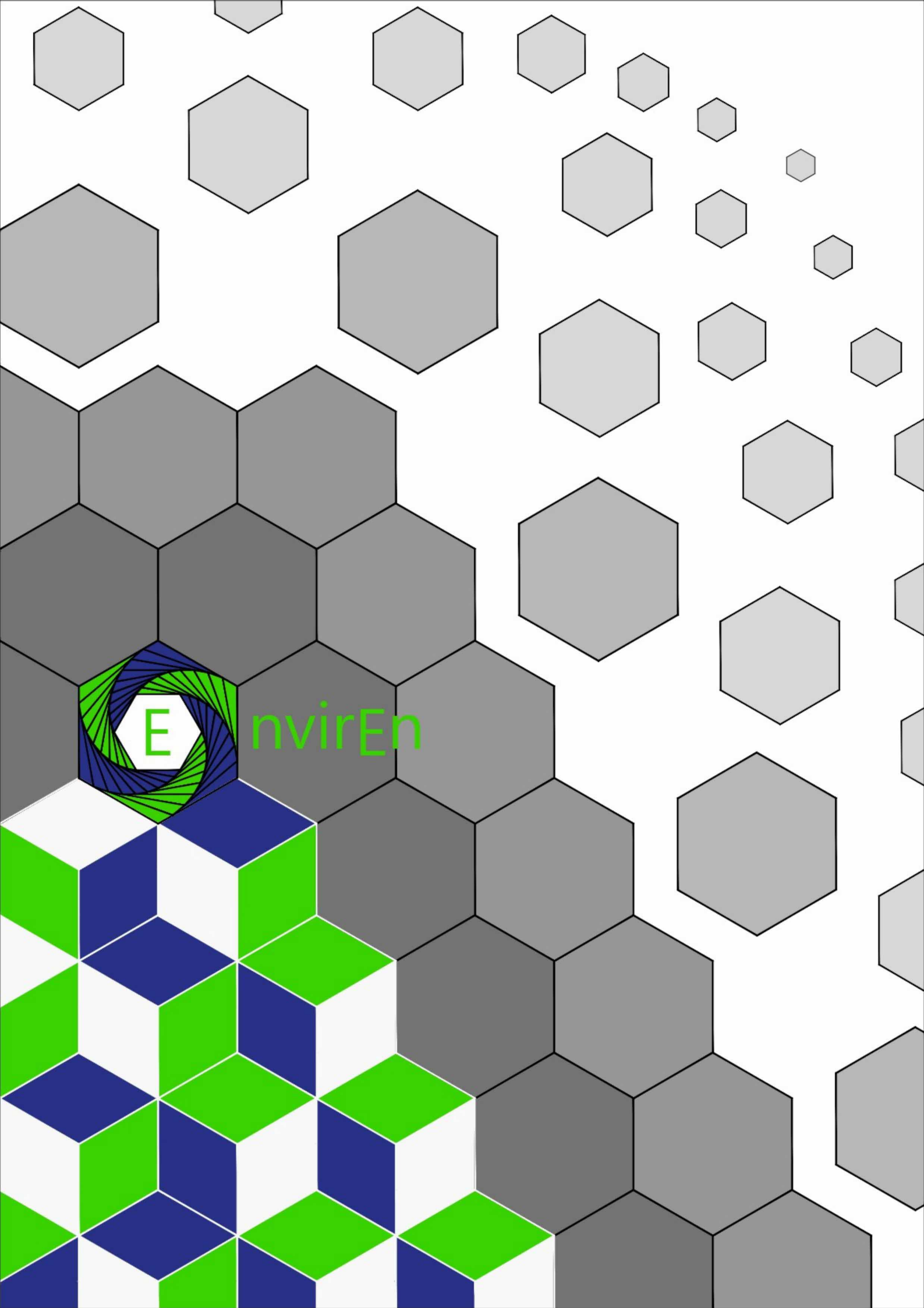
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Flood Risk Assessment Addendum (FRAA)

Bluegates Farm, Berkeley

[redacted]

29/11/2023

Document Ref: 2300270-FRAA

Document Control

Produced by: [redacted]

Job Name: Bluegates Farm, Berkeley

Report Title: Flood Risk Assessment Addendum (FRAA)

Status: Revised

Date: 29 November 2023

DOCUMENT PRODUCTION RECORD

AUTHOR:	[redacted]
ISSUED TO:	[redacted]
REPORT REFENCE:	2300270-FRAA
DOCUMENT STATUS:	Revised

DOCUMENT REVISION RECORD

Issue	Date	Revision Details
1.1	17/11/2023	First Issue
1.2	29/11/2023	Issued for submission.

Confidentiality and Reproduction Restrictions

Executive Summary

This report has been compiled for the support of the creation of a 3 unit residential building at Bluegates Farm in Berkeley (grid reference: ST 66408 98057). This report has been specifically compiled to address comments made by the Environment Agency in relation to the previous prior notification application S.23/1208/P3Q on the flood risk of the development, in a readable and digestible format. More detailed background on the site can be found in the [redacted] Flood Risk Assessment (Report ref: Bluegates and Woodlands Farms, Clapton, Berkeley) and the Ridge and Partners LLP Flood Action Plan (Report ref: 5013832 -RDG-XX-XX-DOC-C-9950). This report considers the flood risk potential and vulnerability classification of the development and then discusses suitable flood protection measures.

This report has been compiled with due regard to the requirements of the National Planning Policy Framework (NPPF) [September 2023] and associated Technical Guidance (March 2012), the Planning Policy Guidance for Flood Risk (PPG) [Updated August 2022][1] as well as CIRIA C753 The SuDS Manual, Government guidance[2] and the Stroud District Council Level 2 Strategic Flood Risk Assessment (SFRA)[3]. In the preparation of this report attention was also paid to the West of England Sustainable Drainage Developer Guide[4].

The site is shown to be situated entirely within Flood Zone 3 and at high risk of thalassic/fluvial flooding, therefore, a deeper analysis of flood risk is required and flood protection measures and protective mechanisms will need to be implemented to ensure that the proposed development is kept safe for the entirety of its design life. Suitable mitigation measures should be incorporated where an extant flood risk is identified to ensure that the development is kept safe. No comment has been made in this report regarding the surface water drainage strategy for the development; however, comment has been made on additional measures that should be implemented to ensure that any drainage system is not overburdened by flood water.

[1] Department for Levelling Up, Housing and Communities and Ministry of Housing Communities and Local Government – Flood Risk and Coastal Change.
[2] EA – Flood Map for Planning and Long Term Flood Risk Mapping.
[3] JBA Consulting – Stroud District Council – Stroud Level 2 Strategic Flood Risk Assessment (November 2019)
[4] West of England Sustainable Drainage Developer Guide Section 1 (March 2015 – Issue Version 1)

Contents

1. Introduction

1.1. This report has been prepared to support the conversion of an agricultural building to 3 dwellings at Bluegates Farm near Berkeley. This Flood Risk Assessment Addendum (FRAA) is compliant with the requirements of the National Planning Policy Framework (NPPF) and the associated Technical Guidance (March 2012) along with other regional and national guidance.

Sources of Information

1.2. This report has been based on the following sources of information (this list in not exhaustive and comprises the major sources of background documentation):

a) Topographical Survey Information
b) Environment Agency Surface Water Flood Maps
c) Environment Agency Fluvial and Thalassic Flood Maps
d) Environment Agency Reservoir Flood Maps
e) Local Authority Groundwater Flood Maps
f) West of England Sustainable Drainage Developer Guide
g) Gloucestershire County Council Local Flood Risk Management Strategy
h) British Geological Survey (BGS) Drift & Geology Maps
i) Stroud District Council Level 2 Strategic Flood Risk Assessment
j) Severn River Basin District Flood Risk Management Plan 2021 to 2027
k) FEH Catchment Boundary Information

1.3. The existing site currently houses an agricultural building situated within Bluegates Farm. The topographical survey (see Appendix A) and background mapping demonstrates that a drainage ditch/culvert is currently present immediately to the west of the building for conversion which, along with other drainage channels, takes runoff from a moderate sized catchment to the east extending to Whitcliff Park. Background mapping also demonstrates that the development is located 1.5km to the east of the Severn Estuary. The effect these features shall have on the development is discussed in more detail in Section 2. Access is present from the south off Hill Road.

Table 1.1 – Site Specific Information

Category	Site Specific Information
Site Name	Bluegates Farm
Site Location	Clapton, Berkeley
Overall Site Area	0.040 hectares
NPPF Vulnerability	More vulnerable – Dwelling houses
Design Return Period	100 years for More vulnerable development (2123)
Climate Change Allowance	45% (Upper end) for peak rainfall intensity 26% (Central) for peak river flow
Flood Zone (Rivers and Sea)	Flood Zone 2 (FZ2) – Defended
	Flood Zone 3b (FZ3b) – Undefended
Risk of Surface Water Flooding	Very low
Risk of Reservoir Flooding	None identified
Risk of Groundwater Flooding	<25% Susceptible to groundwater flooding
Risk of Sewer Flooding	None identified
Critical Drainage Status	Not understood to be in a CDA
High risk / Medium risk	Low risk / Very low risk

2. Background Information

Site Location

2.1. The site is located northeast of the village of Bevington on the northern side of Hill Road. Bevington is located 2.4 kilometres southwest of Berkeley and 8.2 kilometres north of Thornbury. The exact location can be found in Figure 2.1.

Figure 2.1 – Site Location

Previous FRA Findings

2.2. The previous flood risk assessment outlines all the relevant government policy and background information, which has not been repeated in this report for the benefit of the reader, this information can be reviewed within the Katherine Colby Flood Risk Assessment (Bluegates and Woodlands Farms, Clapton, Berkeley).

2.3. The site sits within Flood Zone 3b (functional floodplain) in an undefended scenario; however, Flood Zone 2 (high probability) in a defended scenario, the latter being defined as land that has been assessed as having between a 1 in 100 to 1 in 1,000 annual probability of river flooding (0.1-1%) or land having between a 1 in 200 to 1 in 1,000 annual probability of thalassic flooding (0.1-0.5%), when considering climate change. The proposed development falls within the More vulnerable vulnerability classification. As the development comprises the change of use of an existing structure the Sequential and Exception Test need not be applied for the site; however, the development must be kept safe for the entirety of its design life by following the requirements of the site specific flood risk assessment.

2.4. EA Product 4 information has been provided in the previous FRA. The most recent EA Product 4 data has been obtained as part of the EnvirEn assessment and the relevant flood levels, presented alongside site specific levels, are presented in Table 2.1.

Table 2.1 – Flood Level Information	
Category	Site Specific Information
0.5% Probability Flood Level	0.000mAOD (no flooding)
0.5% Probability Flood Depth	0.000m (no flooding)
0.5% Probability Flood Level (+2118 Climate Change allowance)	10.470mAOD
0.5% Probability Flood Depth (+2118 Climate Change allowance)	3.040m (Based on a local ground level of 7.430mAOD)
0.5% Probability Flood Level (+2068 Climate Change allowance)	7.770mAOD
0.5% Probability Flood Depth (+2068 Climate Change allowance)	0.310m (Based on a local ground level of 7.460mAOD)
Closest Flood Defence Reference	Understood to be the Severn Embankment (EA 27)
Proposed Slab Level	7.750mAOD

2.5. Onsite flooding can be demonstrated to occur in both the defended and undefended scenario; however, flooding shall only occur in the defended scenario when the Severn embankment overtops. As discussed in the [redacted] Flood risk assessment, it is proposed that flood mitigation shall take place through:

1. Locating all sleeping accommodation above the design flood level.
2. Raising the finish floor level such that is 300mm above surrounding ground level.
3. Implementing resilience measures in areas to likely be effected by flood water, such that the property is largely recoverable after a flood.
4. Placing non-return valves in foul water sewers.
5. Preparing a Flood Evacuation and Management plan for the development.
6. Subscribing to the EA flood warning service.

2.6. The onset of flooding could be quick in the event of the breaching of flood defences. As such suitable flood mitigation measures should be implemented to protect the dwellings from flooding. A surface water drainage strategy has been compiled which complies with industry recommendations, this has been based on a betterment over existing brownfield runoff flows. Attenuation shall take the form of porous gravel. Flood resilience measures have been suggested including tiled floors and raised electrical sockets. As the building footprint shall remain the same, no compensatory storage is suggested.

Previous Flood Action Plan Findings

2.7. The Flood Action Plan suggests turning off appliances if evacuation is suitable. The proposed evacuation route is towards Ham, which is located at a higher level than the development. It is recommended that refuge is taken at the Public House in Ham.

2.8. The assessment outlines safe re-entry methods and recommends consultation with the emergency services. The flood action plan recommends that the plan is updated every 3 years and outlines the Flood Warning Codes appropriate at the time of drafting.

3. Environment Agency Response and Information Request

3.1. The Environment Agency (EA) provided comments on the previously completed FRA and Flood Action Plan on 13th October 2023 (Comment ref: SV/2023/111951/01-L01) attached to prior notification application S.23/1208/P3Q and these are summarised below. The comments that still require attention are tabulated within Table 2.2.

Comments (Received 13th October 2023)

3.2. The EA objected to the development on the basis of flood risk. The EA identified that the completed FRA did not accommodate the latest climate change allowances, owing to the date of issue of the report. An updated climate change assessment had not been provided in the Flood Action Plan.

3.3. The EA supports the raising of sleeping accommodation to the first floor as a means of mitigating flood risk. The EA identifies that the incorrect barn has been identified within the existing FRA. The EA requests clarification on proposed finished floor levels. The EA requests greater certainty that users of the development are able to access a safe refuge at a suitable level, in the instance where evacuation is not possible. The EA requests greater scrutiny on access routes, requesting an appropriate assessment in line with DEFRA Report: Hazard risk (FD2320) – 'Danger to People for Combinations of Depth & Velocity'.

3.4. The EA requests that a Foul Drainage Assessment is completed owing to the use of a Package Treatment Plant (PTP). The EA identifies that Freeboard is not adequately considered and requests that an additional freeboard allowance is included when considering floor levels.

Table 3.1 – EA Information Requirements

Ref	Heading	Description
ENV1	Climate Change	A further assessment should be undertaken accommodating the latest climate change allowances.
ENV2	Freeboard	It must be demonstrated how freeboard has been accommodated into the design and justification will be required on the freeboard allowance used.
ENV3	Confirmation on Proposed Floor Levels	Confirmation is required on the proposed finished floor levels for the development.
ENV4	FD2320 Hazard Assessment	An appropriate assessment of the hazard of flood depths/velocities should be submitted to the Environment Agency.
ENV5	Foul Drainage Assessment	A Foul Drainage Assessment should be completed owing to the use of a Package Treatment Plant (PTP).

4. Revisions to Accommodate EA Requirements

ENV1 – Climate Change

4.1. As presented in Table 2.1 up to date EA Product 4 information has been obtained and more accurate design flood levels have been presented. Further discussion of finished floor levels for the upper floor are presented in the Freeboard section (EN2); however, it is recommended that the ground floor level is set at 300mm above surrounding ground level (7.750mAOD), as per the recommendations of the [redacted] report, to exclude all reasonably expected water depths from less onerous events. It is, however, recommended that storm doors are accommodated in the design to exclude any potential flows, up to a maximum design height of 0.600m (see Appendix C).

ENV2 & ENV3 – Freeboard Allowance and Finished Floor Levels

4.2. With due consideration to the Environment Agency/DEFRA report "Accounting for residual uncertainty: updating the freeboard guide" (Report – SC120014), the freeboard allowance for the development can be determined. The report discusses how to consider freeboard allowances and the type and certainty of information required to determine the appropriate freeboard depth. A review of the associated criteria for risk scoring has been undertaken as outlined in SC120014, which is presented in Table 4.1.

Table 4.1 – Flood Risk Scoring

Consideration	Applicability	Score	Reasons
How appropriate is the flood risk analysis?	Yes	1	Uses the most up to date EA flood modelling data with appropriate climate change allowances.
How well is the flood plain modelled?	Yes	1	Good local representation of floodplain pathways using recent EA LIDAR data.
How well has the potential for defence failure been modelled?	Yes	2	EA modelling includes a simulation of the overtopping of flood defences.
What is the confidence in the hydrology?	Yes	1	EA Flood model data used.
How good is the coastal/estuarine/ tidal boundary	Yes	1	Robust embankment and flood defence network present. The defences are monitored and regulated.
How have fluvial threats been represented?	Yes	1	The EA model considers both fluvial and thalassic flooding.
How have coastal threats been represented?	Yes	1	The EA model considers both fluvial and thalassic flooding.
How has surface water runoff been represented?	Yes	1	Information has been based on the detailed EA Risk of Flooding from Surface Water (RoFSW) map.

How have groundwater hazards been represented?	Yes	1	Groundwater flood risk extents are well documented within the JBA Stage 2 Strategic Flood Risk Assessment.
What is the strength of evidence?	Yes	1	Based on comprehensive EA modelling of the largest example of a coastal plain estuary in the UK.

4.3. One can then determine the confidence rating of the design based on Table 3.3 of SC120014 which is based on the 2 topics of least confidence based on Table 4.1 of this report.

Table 3.3 Scoring matrix to derive confidence rating

		Worst topic 1 score				
		10	5	3	2	1
Worst topic 2 score	10	1 star			2 star	3 star
	5	1 star		2 star	3 star	4 star
	3	1 star	2 star	3 star	4 star	
	2	2 star	3 star	4 star		5 star
	1	3 star	4 star		5 star	

Figure 4.1 – Confidence Scoring Matrix

4.4. The conclusion is that a 5 star rating should be adopted for design purposes. On this basis, as per Table 3.4 of the Report SC120014, the minimum freeboard allowance should be either 5% of the design flood depth or 300mm, whichever is the greater. The design flood depth based on EA supplied data is 3.040m, therefore, 5% of this depth would be 0.152m. Given this a freeboard allowance of 300mm should be adopted.

Confidence rating	Confidence description	Proportion of design flood depth [1]	Minimum depth (mm)
1 star	Very unlikely to be locally reliable	40%	900
2 star	Unlikely to be locally reliable	30%	750
3 star	Likely to be locally reliable	20%	600
4 star	Very likely to be locally reliable	10%	450
5 star	Highly likely to be locally reliable	5%	300

Figure 4.2 – Required Freeboard Depth.

4.5. Based on this analysis the finished floor level of the first floor should at a minimum level of 10.770mAOD.

ENV4 – FD2320 Hazard Assessment

4.6. With due consideration to the Environment Agency/DEFRA report "Flood Risk Assessment Guidance for New Development Phase 2 Framework and Guidance for Assessing and Managing Flood Risk for New Development" (R&D Technical Report FD2320/TR2), it can be shown that the development, without the incorporation of mitigation measures, would fall into the category "Danger for all".

4.7. The Product 4 information supplied to [redacted] Hydrologists does not contain velocity information for fluvial/thalassic flows, it would be more appropriate to request

Product 8 information, which contains details of maximum flood velocity. Owing to the development pursuing a containment strategy a flood hazard assessment has not been undertaken for persons ascending to the upper floors within the 0.5% return period event with an allowance for the 2118 climate change scenario. It is however recommended that flood doors are incorporated as part of the proposals such that fast inundation flood waters are excluded to allow occupants to ascend to the upper floors. Such doors have a design flood water depth of 0.600m, and thus the walls of the property should also be designed to withstand this depth of flood water. A suitably qualified structural engineer's input will be required on this matter.

4.8. A flood hazard assessment has been undertaken for the 0.5% return period event with a 2068 climate change allowance. Velocities for this assessment have been based on surface water flood mapping and it has been conservatively assumed that the maximum velocity to effect the site shall be 2.0m/s.

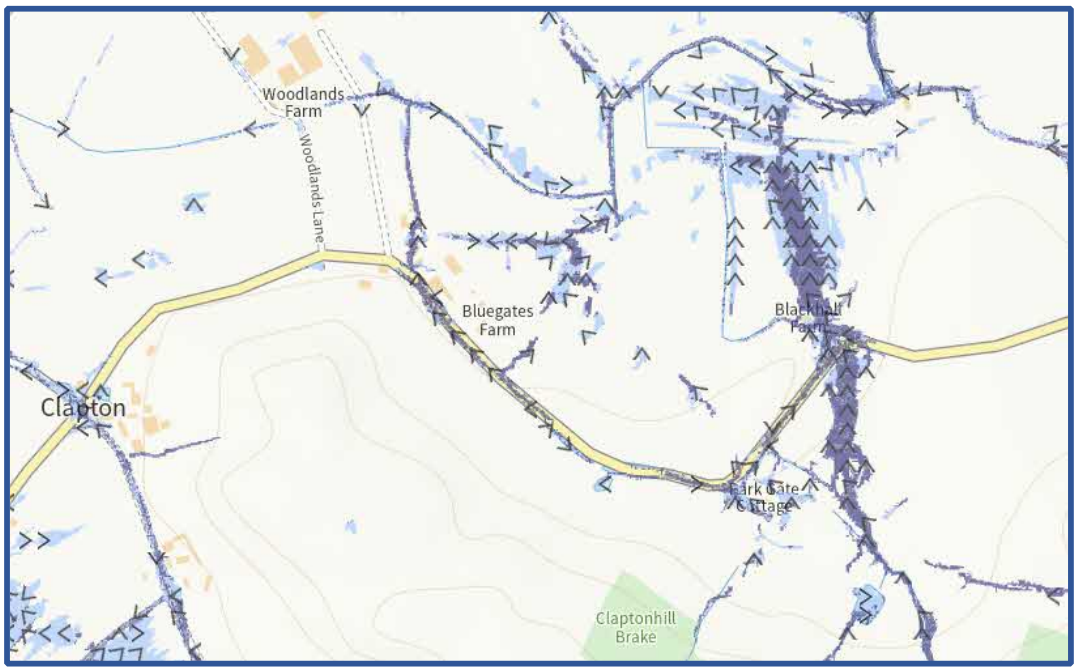

Figure 4.3 – Surface Water Flooding Velocity Data.

4.9. As per Table 13.1 of FD2320/TR2 such flood depths would pose a Danger for some/Danger for most, depending on velocities. Therefore, in such circumstances, a containment strategy should also be pursued (see Figure 4.4).

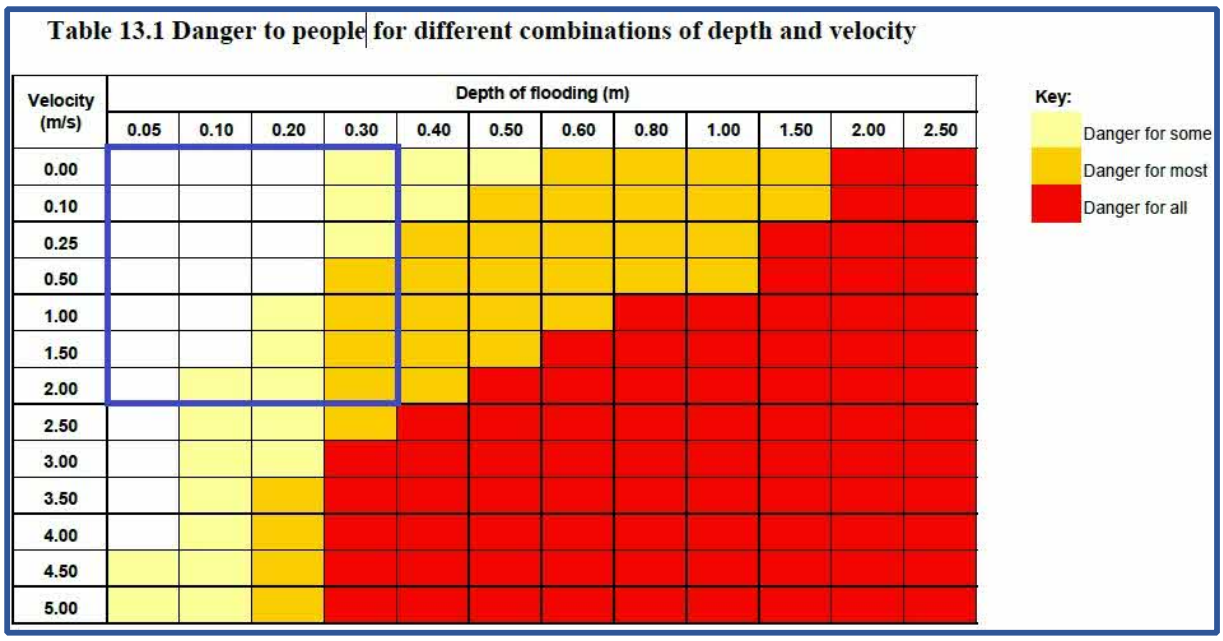

Figure 4.4 – Flood Hazard Category

ENV5 – Foul Drainage Assessment Form

4.10. A copy of the Foul Drainage Assessment Form can be found in Appendix D. Owing to the location of the development, being within a flood zone, additional measures will be required to prevent the inflow of water, which will need to be confirmed with building control. A non-return valve should be specified as a minimum in the foul pipework serving the properties; however, the access cover of the Package Treatment Plant should also be sealed to prevent water entry and appropriate floatation calculations should be undertaken to ensure the concrete surround is appropriate.

Table 4.2 – Review of EA Information Requirements

Ref	Heading	Description	Response
ENV1	Climate Change	A further assessment should be undertaking accommodating the latest climate change allowances.	A further climate change assessment has been undertaken.
ENV2	Freeboard	It must be demonstrated how freeboard has been accommodated into the design and justification will be required on the freeboard allowance used.	An appropriate freeboard allowance has been calculated in line with the Environment Agency/DEFRA report SC120014.
ENV3	Confirmation on Proposed Floor Levels	Confirmation is required on the proposed finished flood levels for the development.	Finished floor levels have been provided for both ground and upper floors.
ENV4	FD2320 Hazard Assessment	An appropriate assessment of the hazard of flood depths/velocities should be submitted to the Environment Agency.	A flood hazard assessment has been undertaken in line with FD2320 (2).
ENV5	Foul Drainage Assessment	A Foul Drainage Assessment should be completed owing to the use of a Package Treatment Plant (PTP).	A Foul Drainage Assessment Form has been completed.

5. Conclusion

5.1. This report is compliant with the NPPF and the associated Technical Guidance as well as the Stroud District Council Level 2 Strategic Flood Risk Assessment (SFRA). This report demonstrates that the proposals can be kept safe for the duration of the developments design life providing that:

An appropriate water proofing design were to take place with consideration to a water entry/recovery strategy.

The proposed dwellings were to be fitted with appropriate flood mitigation methods.

The dwellings were to be subscribed to the EA/Met Office's flood warning service.

5.2. Providing these steps are implemented the development could proceed without flood risk from the 1-200 year (with an allowance for climate change) event posing a significant risk to life or property.

5.3. The proposals offer an opportunity to provide regeneration to the area as well as add to the local economy and these positive benefits should be considered when deciding on the appropriateness of this development; which shall be kept safe from flooding through the mitigation measures discussed.

Appendix A Topographical Survey

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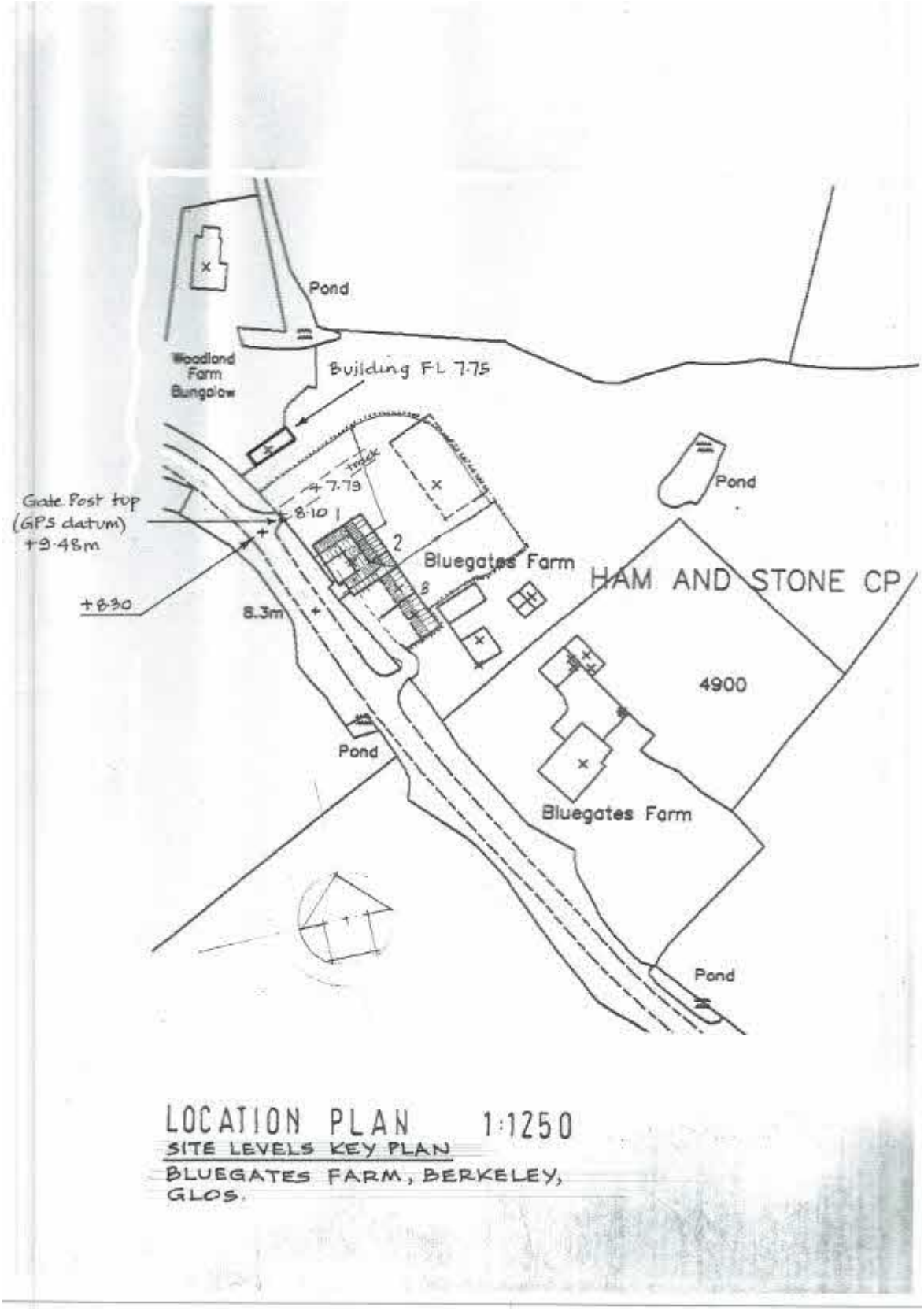

Appendix B Architects Plans and Elevations

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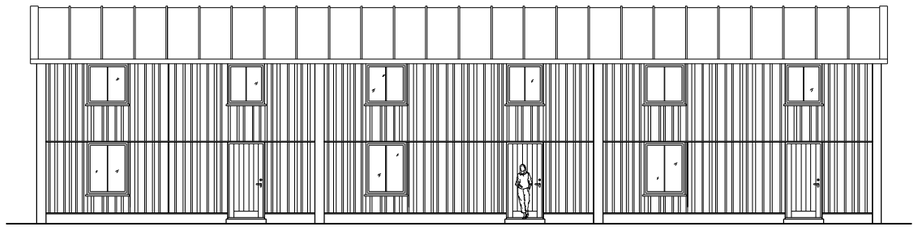

Proposed South West Elevation

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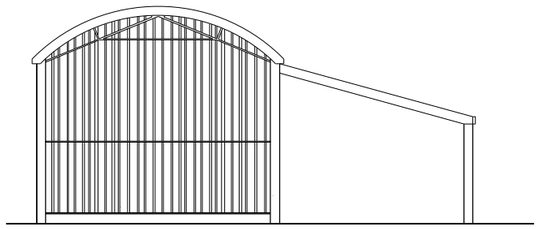

Proposed South East Elevation

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Proposed North East Elevation

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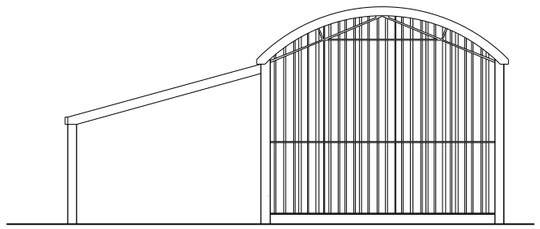

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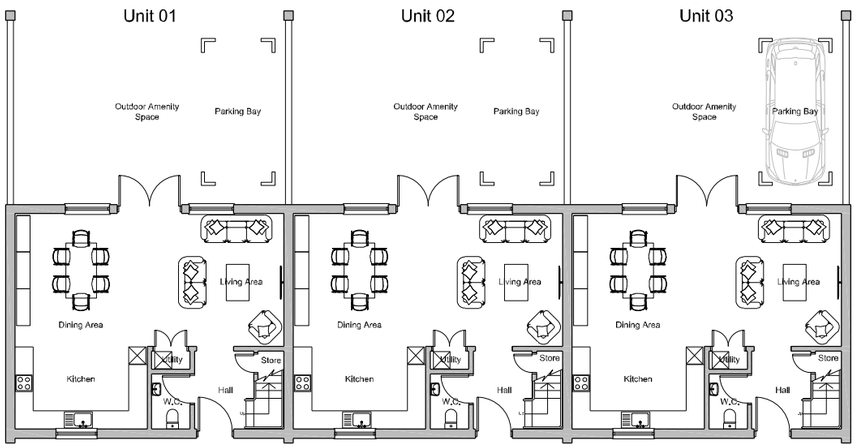

Proposed Ground Floor Plan

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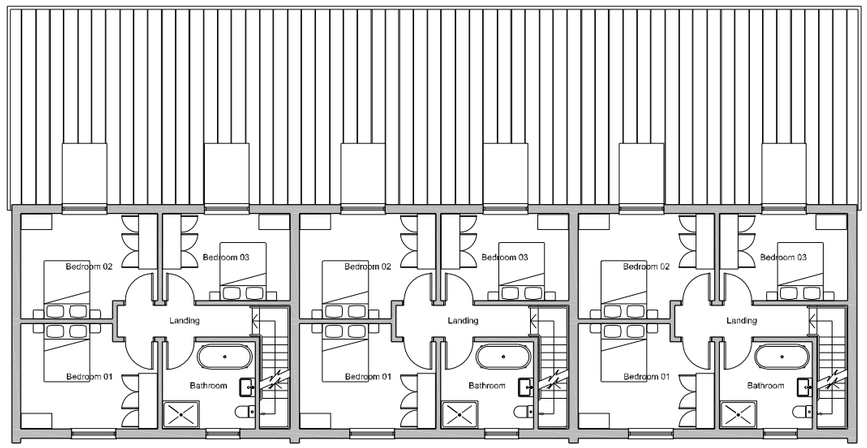

Proposed First Floor Plan

Scale 1:100 @ A1

Rev.	Description	By	Date

Client

Project

Bluegates Farm Dutch Barn

Drawing Title

Proposed Floor Plans and Elevations
Clapton, Berkeley, Gloucestershire,
GL13 9QU

Drawing No.

BLBSXXX-PR-100

Scale	Drawing Status
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	Drawn	Checked
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	Date May '23	Rev.

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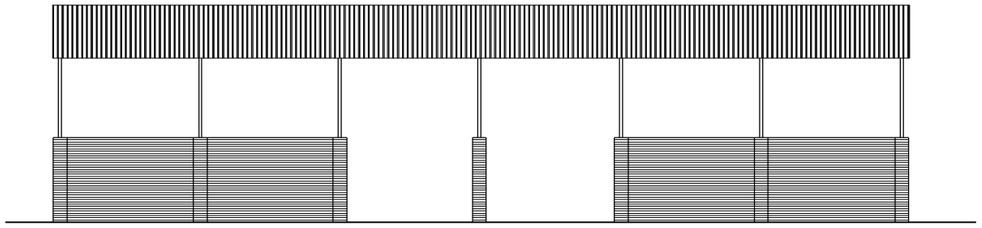

Existing South West Elevation
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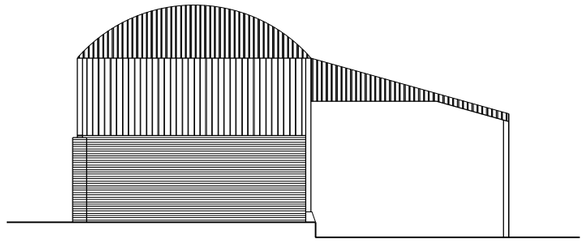

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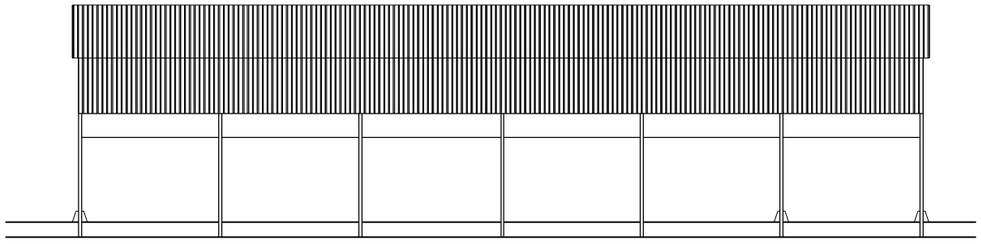

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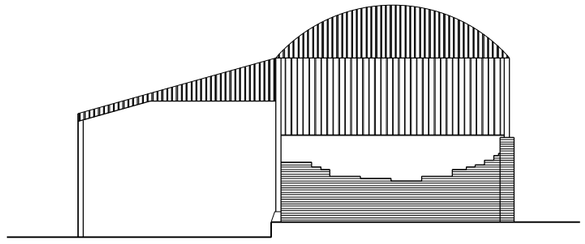

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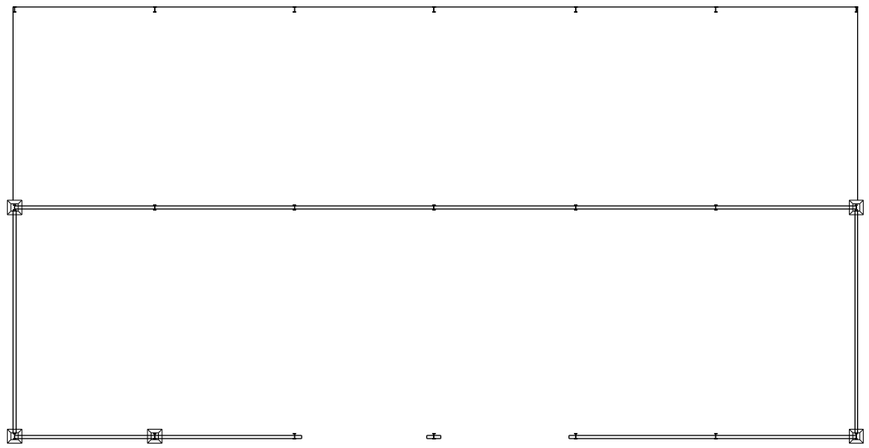

Existing Ground Floor Plan
Scale 1:100 @ A1

Rev.	Description	By	Date

Client

Project
Bluegates Farm Dutch Barn

Drawing Title
Existing Ground Floor Plan and Elevations
Clapton, Berkeley, Gloucestershire.
GL13 9QU

Drawing No.
BLBSXXX-EX-000

Scale	Drawing Status
1:100 @ A1	Planning

gleeds

Drawn	Checked
PJP	
Date	Rev.
May '23	

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Appendix C Details of Flood Mitigation Measures

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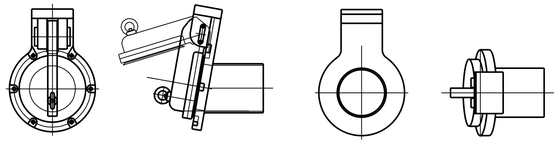
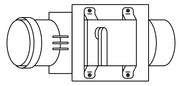


Althon 110/160mm PTK-P Pipe Mounted Flap Valve
Scale 1:10

The Althon PTK-P flap valve is appropriate where a direct connection is made to a watercourse - for example the surface water outfall to the adjacent watercourse.

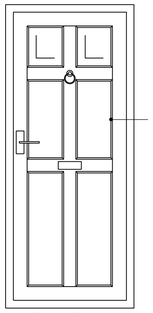


TT Pumps Floaway, Anti-flood Valve, DN110-DN160 with Locking Lever
Scale 1:10

The TT Pumps Floaway non-return valve is appropriate for inline sewers where direct access is desired onto the NRV. The Floaway should be placed in a brick-built inspection chamber for access.

Althon Wastop Inline Non Return Valve
Scale 1:10

The Althon WaStop non-return valve is appropriate for inline sewers and is an easy install piece. The WaStop should be placed immediately upstream or downstream of a PPIC/brick-built inspection chamber for maintenance access/replacement.

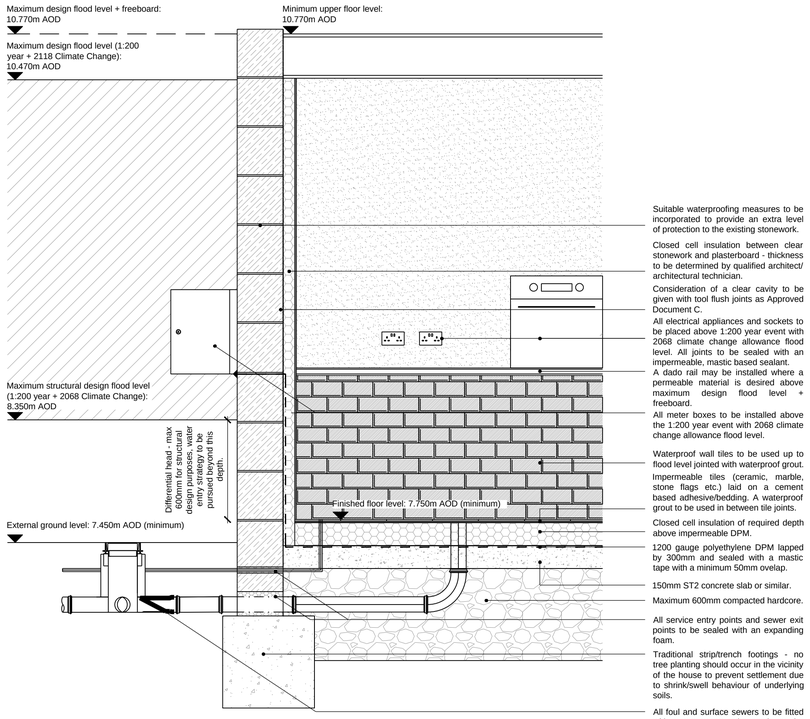


Flood Door
Scale 1:20

PAS 1188-1 compliant flood door capable of withstanding up to 600mm of lateral pressure from flood waters (Stormguard floodplan ultimate collection bespoke high security PVC-u entrance doors or similar approved).

Flood Proof Air Brick
Scale 1:10

A flood-proof airbrick that has a self closing gate to prevent water entry during flood conditions (M3 Floodtec M3AFA Anti Flood Airbrick or similar approved).



Typical Wall and Floor Section
Scale 1:20

Suspended floors to be investigated where possible.

General Notes

1. All works undertaken prior to the full consent of the Council and any statutory consultee/undertaker are undertaken at the clients own risk.
2. All installed pipework and drainage infrastructure must be installed inline with the relevant Approved Document, Industry Standard and British Standard as well as to the satisfaction of the Building Control Officer and any other relevant inspector.
3. All dimensions are in millimetres unless otherwise indicated.
4. All house drainage is to comply and be laid in accordance with current part H of Building Regulations BS8301 and BS5955.
5. Cover and frames to manholes and inspection chambers to comply with BS EN124.
6. Suitable 'as dug' material is to comply with Appendix A of BS5955. The maximum particle size should not exceed 20mm and be free from stones exceeding 40mm.
7. Granular material shall comply with Table 2 of BS5955
8. Backfill should be placed in layers not exceeding 300mm uncompacted thickness, each layer being well compacted. Mechanical compaction equipment should not be used until there is a minimum of 450mm of compacted material above the crown of the pipe.

Drawing Reference Table

BLBSXXX-PR-100	Proposed Floor Plans and Elevations

REV.	REVISION DETAILS	DATE	INITIAL
1.1	First Issue	17.11.2023	ZS

Bluegates Farm,
Berkeley

Drainage Construction Details

PLANNING	ZS Drawn by
As Shown Drawing Scale	17.11.2023 First Issued
2300270-1101 Drawing No.	1.1 Revision Letter

A1

Appendix D Foul Drainage Assessment

(Press Alt + Left Arrow to return if using Hyperlinks)

Foul Drainage Assessment Form (FDA)

Please note: You should only use this form for planning related queries. You cannot use it to apply for an Environmental Permit but you may submit a copy of the information you have provided for planning purposes in support of your Environmental Permit application. Further information on how to apply for an environmental permit and general binding rules applicable to small discharges of domestic sewage effluent is available on the gov.uk website.

APPLICANT DETAILS	
Name [redacted]	
Address Bluegates Farm, Clapton, Berkeley, GL13 9QU	
[redacted]	
[redacted]	

We will use the information you provide on this form to establish whether non-mains drainage, either a new system or connection to an existing system, would be acceptable. It is important that you provide full and accurate information. Failure to do this will delay the processing of your application.

You must provide evidence that a connection to the public sewer is not feasible.

Other than in very exceptional circumstances, we will not allow the use of non-mains drainage as part of your Planning or Building Regulation application unless you can prove that a connection to the public sewer is not feasible. We do not consider non-mains drainage systems to be environmentally acceptable in locations where it is feasible to connect to a public sewer. Please note that a lack of capacity in, or other operating problems with, the public sewer are not valid reasons to use a non-mains drainage system where it is otherwise feasible to connect to a public sewer.

Where connection to the public sewer is feasible, you may need to get the agreement of either the owners of any land through which the drainage will run or, if you intend to connect via an existing private drain, the owner of that private drain.

The National Planning Practice Guidance and Building Regulations Approved Document H give a hierarchy of drainage options that must be considered and discounted in the following order:

1 Connection to the public sewer
2 Package sewage treatment plant (which can be offered to the Sewerage Undertaker for adoption)
3 Septic Tank
4 If none of the above are feasible a cesspool

You must respond to all the following questions. If you wish to submit additional information please do so, marked clearly “Additional Information”. **In some cases you will be required to provide further information in order to demonstrate that any non-mains foul drainage system proposed is acceptable.**

Feasibility of mains foul sewer connection	**YES**	**NO**
Have you provided a written explanation of why it is not feasible to connect to the public foul sewer with this form? *This must include a scaled map showing the nearest public foul sewer connection point - check with your local sewerage undertaker.*		
Is the distance from your site to the closest connection point to the public foul sewer less than the number of properties to be built on the site multiplied by 30m? *(see Guidance Note 2)*		
Does your proposal form part of a phased development or planned development of a wider area? *If YES, please provide further details including references of any planning permissions already granted.*		

Non-mains connection

Please provide a plan with dimensions that clearly shows the location of the whole system in relation to the proposed development and the position of the key elements e.g. septic tank, drainage fields and points of discharge.

1. Existing system	**YES**	**NO**
Do you intend to use an existing non-mains foul drainage system?		
If YES, does the system already have an Environmental Permit issued by the Environment Agency? *(In the case of a cesspool write N/A)* If YES, please provide Environmental Permit reference number……	N/A	N/A

2. Discharge	**YES**	**NO**
Do you propose to use a package treatment plant?		
Do you propose to use a septic tank?		
Do you propose to use a cesspool? *If YES go to Q4*		
Have you considered having your system adopted by the sewerage undertaker? *(see Guidance Note 7).*		
Will all, or any part of, the discharge go to a drainage field or soakaway*? (see Guidance Note 3)* - this includes systems that combine a drainage field with a high level overflow to watercourse *If YES go to Q3.*		
Do you intend to use a system that discharges solely to watercourse? *(see Guidance Note 3) If YES go to Q9.*		

3. Water abstraction	**YES**	**NO**
Do you receive your water from the public mains supply?		
If not, where do you get your water supply from?	N/A	N/A

4. Cesspools *(For methods other than cesspools write N/A)*	**YES**	**NO**
Have you provided written justification for the use of a cesspool in preference to more sustainable methods of foul drainage disposal? *(see Guidance Note 4)*	N/A	N/A

5. Drainage field design *(For cesspools write N/A)*	**YES**	**NO**
Will the system discharge to a drainage field designed and constructed in accordance with British Standard BS6297:2007? If not, why not?	N/A	N/A
Will the discharge from the system be located in a Source Protection Zone 1 (SPZ1)?	N/A	N/A

6. **Ground Conditions** *(For cesspools write N/A)*	YES	NO
6a. Have you submitted a copy of the percolation test results with this form *(see Guidance Note 6)?* 6b. If NO please explain the justification for not undertaking or submitting these tests.	N/A	N/A
6c. Is any part of the system in land which is marshy, water logged or subject to flooding?	N/A	N/A
6d. Will the soakaway be located on artificially raised, made-up ground or ground likely to be contaminated? *If YES please provide details as additional information.*	N/A	N/A
6e. Have you submitted the results of a trial hole at the site to establish that the proposed drainage field will be above any standing groundwater *(see Guidance Note 6)?*	N/A	N/A

7. **Available Land**	YES	NO
Is the application site plus any available area for a soakaway less than 0.025 hectares ($250m^2$)?		

8. **Siting of drainage field/soakaway discharge from a septic tank or package treatment plant or other secondary treatment.** *You may need to make local enquiries to get a full answer to these questions*.	YES	NO
Will it be at least **10m** from a watercourse, permeable drain or land drain?	N/A	N/A
Will it be at least **50m** from any point of abstraction from the ground for a drinking water supply (e.g. well, borehole or spring)? *This includes your own or a neighbour's supply.*	N/A	N/A
Will the discharge be within a groundwater Source Protection Zone 1? *If yes, you will need to apply for an environmental permit*	N/A	N/A
Are there any drainage fields/soakaways within **50m**? *This includes any foul drainage discharge system (other than the subject of this application) or surface water soakaway on either your own or a neighbour's property.*	N/A	N/A
Will it be at least **15m** from any building?	N/A	N/A
Will there be any water supply pipes or underground services within the disposal system, other than those required by the system? *(For cesspools write N/A)*	N/A	N/A
Will there be any access roads, driveways or paved areas within the disposal area? *(For cesspools write N/A)*	N/A	N/A

9. **Siting of treatment plant, septic tank or cesspool**	YES	NO
Is it at least **7m** from the habitable part of a building?		
Will there be vehicular access for emptying within **30m?**		
Can the plant, tank or cesspool be maintained or emptied without the contents being taken through a dwelling or place of work?		

10.Expected flow

Please estimate the total flow in litres per day *(see Guidance Note 5).*	***2,100 litres***

11. **General Binding Rules for Small Sewage Discharges**	YES	NO
Does the system meet the requirements of the General Binding Rules for small sewage discharges?	*	*

More information needed on rules 19 and 23.

12. Maintenance

How do you propose to maintain the system?

The system shall be maintained in line with the manufacturer's recommendations.

13. Declaration

I declare that the above information is factually correct.

Name	Signature	Date
[redacted]	[redacted]	17.11.2023

GUIDANCE NOTES:

1) This form is for use with *the National Planning Practice Guidance, British Standard BS6297:2007 and Building Regulations Approved Document H*. It is intended to help Local Planning Authorities establish basic information about your non-mains drainage system and decide whether you need to submit a more detailed site assessment. If a detailed site assessment is requested but not submitted, your planning application might be refused.

2) Where the distance from a site to the closest point of connection to the foul sewer is less than the number of properties that are proposed to be built on that site multiplied by 30m an Environmental Permit will be required and an applicant will need to demonstrate as part of any application for such a permit why connection to the public foul sewer is not feasible.

Number of domestic properties served by the sewage treatment system [3] x 30 metres = Answer [90] metres

3) In addition to Planning Permission and Building Regulation approval **you may also require an Environmental Permit from the Environment Agency (EA). Please note that the granting of Planning Permission or Building Regulation approval does not guarantee the granting of an Environmental Permit. Upon receipt of a correctly filled in application form the EA will carry out an assessment. It can take up to 4 months before the Agency is in a position to decide whether to grant a permit or not**.

4) The use of cesspools is an option of last resort as set out in the non-mains drainage hierarchy of preference in Building Regulations Approved Document H. In principle, a properly constructed and maintained cesspool, being essentially a holding tank with no discharges, should not lead to environmental, amenity or public health problems. However, in practice, it is known that such problems occur as a result of frequent overflows due to poor maintenance, irregular emptying, lack of suitable vehicular access for emptying and even through inadequate capacity. In addition to this the requirement for frequent emptying is usually carried out by a contractor involving road transport with associated environmental costs. For these reasons, the use of cesspools will not normally be considered to be a long-term foul sewage disposal solution. In view of the environmental risks associated with their use, any proposal to use cesspools must be fully justified to the Local Planning Authority

5) Package treatment plants and septic tanks should be designed and sized according to the advice given in the current edition of Flows and Loads, published by British Water. Volumes for larger systems should be calculated based on expected flows arising from the development.

6) You should refer to Building Regulations Approved Document H2 with regard to the general requirements for construction of non mains sewerage systems. **Sections 1.33 to 1.38** deal with the test requirements for trial holes and percolation tests and for convenience the text of these sections is repeated below:

1.33 A trial hole should be dug to determine the position of the standing groundwater table. The trial hole should be a minimum of 1m² in area and 2m deep, or a minimum of 1.5m

below the invert of the proposed drainage field pipework. The ground water table should not rise to within 1m of the invert level of the proposed effluent distribution pipes. If the test is carried out in summer, the likely winter groundwater levels should be considered. A percolation test should then be carried out to assess the further suitability of the proposed area.

1.34 Percolation test method – A hole 300mm square should be excavated to a depth 300mm below the proposed invert level of the effluent distribution pipe. Where deep drains are necessary the hole should conform to this shape at the bottom, but may be enlarged above the 300mm level to enable safe excavation to be carried out. Where deep excavations are necessary a modified test procedure may be adopted using a 300mm earth auger. Bore the test hole vertically to the appropriate depth taking care to remove all loose debris.

1.35 Fill the 300mm square section of the hole to a depth of at least 300mm with water and allow it to seep away overnight.

1.36 Next day, refill the test section with water to a depth of at least 300mm and observe the time, in seconds, for the water to seep away from 75% full to 25% full level (i.e. a depth of 150mm). Divide this time by 150mm. The answer gives the average time in seconds (Vp) required for the water to drop 1mm.

1.37 The test should be carried out at least three times with at least two trial holes. The average figure from the tests should be taken. The test should not be carried out during abnormal weather conditions such as heavy rain, severe frost or drought.

1.38 Drainage field disposal should only be used when percolation tests indicate average values of V_p of between 12 and 100 and the preliminary site assessment report and trial hole tests have been favourable. This minimum value ensures that untreated effluent cannot percolate too rapidly into groundwater. Where V_p is outside these limits effective treatment is unlikely to take place in a drainage field. However, provided that an alternative form of secondary treatment is provided to treat the effluent from the septic tanks, it may still be possible to discharge the treated effluent to a soakaway.

N.B. When determining whether a discharge may be made under statutory General Binding Rules one of the requirements is that any drainage field must be designed and constructed in accordance with BS6297:2007. This specifies that the minimum percolation rate under that standard is 15s/mm and any discharge made to ground where the percolation rate is less than 15s/mm is subject to the granting of an Environmental Permit.

7) Developers may requisition a sewer from the Sewerage Undertaker to connect their development to the public sewer. Should this not be feasible on the grounds of cost and practicability, on site treatment in the form of package plants and their associated sewers (if constructed to an acceptable standard) can be offered to the sewerage undertaker for adoption. This approach is in support of advice from the Government contained in the National Planning Practice Guidance Developers are urged to discuss their requirements with the Sewerage Undertaker at the earliest possible opportunity.

8) Glossary

Package treatment plant

A package treatment plant is a system which offers varying degrees of biological sewage treatment and involves the production of an effluent which can be disposed of to ground via a drainage field or direct to a watercourse. There are many varieties of package treatment plant but all involve settling the solids before and/or after a biological treatment stage and almost all use electricity. Package treatment plants usually treat sewage to a higher standard than septic tanks but are vulnerable in the event of power failures and require more regular servicing and maintenance to ensure that they work effectively. The type of system chosen should be appropriate to the type of development proposed and take account of variations in flow and periods of inactivity, for example where the system will serve holiday accommodation where occupation and maintenance may be more irregular.

Septic tank

A septic tank is a two or three chamber system, which retains sewage from a property for sufficient time to allow the solids to form into sludge at the base of the tank, where it is partially

broken down. The remaining liquid in the tank then drains from the tank by means of an outlet pipe.

Effluent from a septic tank is normally disposed of to ground via a drainage field and receives further treatment in the soils surrounding that drainage field, so that it does not generate a pollution risk to surface waters or groundwater resources (underground water). The most commonly used form of drainage field is a subsurface irrigation area, comprising a herringbone pattern of interconnecting dispersal pipes laid in shallow, shingle filled trenches. The dispersal pipes within the drainage field should be located at as shallow a depth as possible, usually within 1 metre of the ground surface. A septic tank typically needs to be desludged at least once a year in order to ensure that it continues to work effectively.

Cesspool
A cesspool is a covered watertight tank used for receiving and storing sewage and has no outlet. It relies on road transport for the removal of raw sewage and is therefore the least sustainable option for sewage disposal. It is essential that a cesspool is, and remains, impervious to the ingress of groundwater or surface water.

Appendix E EA Correspondence

(Press Alt + Left Arrow to return if using Hyperlinks)

Charlie Morris
Stroud District Council
Development Control
Ebley Mill Ebley Wharf
Stroud
Gloucestershire
GL5 4UB

Our ref: SV/2023/111951/01-L01
Your ref: S.23/1208/P3Q

Date: 13 October 2023

Dear Charlie

CHANGE OF USE OF AN AGRICULTURAL BARN TO 3 RESIDENTIAL UNITS - BLUEGATES FARM CLAPTON ROAD BERKELEY GLOUCESTERSHIRE GL13 9QU NPA - BLUEGATES FARM CLAPTON ROAD, BERKELEY, GL13 9QU.

Thank you for consulting us on the above application which was received on 12 September 2023. Thank you for agreeing to a deadline extension. We have the following comments for your consideration.

The Environment Agency **objects** to the proposed development on flood risk grounds. This is explained below:

Proposed Development
The proposed development consists of a change of use of an existing modern agricultural barn to 3 dwellinghouses at Bluegates Farm.

Flood Risk Vulnerability
We have reviewed the submitted documents including Flood Action Plan / Flood Risk Assessment (FRA). The application for a change of use of an existing agricultural barn to three residential properties represents a change of vulnerability from less vulnerable to more vulnerable as per Annex 3 of National Planning Policy Framework (NPPF).

Flood Zones
The site is located in Flood Zone 3 according to our Flood Map for Planning. We note that the principle flood risk is tidal from the Severn Estuary, with the site being located within flood zone 3a and benefitting from defences according to the Stroud Strategic Flood Risk Assessment (SFRA) level 1 Appendix H.

Flood Risk Information
We are pleased to see that the design proposals include all sleeping accommodation on the first floor. However, our main concerns relate to the fact that the FRA provided is dated from 2017 and is not exclusive/specific to the site in question. References to development at Bluegates farm in particular appear to relate to a different Barn to that of this planning application.

As such, we are unsure of the exact proposed finished floor levels of the residential dwellings proposed in this Prior Approval application. However, regardless of this, based on modelling and available flood risk information in a design flood event (i.e. the undefended 0.5%Annual Exceedance Probability (AEP) plus climate change scenario)

Cont/d..

flood depths at the properties would be over 3m deep, albeit this flood risk is residual and assumes no defences.

Safe Development
Whilst we do note the FRA states that the first floor will be set at above the 1 in 200 year plus climate change tidal flood event (10.76m Above Ordnance Datum (AOD)) our main concern is that climate change allowances have since been updated and therefore may be higher than calculated for the site. As such, we are unable to determine if the first floor is actually set at a suitable height above the design flood event using the most up to date climate change allowances.

Given the potential flood depths on site and proximity of the development to the coast, in a future flood event that involves breaching or overtopping of defences, we would want to have greater certainty that users of the development are able to access a safe refuge set at a suitable level in the event that evacuation offsite is not possible.

As such in the absence of an acceptable FRA we register our objection to this proposal at this stage. We recommend that the Prior Approval application is refused and consider that a full planning application process is necessary.

Safe Access
The FRA should demonstrate that the development has **safe, pedestrian access** above the 0.5% AEP flood level plus climate change (the design flood event). Pedestrian access should preferably remain flood free in a design flood event. However, in cases where this may not be achievable, the FRA may demonstrate that pedestrian access is acceptable based on an appropriate assessment of 'hazard risk' including water depth, velocity and distance to higher ground (above the design flood event). Reference should be made to DEFRA Hazard risk (FD2320) – 'Danger to People for Combinations of Depth & Velocity' (see Table 13.1 – DEFRA/EA Flood Risk Assessment Guidance for New Development FD2320 at:
https://assets.publishing.service.gov.uk/media/602d040fd3bf7f721a23a993/Flood_risk_assessment_guidance_for_new_development_-_phase_2_technical_report_Full_Documentation_and_Tools.pdf

Given our role and responsibilities we would not make comment on the safety of the access or object on this basis. This does not mean we consider that the access is safe or the proposals acceptable in this regard. We recommend you consult with your Emergency Planners and the Emergency Services to determine whether they consider this to be safe in accordance with the guiding principles of the NPPG.

Foul Drainage
We note from the details submitted that it is proposed to connect to a package treatment plant. Given the scale of the development it does not feature in our consultation checklist under the matter of foul drainage. For our foul drainage advice, we recommend you seek the completion of the 'Foul Drainage Assessment Form' for your consideration, which we have provided to your Authority previously.

Next Steps
The following issues with the FRA will need to be resolved:

> The FRA has failed to take the impacts of climate change into account Different climate change allowances have been used to assess future flood risk than those advised in government guidance: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances

Given that there is uncertainty over the correct flood levels, the FRA also cannot be relied upon for accurate information regarding safe access and egress.

The FRA will need to detail the finished floor levels (FFL) for the first floor in particular. We will seek FFL 600mm (or appropriate freeboard allowance) above the design flood level. If this is not possible and FFLs are at least at the design flood level with flood proofing/resistance and resilience measures up to an appropriate freeboard then we may consider this to be acceptable.

To overcome our objection in a future planning application, the applicant should submit a revised FRA (or FRA addendum) which addresses the points highlighted above. If this cannot be achieved, we are likely to maintain our objection.

I trust the above will assist at this time. Please do not hesitate to contact me if you have any queries. If you are minded to approve the application we would request notification of this so as to make further representation. If you refuse the application at this time based on our advice, we would be prepared to support you in any subsequent appeal. If a determination is made, a copy of the subsequent decision notice would be appreciated.

Yours sincerely

[redacted]

End

Appendix F EA Product 4 Information

(Press Alt + Left Arrow to return if using Hyperlinks)

creating a better place

Environment Agency

[redacted]

Our ref: 330745-WX
Date: 9th November 2023

Thank you for your enquiry which was received on 23rd October 2023. We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

Abstract

Name	Product 4
Description	Detailed Flood Risk Assessment Map for Bluegates Farm, Berkeley, GL13 9QU NGR: ST6640898057
Licence	Open Government Licence
Information Warnings	The mapping of features provided as a background in this product is © Ordnance Survey. It is provided to give context to this product. The Open Government Licence does not apply.
Attribution	Contains Environment Agency information © Environment Agency and/or database rights. Contains Ordnance Survey data © Crown copyright 2019 Ordnance Survey 100024198.

Flood Map for Planning
The Flood Map for Planning is now classed as Open Data. It can be downloaded free of charge under an open data licence from the following weblink:
https://data.gov.uk/publisher/environment-agency

If you search for the 'flood map for planning' in the search box the following datasets will be available for you select and download the data:

Flood Map for Planning (Rivers and the Sea) – Flood Zones 2 and 3
Flood Map for Planning (Rivers and Sea) – Areas Benefiting from Defences
Flood Map for Planning (Rivers and Sea) Flood Storage Areas
Flood Map for Planning – Spatial Flood Defences (without Standard attributes)
Recorded Flood Outlines
Historic Flood Map
Risk of Flooding from Surface Water Extent for:
- 3 percent annual chance
- 1 percent annual chance
- 0.1 percent annual chance

Customer & Engagement, Wessex
Rivers House, East Quay, Bridgwater, Somerset, TA6 4YS
Email: wessexenquiries@environment-agency.gov.uk
www.environment-agency.gov.uk

If you have requested this information to help inform a development proposal, then you should also note the detail in the attached advisory text on the use of Environment Agency Information and Further Guidance for FRAs.

Flooding History

We no longer produce pdf copies of the Historic Flood Map. This information is available to search select, and download free of charge as part of the Government's 'open data' as

Recorded Flood Outlines
the Historic Flood Map

These are GIS layers and can be downloaded from: https://data.gov.uk/publisher/environment-agency

Please note we cannot guarantee that this is an exhaustive list of all past flood events in this location. All reasonable care has been taken to ensure that the historical flood event data is as accurate as possible. The Environment Agency will update its records if new evidence emerges.

Strategic Flood Risk Assessment (SFRA)
We advise that when preparing a FRA to support your development proposal you should also refer to thet Stroud District Council SFRA which is available on their website at https://www.stroud.gov.uk/environment/planning-and-building-control/planning-strategy/evidence-base/environmental-evidence.

Planning
If you have questions regarding the planning nature of your enquiry, or require advice on floor levels, please contact our Sustainable Places team on NWX.SP@environment-agency.gov.uk. Please be aware that we now charge for planning advice when consulted on pre-application enquiries. This new approach provides advice to developers in two ways. Firstly, there is the provision of 'free' advice available to everyone where we give a preliminary opinion on a proposed development. This sets out the environmental constraints together with any issues this raises for us. Should you wish us to review in detail any of these issues then we can do this through a chargeable scheme aimed at recovering our costs.

Flood Levels
Coastal/tidal flood levels and depths
The tables below show the maximum modelled tidal flood levels and depths for defended (actual situation) and undefended (natural floodplain) scenarios taken from our 2020 Severn House Farm modelling. The annual exceedance probability (AEP) is given.

*Please note. We have provided you with climate change data based on National Planning and Policy Framework (NPPF) guidance. We advise that this data is suitable for the use in an FRA, but we also have climate change data based on UK Climate Projections 2009 (UKCP09) if required.

We advise that the extracted level and depth data provided below is suitable for use in an FRA. If you require level and depth data from additional return periods, these .asc grids can be requested as part of a Product 6.

Defended

AEP	Maximum depth (in metres)	Maximum level (mAOD)
0.1% (1 in 1000)	0.20	7.66
0.5% (1 in 200)	0.00	0.00
0.5% with CC 2068 added	0.31	7.77
0.5% with CC 2118 added	3.04	10.47

20% (1 in 5)	0.00	0.00

Undefended

AEP	Maximum depth (in metres)	Maximum level (mAOD)
0.1% (1 in 1000)	2.66	10.08
0.5% (1 in 200)	2.20	9.63
0.5% with CC 2068 added	2.73	10.16
0.5% with CC 2118 added	3.49	10.91
20% (1 in 5)	0.91	8.34

N.B. 0.00 (m or mAOD) indicates the data does not reach the site.
N.B. Levels and depths have been extracted based upon the site boundary plan provided.

If you intend undertaking a FRA for a planning application using climate change flood level information supplied in this letter, you should consider whether it is appropriate in light of a range of potential allowances for fluvial flood flow now advised in curent planning guidance on 'Flood risk assessments: climate change allowances'. The relevant guidance is available at the following website address: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances

We have included a briefing note that refers to the 2018 Climate Change projections. Our Sustainable places team would be happy to discuss the issues around Climate Change and how this should be used.

Flood Defences
We can confirm that this site is not located within 1 kilometre of any formal flood defences. However it may benefit from assets further afield.

Extreme Tide Level (Still Water) Information

IMPORTANT. If you are carrying out a Flood Risk Assessment you should also review the Still Water Tide Level data from the Coastal Flood Boundary Study 2018. You should be mindful that in some locations the predicted Still Water Tide Levels are higher than the locally modelled water levels provided above. When this is the case the higher water levels should be taken into account in your Flood Risk Assessment.

For more information on climate change allowances please see guidance on the Gov.UK website here: Flood risk assessments: climate change allowances - GOV.UK

The updated Still Water Tide Level Data (baseline 2017) from the Coastal Flood Boundary Study 2018 is also available to download from our data.gov.uk site. Please search for 'Coastal Design Sea Levels'.

For your information you can view the Coastal Flood Boundary Study 2018 technical summary report and the user guide below.
https://www.gov.uk/government/publications/coastal-flood-boundary-conditions-for-uk-mainland-and-islands-design-sea-levels

Environmental Permit for Flood Risk Activities
In addition to any other permission(s) that you may have already obtained e.g., planning permission, you may need an environmental permit for flood risk activities (formerly known as Flood Defence Consent prior to 06 April 2016) if you want to do work:

in, under, over or near a main river (including where the river is in a culvert)
on or near a flood defence on a main river
in the flood plain of a main river

on or near a sea defence

For further information and to check whether a permit is required please visit:
https://www.gov.uk/guidance/flood-risk-activities-environmental-permits.

For any further advice, please contact your local Environment Agency Office, at
bridgwater.frap@environment-agency.gov.uk.

Further Information

We advise that you also contact the Flood Risk Management Team, at FloodRiskManagement@gloucestershire.gov.uk or at Flood Risk Management, Gloucestershire County Council, Shire Hall, Westgate Street, Gloucester, GL1 2TH, the drainage engineer,David Lesser, on 01453 754480, or by email, david.lesser@stroud.gov.uk, at Stroud District Council as they may be able to provide further advice with respect to localised flooding and drainage issues.

Further details about the Environment Agency information supplied can be found on our website:
https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather

If you have requested this information to help inform a development proposal, then you should note the information on GOV.UK on the use of Environment Agency Information for FRAs:
https://www.gov.uk/planning-applications-assessing-flood-risk
https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion

We hope you find this information helpful, and it is provided subject to the guidance below, which we strongly recommend you read.

Yours sincerely,

[redacted]

Customer & Engagement, Wessex
Rivers House, East Quay, Bridgwater, Somerset, TA6 4YS
Email: wessexenquiries@environment-agency.gov.uk

Enc: Use of Environment Agency Information for Flood Risk Assessments (below)
UKCP18 Climate Change Briefing Note

Use of Environment Agency Information for Flood Risk Assessments (FRAs)

Important
Use of Environment Agency data: you should note that

1. Information supplied by the Environment Agency may be used to assist in producing a Flood Risk Assessment (FRA) where one is required, but the use of Environment Agency information does not constitute such an assessment on its own.

2. As part of your data request, we have provided all of the modelled data we hold for your location. Please note that some of our modelled information may have been produced for purposes other than for flood zone generation. This may mean that some of the modelled data you have been provided with has a lower confidence level, and has not been used in producing our flood map, nor definitively reflects the predicted flood water level at the property/development site scale. To check the suitability of the use of this information in your FRA please contact your local Partnership & Strategic Overview (PSO) team.

3. This information covers flood risk from main rivers and the sea, and you will need to consider other potential sources of flooding, such as groundwater or surface water runoff. The information produced by the Local Planning Authority and the Lead Local Flood Authority (LLFA) may assist in assessing other sources of flood risk.

4. Where a planning application requires a FRA and this is not submitted or deficient, the Environment Agency may well raise an objection.

5. For more significant proposals in higher flood risk areas, we would be pleased to discuss details with you ahead of making any planning application, and you should also discuss the matter with your Local Planning Authority.

Pre-Planning Advice from the Environment Agency
If you have requested this information to help inform a development proposal, then we recommend that you undertake a formal pre-application enquiry using the form available from our website:

Pre-application Preliminary Opinion:
https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion

Pre-application Charged Service:
https://www.gov.uk/government/publications/planning-advice-environment-agency-standard-terms-and-conditions

Depending on the enquiry we may also provide advice on other issues related to our responsibilities, including flooding, waste, land contamination, water quality, biodiversity, navigation, pollution, water resources, foul drainage or Environmental Impact Assessment.

Flood Risk Assessment (FRA) Guidance
You should refer to the Planning Practice Guidance of the National Planning Policy Framework (NPPF) and the Environment Agency's Flood Risk Standing Advice for information about Flood Risk Assessment (FRA) for new development in the different Flood Zones. These documents can be accessed via:

National Planning Policy Framework Planning Practice Guidance:
http://planningguidance.planningportal.gov.uk/

Environment Agency advice on FRAs:
https://www.gov.uk/flood-risk-assessment-for-planning-applications#when-to-follow-standing-advice

https://www.gov.uk/government/publications/planning-applications-assessing-flood-risk

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Using 'Flood risk assessments: climate change allowances' following publication of new climate projections in UKCP18

Who are these messages for?

These messages are for local planning authorities and developers preparing Strategic Flood Risk Assessments (SFRAs) and site specific flood risk assessments (FRAs).

How to use these messages

These messages advise developers who need to prepare site specific flood risk assessments and all local planning authorities how to use 'Flood risk assessments: climate change allowances' (published 2016) to account for the impact of climate change on flood risk now UKCP18 has been published.

Main messages

- UKCP18 was published on 26th November 2018.
- UKCP18 is the official source of information on how the climate of the UK may change over the rest of this century. The UKCP18 projections replace the UKCP09 projections.
- The allowances in 'Flood risk assessments: climate change allowances' (published Feb 2016) are still the best national representation of how climate change is likely to affect flood risk for:
    - peak river flow
    - peak rainfall intensity
- Research that is due to be published in 2019 may result in changes to these allowances[1]. We will provide customers with more information regarding the need to update peak river flow and peak rainfall intensity allowances in due course.
- The climate change allowances for sea level rise in 'Flood risk assessments: climate change allowances' will be updated and published as early as possible in 2019. Until then, it is reasonable to continue to use the sea level rise allowances in 'Flood risk assessments: climate change allowances' (published in 2016) for planning decision making, because the allowances that have been used to date represent the high end of the range of sea level rise projected by UKCP18.

[1] High resolution mapping providing peak river flow allowances at 1km grid resolution due to be published Spring 2019. We do not expect the peak river flow allowances provided at a regional scale in 'Flood risk assessments: climate change allowances' to change as a result of this information, however, planners and developers may need to take account of this information where it shows a significant difference to the regional allowances. High resolution (daily and sub daily) rainfall projections is due to be published in the second half of 2019. These are used to understand the impact of climate change on peak rainfall. Following this, the peak rainfall allowances in 'Flood risk assessments: climate change allowances' may need to be updated, but this will not be until late 2019 at the earliest.

- However, in exceptional cases where developments are very sensitive to flood risk and have a lifetime of at least 100 years[2], we recommend you assess the impact of both the current allowance in 'Flood risk assessments: climate change allowances' and the 95th percentile of UKCP18 'RCP 8.5' scenario (high emissions scenario) **standard method** sea level rise projections of UKCP18, and plan according to this assessed risk. You will need to calculate sea level rise allowances beyond 2100 by extrapolating the UKCP18 dataset. The Environment Agency will check your extrapolation methodology and provide advice.
- UKCP18 provides sea level rise projections for 2100 – 2300. The update of 'Flood risk assessments: climate change allowances' will include advice on using these projections. In the meantime, for development with a longer than 100 year lifetime e.g. large urban extensions, new settlements, major infrastructure, you should contact your local the Environment Agency office for advice on how to calculate such allowances.
- Where it is appropriate to use the sea level rise information in UKCP18 as described in this briefing note, planning decisions should do so from now onwards, in order to ensure planning decisions are in line with policies in the National Planning Policy Framework. However, where local plans or development proposals and associated flood risk assessments are well advanced, it will usually be acceptable make decisions based on the allowances and advice in 'Flood risk assessments: climate change allowances' (published Feb 2016) in the following circumstances:
    - local plan has been submitted for examination (before or on the day UKCP18 is published); or
    - development proposals are well advanced or where a valid planning application has already been submitted to the local planning authority (before or on the day UKCP18 is published).
- When the climate change allowances are updated, the supporting guidance will be updated at the same time to address user feedback collated since Feb 2016.
- Once 'Flood risk assessments: climate change allowances' has been updated, over time we will update our flood risk modelling to reflect the revised climate change projections. This modelling work is principally done to inform our flood risk management activities, but we will continue to share this work with planners (for SFRAs) and developers (for site-specific FRAs) when it becomes available. Where the modelling needed by planners and developers has not yet been undertaken, we may be able to work together to do this work more quickly and to share the costs. Where this is not possible, the onus will be on planners and developers to undertake the necessary work at their own cost. Contact your local Environment Agency office to find out when they plan to update their flood risk modelling and to discuss working together.

[2] Such as infrastructure projects or developments that significantly change existing settlement patterns including urban extensions and new settlements