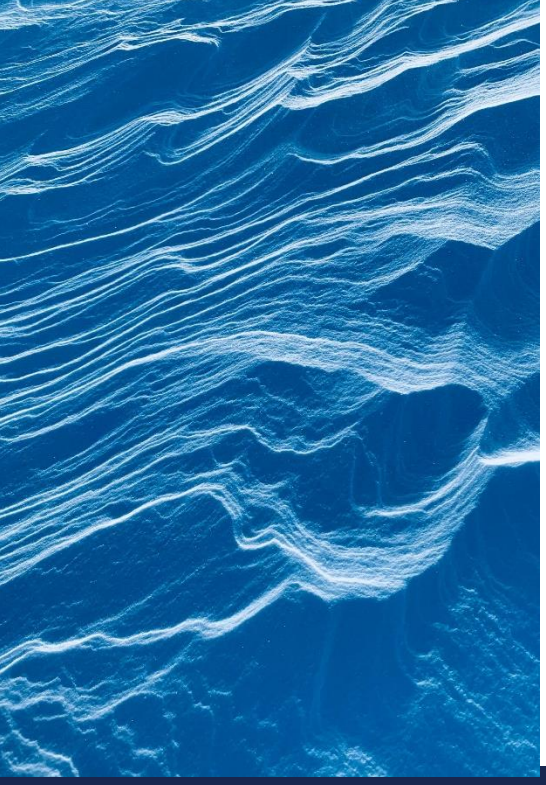

Flood Risk Assessment

AEG0257_B79_Clifton Campville_01

Site Address: Stoneybridge House
Netherseal Road
Clifton Campville
Tamworth
B79 0AX

aegaea
Flood risk, water and environment

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

aegaea
Flood risk, water and environment

Document Issue Record

Project: Flood Risk Assessment

Prepared for: Justine Elliott

Reference: AEG0257_B79_CliftonCampville_01

Site Location: Stoneybridge House, Netherseal Road, Clifton Campville, Tamworth, B79 0AX

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Please Note:

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Flood risk, water and environment

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Flood risk, water and environment

Summary

Development Description	Existing	Proposed
Development Type	Residential	Construction of two ancillary buildings to an existing residential dwelling, a workshop and a summerhouse, total footprint of both is less than 250m^2 (minor development).
EA Vulnerability Classification	More Vulnerable	No change
Ground Level	Based on 1m LiDAR, the proposed workshop sits between 63.46m AOD and 64.43m AOD; the proposed summerhouse footprint sits between 63.29m AOD and 64.17m AOD.	Recommended Finished Floor Levels of the workshop and summerhouse is a minimum of 63.66m AOD (which is equal to the 1 in 100 + CC flood level), where possible. Raising by additional 300mm above this would provide additional mitigation. It is important to note that each building is ancillary to the existing and viewed as a minor development.
Level of Sleeping Accommodation	N/A[1]	No sleeping accommodation is included in either proposed building.
Impermeable Surface Area	N/A[1]	Increase of approximately 120m^2
Surface Water Drainage	N/A[1]	N/A[1]
Site Size	Approximately 500m^2	No change
Risk to Development		
EA Flood Zone	Flood Zone 1, 2 and 3	
Flood Source	Fluvial	
SFRA Available	South Staffordshire SFRA (2019)	
Management Measures		
Ground floor level above extreme flood levels	Yes	Recommended Finished Floor Levels of the workshop and summerhouse is a minimum of 63.66m AOD (which is equal to the 1 in 100 + CC flood level), where possible. Raising by additional 300mm above this would provide additional mitigation. It is important to note that each building is ancillary to the existing and viewed as a minor development.
Safe Access/Egress Route	Yes	A maximum walk 35m within the grounds of the property takes occupants to Flood Zone 1 (within the site boundary)

Flood Resilient Design	Yes	The proposed buildings should be constructed in flood resilient manner in line with CLG 2007 Report Improving Flood Performance of New Buildings
Site Drainage Plan	N/A[1]	N/A[1]
Flood Warning & Evacuation Plan	N/A[1]	N/A[1]
Offsite Impacts		
Displacement of floodwater	Negligible	Proposal is Minor Development which may not result in significant impact of floodplain storage in isolation in accordance with paragraph 047 of the Flood Risk and Coastal Change PPG
Increase in surface run-off generation	Negligible	N/A[1]
Impact on hydraulic performance of channels	N/A[1]	Development should not affect watercourses. No development shall take place within 8m of the EA main river unless an EA Flood Risk Activity Permit is applied for.

[1] not required for this assessment [2] data not available.

1. Introduction

1.1. Aegaea were commissioned by Justine Elliott to undertake a Flood Risk Assessment (FRA) to facilitate a 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 full 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 Stoneybridge House, Netherseal Road, Clifton Campville, Tamworth, B79 0AX. The site sits to the northeast of Clifton-Campville.

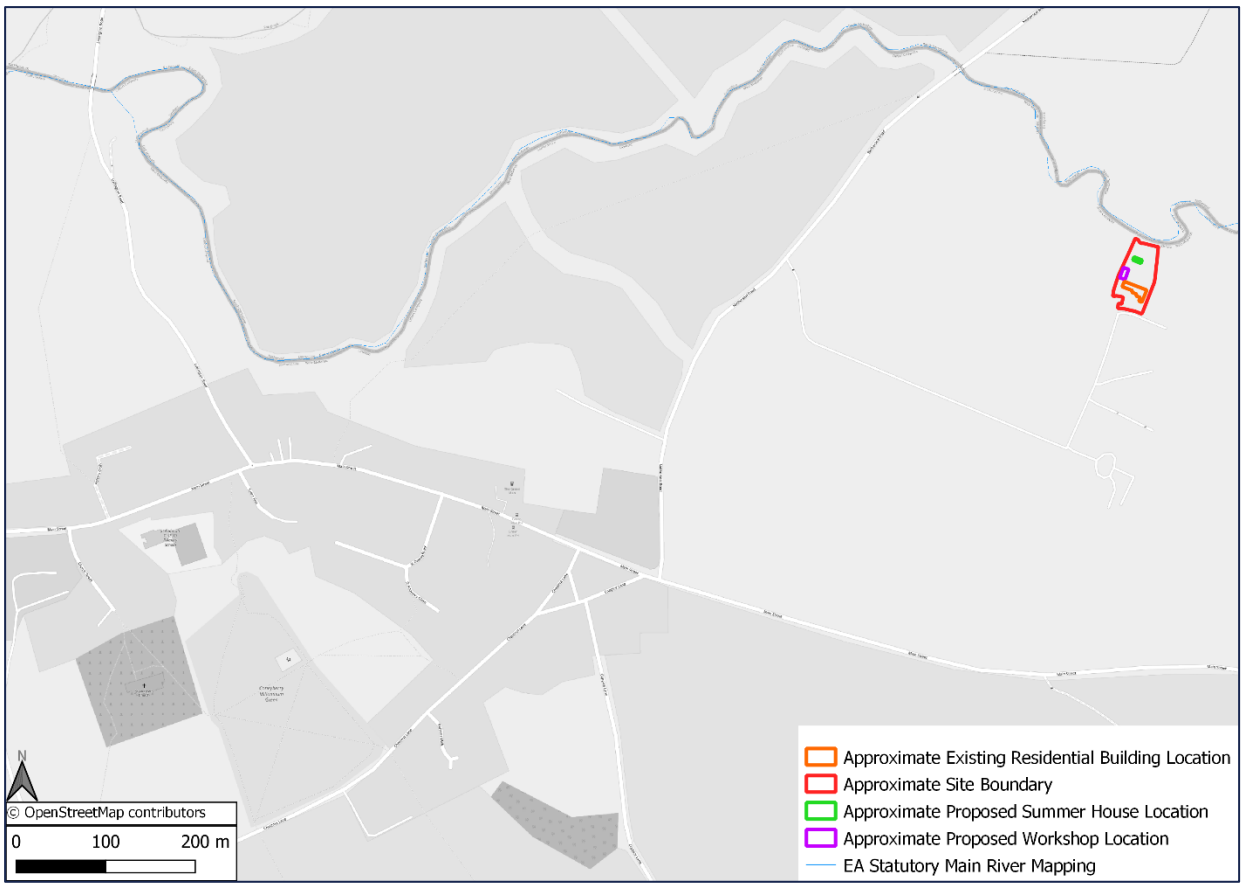


Figure 1: Site Location

1.4. The site is currently a residential dwelling, and the proposed development constitutes construction of two ancillary buildings, a workshop and a summerhouse (no sleeping accommodation is provided in the summerhouse, it would not be useable as an annexe). The proposed workshop and summerhouse would be approximately 70.80m^2 and 50m^2 respectively, a combined total of 120.80m^2.

1.5. In the absence of a topographical survey, Environment Agency Light Detection and Ranging (LiDAR) data Digital Terrain Model (1m resolution) has been utilised to review the topography of the site. Analysis of EA LiDAR indicates that topographic levels on site vary between approximately 61.80m Above Ordinance Datum (AOD) and 66.10m AOD (Figure 2).

1.6. The proposed workshop footprint sits between 63.46m AOD and 64.43m AOD. The proposed summerhouse footprint sits between 63.29m AOD and 64.17m AOD.

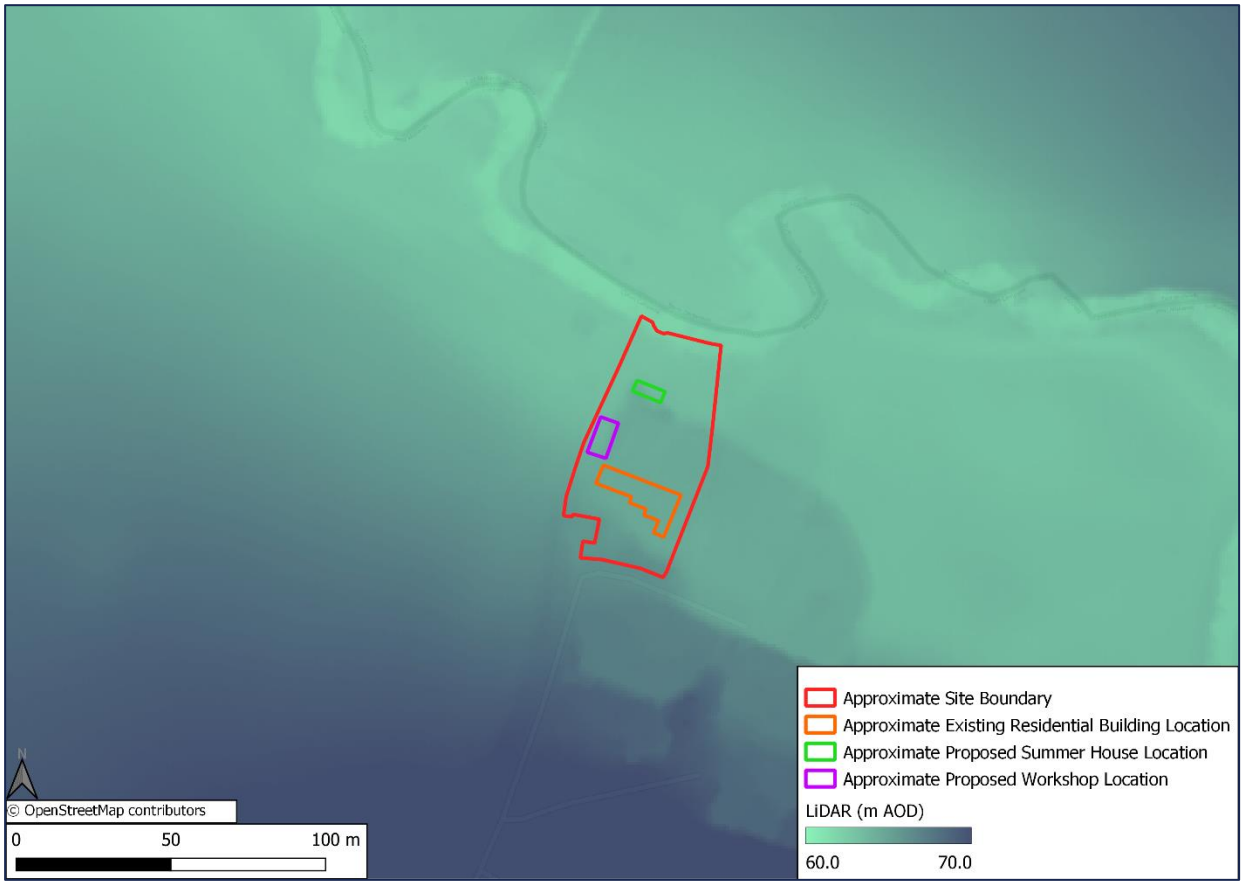


Figure 2: Site Topography

1.7. Staffordshire County Council is the Local Planning authority for the site. The site also sits within Lichfield District Council's remit and within the Environment Agency's (EA) West Midlands region.

Planning Policy and Guidance

1.8. UK government planning guidance states[1] that an FRA is required for sites which are:

- *In Flood Zone 2 or 3 including minor development and change of use,*

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

- *More than 1 hectare 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 river and the sea (for example surface water drains or reservoirs),*
- *In an area within Flood Zone 1 which has critical drainage problems as notified by the Environment Agency.*

1.9. The site is a minor development (under 250m^2) located within Flood Zones 1, 2 and 3 and therefore an FRA is required.

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.

2. Relevant Planning Policy

National Planning Policy Framework

2.1. The potential consequences of inappropriate development in a flood risk area for occupiers, either of the development or elsewhere, pose significant risks in terms of personal safety and damage to property. 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. The following section summarises the key policies and guidance relevant to the proposed development.

2.2. The National Planning Policy Framework[2] (NPPF) (DCLG, 2021) includes Government policy on development and flood risk stating that:

> *"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;*
>
> *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] https://www.gov.uk/guidance/national-planning-policy-framework, **last updated July 2021**

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. Paragraph 046 of the Flood Risk and Coastal Change PPG states:

> *Minor development means:*
>
> *minor non-residential extensions: industrial/commercial/leisure etc extensions with a footprint less than 250 square metres.*
>
> *alterations: development that does not increase the size of buildings eg alterations to external appearance.*
>
> ***householder development: For example; sheds, garages, games rooms etc within the curtilage of the existing dwelling**, in addition to physical extensions to the existing dwelling itself. This definition excludes any proposed development that would create a separate dwelling within the curtilage of the existing dwelling eg subdivision of houses into flats.*

2.5. As such, in accordance with the PPG, the proposed development for a workshop outbuilding and summer house could be considered a minor development.

2.6. Flood Zones in England are defined in Table 1[3] as follows:

Table 1: 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. (Shown as 'clear' on the Flood Map – all land outside Zone 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. (Lan shown in light blue on the Flood Map)
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. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in her Strategic Flood

[3] **https://www.gov.uk/guidance/flood-risk-and-coastal-change**

	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)

Table 1: Flood Zone Definitions

2.7. An FRA should be appropriate to the scale, nature and location of the development and 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.

2.8. An assessment of any hydrological impacts should be assessed including an assessment of impacts on surface water runoff and impacts to the drainage network to demonstrate how flood risk to others will be managed following development and taking climate change into account.

2.9. The Planning Practice Guidance (substantially revised in March 2015 in relation to drainage) requires that sustainable drainage systems should be considered and included ***where practicable***, in line with DEFRA Technical Standards[4].

Lichfield District Local Plan Strategy 2008 - 2029

2.10. The Lichfield District Council Local Plan Strategy[5] (2015) includes Core Policy 3. Core Policy 3 sets out the sustainability requirements for new developments. It requires developments proposed within an area of flood risk to include a site specific FRA at planning.

Sequential and Exception Tests

2.11. 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.

2.12. Paragraph 168 of the 2021 NPPF states that:

> *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. "*

2.13. As such, as the proposal is for a Minor Development, the application should not be subject to the Sequential or Exception Tests.

4 Technical Standards Accessed Online
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415773/sustainable-drainage-technical-standards.pdf

[5] Lichfield District Council, Lichfield District Council Local Plan strategy 2008-2029, February 2015

Table 2: Flood Risk Vulnerability Classification Table

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	✓

Summary

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

3. Consultation and Review

Sources of Information

Documents

3.1. 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.

3.2. The following sources of information have been reviewed for this assessment:

- The Interactive Flood Risk Mapping available on the Environment Agency (EA) website[6].
- The National Planning Policy Framework (NPPF) technical guide (Communities and Local Government, 2019).
- British Geological Survey - Geology of Britain Viewer (British Geological Society, 2017).
- South Staffordshire Strategic Flood Risk Assessment[7] (2019).

South Staffordshire Strategic Flood Risk Assessment

3.3. The South Staffordshire SFRA was completed to inform decisions on the location of future development and the preparation of sustainable policies.

3.4. The SFRA presents flood data pertinent to the South Staffordshire region. This data has been presented and discussed within the relevant sections throughout this report.

6 Environment Agency, Flood Map for Planning, https://flood-map-for-planning.service.gov.uk/, 2017
7 South Staffordshire Strategic Flood Risk Assessment, October **2019**

4. Sources of Flood Risk

Main Rivers

4.1. The River Mease is an EA Main River which runs east to west along the northern end of the site.

Ordinary Watercourses

4.2. There are no other watercourses in the vicinity of the site.

4.3. 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.

Fluvial Flood Risk

4.4. The site is located within Flood Zones 1, 2 and 3 (Figure 3). These Flood Zones denote a risk of flooding from fluvial sources of 1 in 1000 years (Flood Zone 1 – low risk), between 1 in 100 years and 1 in 1000 years (Flood Zone 2 – medium risk), or less than 1 in 100 years (Flood Zone 3 – high risk) respectively.

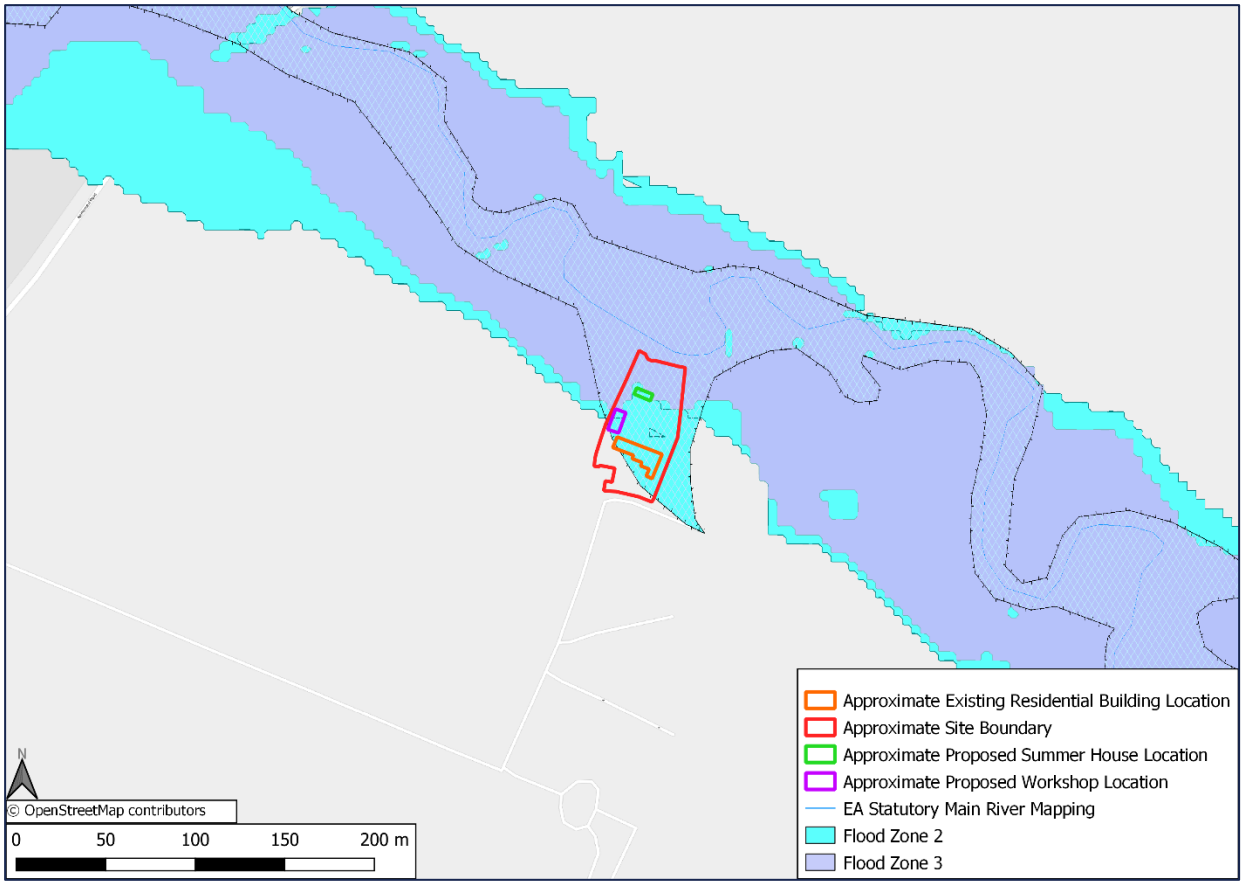


Figure 3: EA Flood Mapping for Planning using the DEFRA opensource data sets (Source: DEFRA / Open Streetview Mapping)

4.5. The outline for Flood Zone 2 in this location appears to have been defined in part by the EA's historic flood outline mapping.

4.6. Both proposed buildings sit largely within Flood Zone 2, although the summerhouse overlaps the edge of the Flood Zone 3 extent. The risk of flooding to the proposed buildings is considered to be moderate to high based on the EA Flood Map for Planning.

4.7. Product 4 data has been obtained from the Environment Agency which has provided outputs from two models Measham & Packington Modelling Scenario (Year Build: 2012) and Section 105 – River Mease (Year Build: 2000). Given the age of the Section 105 model, the outputs from this model have been discounted for the purposes of this assessment. The model outputs used to inform the FRA have been the Measham & Packington Scenario Modelling (2012).

4.8. Product 4 data has been obtained from the EA (Appendix B). River levels adjacent to the site (taken from the node nearest upstream to the site - M14820) are predicted to reach 63.57m AOD in the design event (a 1 in 100 year defended scenario). The proposed workshop footprint sits between 63.46m AOD and 64.43m AOD. The proposed summerhouse footprint sits between 63.29m AOD and 64.17m AOD. The land on which the workshop is proposed could be susceptible to flooding with depths of 0.11m and the land on which the summerhouse is proposed could be subjected to flood depths of 0.28m although its worth noting that both buildings are to also be on land partially above the modelled flood level.

4.9. In a worst case 1 in 1000 year defended event (maximum river level of 63.88m AOD), the land on which the workshop is proposed could be susceptible to flooding with depths of 0.42m and the land on which the summerhouse is proposed could be subjected to flood depths of 0.59m.

Climate Change

4.10. Based on a review of the Environment Agency Climate Change allowances introduced July 2021, it has been demonstrated that the Site is in the Tame Anker and Mease management catchment, the peak river flow for the 2080s central allowance is 22%. Given that the model was built in 2012, the national approach to climate change was 20%. It is therefore viewed that the flood level from the Measham and Packington Scenario modelling is fit for purpose to assess the risk of flooding to the Site and proposed development, as a 2% increase in flow may not result in significant increases in flood levels in most cases.

4.11. Analysis of the 1 in 100 + climate change (presumed to be 20% due to the age of the model) from the Measham and Packington Scenario modelling for node M14820 has a flood level of 63.66m AOD. According to LiDAR, the proposed workshop footprint sits between 63.46m AOD and 64.43m AOD. The proposed summerhouse footprint sits between 63.29m AOD and 64.17m AOD.

4.12. The land on which the workshop is proposed could be susceptible to flooding with depths of 0.20m and the land on which the summerhouse is proposed could be subjected to flood depths of 0.37m.

Access and Egress

4.13. Access and egress can be made by users of either proposed building walking a maximum of approximately 35m southwards. The southern end of the site remains within Flood Zone 1 and could

therefore provide access and egress to and from the site in times of flooding. Safe refuge may also be possible within the main dwelling on site.

Summary

4.14. The proposal development constitutes a Minor Development and can therefore adhere to the EA Standing Advice for Minor Developments. The Finished Floor Levels (FFLs) of the proposed extension could be set no lower than existing FFLs. However, to provide a robust approach, it is recommended that the Finished Floor Levels of the workshop and summerhouse are a minimum of 63.66m AOD (which is equal to the 1 in 100 + CC flood level), where possible. Raising by additional 300mm above this would provide additional mitigation. Furthermore, both buildings should be constructed in a flood resilient manner in accordance with the CLG Report, Improving the Flood Performance of New Buildings - Flood Resilient Construction (2007).

Historic Flooding

4.15. The Environment Agency's Historic Flood Map (also shown within Figure 3) dataset shows the site as within a historic flood extent. The EA Recorded Flood Outline dataset suggests that the site is within the recorded flood outline from a fluvial event in December of 1992.

4.16. The South Staffordshire SFRA states Clifton-Campville was adversely affected in pluvial and fluvial flooding on 8th and 17th of June 2016 due to intense rainfall. No further information is provided on these events nor the precise locations of these flood incidents.

Coastal Flooding

4.17. The site is not at risk of coastal flooding.

Canals

4.18. There are no canals within the vicinity of the site.

Pluvial Flood Risk

4.19. 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.

4.20. The EA Surface Water Flood Risk Mapping indicates that the site is within an area at low (1% to 0.1%), medium (1% to 3.33%) and high (>3.33%) risk of surface water flooding (Figure 4).

4.21. The proposed workshop sits wholly outside the predicted pluvial extends. The proposed summerhouse sits within the low risk extent only.

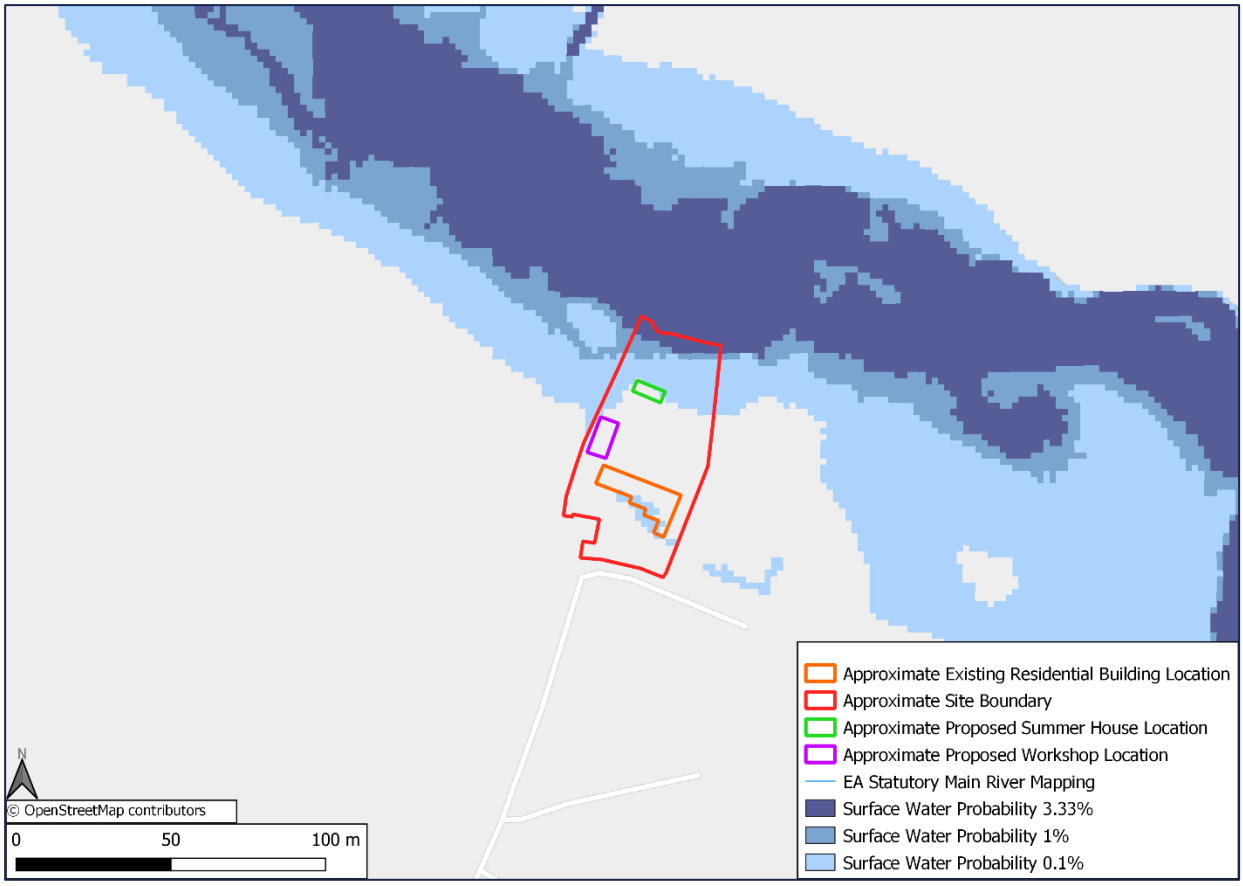


Figure 4: EA Surface Water Flood Risk Mapping

4.22. Further investigation of the EA surface water mapping (Figure 5) shows the land on which the summerhouse is proposed could experience up to 600mm flooding in the low risk (0.1%) event / 1 in 1000 year event.

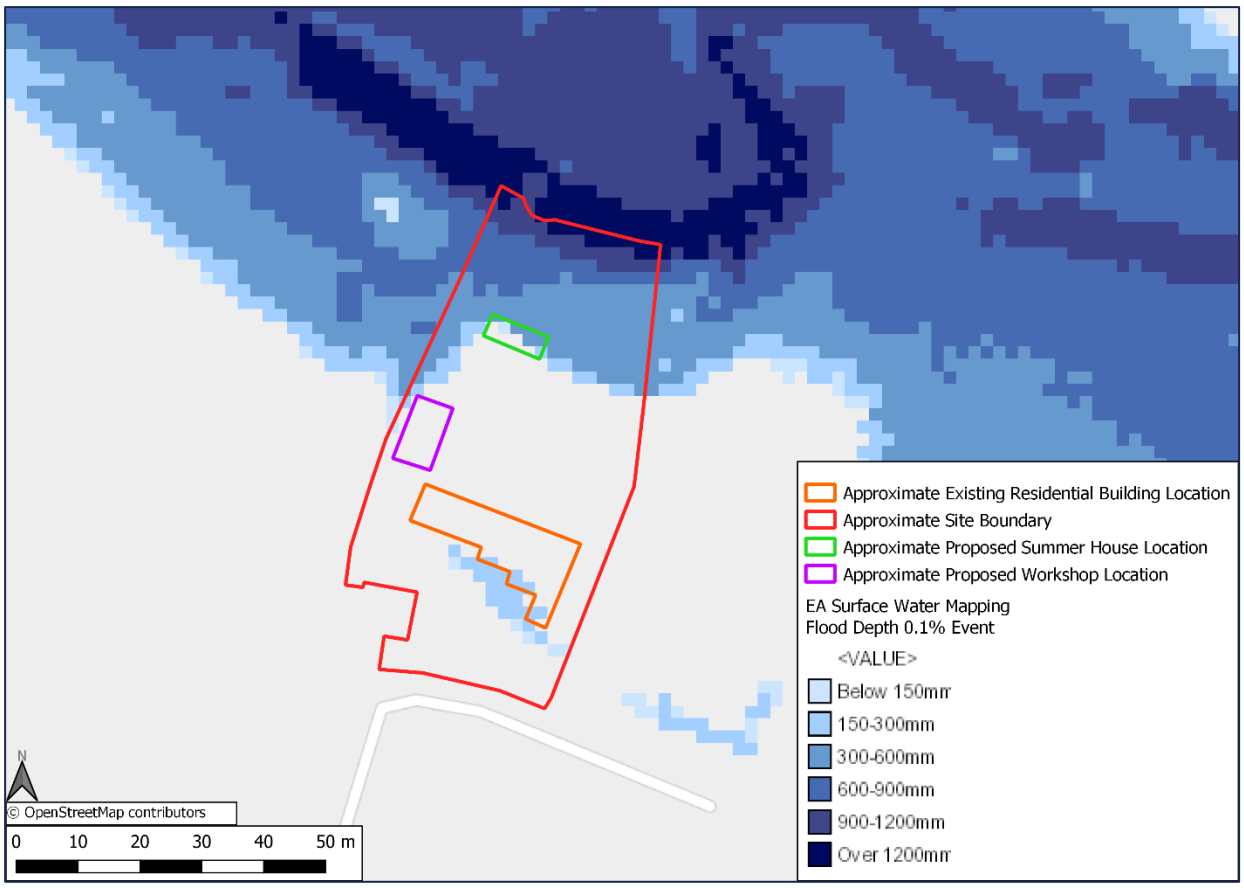


Figure 5: EA Surface Water Flood Risk Mapping – 0.1% Event – Maximum Flood Depth

4.23. The South Staffordshire SFRA states Clifton-Campville was adversely affected by pluvial and fluvial flooding on 8th and 17th of June 2016 due to intense rainfall. No further information is provided on these events nor the precise locations of these flood incidents.

4.24. As the proposed development is only predicted to be at risk of flooding in the 0.1% event, the risk of flooding from pluvial sources is considered low.

Reservoirs

4.25. Flooding can occur from large waterbodies or reservoirs if they are impounded above the surrounding ground levels or are used to retain water in times of flood. Although unlikely, reservoirs and large waterbodies could overtop or breach leading to rapid inundation of the downstream floodplain.

4.26. According to EA Flood risk from reservoirs mapping (Figure 6) the site is at risk of flooding in the event of a breach at Willesley Lake, approximately 8km northeast of the site, when river levels are normal.

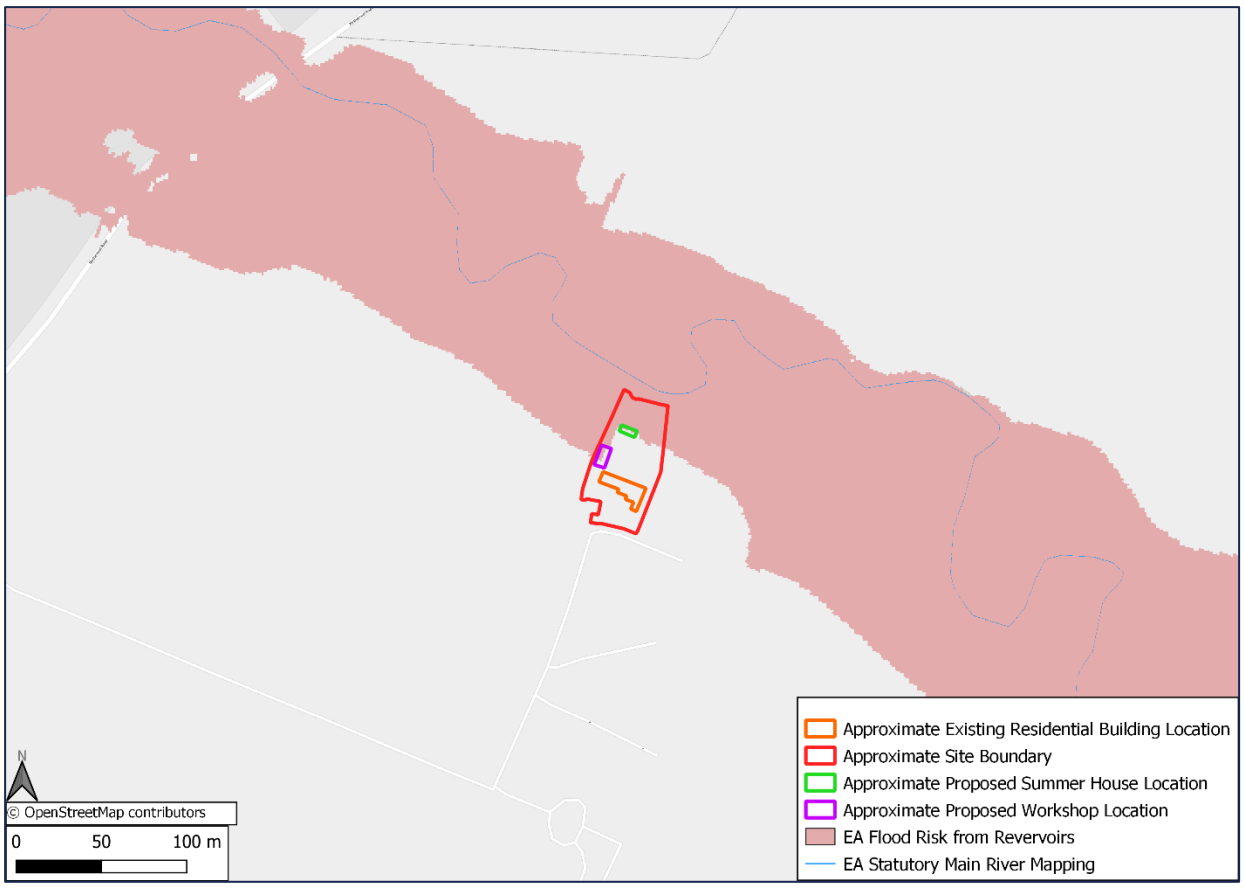


Figure 6: EA Reservoir Flood Risk Mapping

4.27. 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. Therefore, given these criteria the site is deemed to be at a low risk of flooding from this source.

Groundwater

4.28. Groundwater flooding occurs in areas where underlying geology is permeable, and water can rise within the strata sufficiently to breach the surface.

4.29. The British Geological Survey (BGS) Geology of Britain Viewer indicates that the bedrock underlying the site is Radcliffe Member mudstone, and superficial deposits are Alluvium (clay, silt and gravel).

4.30. The South Staffordshire SFRA states that the majority of Southern Staffordshire has a low risk of groundwater flooding. Appendix A of the SFRA provides groundwater vulnerability mapping, however this appendix is not available online. It has been requested but is outstanding at time of writing.

4.31. No historic groundwater flood events in the vicinity of the site are noted within the South Staffordshire SFRA.

4.32. DEFRA mapping[8], available online, shows the site does not sit within any source protection zone.

4.33. The risk of flooding from groundwater to the proposed development is considered low.

Surface Water Sewer Flooding

4.34. Surface water sewers can be a cause of flooding where the drainage network has become overwhelmed, either by blockage or due to local development beyond the designed capabilities of the drainage system.

4.35. The South Staffordshire SFRA does not identify the River Mease catchment as having a high number of sewer flooding incidents. One incidence of sewer flooding is identified in the SFRA within Clifton-Campville, occurring in the "main street" in September 2010.

4.36. The risk of flooding from sewers is considered low.

[8] **DEFRA, https://magic.defra.gov.uk/MagicMap.aspx**

5. Flood Risk Mitigation

Fluvial

5.1. Based on the data available at the time of writing, the risk of flooding to the proposed development from fluvial sources is considered to be moderate to high.

5.2. However, the proposal is a Minor Development, and can adhere to the EA Standing Advice for Minor Developments. The Finished Floor Levels (FFLs) of the proposed extension could be set no lower than existing FFLs. However, to provide a robust approach, it is recommended that the Finished Floor Levels of the workshop and summerhouse are a minimum of 63.66m AOD (which is equal to the 1 in 100 + CC flood level), where possible. Raising by additional 300mm above this would provide additional mitigation. Furthermore, both buildings should be constructed in a flood resilient manner in accordance with the CLG Report, Improving the Flood Performance of New Buildings - Flood Resilient Construction (2007) including measures such as the below where possible:

- Solid (i.e. concrete floors) with waterproof screed – where possible
- Recommended Finished Floor Levels of the workshop and summerhouse is a minimum of 63.66m AOD which is equal to the 1 in 100 + CC flood level, where possible raising by further 300mm would provide additional mitigation. It is important to note that each building is ancillary to the existing and viewed as a minor development.
- Raised wiring and power outlets at ground level above the flood level of 63.66m AOD.
- Units to be raised on legs above plinth.
- Waterproof plasterboard used at ground floor.
- Air brick covers to be installed – where possible
- Damp Proof Membranes (d.p.m.) should be included in any design to minimise the passage of water through ground floors – where possible
- If Patio doors are proposed these may be susceptible to ingress of flood water. Any PVC window/door sills should be adequately sealed. Double glazing should be used to provide resistance against external flood water pressure. Of concern would be excessive water pressure on the glazing of patio doors.
- Residents to sign up to the EA flood warning service if not done so already.

Pluvial

5.3. The risk of pluvial flooding to the proposed development is considered low. The flood resilience measures recommended to mitigate the risk of fluvial flooding should provide sufficient mitigation against pluvial flooding.

Reservoirs, Groundwater and Sewers

5.4. Flood risk from other sources is considered low, therefore mitigation is not proposed.

Impact on Flood Risk Elsewhere

5.5. The proposed development is for the construction of an extension to the existing dwelling on site. As such, the proposal constitutes a Minor Development under the NPPF.

5.6. Paragraph 047 of the Flood Risk and Coastal Change Planning Practice Guidance (PPG) states:

> *Minor developments are unlikely to raise significant flood risk issues unless:*
>
> - they would have an adverse effect on a watercourse, floodplain or its flood defences;
> - they would impede access to flood defence and management facilities, or;
> - where the cumulative impact of such developments would have a significant effect on local flood storage capacity or flood flows.

5.7. As such, the proposed development in isolation should have a negligible impact on flood risk elsewhere. The proposed development will not increase land levels on site as this could increase flood risk elsewhere.

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 Stoneybridge House, Netherseal Road, Clifton Campville, Tamworth, B79 0AX. It has been written to support a 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. The FRA supports the planning application and demonstrates that there is an acceptable level of flood risk to the site if the mitigation strategies recommended are implemented in the scheme. The development does not increase flood risk off site or to the wider area.

Source of Flooding	Flood Risk Summary
Fluvial (and Canals)	The site is located in Flood Zones 1, 2 and 3. Based on the data available at the time of writing, the risk of flooding to the proposed development from fluvial sources is considered to be moderate to high. The proposal is a Minor Development, and can adhere to the EA Standing Advice for Minor Developments. Recommended Finished Floor Levels of the workshop and summerhouse is a minimum of 63.66m AOD which is equal to the 1 in 100 + CC flood level. Where possible raising by further 300mm would provide additional mitigation. It is important to note that each building is ancillary to the existing and viewed as a minor development.
Pluvial	The risk of pluvial flooding to the proposed development is considered low. Mitigation measures in place for the fluvial flood risk would also provide mitigation in a pluvial events.
Sea/Coast Reservoirs Groundwater Sewers	The risk of flooding from reservoirs, groundwater and sewers to the proposed development is considered low.

6.3. The following conclusions can be drawn from this level 1 FRA:

- This FRA has identified no prohibitive constraints in developing the proposed site for the proposed usage.
- The Site is in Flood Zones 1, 2 and 3, and therefore at low to high risk of flooding from fluvial sources.
- The proposal is a Minor Development and can adhere to the EA Standing Advice for Minor Developments.

6.4. This Flood Risk Assessment should be submitted as part of the planning application to satisfy the requirements under NPPF.

Appendix A – Development Proposals

Home Improvements - Location Plan

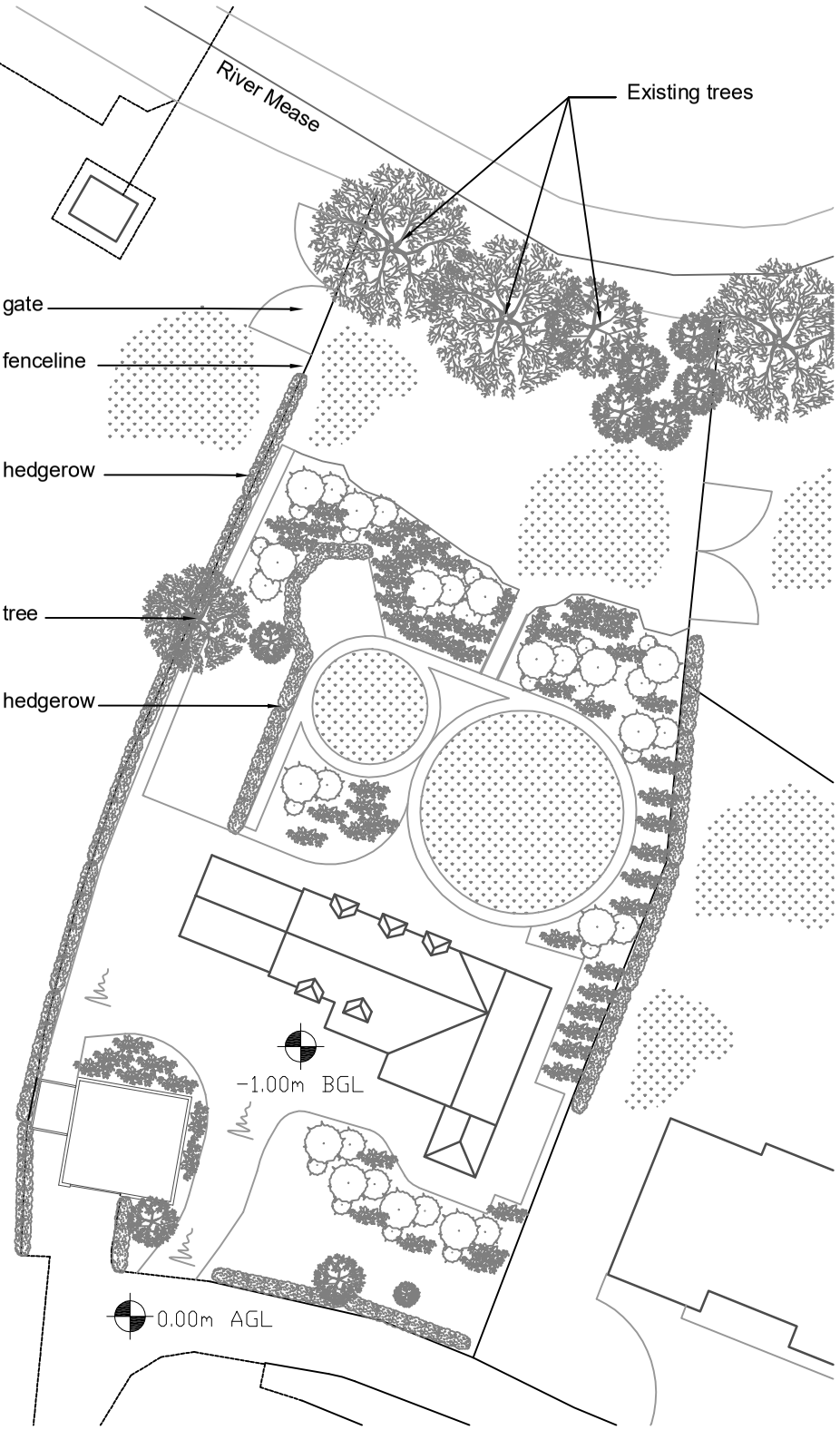
0 50
Metres

N

ReQuestaPlan

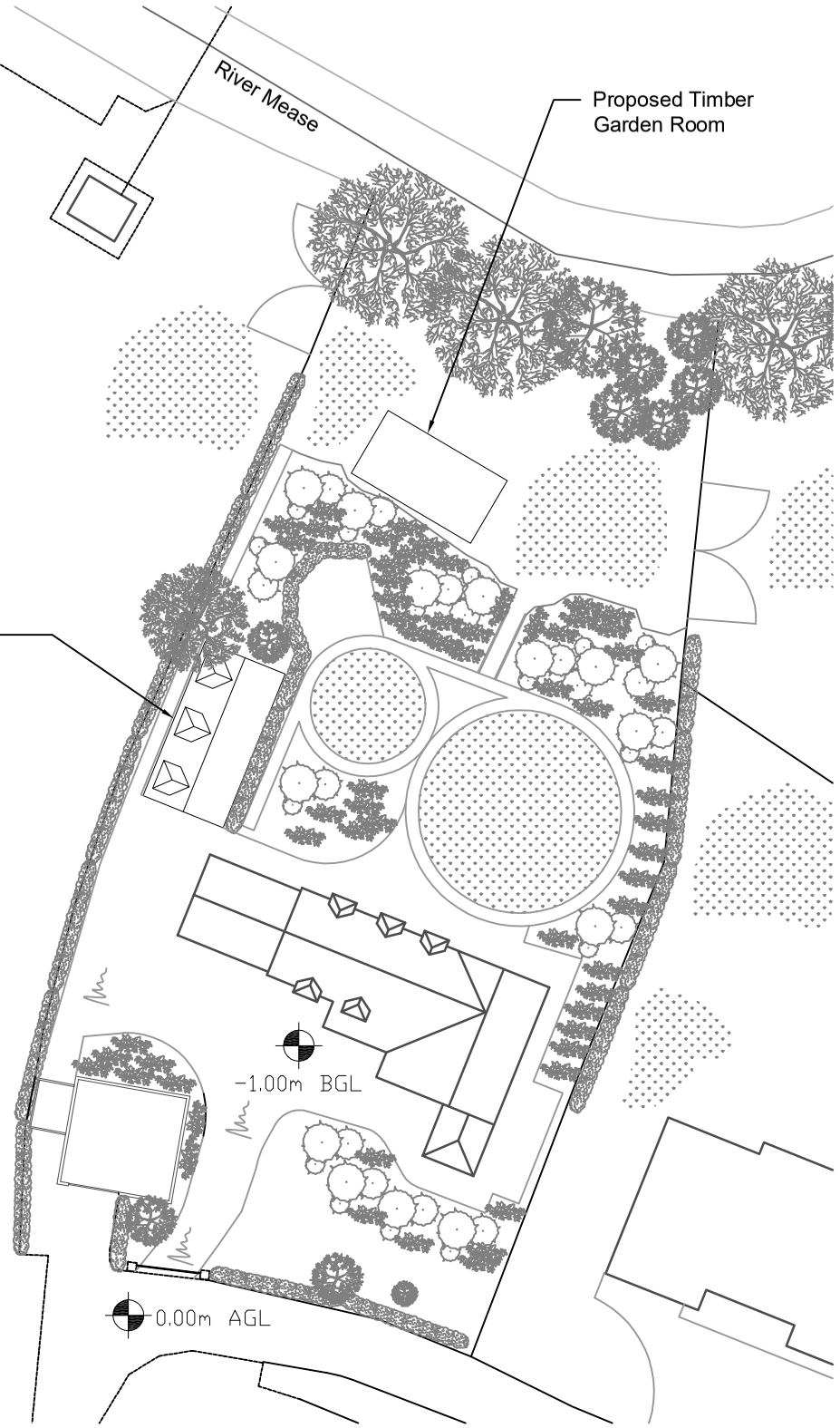
Plan Produced for:	Justine Elliott
Date Produced:	24 Jul 2021
Plan Reference Number:	TQRQM21205160657702
Scale:	1:1250 @ A4

A3



1 Existing Site Layout

1 : 500



2 Proposed Site Layout

1 : 500

0m 10m 20m 30m 40m 50m

VISUAL SCALE 1:500 @ A3

Notes:

1. All dimensions are in millimeters unless otherwise stated.

04/10/2021
08:35:41

Issue	Date	By	Chkd	Appd

Job Title

Erection of a 2No. Outbuildings

Client

Mrs J Elliott

Stoneybridge House, Clifton Park, Netherseal Road, B79 0BE

General Arrangement
Site Layouts

Scale at A3

Discipline: Architectural

Job No: **N/A**

Drawing Status: **Planning Permission**

Drawing No: **GA-002**

Issue: **1**

Appendix B – EA DATA

Product 4 (Detailed Flood Risk Data) for Stoneybridge House, Clifton Campville

Reference number: 243909
Date of issue: 21 February 2022

Model Information

The following information and attached maps contain a summary of the modelled information relevant to the area of interest. The information provided is based on the best available data as of the date of issue.

Model Name	Release Date
Measham & Packington Scenario Modelling	2012
Section 105 - River Mease	2000

Flood Map for Planning (Rivers and Sea)

The Flood Map for Planning (Rivers and Sea) indicates the area at risk of flooding, **assuming no flood defences exist**, for a flood event with a 0.5% chance of occurring in any year for flooding from the sea, or a 1% chance of occurring in any year for fluvial (river) flooding (Flood Zone 3). It also shows the extent of the Extreme Flood Outlines (Flood Zone 2) which represents the extent of a flood event with a 0.1% chance of occurring in any year, or the highest recorded historic extent if greater. The Flood Zones refer to the land at risk of flooding and **do not** refer to individual properties. It is possible for properties to be built at a level above the floodplain but still fall within the risk area.

This Flood Map only indicates the extent and likelihood of flooding from rivers or the sea. It should also be remembered that flooding may occur from other sources such as surface water, sewers, road drainage, etc.

To find out which flood zone a location is in please use: https://flood-map-for-planning.service.gov.uk/

Definition of flood zones

- **Zone 1** - The area is within the lowest probability of flooding from rivers and the sea, where the chance of flooding in any one year is less than 0.1% (i.e. a 1000 to 1 chance).

- **Zone 2** - The area which falls between the extent of a flood with an annual probability of 0.1% (i.e. a 1000 to 1 chance) fluvial and tidal, or greatest recorded historic flood, whichever is greater, and the extent of a flood with an annual probability of 1% (i.e. a 100 to 1 chance) fluvial / 0.5% (i.e. a 200 to 1 chance) tidal. (Land shown in light blue on the Flood Map).
- **Zone 3** - The chance of flooding in any one year is greater than or equal to 1% (i.e. a 100 to 1 chance) for river flooding and greater than or equal to 0.5% (i.e. a 200 to 1 chance) for coastal and tidal flooding.

Note: The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding. Reference should therefore also be made to the Strategic Flood Risk Assessment when considering location and potential future flood risks to developments and land uses.

Node Data

The attached map will show a selection of 1D model node points near to your site. The fluvial levels for these node points are shown below.

Fluvial Flood Levels (m AOD)

The modelled levels are given in m AOD (N), m AOD indicates metres Above Ordnance Datum (Newlyn).

The information is taken from the model referenced above and does not include the updated climate change figures.

Annual Exceedance Probability - Maximum Water Levels (mAOD) DEFENDED												
Node Label	MODEL	EASTING	NORTHING	20% (1 in 5)	10% (1 in 10)	5% (1 in 20)	2% (1 in 50)	1.33% (1 in 75)	1% (1 in 100)	1% (Climate Change)	0.5% (1 in 200)	0.1% (1 in 1000)
M14356	Measham & Packington Scenario Modelling 2012	426353	311327	62.95	63.08	63.15	63.29	63.35	63.39	63.52	63.49	63.77
M14820	Measham & Packington Scenario Modelling 2012	426589	311154	63.32	63.39	63.43	63.51	63.54	63.57	63.66	63.63	63.88

Annual Exceedance Probability - Maximum Water Levels (mAOD) UN-DEFENDED									
Node Label	MODEL	EASTING	NORTHING	20% (1 in 5)	10% (1 in 10)	4% (1 in 25)	2% (1 in 50)	1% (1 in 100)	0.67% (1 in 150)
M14356	Section 105 - River Mease 2000	426361	311340	63.3	63.42	63.58	63.70	63.88	64.03
M14820	Section 105 - River Mease 2000	426593	311161	63.53	63.63	63.75	63.86	64.00	64.13

Email: Enquiries_Westmids@environment-agency.gov.uk
Website: www.gov.uk/government/organisations/environment-agency

Climate Change

In February 2016 the 'Flood Risk Assessments: Climate Change Allowances' were published on GOV.UK. This is in replacement of previous climate change allowances for planning applications. The data provided in this product does not include the new allowances. You will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding. The fluvial climate change factors are now more complex and a single uplift percentage across England cannot be justified.

The Environment Agency will incorporate the new allowances into future modelling studies. For now, it remains the applicant's responsibility to demonstrate through their proposal and flood risk assessments that new developments will be safe in flood risk terms for its lifetime.

Recorded Flood Outlines

Following an examination of our records of historical flooding we do hold records of flooding for this area, please find tabulated information below for these recorded flood events.

Flood Event Code	Flood Event Date	Source of Flooding	Cause of Flooding
7319	December 1992	Main River	unknown

The corresponding recorded flood outline/s can be accessed here:
https://data.gov.uk/dataset/recorded-flood-outlines1

The Recorded Flood Outlines take into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding. It includes flood extents that may have been affected by overtopping, breaches or blockages. Any flood extents shown do not necessarily indicate that properties were flooded internally. It is also possible that the pattern of flooding in this area has changed and that this area would now flood or not flood under different circumstances.

Please note that our records are not comprehensive and that the map is an indicative outline of areas which have previously flooded, not all properties within this area will have flooded. It is possible that other flooding may have occurred that we do not have records for.

You may also wish to contact your Local Authority or Internal Drainage Board (where relevant), to see if they have other relevant local flood information.

Flood Defences

There are no formal raised flood defences owned or operated by the Environment Agency protecting this site. You may wish to contact the Local Authority to obtain further information regarding localised flooding from drains, culverts and small watercourses, and regarding existing or planned flood defence measures.

Planning development/s

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 Flood Risk Assessments. You can also request pre application advice:

https://www.gov.uk/planning-applications-assessing-flood-risk
https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion

Supporting Information

River modelling: technical standards and assessment guidance

The link below contains standards for the flood risk management industry on how to build and review hydraulic models and provide evidence for flood risk management decisions.

https://www.gov.uk/government/publications/river-modelling-technical-standards-and-assessment

Surface Water

Managing the risk of flooding from surface water is the responsibility of Lead Local Flood Authorities. The 'risk of flooding from surface water' map has been produced by the Environment Agency on behalf of government, using information and input from Lead Local Flood Authorities.

You may wish to contact your Local Authority who may be able to provide further detailed information on surface water.

It is not possible to say for certain what the flood risk is but we use the best information available to provide an indication so that people can make informed choices about living with or managing the risks. The information we supply does not provide an indicator of flood risk at an individual site level. Further information can be found on the Agency's website:

https://flood-warning-information.service.gov.uk/long-term-flood-risk

Flood Risk from Reservoirs

The Flood Risk from Reservoirs map can be found on the Long Term Flood Risk Information website:

https://flood-warning-information.service.gov.uk/long-term-flood-risk/map?map=Reservoirs

Flood Alert & Flood Warning Area

We issue flood alert/warnings to specific areas when flooding is expected. If you receive a flood warning you should take immediate action.

You can check whether you are in a Flood Alert/Warning Area and register online using the links below:

https://www.gov.uk/check-flood-risk

https://www.gov.uk/sign-up-for-flood-warnings

If you would prefer to register by telephone, or if you need help during the registration process, please call Floodline on 0345 988 1188.

The associated dataset for flood warning areas is available here: https://data.gov.uk/dataset/flood-warning-areas3

The associated dataset for flood alert areas is available here: https://data.gov.uk/dataset/flood-alert-areas2

Flood Risk Activity Permits

We now consider applications for works, which may be Flood Risk Activities, under Environmental Permitting Regulations. This replaces the process of applying for a Flood Defence Consent. You may need an environmental Permit for flood risk activities 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

Please go to this website to find out more about how to apply: https://www.gov.uk/guidance/flood-risk-activities-environmental-permits.
Please be aware that Bespoke and Standard Rules permits can take up to 2 months to determine and will incur a charge.

Further details about the Environment Agency information supplied can be found on the GOV.UK website:

https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather