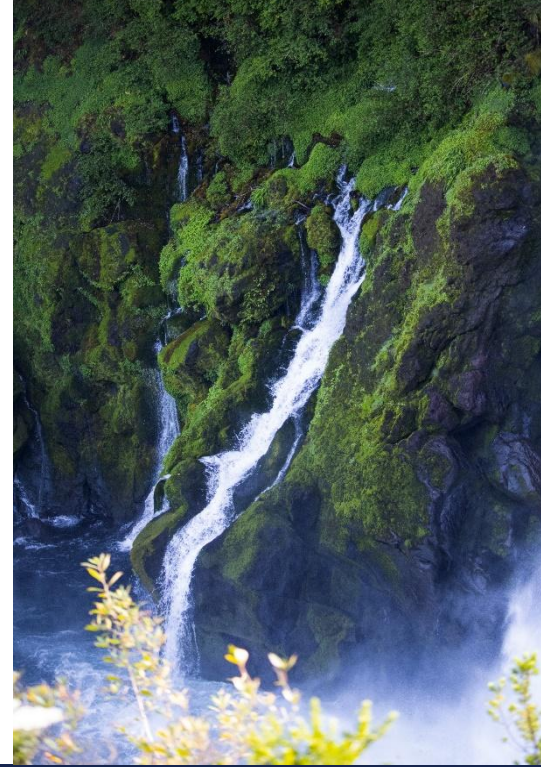




Flood Risk Assessment AEG10057_SO53_Eastleigh_01

Site Address: 107 Brownhill Road
Chandler's Ford
Eastleigh
Hampshire
SO53 2FH

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



Document Issue Record

Project: Flood Risk Assessment

Prepared for: Andrew Ballard

Reference: AEG10057_SO53_Eastleigh_01

Site Location: 107 Brownhill Road, Chandler's Ford, Eastleigh, Hampshire, SO53 2FH

Issue	Date	Author	Check	Auth.	Comments
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Summary

Development Description	Existing	Proposed
Development Type	Residential Dwelling with associated garden	Construction of a new double garage
EA Vulnerability Classification	N/A ¹ - garden	Less Vulnerable
Ground Floor Level	The EA LiDAR data shows the ground elevation of the site is varies between approximately 26.56mAOD (metres Above Ordnance Datum) and 27.19mAOD.	No change. Garage levels will mimic the existing ground level.
	The ground levels at the location of the proposed garage are 26.65m AOD.	
Level of Sleeping Accommodation	N/A ¹ – no sleeping in garden area	N/A ¹ – no sleeping in garage
Surface Water Drainage	N/A ¹	Minor development with minimal impact on drainage. Runoff is to drain into surrounding ground. Small scale SuDS can be included at rainwater downpipes where possible.
Site Size	Circa 724m ²	No change
Risk to Development	Summary	Comment
EA Flood Zone	Flood Zone 3	High fluvial flood risk. Site affected in 1% and 0.1% annual probability events per EA JFLOW (2008) model
Flood Source	Fluvial	
SFRA Available	PfSH Level 1 SFRA Part 8 - Eastleigh Borough Council (Eastleigh Borough Council, 2023)	
Management Measures	Summary	Comment
Ground floor level above extreme flood levels	No	Garage ground level is 26.65m AOD which is below the 0.1% annual probability flood level (27.59m AOD).

Safe Access/Egress Route Flood Resilient Design Site Drainage Plan Flood Warning and Evacuation Plan		The proposed garage is less vulnerable thus the risk is acceptable and would be managed through flood resilience.
	Yes	Since the proposal is a minor development, access and egress arrangements would remain the same.
	Yes	Flood resilience measures proposed for garage design are detailed in Section 5.
	No change	Minor development with minimal impact on drainage, so runoff is to drain into surrounding ground. Small scale SuDS can be included at rainwater downpipes where possible.
	Yes	Recommended that occupier monitor Met Office Weather Warnings for extreme weather events.
Offsite Impacts	Summary	Comment
Displacement of floodwater	Negligible	Garage proposed with shutter doors to allow free ingress and egress of floodwater.
Increase in surface run-off generation	Negligible	Minor development with minimal impact on drainage - runoff to drain into surrounding ground. Small scale SuDS can be included at rainwater downpipes where possible.
Impact on hydraulic performance of channels	None	No watercourses within or in vicinity of the site.

¹ not required for this assessment

² data not available.

1. Introduction

- 1.1. Aegaea were commissioned by Andrew Ballard 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 107 Brownhill Road, Chandler's Ford, Eastleigh, Hampshire, SO53 2FH (Figure 1)



Figure 1: Site Location (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

- 1.4. The existing site comprises a house with associated garden. The proposed development is for the construction of a garage. Scheme plans are included in Appendix A.
- 1.5. In the absence of a topographical survey, Environment Agency (EA) Light Detection and Ranging (LiDAR) data Digital Terrain Model has been used to review the topography of the site (Figure 2). The LiDAR data shows the ground elevation at the site varies between approximately 26.56mAOD (metres Above Ordnance Datum) and 27.19mAOD.
- 1.6. The ground levels at the location of the proposed garage are 26.65m AOD. The proposed garage internal levels would mimic existing ground levels as much as possible.

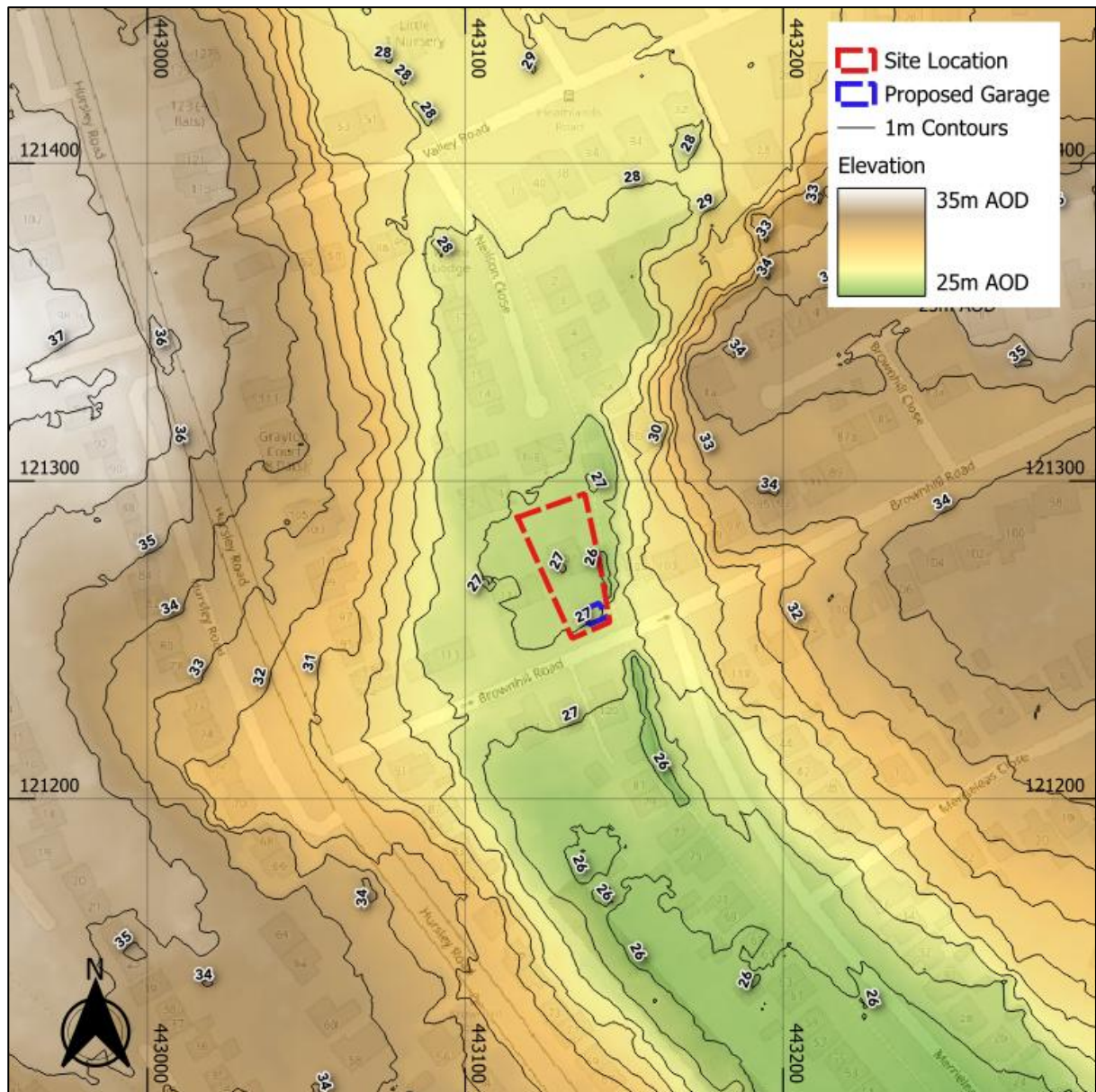


Figure 2: Site Topography (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

- 1.7. Eastleigh Borough Council is the Local Planning Authority (LPA) for the site and Hampshire County Council is the designated Lead Local Flood Authority (LLFA). The site sits within the Environment Agency's Solent and South Downs region.

Planning Policy and Guidance

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

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

1.9. The site is located within Flood Zone 3. Therefore, under the NPPF, a flood risk assessment 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/tidal flood risk
- Surface water flood risk
- Risk of flooding from other sources

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

2. Planning Policy

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

National Planning Policy Framework (NPPF)

- 2.2. The National Planning Policy Framework² (NPPF) (MHCLG, 2024) which includes UK Government policy on development and flood risk states:

170. 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.

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

181. 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;*

² <https://www.gov.uk/guidance/national-planning-policy-framework>, last updated Dec 2024

- 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.*

2.3. Footnote 63 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 051 of the Flood Risk and Coastal Change Planning Practice Guidance (PPG) states:

Minor development means:

- *minor non-residential extensions (industrial/commercial/leisure etc): extensions with a floorspace not in excess of 250 square metres.*
- *alterations: development that does not increase the size of buildings, e.g. 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 (e.g. subdivision of houses into flats) or any other development with a purpose not incidental to the enjoyment of the dwelling.*

2.5. The proposed development is therefore considered a Minor Development under the NPPF.

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

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

Local Plan

- 2.9. The Local Plan prepared by the Local Planning Authority, Eastleigh Borough Council, sets out the policies for development in the local area.
- 2.10. Policy DM5 Managing flood risk outlines the requirements for new development within the area. It states:

1. Development will only be permitted within the areas at risk of flooding, now and in the future, as identified on the Environment Agency most recent flood maps and the Council's Strategic Flood Risk Assessment provided that:

- a. it meets the sequential and exception test (where required) as outlined in Government guidance;*
- b. a site-specific flood risk assessment demonstrates that the development, including the access, will be safe without increasing flooding elsewhere, and where possible, will reduce flood risk overall;*
- c. the scheme incorporates flood protection, flood resilience and resistance measures appropriate to the character and biodiversity of the area and the specific requirements of the site and where appropriate takes advantage of opportunities to utilise natural flood management techniques;*
- d. appropriate flood warning and evacuation plans are in place; and*
- e. new site drainage systems are designed taking account of events which exceed the normal design standard.*

- 2.11. Policy DM6 Sustainable surface water management and watercourse management outlines the requirements for new development within the area. It states:

1. New development (excluding extensions to dwellings and changes of use) will only be permitted if it incorporates Sustainable Drainage Systems (SuDS). Wherever feasible, naturalised filtration should be included within the treatment train as follows:

- a. On sites of 1 hectare or more, or within 100m of the River Itchen SAC or Solent Maritime SAC, SuDS schemes should include at least three forms of naturalised filtration. On sites within 100m of headwaters and tributaries draining into a SAC, SuDS schemes should include at least three forms of naturalised filtration unless hydrological studies and project-level Habitats Regulations Assessment demonstrate*

this to be unnecessary to protect the integrity of the SAC and its qualifying features;

- b. On other sites of between 0.5 hectares and 1 hectare, SuDS schemes should include at least two forms of naturalised filtration; and
- c. On other sites of less than 0.5 hectares non-naturalised SuDS e.g. permeable paving will be considered where justified.

2. In order to reduce flooding and maintain water quality (in accordance with DM8) SuDS schemes should:

- a. be designed and monitored in accordance with the CIRIA C753 SuDs Manual or equivalent national or local guidance, noting that all receiving waters in the Borough should be classified as protected waters;
- b. manage surface water runoff as close to its source as possible;
- c. ensure that discharge rates are reduced as far as possible and that on greenfield sites these should at least mirror greenfield rates before development;
- d. be provided as part of any application for outline or full planning permission;
- e. where discharge is to a wetland or wet woodland habitat, flows off site must mirror the natural hydrological pathways;
- f. include clear arrangements for their whole life management and maintenance.

3. Where a watercourse is present on a development site, it should be retained or restored into a natural state and enhanced where possible. The culverting of any watercourse will not generally be permitted, and development should wherever possible remove any existing culverts and increase on-site flood storage. Development should be laid out to enable maintenance of the watercourse.

4. Where development drains into a waterway connected to the Natura 2000 or Ramsar network a site specific Construction Environment Management Plan must be prepared before permission.

Sequential and Exception Tests

- 2.12. 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.
- 2.13. As per Paragraph 176 of the NPPF

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 63.

- 2.14. As such, given the proposed development is classified as a minor development, the development is not required to be subject to the sequential or exception tests.

Summary

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

3. Data and Document Review

Environment Agency Data

- 3.1. The EA were contacted to obtain the relevant hydraulic model for the area; to which they provided a JFLOW (2008) flood model. Aegaea queried with the EA whether this is the latest available data for the area, in response to which the EA noted on 4th March 2026 that *"unfortunately the Monks Brook Model (2025 Update) is not yet available to share externally"*.
- 3.2. Therefore, the JFLOW 2008 model is understood to be the best available data at the time, and has been used to inform this FRA.

Documents and Online Mapping

- 3.3. Local Governments and Lead Local Flood Authorities provide documents which contain data and policies on flood risk and new development in their areas. These documents are introduced and briefly summarised below. For the purposes of this FRA, these documents have been reviewed for relevant information and any relevant data is discussed within the appropriate sub heading of this report.
- 3.4. The following sources of information have been reviewed for this assessment:
 - Flood Map for Planning on the Environment Agency website <https://flood-map-for-planning.service.gov.uk/>
 - Long Term Flood Risk Information on the Environment Agency website <https://www.gov.uk/check-long-term-flood-risk>
 - National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2024)
 - Planning Practice Guidance - Flood Risk and Coastal Change (Ministry of Housing, Communities and Local Government, 2022)
 - Geoindex Onshore (British Geological Survey, 2024)
 - Eastleigh Borough Local Plan (2016-2036) (Eastleigh Borough Council, 2022)

- PfSH Level 1 Strategic Flood Risk Assessment Part 1 (Partnership for South Hampshire, 2024)³
- Local Flood and Water Management Strategy (Hampshire County Council, 2022)

Preliminary Flood Risk Assessment (PFRA)

- 3.5. The PFRA, published in 2011 and 2017, is a high-level appraisal of flood risk across Lead Local Flood Authority Hampshire County Council. The flood risk from all sources, including fluvial, surface water, groundwater, and surcharged sewers is evaluated. It is the basis upon which the Local Flood Risk Management Strategy is produced.
- 3.6. The PFRA summarises historical flood incidents in Hampshire County Council. The site is not recorded as having been affected by any flood event.

Strategic Flood Risk Assessment (SFRA)

- 3.7. The SFRA, published in 2016, 2023, and 2024, provides the evidence base for the Local Planning Authority Eastleigh Borough Council Local Plan and guidance for consideration when determining planning applications. The SFRA seeks to place new development into areas of lower flood risk taking into account current flood risk, future flood risk, and the effect a proposed development would have on the risk of flooding.
- 3.8. The SFRA mapping provided by Eastleigh Borough Council has been used throughout production of this report as a source of information, particularly pertaining to historical flood incidents.

Local Flood Risk Management Strategy (LFRMS)

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

³ <https://www.eastleigh.gov.uk/media/14369/final-sfra-part-1-main-report-v6.pdf>

4. Sources of Flood Risk

Fluvial

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

Main Rivers and Ordinary Watercourses

- 4.2. The nearest EA Main River, Monks Brook, is located approximately 2m east of the site.
- 4.3. There are no other watercourses in the vicinity of the site according to OS mapping.

EA Flood Map for Planning

- 4.4. The site is located within Flood Zone 3 (high risk) (Figure 3). Flood Zone 3 denotes a risk of fluvial flooding from sources greater than 1 in 100 (1%).

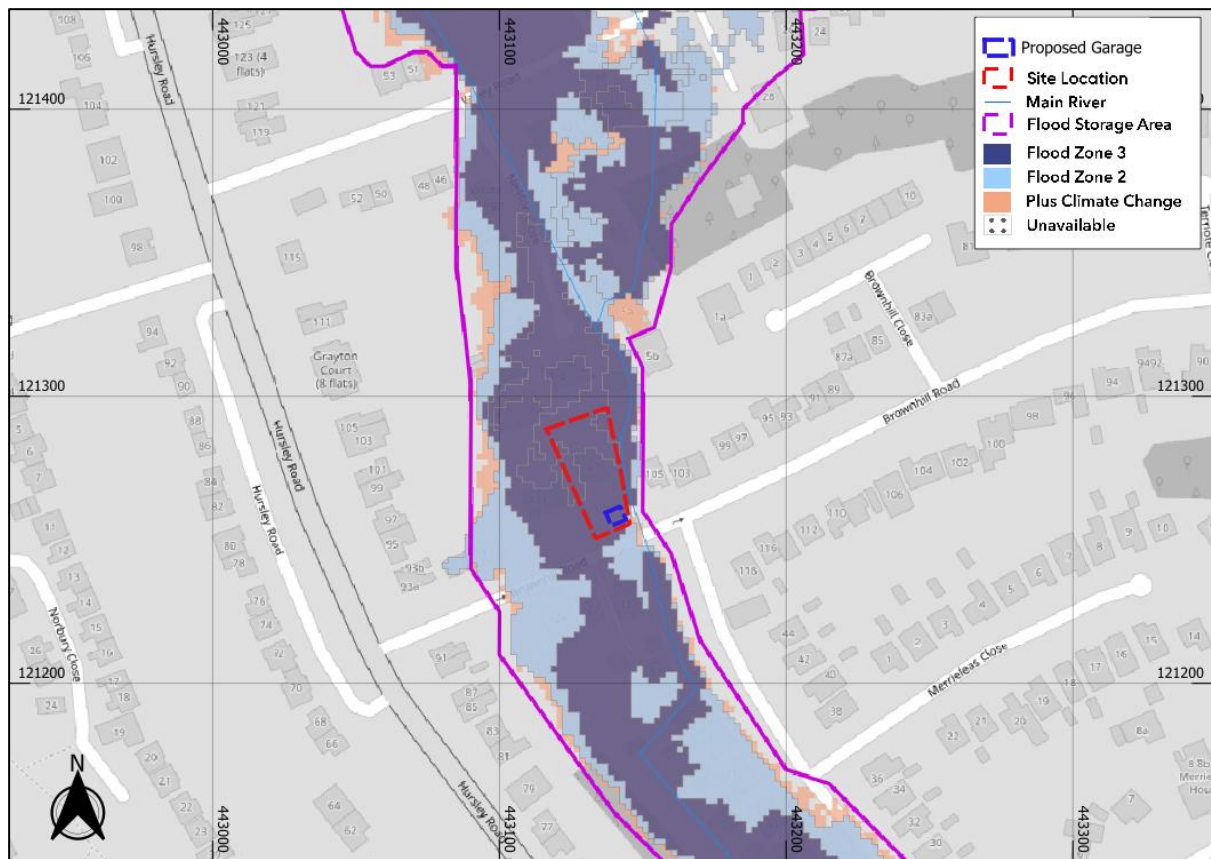


Figure 3: EA Flood Map for Planning (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

Historical Fluvial Flooding

- 4.5. The EA Recorded and historical Flood Outlines dataset shows that fluvial flooding has not been recorded at or within the vicinity of the site (Figure 4).

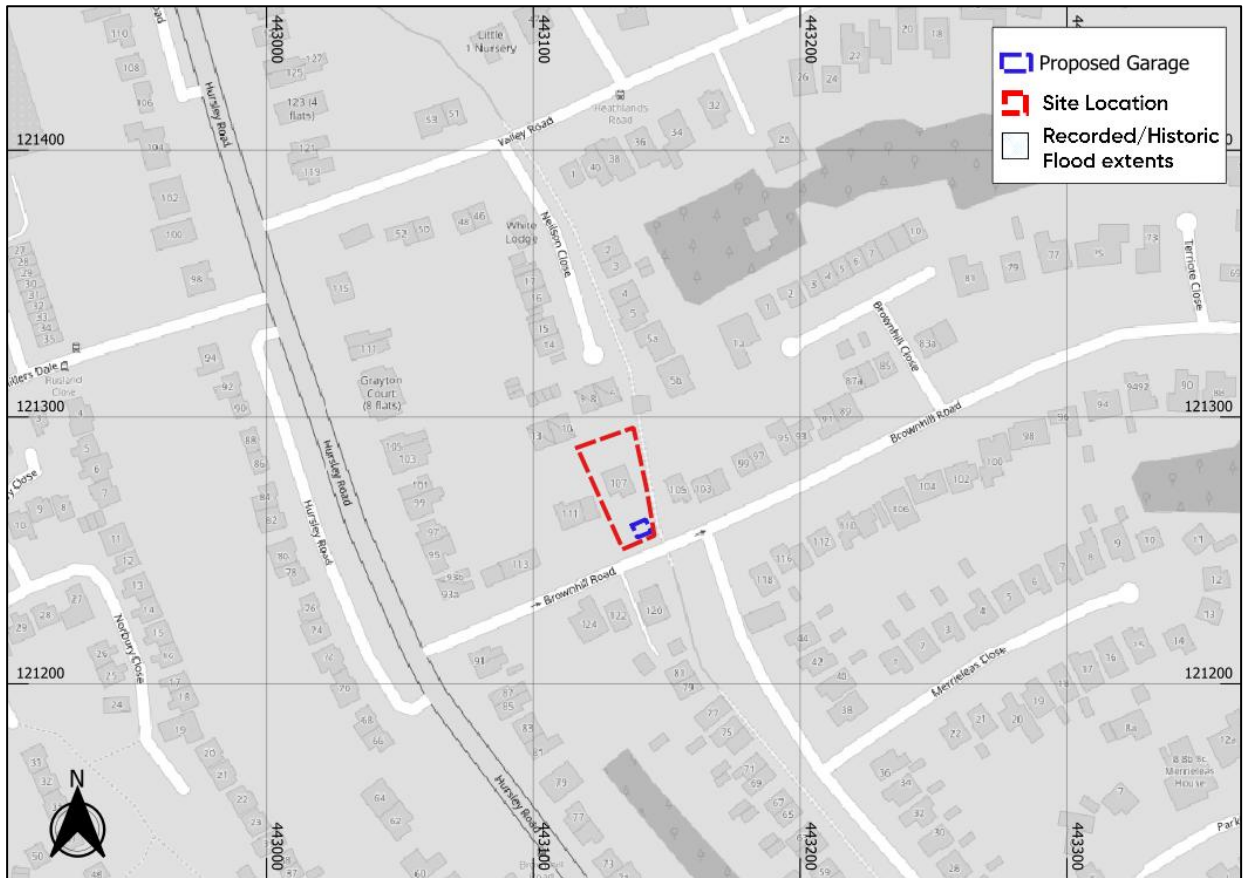


Figure 4: EA Historic Flood Mapping (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

JFLOW Model (2008)

- 4.6. Aegaea has been provided with flood model data for the site area by the EA which has been used to inform this FRA. This information is based on the JFLOW (2008) model and is understood to be the best available information for this area. The EA provided Product 4 (included in Appendix B) and Product 6 outputs which have been used to inform the figures below.
- 4.7. The 2008 model domain covers the main watercourse nearby and provides flood levels and depths for the 100 and 1,000 year events. In lieu of modelled climate change scenarios, the 1,000

year event has been used as a conservative proxy, which given the less vulnerable nature of this minor development, is considered commensurate and appropriate for assessment. The relevant scenarios have been assessed below.

- 4.8. The site is entirely impacted by the 1 in 100 year event with the maximum depth by the proposed garage at 0.99m (Figure 5).

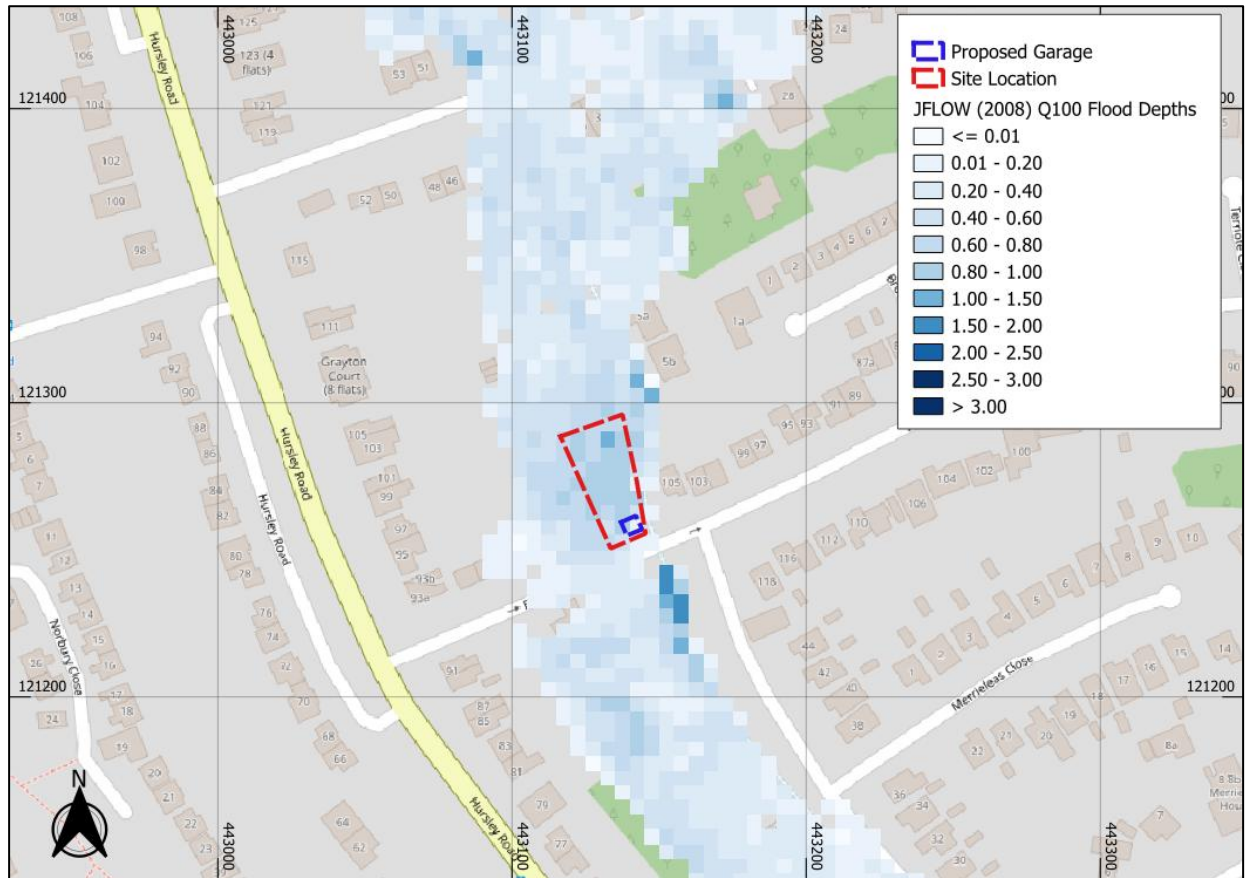


Figure 5: JFLOW (2008) Flood Depths for 1 in 100 year event (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

- 4.9. The site is also entirely impacted by the 1 in 1000 year event with the maximum depth by the proposed garage at 1.05m (Figure 6).

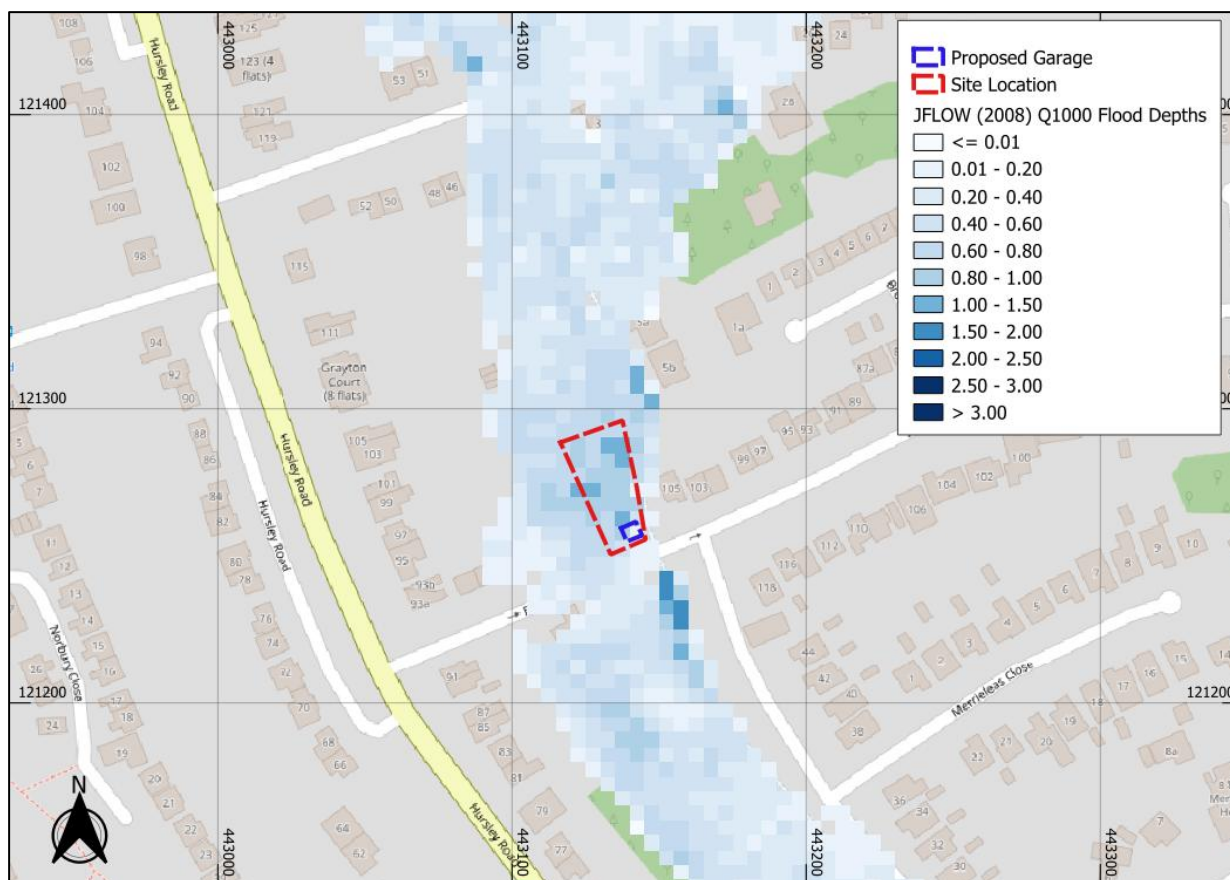


Figure 6: JFLOW (2008) Flood Depths for 1 in 1000 year event (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

- 4.10. The EA provided the water levels and depths for 10 nodes on the site (see Product 4 in Appendix B). The nearest nodes to the proposed garage are Nodes 7 (located approximately 1 meter northwest) and 9 (located at the southeast corner). The flood levels and depths at these nodes are summarised in Table 2.

Table 2: Water Depths and Levels for Node 7 and Node 9

Node	Water Depth (metres)		Water Surface Level (mAOD)	
	1% Annual Probability	0.1% Annual Probability	1% Annual Probability	0.1% Annual Probability
7	0.99	1.05	27.53	27.59
9	0.07	0.12	27.54	27.60

- 4.11. Considering the proposed garage level is 26.65m AOD and the modelled water surface level for the 0.1% annual probability (conservative proxy for design event) is around 27.60m AOD, flood risk to the proposed garage could reach depths up to 0.95m, and the risk of fluvial flooding is therefore considered to be high.
- 4.12. However, given the less vulnerable use, this risk is considered to be acceptable and would be managed through flood resilience measures - as detailed in Section 5.

Tidal

- 4.13. Tidal flooding occurs when a high tide and high winds combine to elevate the sea levels. An area behind coastal flood defences can still flood if waves overtop the defences or break through them. Tidal flooding can also occur a long way from the coast by raising river levels. Water may overtop the riverbank or river defences when tide levels are high. The site is a significant distance from any tidal source.
- 4.14. There is no record of historical tidal or sea flooding on-site.
- 4.15. The risk of flooding from tidal sources is therefore considered to be low.

Canals

- 4.16. The Canal and River Trust (CRT) generally maintains canal levels using reservoirs, feeders, and boreholes and manages water levels by transferring it within the canal system.
- 4.17. There are no canals that have been identified within a 1km radius on review of the CRT UK mapping⁴.
- 4.18. The risk of flooding to this site from canals is considered to be low.

Pluvial

- 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 <https://canalrivertrust.org.uk/canals-and-rivers>

RoFSW Data

- 4.20. The new National Flood Risk Assessment (NaFRA2), published in Jan 2025, has updated the Risks of Flooding from Surface Water (RoFSW) products which shows the chance of flooding from surface water to areas of land.
- 4.21. The RoFSW products are an assessment of where surface water flooding may occur when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. It includes information about flooding extents and depths including the potential impact of climate change on flood risk, based on the latest UK Climate Projections (UKCP18).
- 4.22. Risk is displayed as one of three likelihood categories:
- High – greater than or equal to 1 in 30 (3.3%) chance of flooding in any year.
 - Medium – less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance of flooding in any given year.
 - Low – less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) chance of flooding in any given year.
- 4.23. The new RoFSW depth mapping shows the annual chance of flooding (based on the three risk categories listed above) beyond a specific depth, for depths at the following intervals from 20cm to 120cm:
- 0.2m, 0.3m, 0.6m, 0.9m and 1.2m
- 4.24. As well as present day risk of flooding from surface water, climate change scenarios have been produced to indicate the predicted impacts of climate change on future flood risk. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5. A near-term epoch (2040 – 2060 “2050s” epoch) and central allowances are being used initially, to support short and medium-term decisions informed by the highest flood likelihood projections.

RoFSW Climate Change Assessment

- 4.25. To provide a conservative assessment, the risk of flooding from surface water including for the impacts of climate change has been presented below.

4.26. The EA 'Flood Risk from Surface Water – Climate Change' map indicates that the site falls within the Low, Medium, and High Risk categories present. However, the High Risk extent is concentrated in the north of the Site. The proposed garage location in the south is located outside of all risk categories, indicating a very low risk of flooding from surface water (Figure 7).

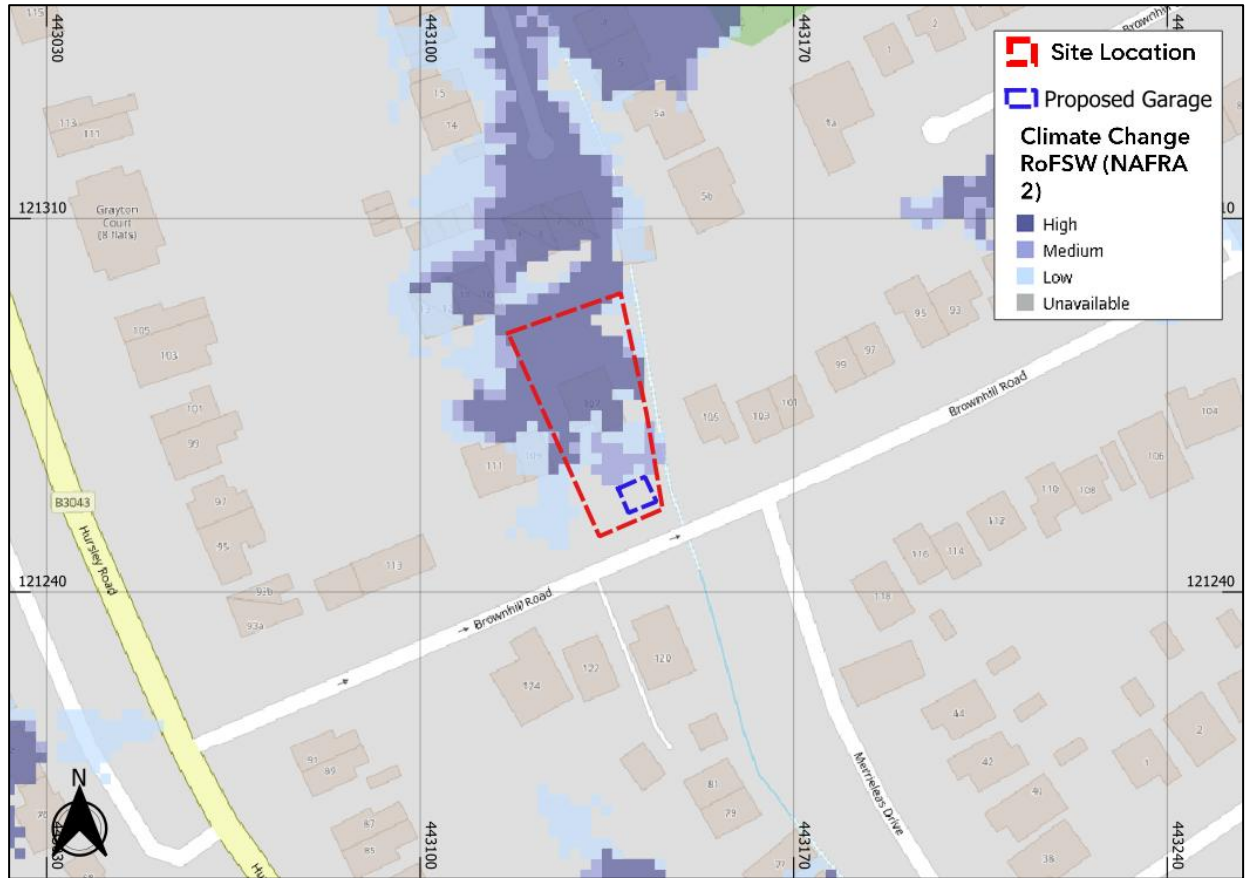


Figure 7: EA Surface Water Flood Risk Mapping Climate Change (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

4.27. Analysis of the climate change RoFSW flood depth mapping indicates that the site falls within all modelled likelihood categories for flood depths exceeding 0.2m (Figure 8).

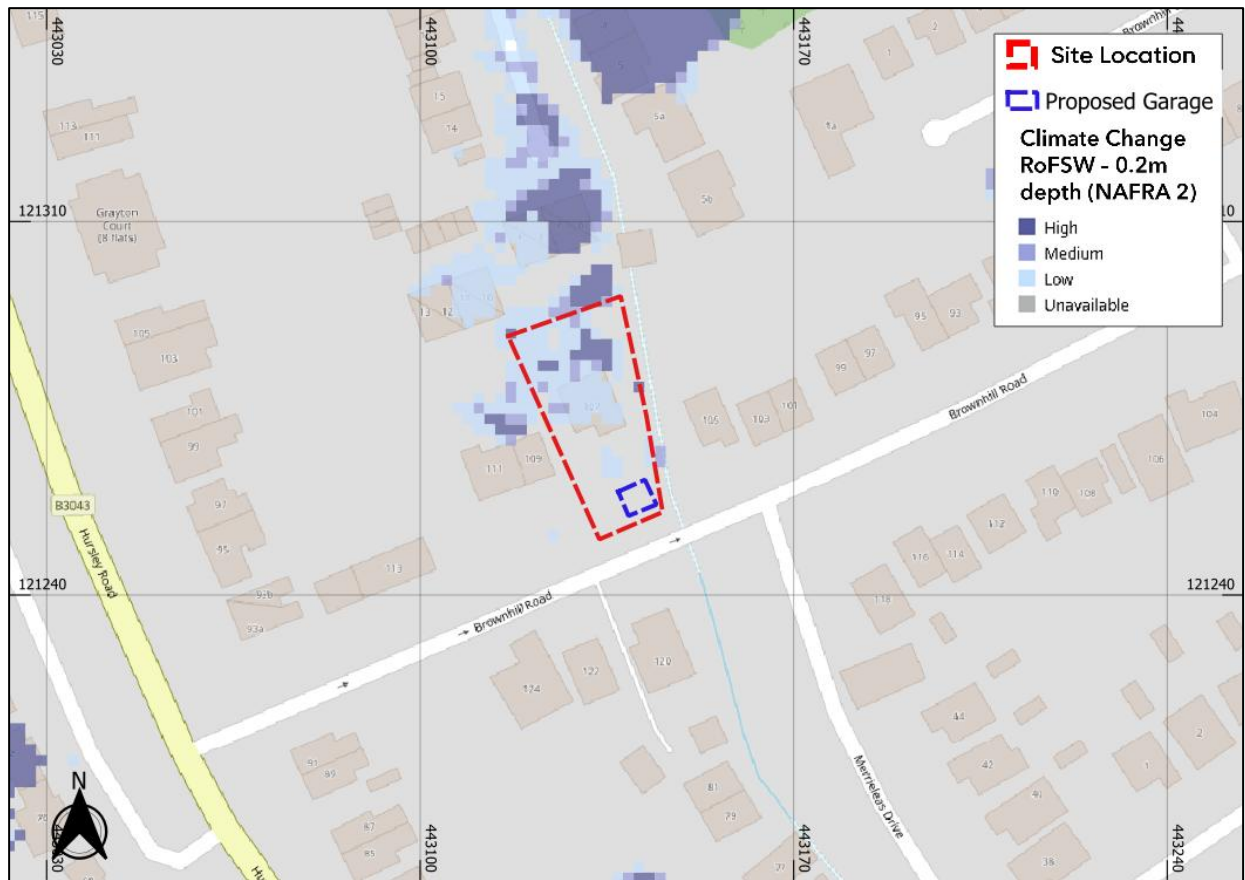


Figure 8: EA Surface Water Flood Risk Mapping Climate Change > 0.2m (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

Surface Water Flood Risk Summary

- 4.28. Based on the information above, the proposed garage is at low risk of flooding from surface water.

Reservoirs

- 4.29. Large waterbodies or reservoirs that have walls built above the surrounding ground level pose a risk of flooding. Walls could fail due to old age, accident, or because excess flood water has been added to the reservoir. Although a breach is unlikely the consequences would be significant, leading to rapid inundation of the downstream floodplain.
- 4.30. According to the EA Flood Risk from Reservoirs mapping (Figure 9), the site is outside flood extents in the event of reservoir flooding. Therefore, flooding from this source is low risk.

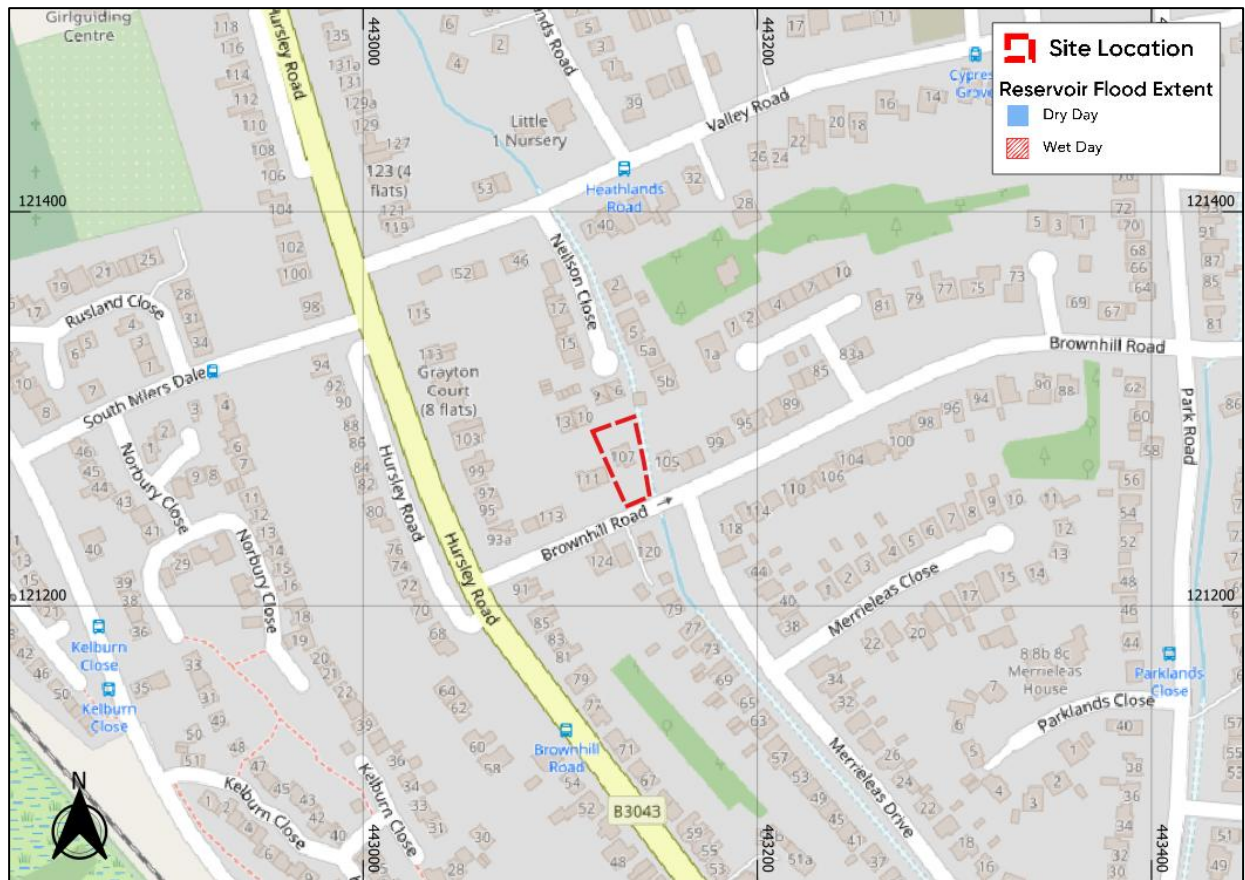


Figure 9: EA Reservoir Flood Risk Mapping (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). ©<https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

Groundwater

- 4.31. Groundwater flooding occurs in areas where underlying geology is permeable and water can rise within the strata sufficiently to breach the surface.
- 4.32. The British Geological Survey's (BGS) mapping shows no superficial deposits underlying the site. BGS also shows the bedrock geology to be Wittering Formation of sand, silt, and clay.
- 4.33. The Strategic Flood Risk Assessment (SFRA) (2023) includes the EA's Areas Susceptible to Groundwater Flooding mapping (Figure 10) which assesses the risk of groundwater flooding. This mapping consists of 1km grid squares and shows the proportion of each which is at risk of groundwater flooding. The site is within a 1km cell with less than 25% susceptibility to groundwater flooding.

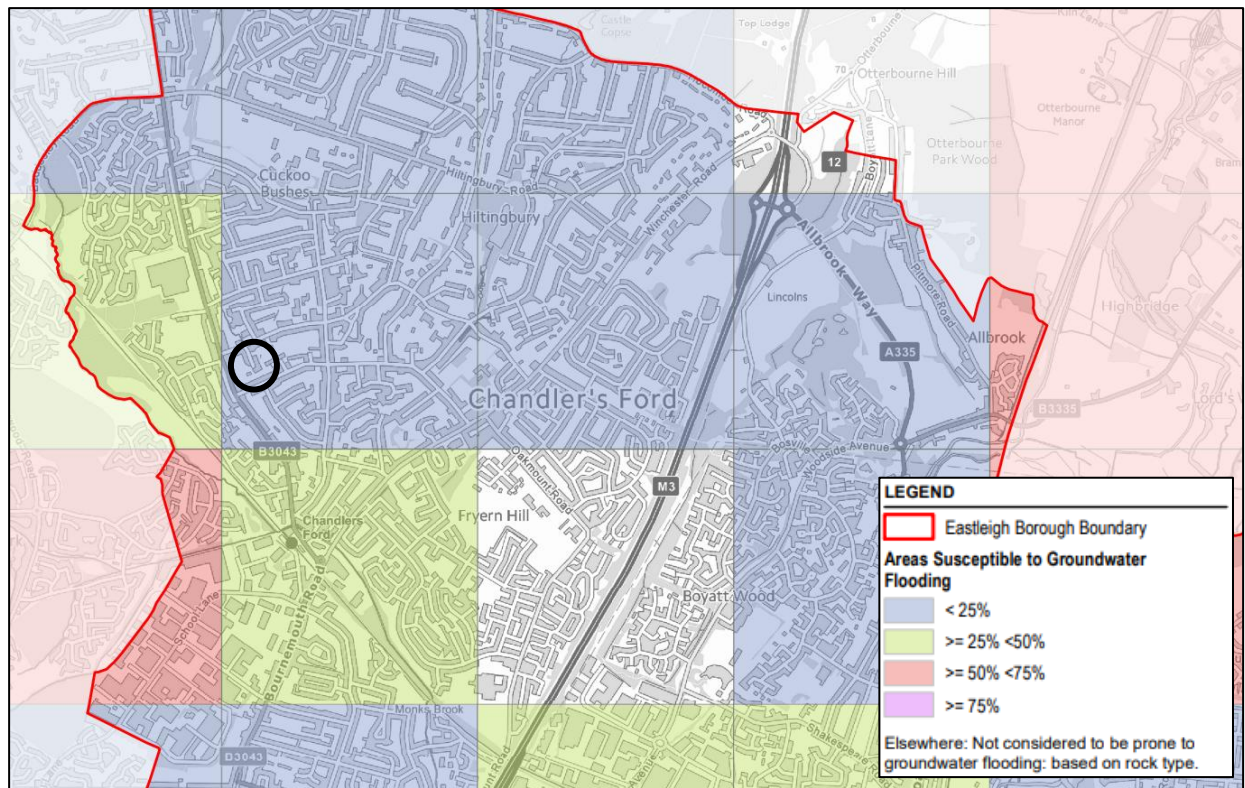


Figure 10: Susceptibility to Groundwater Flooding (SFRA,2023). The Black Circle Represents the Approximate Location of the Site

- 4.34. A review of BGS borehole records in the vicinity of the site identified two boreholes within approximately 200 metres: SU42SW13 (approximately 175m west of the site) and SU42SW12 (approximately 180m southwest of the site). These boreholes do not mention groundwater.
- 4.35. Based on the above, in addition to the proposed development not comprising any subterranean elements, it is considered that the risk of groundwater flooding is low.

Sewers

- 4.36. Foul or surface water sewers can be a cause of flooding if the drainage network becomes overwhelmed, either by blockage or due to local development beyond the designed capabilities of the drainage system.
- 4.37. The SFRA (2023) provides mapping of observed flood incidents and recorded flood outlines which would include flooding from sewers (Figure 11). The site is located in an area of Southern Water observed flooding but is not in an area with recorded flooding outlines.
- 4.38. There is no evidence to suggest the site itself was impacted by sewer flooding. Therefore, the risk is considered to be low.

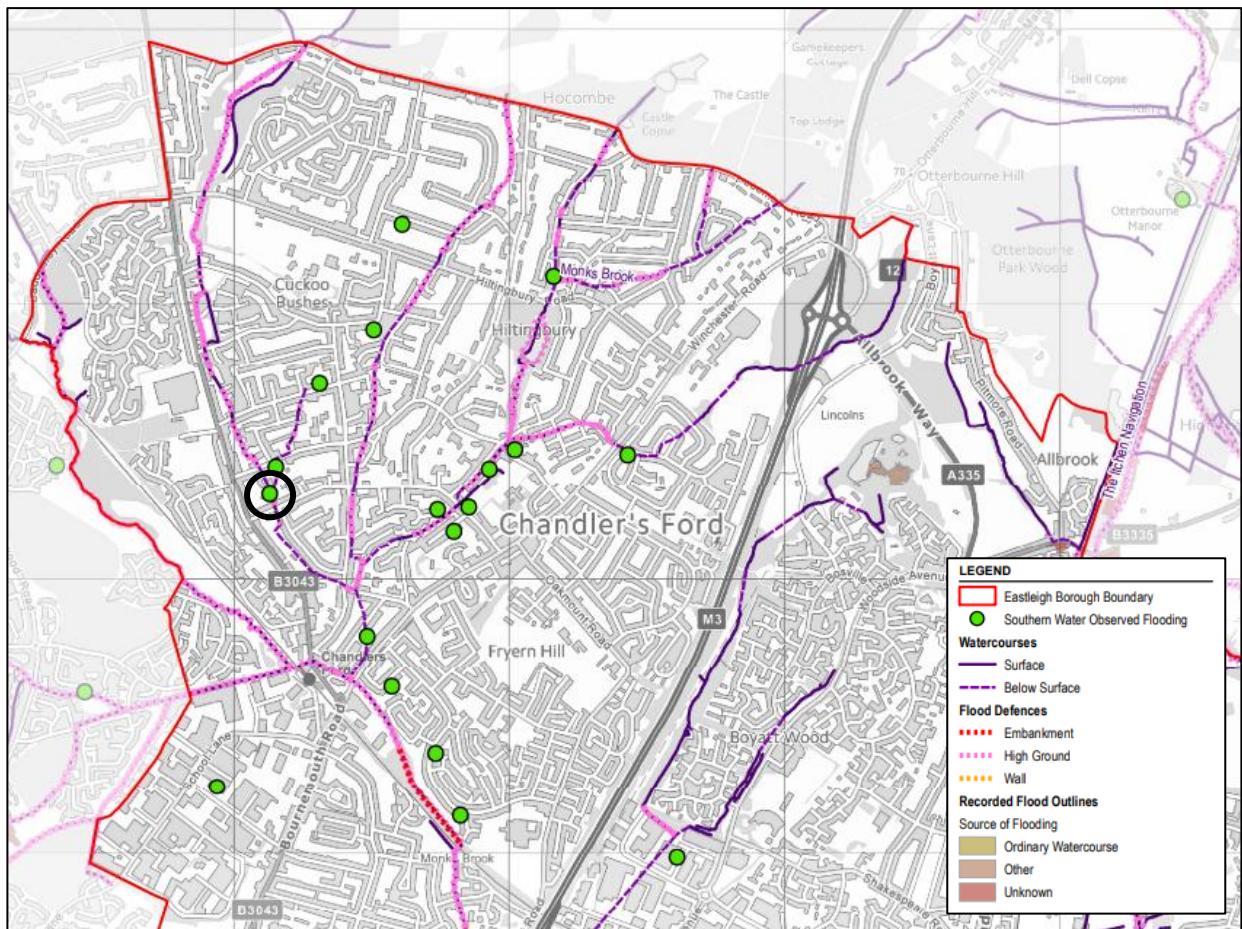


Figure 11: Observed flood incidents and recorded flood outlines (SFRA, 2023). The Black Circle Represents the Approximate Location of the Site

5. Flood Risk Mitigation

Fluvial

- 5.1. The site is located within Flood Zone 3 according to the EA Flood Map for Planning. Review of the EA JFLOW (2008) flood model data confirms that the proposed garage is located within the 1in100 and 1in1000 year flood extents. Modelled flood levels of approximately 27.53m AOD in the 1% annual probability event and 27.59m AOD in the 0.1% annual probability event at Node 7 (the nearest node to the proposed garage). The proposed garage could experience flood depths up to 0.95 in the 1000 year event (used as a conservative proxy for design event). The ground level is 26.65m AOD, which is below these modelled flood levels. The proposed garage is therefore at high risk of fluvial flooding.
- 5.2. As the proposed development is a garage (minor development), it is classified as 'Less Vulnerable', and the risk is therefore acceptable. The would be made resilient to flooding through the following recommended measures - to be confirmed during detailed design:
- Raising of electronics from ground level
 - Use of flood resilient materials

Pluvial, Tidal, Canals, Reservoirs, Groundwater and Sewers

- 5.3. Flood risk from all other analysed sources of flooding is considered to be low, therefore no further mitigation is required for these sources.

Increase to Flood Risk Elsewhere

- 5.4. The garage would be constructed with shutter doors to allow for the free flow of water such as not to displace floodwater.
- 5.5. In addition, the proposed garage constitutes a Minor Development under the NPPF. Paragraph 051 of the Flood Risk and Coastal Change Planning Practice Guidance (PPG) states:

Minor developments are unlikely to raise significant flood 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.*

- 5.6. As such, the development in isolation is considered to have a negligible increase in flood risk elsewhere.
- 5.7. The site is in the Environment Agency 'Chandlers Ford to Swaythling' flood warning service area. This service allows site owners to register an address along with contact details so that, in the event of a flood being forecast, they are sent an alert. As a further precaution and risk reduction, the owner of the site should sign up.
- 5.8. Flood warnings/alerts can be enforced at any time of the day or night. Signing up for this service provides site owners some notice before a flood event. The amount of time afforded before a flood occurs depends on the site-specific location (e.g. proximity to the source of flooding, topography of the surrounding area) and the flood mechanism (e.g. bank over topping versus a breach event). Flood alerts and warnings provide site managers with time to take necessary action, e.g. communication of the risk of flooding to occupants/employees etc, evacuation of occupants offsite or to a safe level, removal of valuable items out of reach of flooding and the mounting of site-specific flood defences.
- 5.9. Upon receipt of flood warning occupants can move any sensitive items (i.e. car) outside of the flood extents.

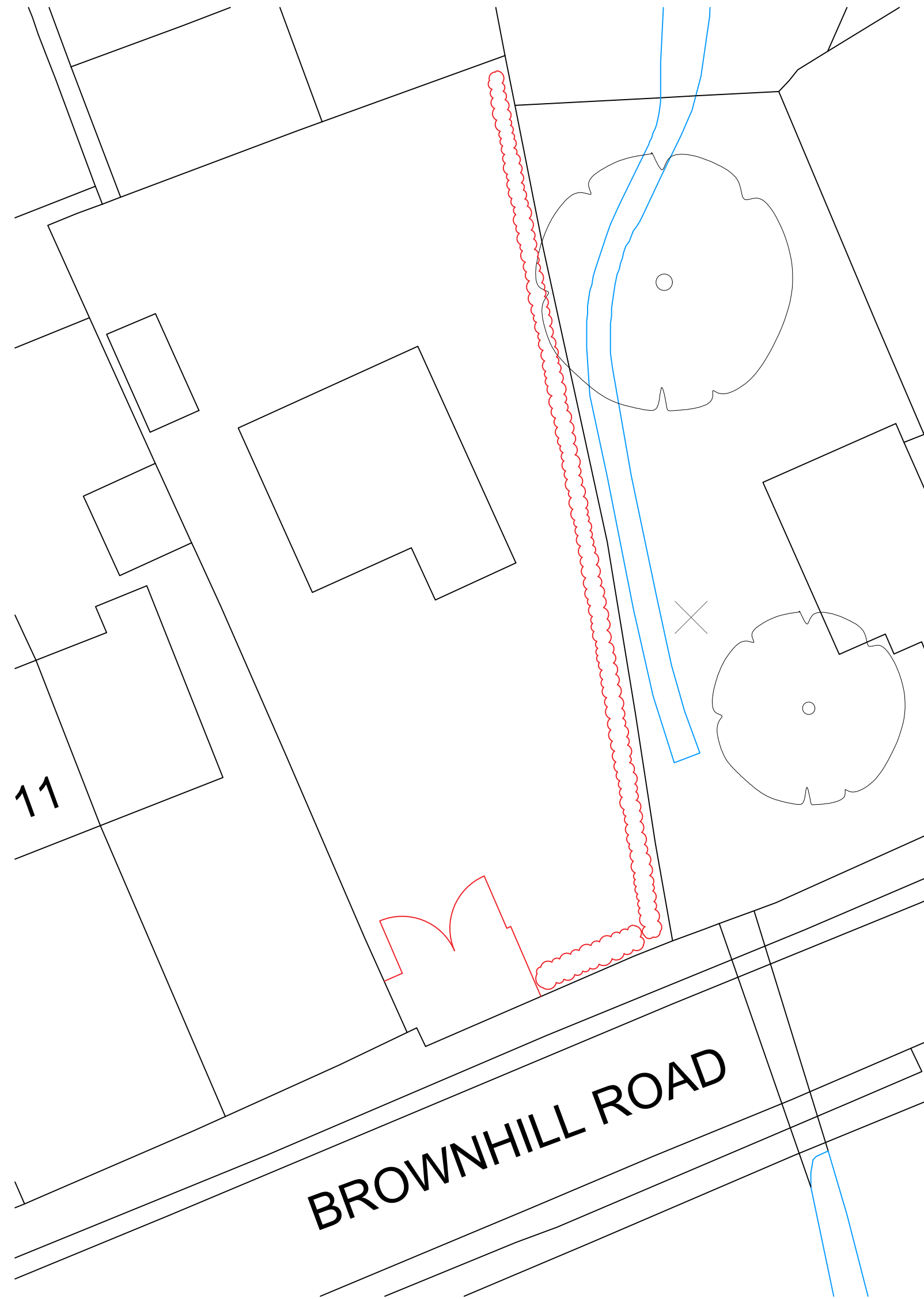
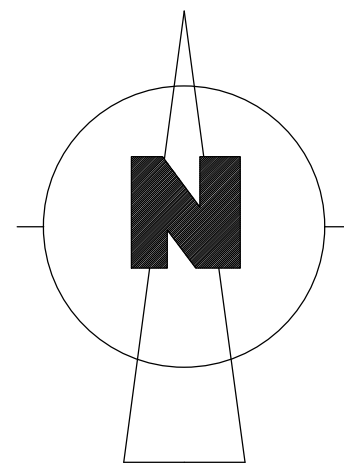
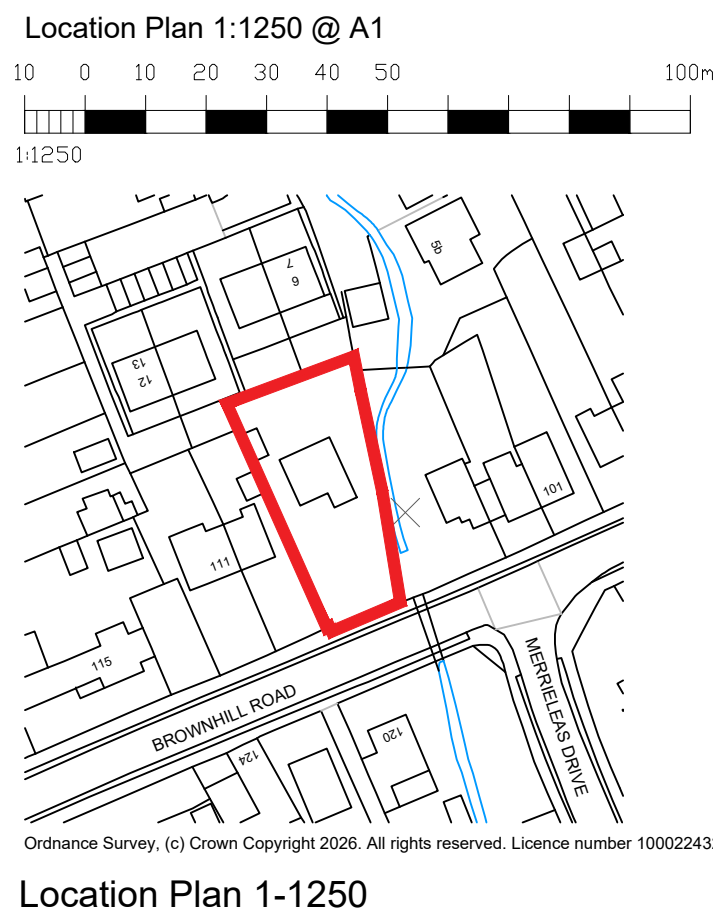
6. Conclusions

- 6.1. This FRA has been undertaken with reference to the requirements of NPPF and Planning Practice Guidance with respect to the development at 107 Brownhill Road, Chandler's Ford, Eastleigh, Hampshire, SO53 2FH. It has been written to support a planning application and prepared with due consideration to the nature of the proposed development to provide the appropriate level of detail.
- 6.2. An assessment of the risk of flooding from all sources has been undertaken and is summarised in the table below:

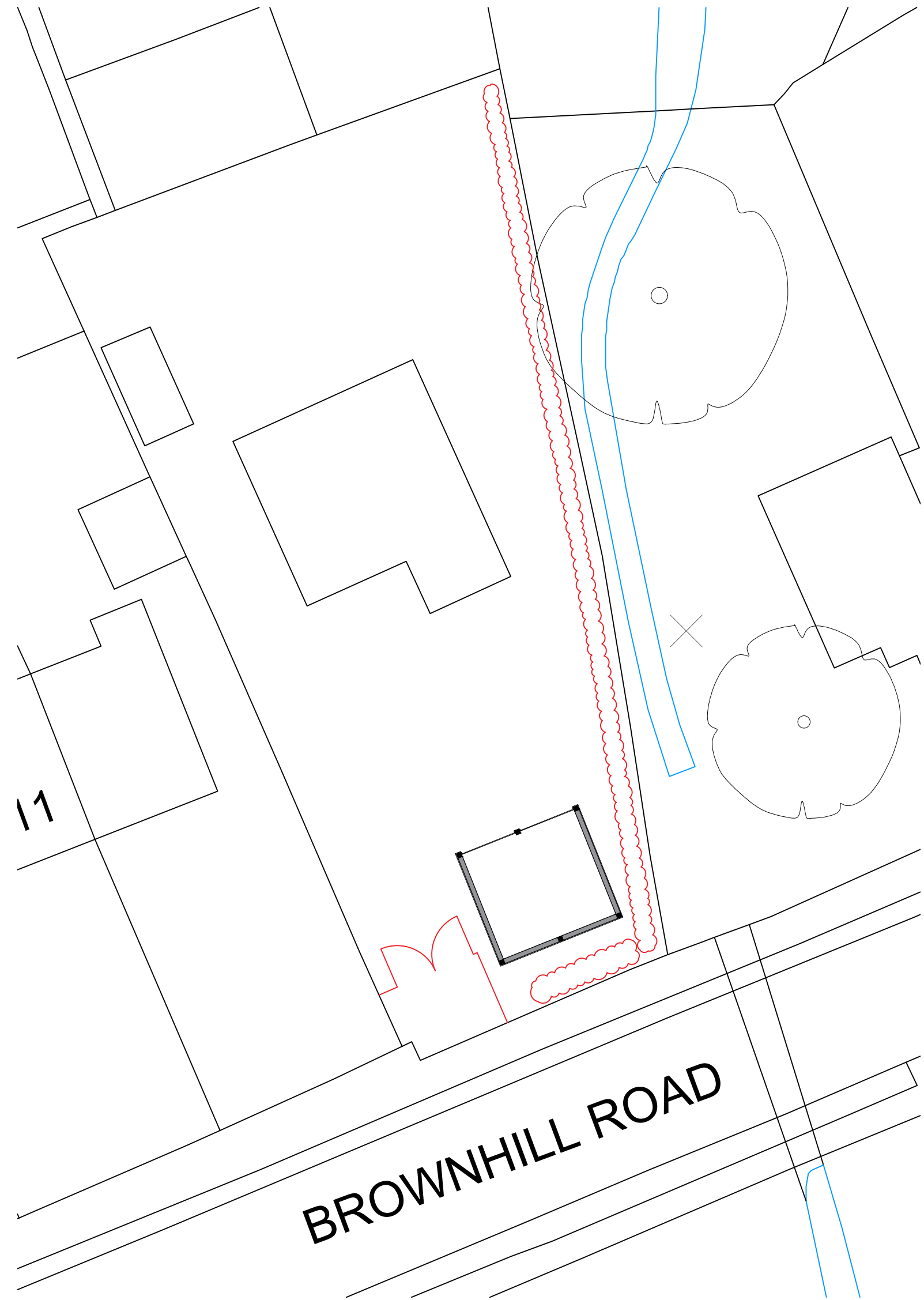
Source of Flooding	Flood Risk Summary
Fluvial	The site is located within Flood Zone 3 (high fluvial risk). The EA JFLOW (2008) model indicates the proposed garage would be subject to flood depths up to 0.95m in the 1000 year event (used as conservative proxy for design event). Given the less vulnerable use of this minor development, this risk is considered acceptable and would be managed through flood resilience measures. In addition, the garage is proposed with shutter doors to allow the free flow of water to minimise potential flood water displacement.
Pluvial Tidal Reservoirs Groundwater Sewers Canals	The site is considered to be at low risk from other sources.

- 6.3. The FRA supports the planning application and demonstrates that there is an acceptable level of flood risk to the site if the mitigation measures are incorporated. The development would not increase flood risk off site or to the wider area.
- 6.4. This Flood Risk Assessment should be submitted as part of the planning application to satisfy the requirements under NPPF.

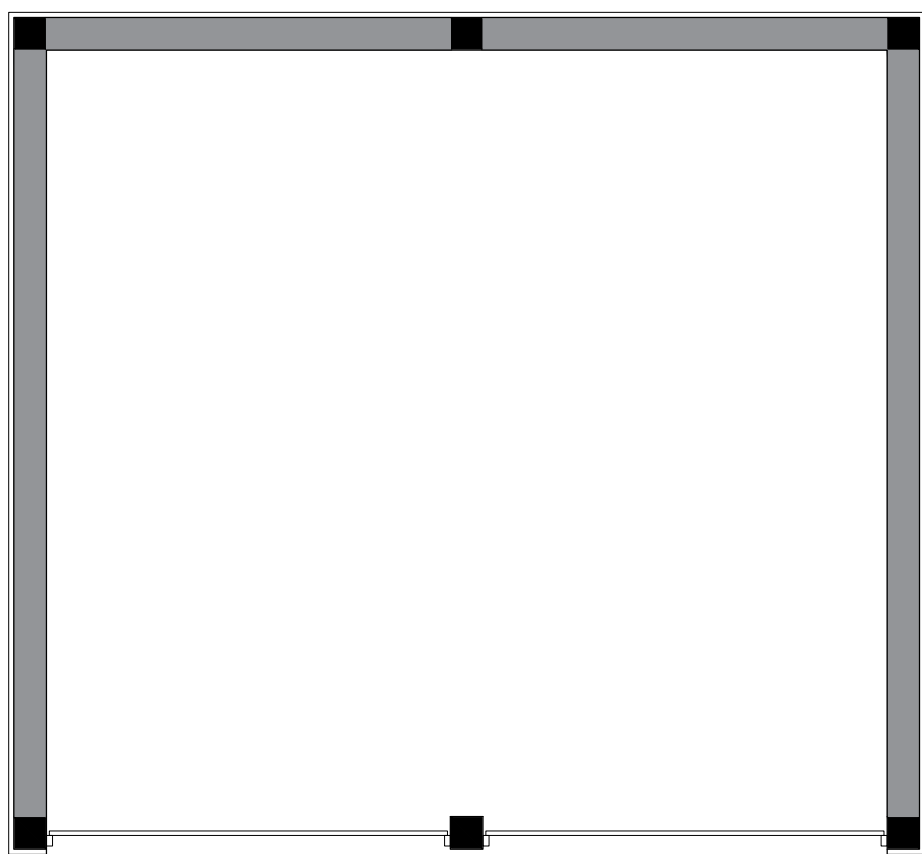
Appendix A - Development Proposals



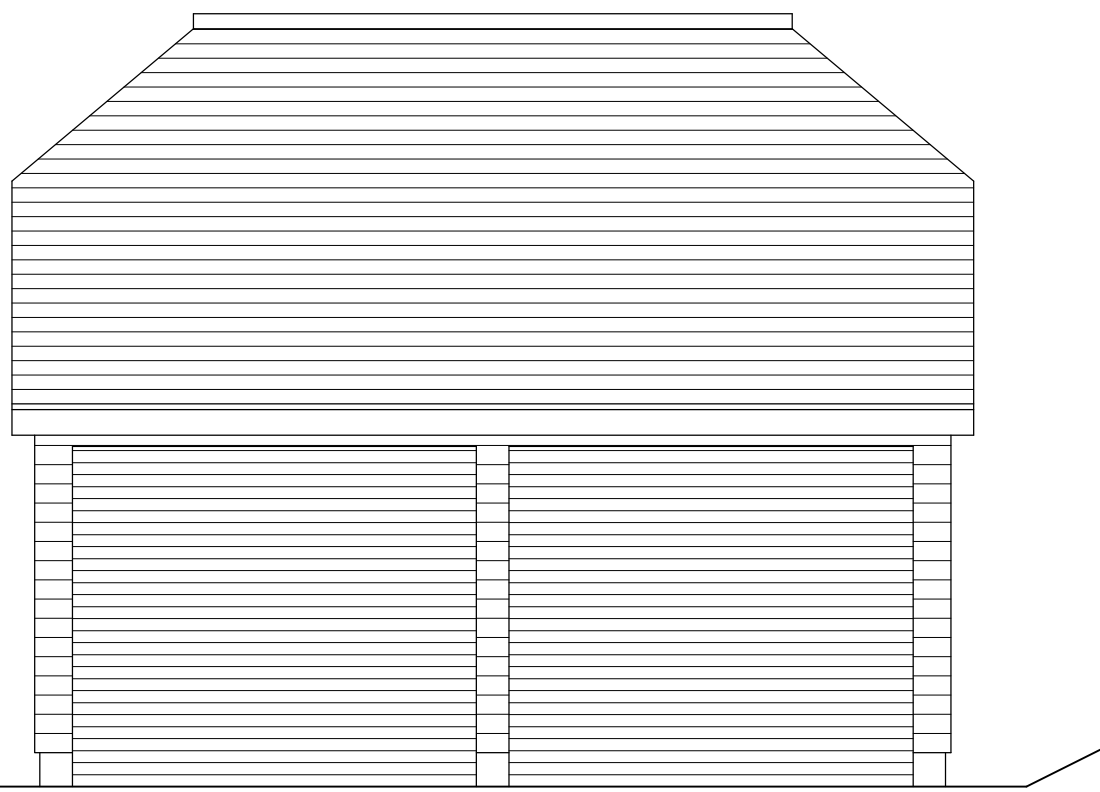
Existing Site Plan 1-500



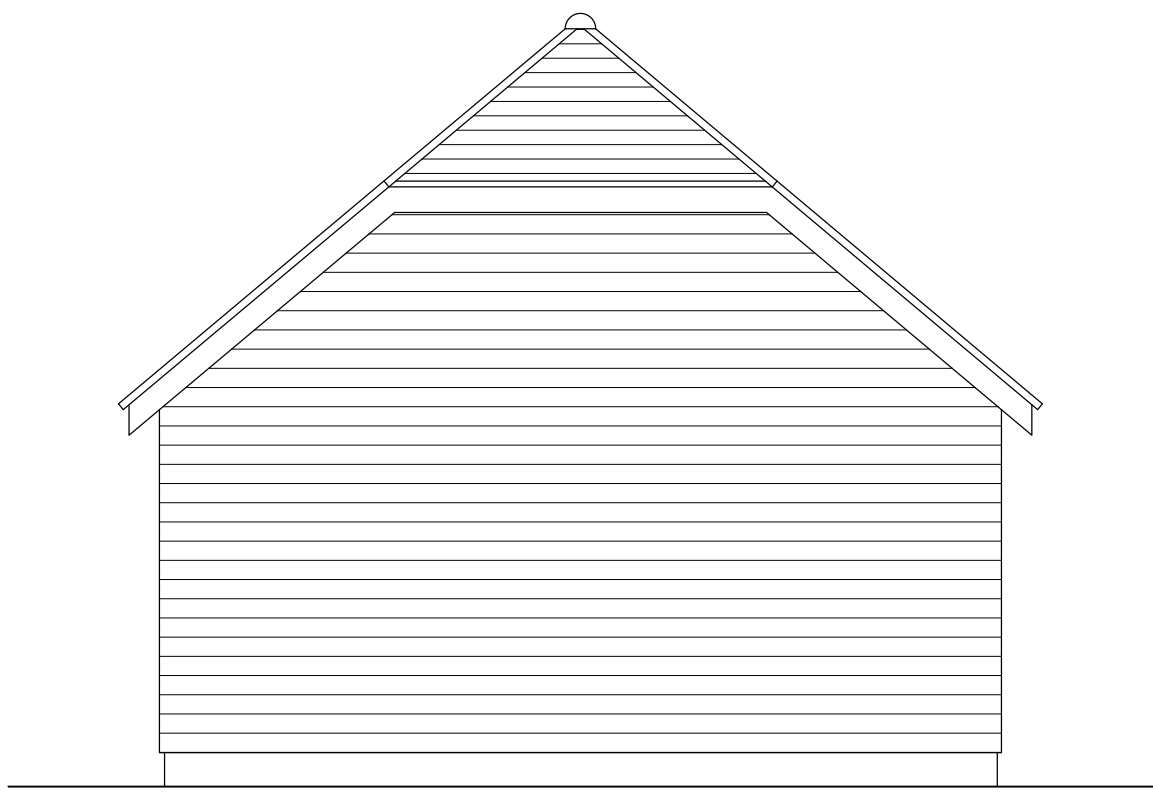
Proposed Site Plan 1-500



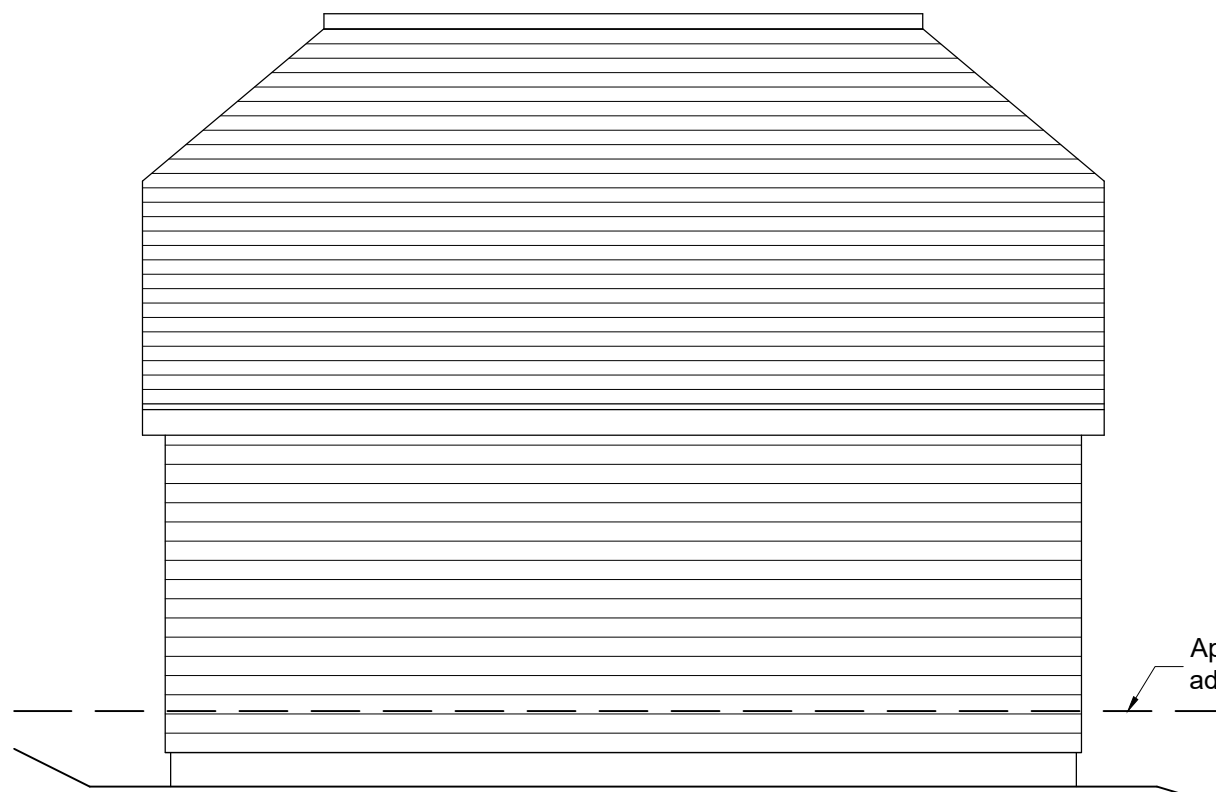
Plan 1-50



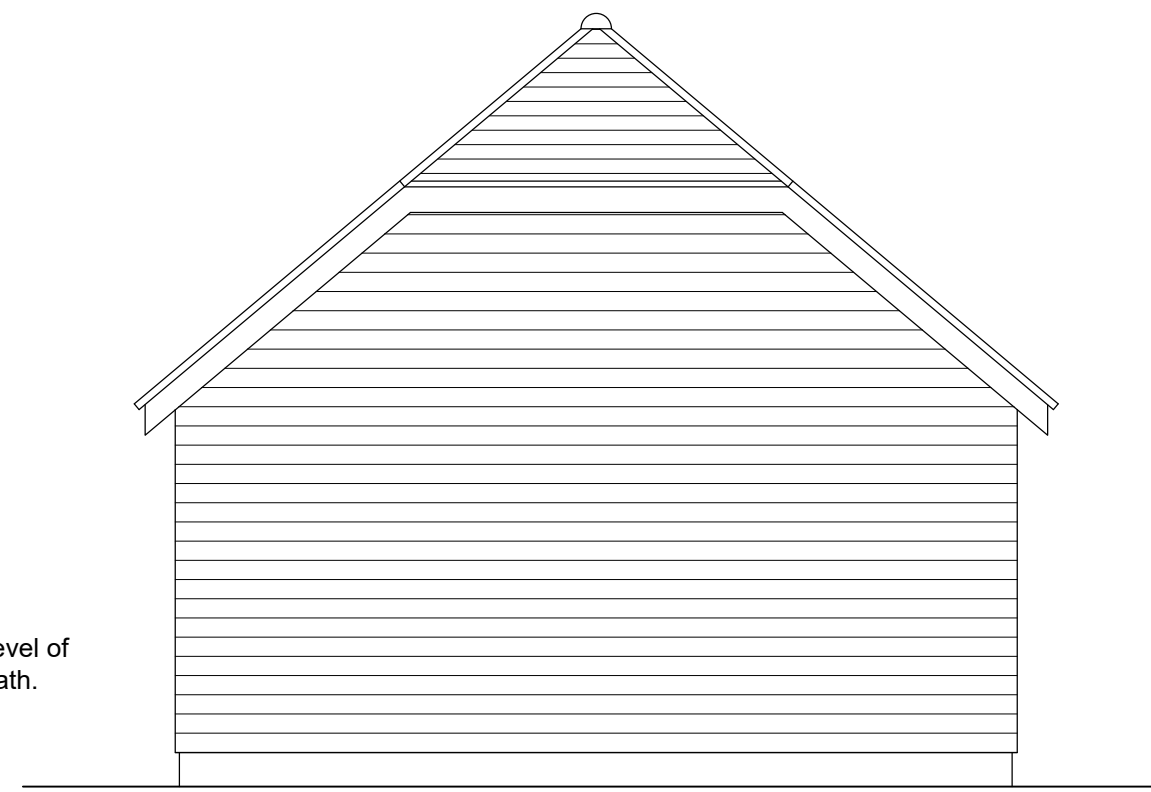
West Elevation 1-50



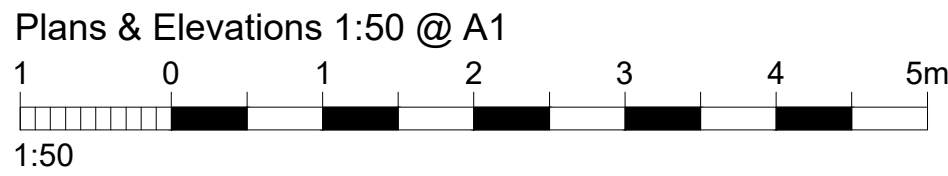
South Elevation 1-50



East Elevation 1-50



North Elevation 1-50



Rev A - Road names added. 13-01-26

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Job Title:

107 Brownhill Road,
Eastleigh,
SO53 2FH

Description:

Planning

Scale: As shown Date: Jan '25 Drawing: 107BR-001-A

Appendix B - EA Product 4

Flood risk assessment data



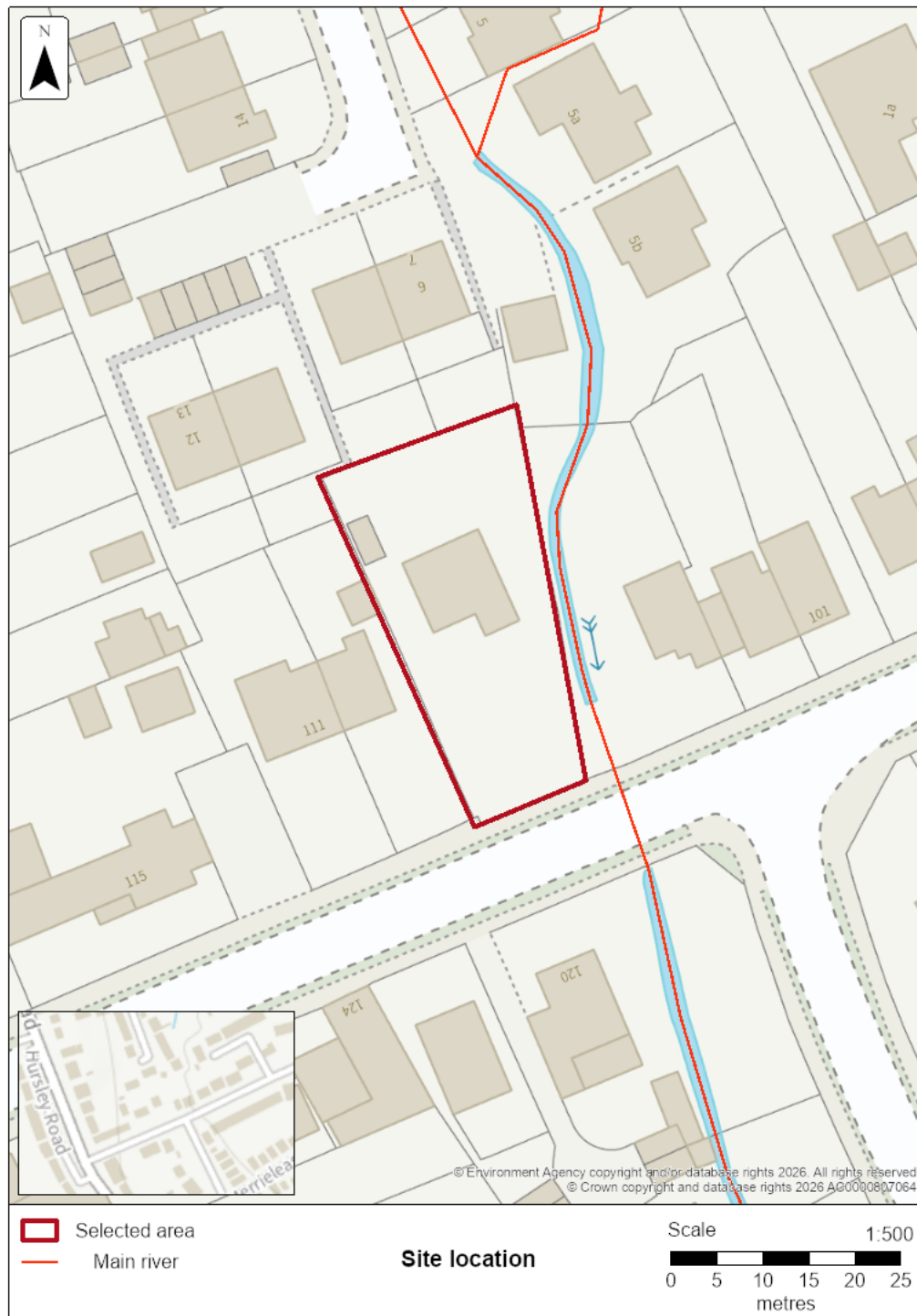
Location of site: 443132 / 121274 (shown as easting and northing coordinates)

Document created on: 19 January 2026

This information was previously known as a product 4.

Customer reference number: KNHUKC4E86J8 / EIR2026/02142

Map showing the location that flood risk assessment data has been requested for.



How to use this information

You can use this information as part of a flood risk assessment for a planning application. To do this, you should include it in the appendix of your flood risk assessment.

We recommend that you work with a flood risk consultant to get your flood risk assessment.

Included in this document

In this document you'll find:

- how to find information about surface water and other sources of flooding
- information on the models used
- definitions for the terminology used throughout
- flood map for planning (rivers and the sea)
- flood defences and attributes
- information to help you assess if there is a reduced flood risk from rivers and the sea because of defences
- modelled data
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

Information that's unavailable

This document **does not** contain:

- past floods

We do not have past flooding data for this location.

Please note that:

- flooding may have occurred that we do not have records for
- flooding can come from a range of different sources
- we can only supply flood risk data relating to flooding from rivers or the sea

You can contact your Lead Local Flood Authority or Internal Drainage Board to see if they have other relevant local flood information. Please note that some areas do not have an Internal Drainage Board.

Surface water and other sources of flooding

When using the surface water map on the [check your long term flood risk service](#) the following considerations apply:

- surface water extents are suitable for use in planning
- surface water climate change scenarios may help to inform risk assessments, but the available data fall short of what is required to assess planned development
- surface water depth information should not be used for planning purposes

To find out about other factors that might affect the flood risk of this location, you should also check:

- [reservoir flood risk](#)
- groundwater flood risk - you could use the [British Geological Survey groundwater flooding data](#), [groundwater: current status and flood risk](#) and the guide on [mining and groundwater constraints for development](#) - further information may be available from the lead local flood authority (LLFA)
- your local planning authority's SFRA, which includes future flood risk

Your Lead Local Flood Authority is Hampshire County.

For information about sewer flooding, contact the relevant water company for the area.

About the models used

Model name: JFLOW Modelling 2008
Scenario(s): Defences removed fluvial
Date: 2008

Terminology used

Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1% chance of occurring in any one year, is described as 1% AEP.

Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.

Flood map for planning (rivers and the sea)

Your selected location is in flood zone 3.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change

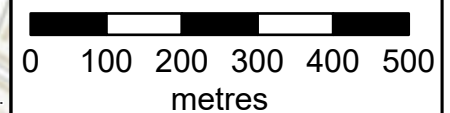
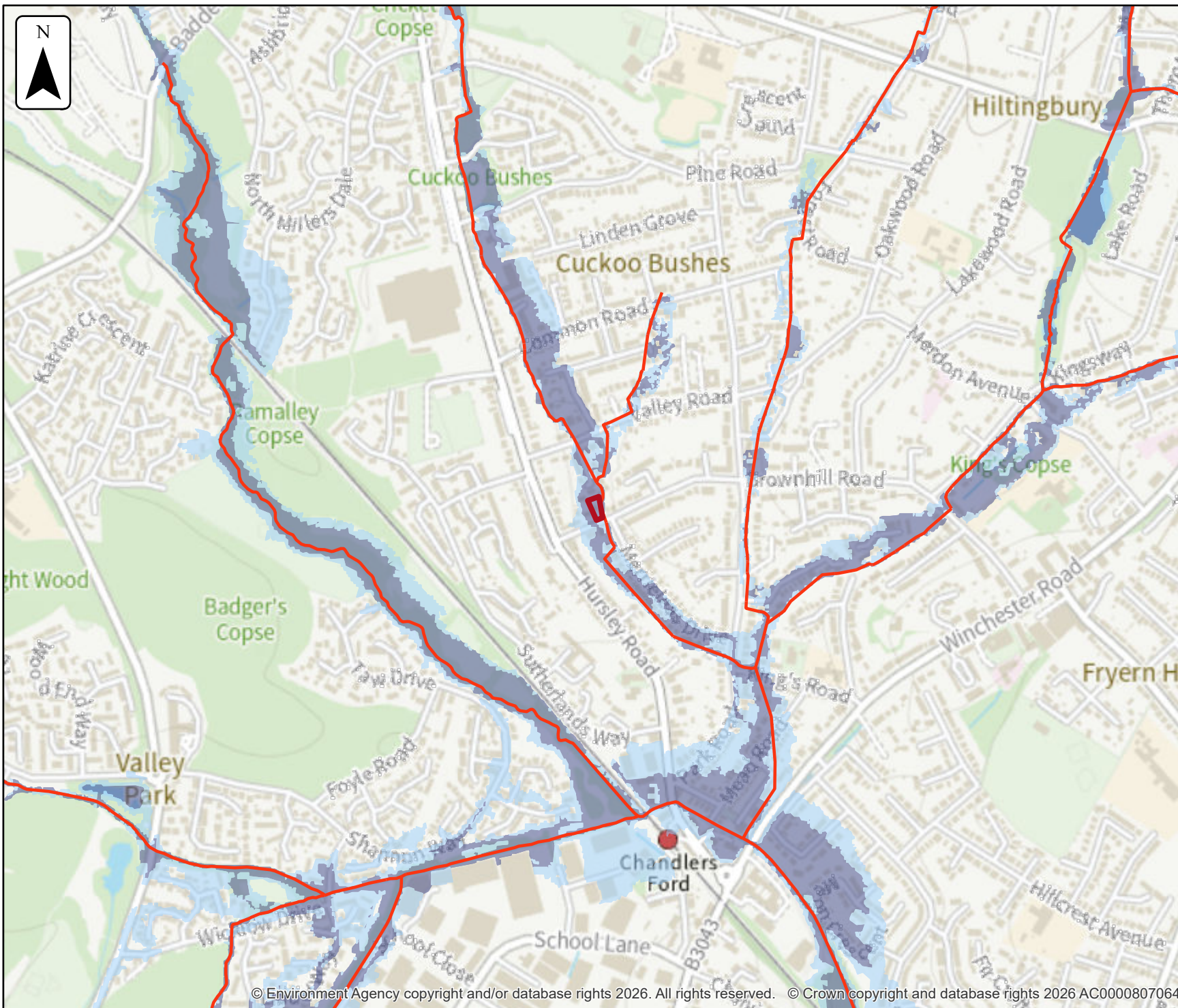


Flood map for planning

Location (easting/northing)
443132/121274

Scale
1:10,000
Created
19 Jan 2026

-  Selected area
-  Main river
-  Flood Zone 3
-  Flood Zone 2



Flood defences and attributes

The flood defences map shows the location of the flood defences present.

The flood defences data table shows the type of defences, their condition and the standard of protection. It shows the height above sea level of the top of the flood defence (crest level). The height is in mAOD which is the metres above the mean sea level at Newlyn, Cornwall.

It's important to remember that flood defence data may not be updated on a regular basis. The information here is based on the best available data.

Use this information:

- to help you assess if there is a reduced flood risk for this location because of defences
- with any information in the modelled data section to find out the impact of defences on flood risk



Flood defences

Location (easting/northing)
443132/121274

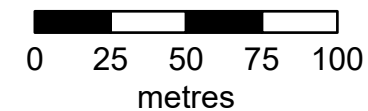
Scale

1:2,500

Created

19 Jan 2026

-  Selected area
-  Main river
-  Flood defence



Flood defences data

Label	Asset ID	Asset Type	Standard of protection (years)	Current condition	Downstream actual crest level (mAOD)	Upstream actual crest level (mAOD)	Effective crest level (mAOD)
1	404292	Engineered High Ground					
2	404293	Engineered High Ground					
3	511071	Engineered High Ground					
4	511072	Engineered High Ground					
5	404294	Engineered High Ground					
6	404295	Engineered High Ground					

Any blank cells show where a particular value has not been recorded for an asset.



Flood Levels

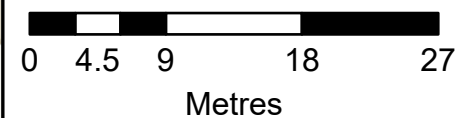
Location (easting/northing)
443132 / 121274

Scale:
1:500

Created
09 Feb 2026

Model Name
JFLOW Modelling 2008

-  Location Points
-  Selected area
-  Main River
-  Flood zone 3
-  Flood Zone 2



Water Depths & Levels for SU4313121273

Point	Water Depth (Metres)		Water Surface Level (mAOD*)		Ground Level
	1% Annual Probability/1 in 100 Year (Flood Zone 3)	0.1% Annual Probability/1 in 1000 Year (Flood Zone 2)	1% Annual Probability/1 in 100 Year (Flood Zone 3)	0.1% Annual Probability/1 in 1000 Year (Flood Zone 2)	
1	0.82	0.86	27.56	27.60	26.74
2	0.63	0.67	27.57	27.61	26.94
3	0.77	0.80	27.58	27.61	26.81
4	0.99	1.01	27.58	27.60	26.59
5	0.85	0.90	27.54	27.59	26.69
6	0.05	0.11	27.55	27.61	27.50
7	0.99	1.05	27.53	27.59	26.54
8	0.61	0.68	27.52	27.59	26.91
9	0.07	0.12	27.54	27.59	27.47
10	0.03	0.09	27.54	27.60	27.51

* Levels in metres above Ordnance Datum Newlyn

Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as surface water, ground water and reservoirs

Your Lead Local Flood Authority is Hampshire County.

About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

[Find out more about flood risk activity permits](#)

Help and advice

Contact the Solent and South Downs Environment Agency team at ssdenquiries@environment-agency.gov.uk for:

- [more information about getting a product 5, 6, 7 or 8](#)
- general help and advice about the site you're requesting data for