



Flood Risk Assessment for Planning

Prepared for:

Sheridan Morrish

Location:

Land Adjacent To 22 Hillside
Hatherden Lane
Hatherden
SP11 0HP

November 2023

Our reference:

91678-LukeRose-Hillside



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Authorisation: Mrs Emma Jeffery

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Southpoint, Old Brighton Road, Gatwick, West Sussex, RH11 0PR

+44 (0) 1293 214 444

www.unda.co.uk

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1. Key Facts

1.1 Flood Risk Posed:

- The site is situated partially within Flood Zones 1, 2 and 3 when using the Environment Agency Flood Map for Planning (Rivers and Sea).
- JFlow picked up overland flow route / dry valley.
- No detailed flood modelling available.
- fluvial/surface/groundwater water (origin unknown).
- The location of the proposed dwelling is also shown to be within an area with a “Very Low” to “Low” risk of flooding from surface water.
- No records of flooding at the site.
- No further information has been provided to suggest that the site has flooded previously from groundwater, sewer surcharge or reservoir flooding.

1.2 Flood Risk Mitigation:

- There are no rivers, watercourses or ditches located on the site or the surrounding area
- The internal finished floor levels of the new dwelling at least 150mm above the adjacent ground level
- No basement or land raising is proposed
- Flood proofing of the dwelling will be incorporated as appropriate.
- The applicant will register with the free Environment Agency Floodline Alert Direct service.
- Safe escape will be provided by a flood warning and evacuation plan, which will be prepared in liaison with the Council's Emergency Planners and tied in with the existing emergency plans for the area.

Assuming accordance with these flood risk management measures, Unda Consulting Limited consider the proposed application to be suitable in flood risk terms.

2. Introduction

Unda Consulting Limited have been appointed by Sheridan Morrish (hereinafter referred to as “the applicant”) to undertake a Flood Risk Assessment for the proposed development at Land Adjacent To 22 Hillside, Hatherden Lane, Hatherden SP11 0HP hereinafter referred to as “the site”). The FRA has been undertaken in accordance with the National Planning Policy Framework (NPPF) and the associated technical guidance.

The purpose of the study is to support a planning application for the proposed development.

The site appears to be partially located within Flood Zones 1, 2 and 3 as defined by the Environment Agency (EA) on their Flood Map for Planning. Under the National Planning Policy Framework (NPPF), a FRA is required if a proposed development:

- includes building or engineering works in Flood Zone 2 or 3;
- includes building or engineering works on land classified by the Environment Agency as having critical drainage problem;
- changes the use of land or buildings in a location at risk of flooding from rivers or the sea, or with critical drainage problems;
- changes the use of land or buildings in a way that increases the flood vulnerability of the development where it may be subject to other sources of flooding;
- is larger than 1 hectare.

The assessment should demonstrate to the Local Planning Authority (LPA) and EA how flood risk will be managed now and over the development’s lifetime, taking climate change into account, and with regard to the vulnerability of its potential users.

- whether the proposed development is likely to be affected by current or future flooding from any source;
- whether it will increase flood risk elsewhere;
- whether the measures proposed to deal with these effects and risks are appropriate.

3. Existing Situation

3.1 Site Usage:

The site currently forms the side garden of 22 Hillside and is a rectangular plot of land that is bounded by neighbouring properties and gardens. The area is characterised by a mixture of properties; to the north-west older larger dwellings in generous plots of land, to the south-east modern two-storey detached dwellings, to the south single-storey bungalows and to the west a residential housing estate of largely uniform layout and design.

Existing site plans are provided in the report Appendix.



Figure 1: Aerial photograph of site and surrounding area (Source: Google Earth)



Figure 2: Site image (Source: Luke Rose Architecture)

3.3 Topography:

Environment Agency LiDAR has been used to assess the topography across the site and wider area. Light Detection and Ranging (LIDAR) is an airborne mapping technique, which uses a laser to measure the distance between the aircraft and the ground surface. Up to 100,000 measurements per second are made of the ground, allowing highly detailed terrain models to be generated at high spatial resolutions. The EA's LIDAR data archive contains digital elevation data derived from surveys carried out by the EA's specialist remote sensing team. Accurate elevation data is available for over 70% of England. The LiDAR technique records an elevation accurate to +0.3m every 1m. This dataset is derived from a combination of our full dataset which has been merged and re-sampled to give the best possible coverage. The dataset can be supplied as a Digital

Surface Model (DSM) produced from the signal returned to the LIDAR (which includes heights of objects, such as vehicles, buildings and vegetation, as well as the terrain surface) or as a Digital Terrain Model (DTM) produced by removing objects from the Digital Surface Model.

1m horizontal resolution LiDAR remotely sensed digital elevation data suggests that the ground topography on site ranges from 105m AOD to the rear of the site to 104m AOD at the front of the site.

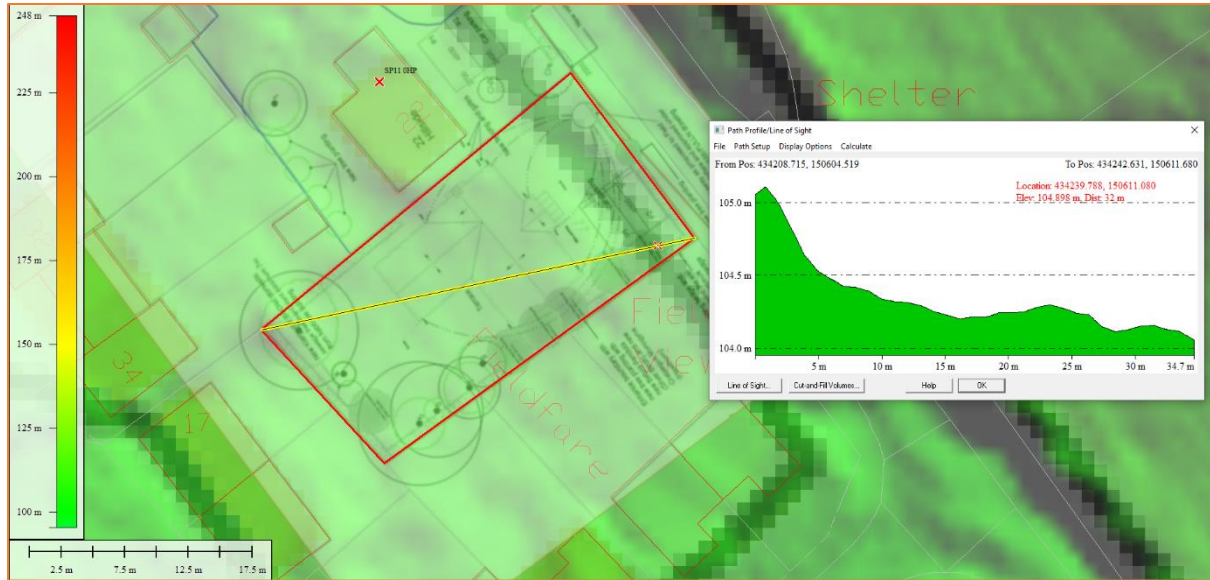


Figure 3: LiDAR DTM showing topographic levels across the site (transect runs west -east) (Source: EA 1m LiDAR)

3.4 Geology and Soil:

The British Geological Survey (BGS) Map indicates that the bedrock underlying the site is Seaford Chalk Formation - Chalk, with superficial deposits of Head - clay, silt and sand.

The soil type taken from the UK Soil Observatory Website are relatively deep soils from Intermediate shallow chalk Soil Parent Material with a chalky, silty loam soil texture.

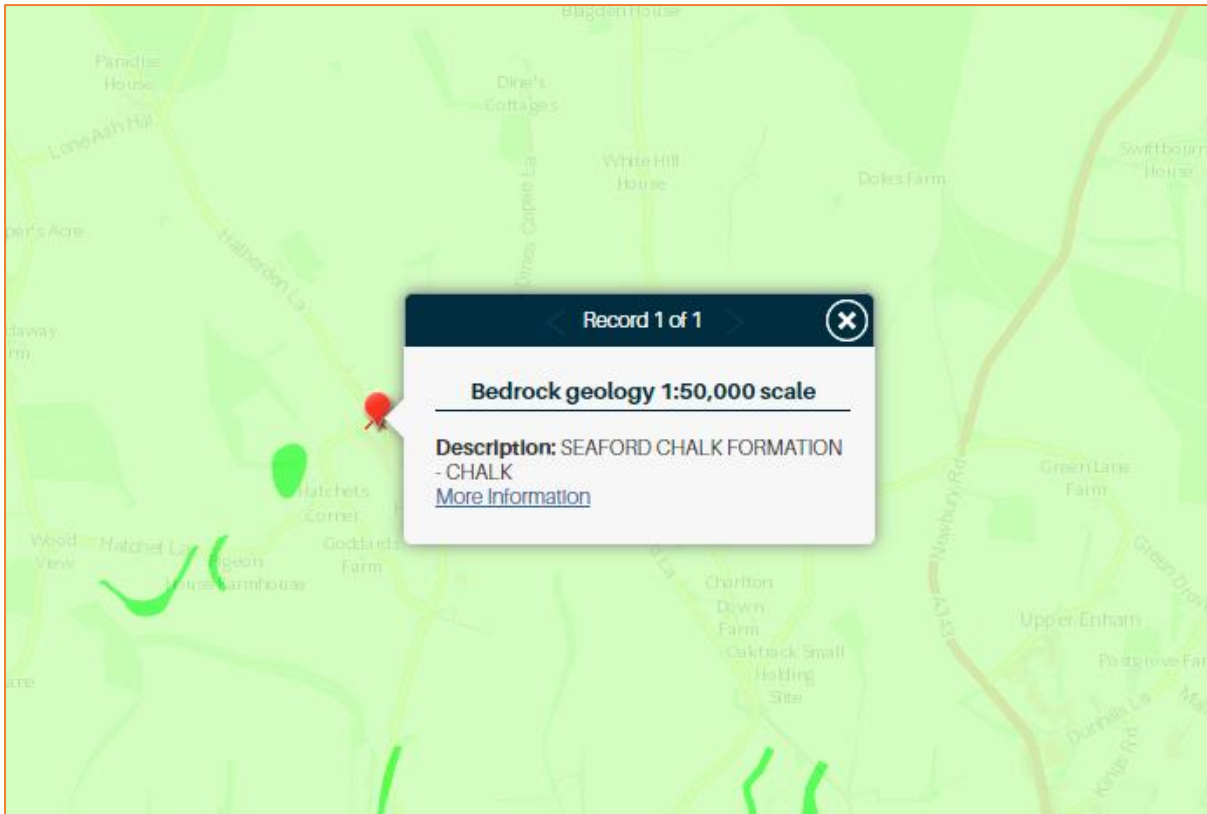


Figure 4: Local bedrock geology (Source: BGS)

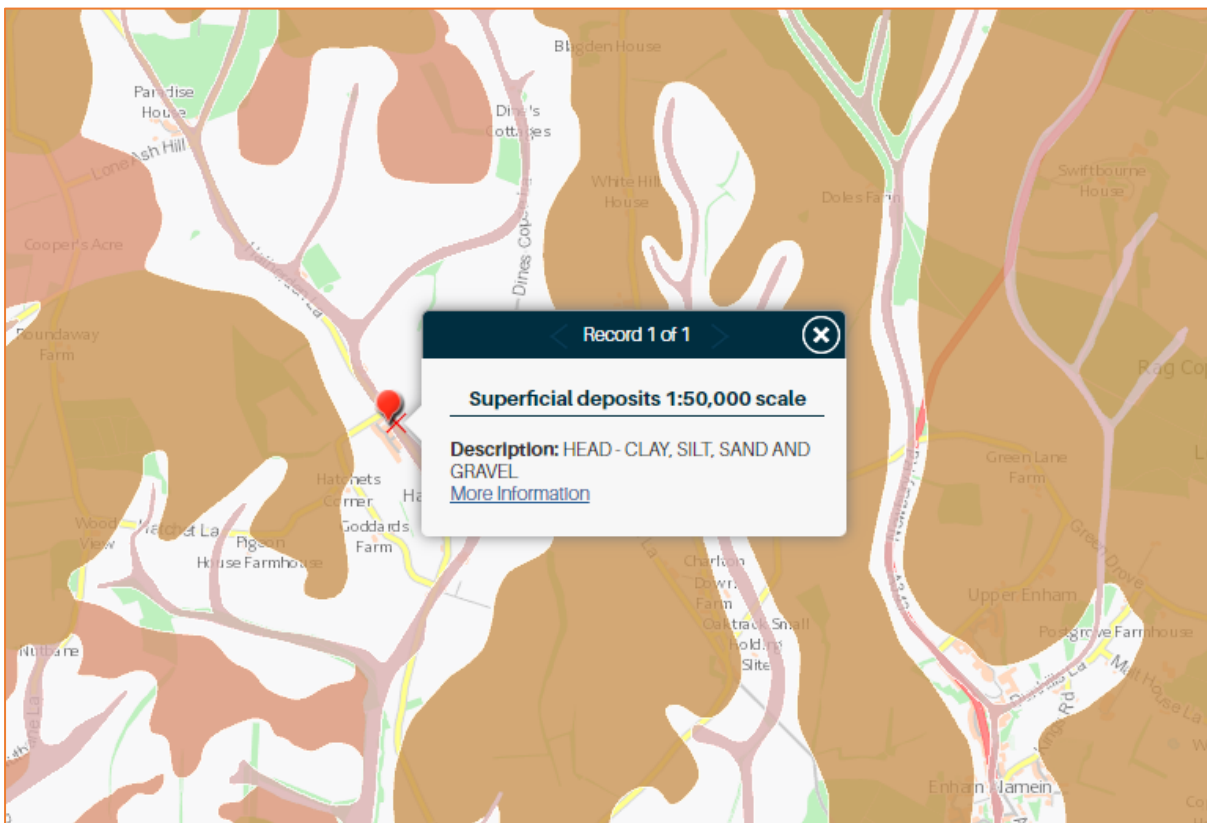


Figure 5: Superficial deposits geology (Source: BGS)

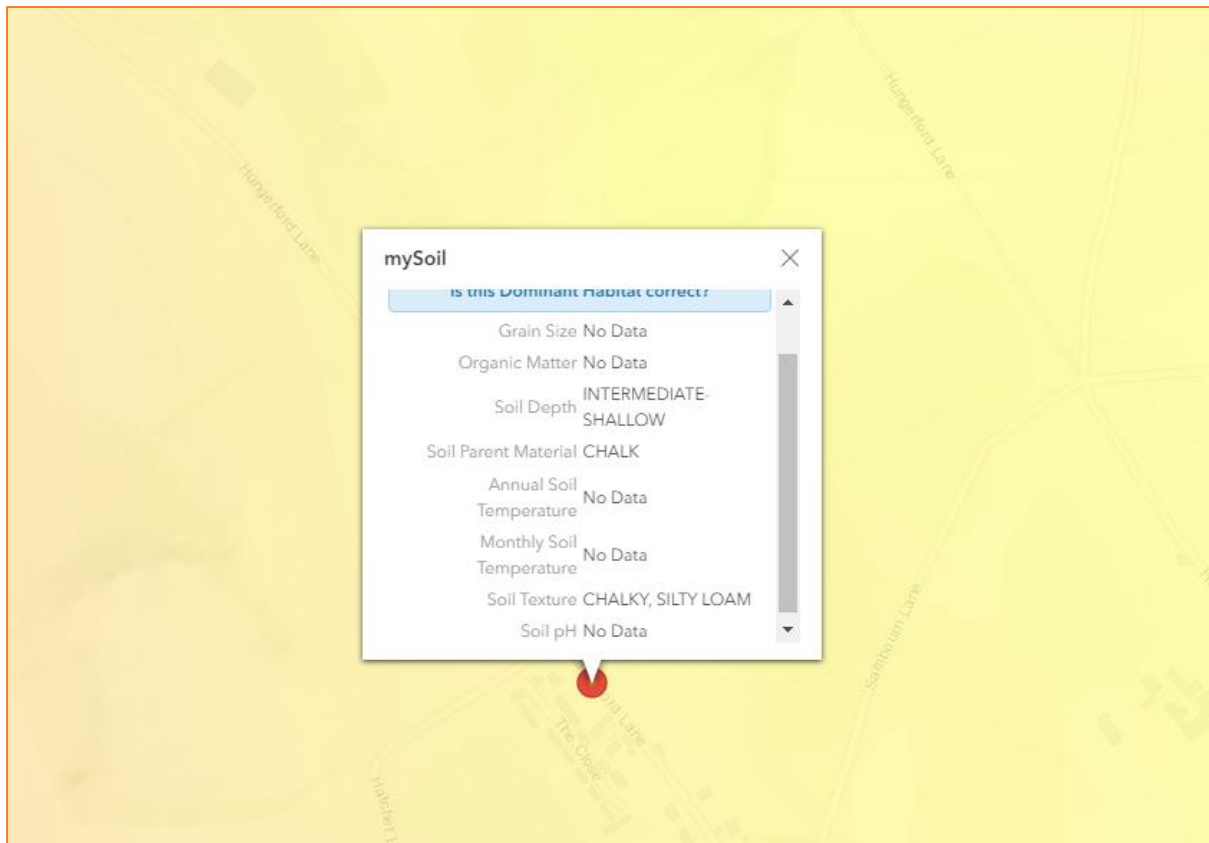


Figure 6: Local soil types (Source: UKSO)

3.5 Riparian Ownership:

A riparian owner is someone who owns land or property alongside a river or other watercourses. A watercourse is any natural or artificial channel through which water flows including flow through a culvert, ditch, drain, cut, dyke, sluice or private sewer.

Riparian owners have statutory responsibilities, including:

- Maintaining river beds and banks;
- Allowing the flow of water to pass without obstruction;
- Controlling invasive alien species

Further guidance for riverside property owners can be found in the Environment Agency's helpful booklet 'Living on the Edge, 5th Edition' published in June 2014.

The applicant has confirmed there are no rivers, watercourses or ditches located on the site or the surrounding area.

3.6 Environmental Permit for Flood Risk Activity:

Under the Environmental Permitting (England and Wales) Regulations 2010 any activity within 8m of the bank of a main river, or 16m if it is a tidal main river, or any activity within 8m of any flood

defence structure or culvert on a main river, or 16m on a tidal river or any activity within 16m of a sea defence structure may require a permit. Some activities may be excluded or exempt. Further details and guidance are available on the GOV.UK website:

<https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>.

For more information and to apply please contact the Partnerships and Strategic Overview team at:

- National Customer Contact Centre on 03708 506 506 or
- enquiries@environment-agency.gov.uk

Please be aware that Environment Agency permits, consents and licences are separate from the planning process and are not guaranteed.

The applicant has confirmed there are no rivers or watercourses located on the site or located within 8m of the site boundary. A Flood Risk Activity Permit will therefore not be required.

3.7 Ordinary Watercourse Land Drainage Consent:

Under the Land drainage Act 1991, as amended by the Flood and Water Management Act 2010, prior consent of the Lead Local Flood Authority (LLFA), West Sussex County Council is required if the proposals include works to an ordinary watercourse such as:

- place or alter a structure within an ordinary watercourse
- affect the flow or storage of water within an ordinary watercourse
- This includes temporary structures
- Build within 5m's of an ordinary watercourse

Ordinary Watercourse consents and licences are separate from the planning process and are not guaranteed.

The applicant has confirmed there are no ordinary watercourses located on the site or located within 5m of the site boundary. Ordinary Watercourse Land Drainage Consent will therefore not be required.

4. Development Proposal

The proposed application is for the erection of a single storey dwelling. No basements or land raising is proposed at the site.

The proposed plans are provided in the report Appendix.

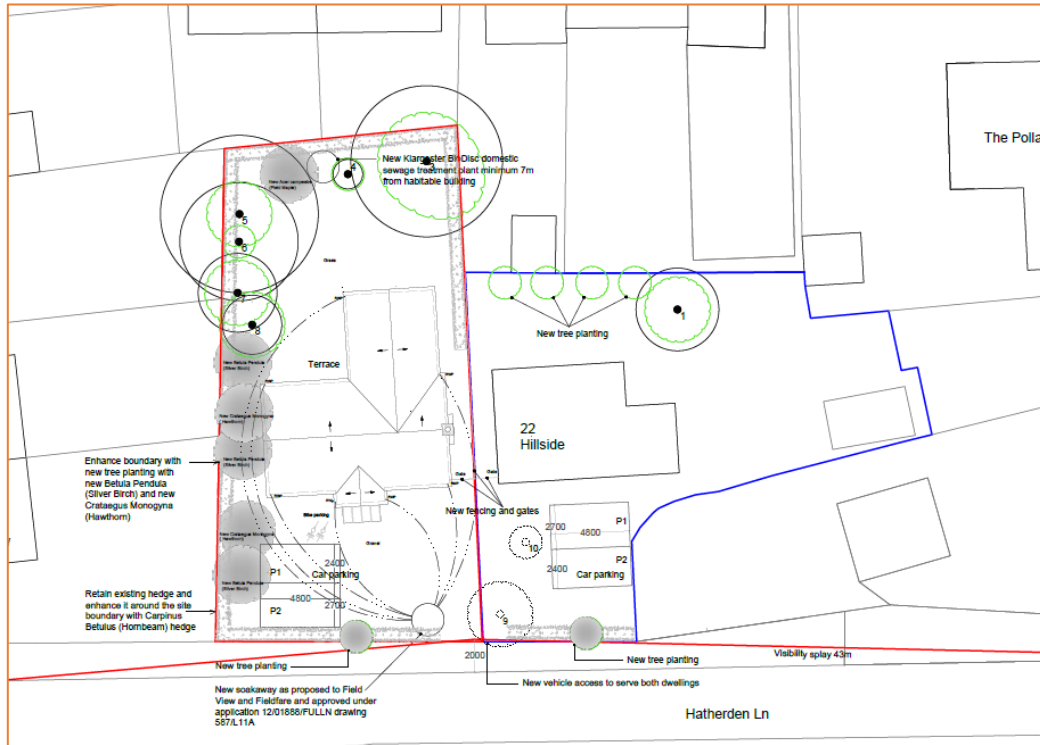


Figure 7: Proposed site plan (Source: Luke Rose Architect)

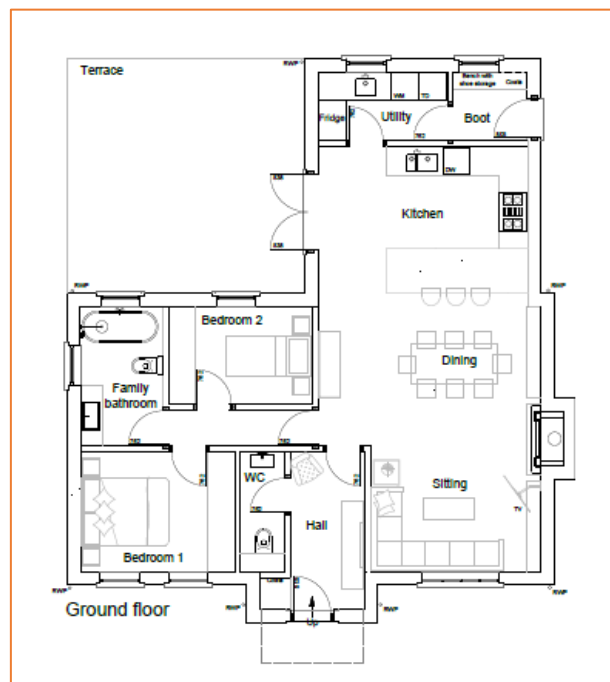


Figure 8: Proposed floor plan (Source: Luke Rose Architect)

5. Assessment of Flood Risk

5.1 Flood Zones:

Within planning, Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency's Flood Map for Planning (Rivers and Sea), available on the Environment Agency's website.

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – 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. (Land 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 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)

Table 1: Flood Zones

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.

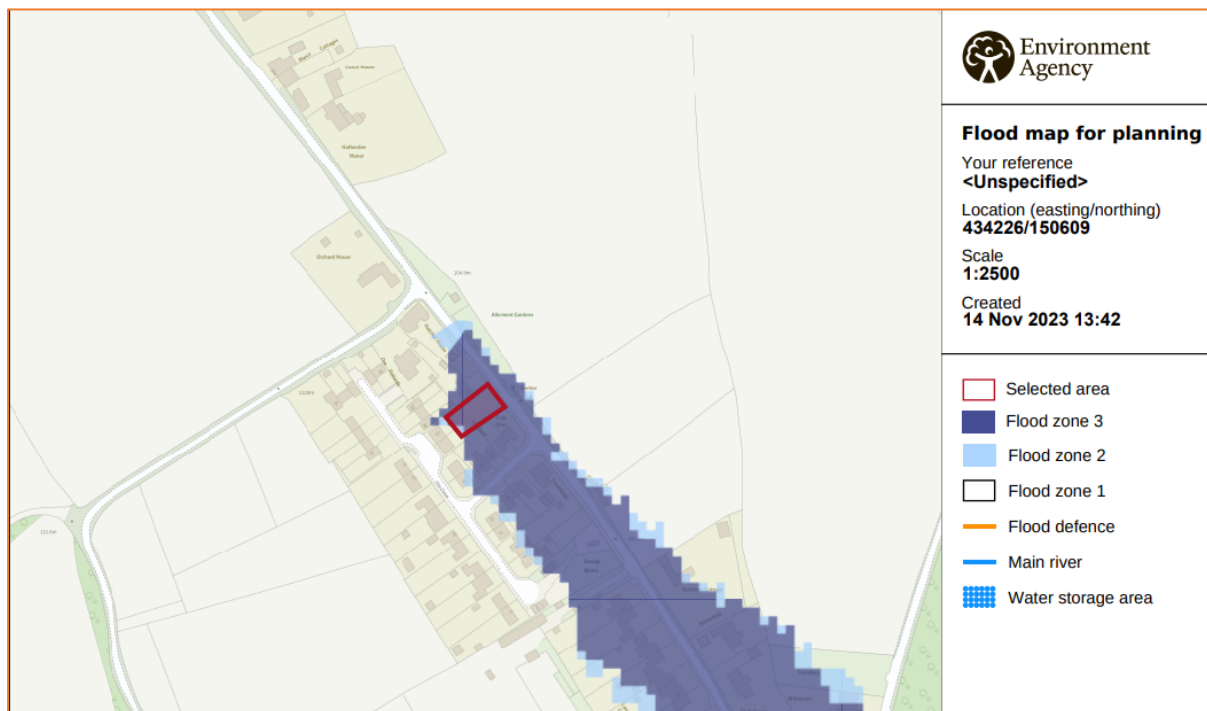


Figure 9: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

The site is located partially within Flood Zones 1, 2 and 3 (Low, Medium and High probability), which means it is defined as land having between a more than 1 in 100, and a less than 1 in 1,000 annual probability of river flooding.

The risk would appear to be predominantly fluvial/surface/ground water, the actual origin of which is unknown as there does not appear to be an open watercourse at or near the site. It is likely that JFlow has picked up an overland surface water flow path or a dry valley which flows in a southerly direction away from the site.

5.2 Fluvial (unknown origin):

The risk would appear to be predominantly fluvial/surface/ground water, the actual origin of which is unknown as there does not appear to be an open watercourse at or near the site. It is likely that JFlow has picked up an overland surface water flow path or dry valley. A dry valley may develop on many kinds of permeable rock, such as limestone and chalk. Dry valleys do not hold surface water because it sinks into the permeable bedrock.

5.2.1 Modelled flood levels and events:

Product 4 modelled flood levels and extents have been requested from the Environment Agency for use within this report.

Site-specific modelled flood levels and flood extents are not available from the EA. The flood zones in this area are produced using JFlow, a broad scale 2D hydrodynamic model. This modelling was developed to produce undefended fluvial flood extents for 1% and 0.1% AEP events, to update the Flood Zones.

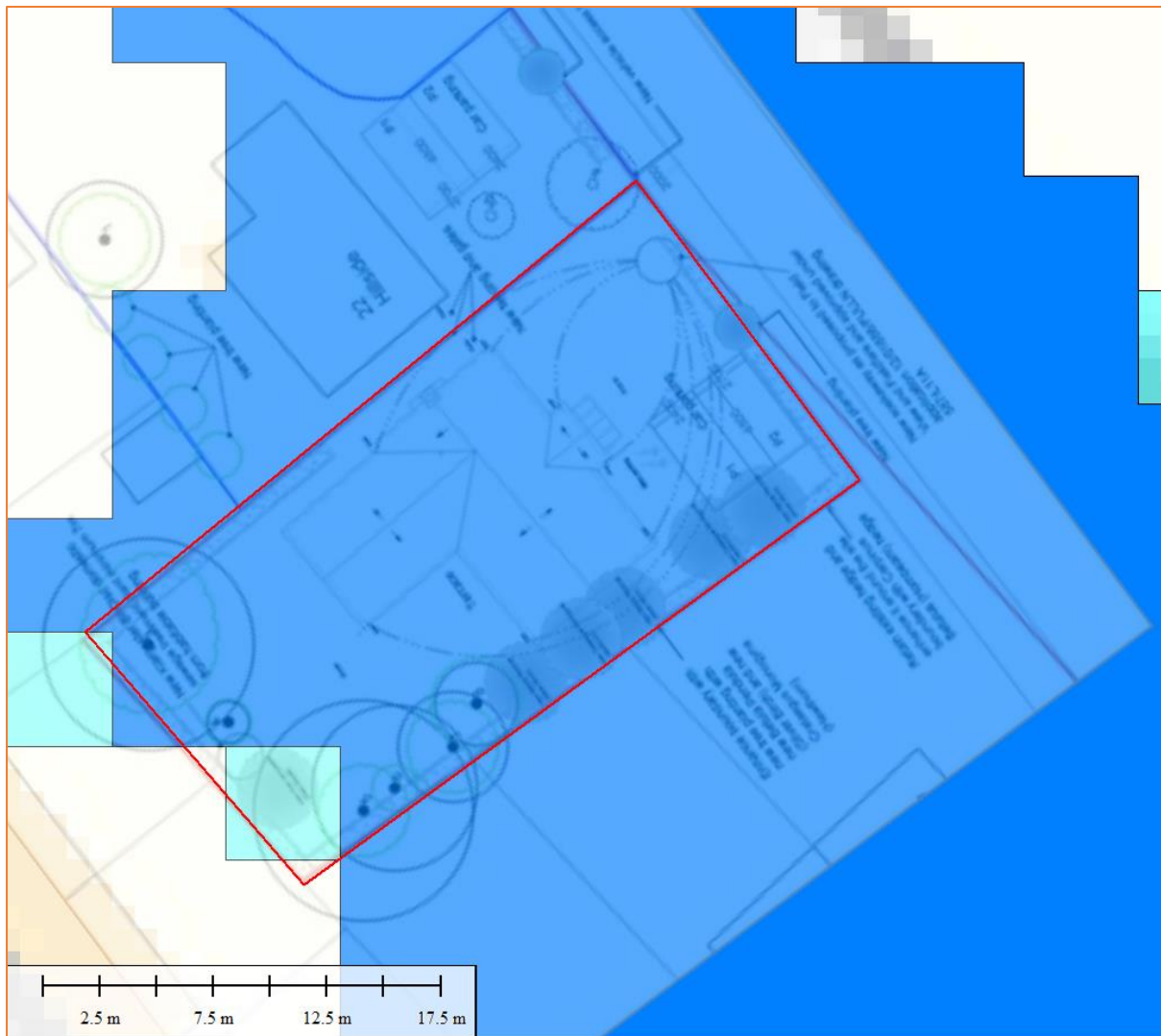


Figure 10: Environment Agency Flood Zone 2 (light blue) and Flood Zone 3 (darker blue) outlines overlain onto proposed site plan (Source: Luke Rose Architect)

The EA has also confirmed that the Fluvial Flood Zones 2 and Flood Zones 3 for the area of the site have been produced from their National Generalised Model JFLOW.

However, according to the Test Valley Borough Council, Strategic Flood Risk Assessment for Local Development Framework, Final September 2007, detailed computer simulation of flooding using the ISIS modelling program has been undertaken for the Rivers Anton and Pillhill Brook, and the formal flood maps were changed to reflect the flood outlines yielded. This modelling did not extend up the Charlton River. Therefore there is no detailed flood modelling in this area.

It is understood that The Test and the tributaries within its catchment are mainly chalk fed watercourse's. The Charlton River is an ephemeral tributary.

5.2.2 Flood Defences:

A flood defence or EA Asset is any man-made or natural feature – such as a raised defence, retaining structure, channel, pumping station or culvert – that performs a flood defence or land drainage function.

No formal flood defences have been identified in this location.

5.2.3 Residual risk (breach or overtopping of flood defences):

Breaching of flood defences can cause rapid inundation of areas behind flood defences as flow in the river channel discharges through the breach. A breach can occur with little or no warning, although they are much more likely to concur with extreme river levels or tides when the stresses on flood defences are highest. Flood water flowing through a breach will normally discharge at a high velocity, rapidly filling up the areas behind the defences, resulting in significant damage to buildings and a high risk of loss of life. Breaches are most likely to occur in soft defences such as earth embankments although poorly maintained hard defences can also be a potential source of breach.

Overtopping of flood defences occurs when water levels exceed the protection level of raised flood defences. The worst case occurs when the fluvial or tidal levels exceed the defence level as this can lead to prolonged flooding. Less severe overtopping can occur when flood levels are below defence levels, but wave action causes cyclic overtopping, with intermittent discharge over the crest level of the defence. Flood defences are commonly designed with a freeboard to provide protection against overtopping from waves. The risk from overtopping due to exceedance of the flood defence level is much more significant than the risk posed by wave overtopping. Exceedance of the flood defence level can lead to prolonged and rapid flooding with properties immediately behind the defences at highest risk.

No flood defences act to defend the site from direct inundation, meaning there is negligible residual risk from beach and overtopping of flood defences.

5.2.4 Historical flood events:

The Environment Agency confirm that they hold no records of historical flood events at the site only downstream at the Chalton River which flows in a southerly direction away from the site.

The Test Valley Borough Council Strategic Flood Risk Assessment (SFRA) shows the site to be located outside of areas identified as a Localised Flooding Area.

5.3 Pluvial (Surface Water):

Pluvial (surface water) flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead.

In 2013 the EA, working with Lead Local Flood Authorities (LLFAs), produced an updated Flood Map for Surface Water. It is considered to represent a significant improvement on the previous surface water flood maps available, both in terms of method and representation of the risk of flooding. The modelling techniques and data used are considerably improved, and also incorporated locally produced mapping where this is available to represent features best modelled at a local scale.

The Flood Map for Surface Water assesses flooding scenarios as a result of rainfall with the following chance of occurring in any given year (annual probability of flooding is shown in brackets):

- High: Greater than or equal to 3.3% (1 in 30) chance in any given year (3.3%)
- Medium: Less than 3.3% (1 in 30) but greater than or equal to 1% (1 in 100) chance in any given year
- Low: Less than 1% (1 in 100) but greater than or equal to 0.1% (1 in 1,000) chance in any given year
- Very Low: Less than 0.1% (1 in 1,000) chance in any given year

The mapping below shows the Risk of Flooding from Surface Water centred on the postcode. Please note that the EA do not consider this information suitable to be used to identify the risk to individual properties or sites. It is useful to raise awareness in areas which may be at risk and may require additional investigation.

The EA Risk of Flooding from Surface Water Map suggests that the site lies in an area of “Very Low” to “High” risk of flooding from surface water.

The location of the proposed dwelling however is shown to be within an area with a “Very Low” to “Low” risk of flooding from surface water.

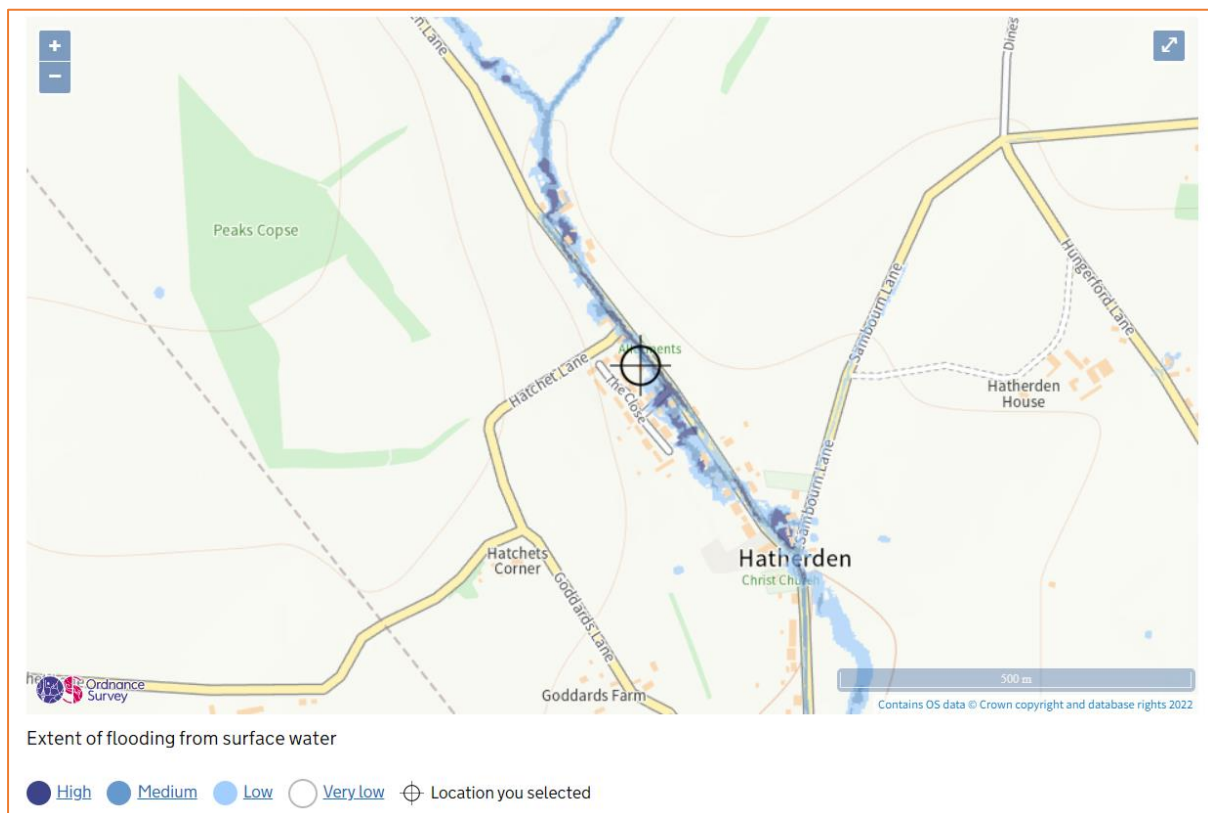


Figure 11: Extract from Environment Agency Surface Water Flood Map centred on postcode (Source: EA)

The EA has also produced surface water flood depth mapping for the 1 in 30 year (High Risk), 1 in 100 year (Medium Risk) and 1 in 1000 year (Low Risk) scenarios (high risk, medium risk and low risk respectively).

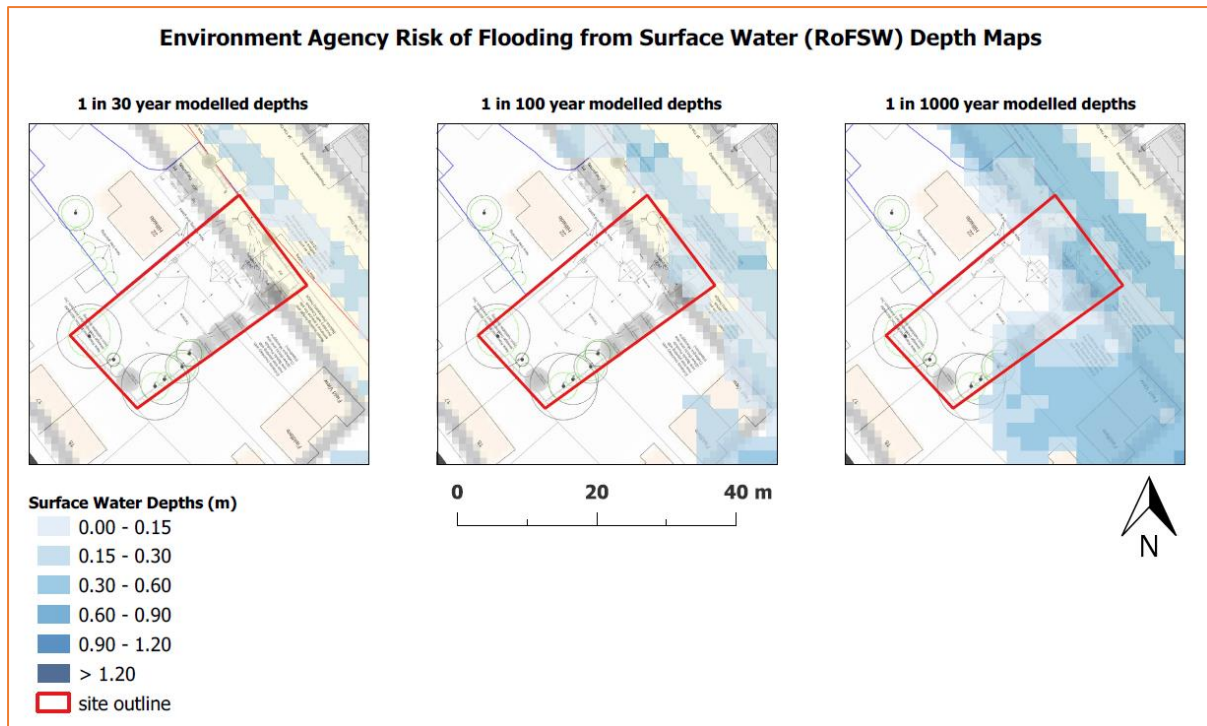


Figure 12: Environment Agency Risk of flooding from Surface Water Flood Depth Maps for High (1:30yr), Medium (1:100yr) and Low (1:1000yr) modelled events (Source: EA)

The Environment Agency risk of flooding from surface water depth maps show:

- For the 1:30 year event (High), the site is entirely flood free during this event.
- For the 1:100 year event (Medium), the maximum depth of flooding on the site is 0.15m - 0.30m. The area of the proposed built footprint is entirely flood free during this event.
- For the 1:1000 year event (Low), the maximum depth of flooding on the site is 0.30m - 0.60m. The area of the proposed built footprint has a maximum depth of 0.15m - 0.30m during this event.

According to the Test Valley Borough Council Strategic Flood Risk Assessment (SFRA), no historical pluvial has occurred on site or in the immediate surrounding area.

It is anticipated that the identified level of flood risk is manageable via the implementation of appropriate mitigation and management.

5.4 Groundwater:

Groundwater flooding occurs as a result of water rising up from the underlying rocks or from water flowing from abnormal springs. This tends to occur after much longer periods of sustained high rainfall. Higher rainfall means more water will infiltrate into the ground and cause the water table to rise above normal levels. Groundwater tends to flow from areas where the ground level is high, to areas where the ground level is low. In low-lying areas the water table is usually at shallower depths anyway, but during very wet periods, with all the additional groundwater flowing towards these areas, the water table can rise up to the surface causing groundwater flooding.

Groundwater flooding is most likely to occur in low-lying areas underlain by permeable rocks (aquifers). These may be extensive, regional aquifers, such as chalk or sandstone, or may be localised sands or river gravels in valley bottoms underlain by less permeable rocks. Groundwater flooding takes longer to dissipate because groundwater moves much more slowly than surface water and will take time to flow away underground.

In the chalk areas, permanent watercourses are absent in all except the deepest valleys. Chalk is a major aquifer capable of absorbing large amounts of rainfall and releasing it slowly over a long period. This buffering effect together with the mainly rural nature of the chalk area means that the Hampshire Avon, and the upper and middle parts of the Test and associated tributaries, which are mainly spring fed by the chalk aquifers, have relatively narrow ranges of flows in a normal year and generally do not flood in response to short to medium duration heavy rainfall.

After prolonged rainfall the water table in the chalk aquifer can rise to the ground surface causing springs to erupt in the valley floors and the creation of ephemeral watercourses, and indeed the upper reaches of many of the Test's tributaries have this characteristic. These effects can lead to "groundwater flooding" lasting for several months in very wet winters. Public supply and agricultural water abstraction from the chalk tends to increase the chalk's buffering effect, thereby suppressing the frequency at which ephemeral watercourses and springs occur. However, when the water table is sufficiently high for the aquifer to flow freely into the valleys, the runoff from the chalk can be similar to that from a generally impermeable catchment. Snow melt and rainfall on a frozen Upper Chalk catchment also can lead to rapid surface water runoff to the river system and widespread valley flooding.

No records of groundwater flooding at the site previously have been provided. However, according to EA data groundwater flooding is possible in the local area when groundwater levels are high.

5.4.1 Source Protection Zone:

The Environment Agency has defined Source Protection Zones for groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area.

The zones are used in conjunction with the EA Groundwater Protection Policy to set up pollution prevention measures in areas that are at a higher risk, and to monitor the activities of potential polluters nearby.

The published Environment Agency Groundwater Vulnerability map shows the site to be located outside a Source Protection Zone.



Figure 13: Extract from the Source Protection Zone map (Source: Magic)

5.5 Sewer Surcharge:

Sewer flooding occurs when the sewer network cannot cope with the volume of water that is entering it. It is often experienced during times of heavy rainfall when large amounts of surface water overwhelm the sewer network causing flooding. Temporary problems such as blockages, siltation, collapses and equipment or operational failures can also result in sewer flooding.

All Water Companies have a statutory obligation to maintain a register of properties/areas which have reported records of flooding from the public sewerage system, and this is shown on the DG5 Flood Register. This includes records of flooding from foul sewers, combined sewers and surface water sewers which are deemed to be public and therefore maintained by the Water Company. The DG5 register records of flood incidents resulting in both internal property flooding and external flooding incidents. Once a property is identified on the DG5 register, water companies can typically put funding in place to address the issues and hence enable the property to be removed from the register. It should be noted that flooding from land drainage, highway drainage, rivers/watercourses and private sewers is not recorded within the register.

According to the Test Valley Borough Council Strategic Flood Risk Assessment (SFRA), Southern Water have provided several regions across the borough where there has been a history of sewer flooding. The site does not lie within one of these regions.

No further information has been provided to suggest that the site or surrounding area is susceptible to sewer surcharge flooding.

5.6 Other Sources:

Reservoirs with an impounded volume in excess of 25,000 cubic metres (measured above natural ground level) are governed by the Reservoirs Act and are listed on a register held by the Environment Agency. The site lies outside the maximum inundation extent on the EA Reservoir Inundation Map. The EA also advise on their website that reservoir flooding is extremely unlikely. There has been no loss of life in the UK from reservoir flooding since 1925. All major reservoirs have to be inspected by specialist dam and reservoir Engineers. In accordance with the Reservoirs Act 1975 in England, these inspections are monitored and enforced by the EA themselves. The risk to the site from reservoir flooding is therefore minimal and is far lower than that relating to the potential for fluvial / tidal flooding to occur. The Environment Agency Reservoir Flood Map illustrated below, illustrates the largest area that might be flooded if the storage area were to fail and release the water it is designed to hold during a flood event.

Records of flooding from reservoirs and canals are erratic as there is no requirement for the Environment Agency to provide information on historic flooding from canals and raised reservoirs on plans. In particular, the NPPF does not require flood risk from canals and raised reservoirs to be shown on the Environment Agency flood zones.

Overflows from canals can be common as they are often fed by land drainage, and often do not have controlled overflow spillways. Occasionally, major bank breaches also occur, leading to rapid and deep flooding of adjacent land.

6. Flood Risk Management

6.1 Vulnerability to flooding:

The NPPF classifies property usage by vulnerability to flooding.

Post development, the site will become “more vulnerable”, as the application is for construction of a new dwelling.

Accordingly, it is considered that the vulnerability of the site as a whole will be increased post development (introduction of a new residential unit).

6.2 EA Standing Advice:

The EA Standing Advice guidance is for domestic extensions and non-domestic extensions where the additional footprint created by the development does not exceed 250m². It should not be applied if an additional dwelling is being created, e.g. a self-contained annex or additional commercial unit.

The application is for the creation of a new dwelling.

6.3 Physical Design Measures:

The NPPF requires new residential floor levels to be set at least 300mm above suitable modelled 1:100 year plus allowance for climate change flood levels. No modelled flood levels including allowances for climate change are available as part of the aforementioned JFlow flood modelling.

In the absence of suitable flood modelling including an allowance for climate change, the applicant has agreed to set the internal finished floor levels of the new dwelling at least 150mm above the adjacent ground level.

The location of the proposed dwelling is also shown to be within an area with a “Very Low” risk of flooding from surface water.

In addition, no basement or land raising is proposed.

To help protect against flooding during extreme events, the applicant has agreed to implement flood resistant design measures into the proposal, in consultation with the Local Authority building control department. These measures can include the following:

- Solid concrete ground floor, with waterproof membrane;
- Waterproof screed used on floors;
- Closed-cell foam used in wall cavities;
- Waterproof ground floor internal render;
- External walls rendered resistant to flooding to first floor level;
- Exterior ventilation outlets, utility points and air bricks fitted with removable waterproof covers;

- Ground floor electrical main ring run from first floor level; and on separately switched circuit from first floor;
- Electrical incomer and meter situated at first floor level or above;
- Boilers, control and water storage / immersion installed at first floor level or above;
- Gas meter installed at first floor level or above;
- Plumbing insulation of closed-cell design;
- Non-return valves fitted to all drain and sewer outlets;
- Manhole covers secured;
- Anti-syphon fitted to all toilets;
- Kitchen units of solid, water resistant material;
- Use of MDF carpentry (i.e. skirting, architrave, built-in storage) avoided at ground floor level;
- Stairs of solid hardwood construction with wood faces treated to resist water penetration.

The applicant should also consider the use of demountable flood defence barriers to defend ground level doorways and low windows.

6.4 Safe Escape and Flood Action Plan:

The NPPF requires a route of safe escape for all residents and users to be provided from new residential properties in Flood Zone 3. Safe escape is usually defined as being through slow moving flood water no deeper than 25cm.

The site is partially situated within Flood Zones 1, 2 and 3 when using the Environment Agency Flood Map for Planning (Rivers and Sea). The location of the proposed built footprint is also shown to be within an area with a "Very Low" risk of flooding from surface water.

The proposed escape route is to leave the property and head north along Hatherden Lane which is entirely within Flood Zone 1 within 40m of the site boundary.

Safe escape will be provided by a formal flood warning and evacuation plan which will need to be prepared in liaison with the Council's Emergency Planners, and tied in with the existing emergency plans for the area. The applicant has agreed to implement a flood warning and evacuation plan post development, and subscribe to the EA's flood warning service.

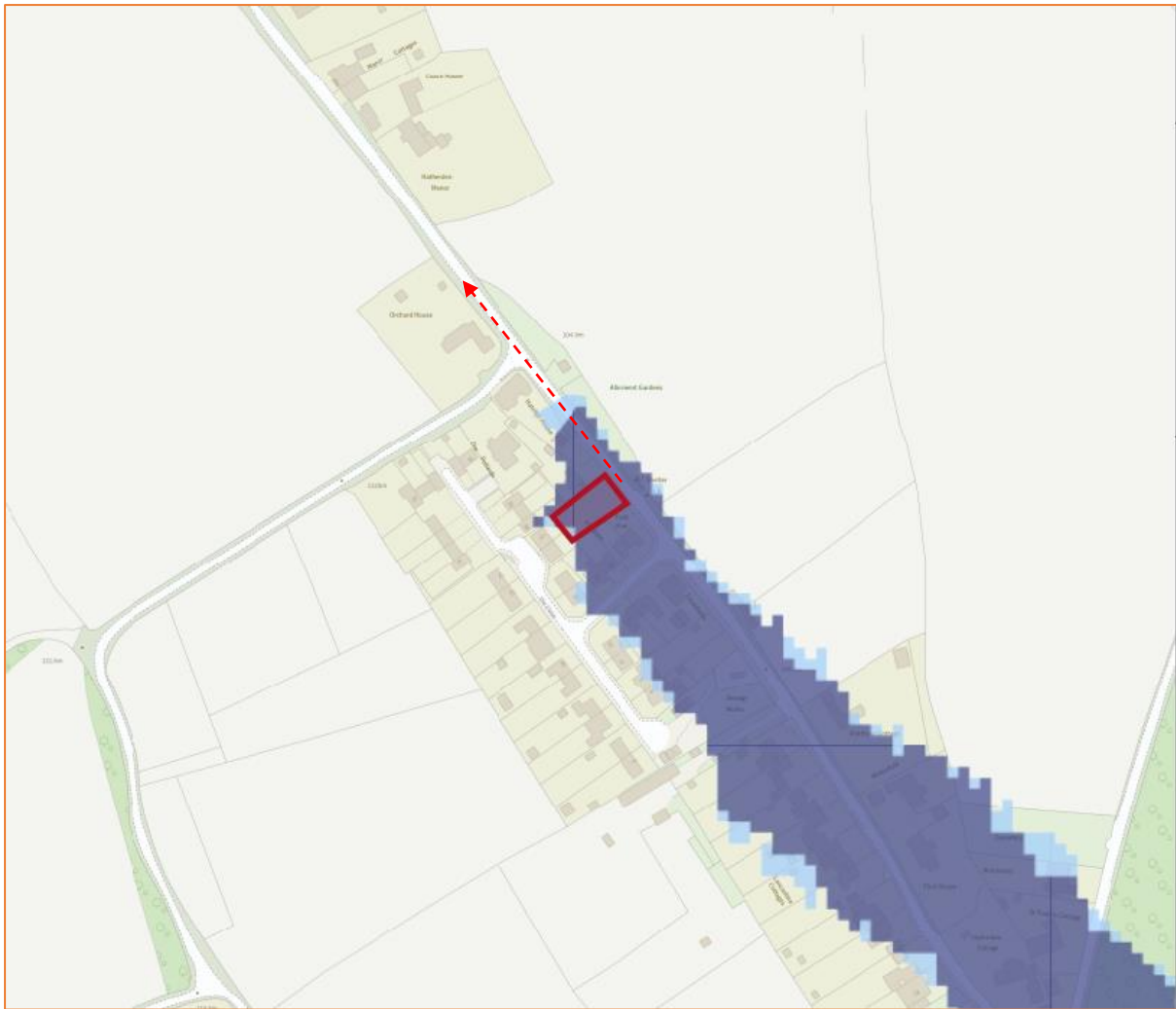


Figure 14: Environment Agency Flood Map for Planning (Rivers and Sea) with proposed escape route – red dashed line (Source: EA)

6.5 Flood Warning:

The EA is responsible for issuing flood warnings. Flood warnings are issued to the emergency services and local authorities. Both private individuals and organisations can sign-up to receive warnings via phone, text or email. This system of receiving warnings is currently voluntary.

Advice regarding severe flood warnings will generally be given during weather forecasts on local radio and TV. In the case of extreme events, warnings can also be disseminated via door to door visits by the police or locally appointed flood wardens.

The EA issue flood warnings/alerts to specific areas when flooding is expected. It is recommended that the applicant registers online with the free Environment Agency Floodline Warnings/Alert Direct service at www.gov.uk/sign-up-for-flood-warnings to receive flood warnings by phone, text or email.

The applicant has agreed to subscribe to the EA's flood alert/warning service.

The flood warning service has three types of warnings that will help you prepare for flooding and take action:




Flood Warning	Flood Alert	Flood Warning	Severe Flood Warning
			
What it means?	Flooding is possible. Be prepared.	Flooding is expected. Immediate action required.	Severe flooding. Danger to life.
When it's used?	Two hours to two days in advance of flooding.	Half an hour to one day in advance of flooding.	When flooding poses a significant threat to life.
What to do?	Be prepared to act on your flood plan. Prepare a flood kit of essential items. Monitor local water levels and the flood forecast on our website.	Move family, pets and valuables to a safe place. Turn off gas, electricity and water supplies if safe to do so. Put flood protection equipment in place.	Stay in a safe place with a means of escape. Be ready should you need to evacuate from your home. Co-operate with the emergency services. Call 999 if you are in immediate danger.

Table 2: EA Flood Warning Service

6.6 Flood Plan:

It is recommended that the applicant and future owners, occupiers and Landlords of the property prepare a flood plan to protect life and property during a flood event:

Before a flood:

- Prepare and keep a list of all your important contacts to hand or save them on your mobile phone.
- Think about what items you can move now and what you would want to move to safety during a flood.
- Know how to turn off electricity and water supplies to the site.
- Prepare a flood kit of essential items and keep it handy. It can include copies of important documents, a torch, a battery-powered or wind-up radio, blankets and warm clothing, waterproofs, rubber gloves and a first aid kit including all essential medication.

During a flood:

- Activate the evacuation plan and evacuate the site.

- Remove cars from the site if there is sufficient warning and the water levels are not rising rapidly.
- Switch off water and electricity for the site.
- Tune into your local radio station on a battery or wind-up radio.
- Listen to the advice of the emergency service and evacuate if told to do so.
- Avoid walking or driving through flood water. Six inches of fast-flowing water can knock over an adult and two feet of water can move a car.

After a flood:

- If you have flooded, contact your insurance company as soon as possible.
- Take photographs and videos of your damaged property as a record for your insurance company.
- If you don't have insurance, contact your local authority for information on grants and charities that may help you.
- Flood water can contain sewage, chemicals and animal waste. Always wear waterproof outerwear, including gloves, wellington boots and a face mask.
- Have your electrics and water checked by qualified engineers before switching them back on.

6.7 Off-Site Impacts:**6.7.1 Fluvial floodplain storage:**

The NPPF requires that where development is proposed in undefended areas of floodplain, which lie outside of the functional floodplain, the implications of ground raising operations for flood risk elsewhere needs to be considered. Raising existing ground levels may reduce the capacity of the floodplain to accommodate floodwater and increase the risk of flooding by either increasing the depth of flooding to existing properties at risk or by extending the floodplain to cover properties normally outside of the floodplain. Flood storage capacity can be maintained by lowering ground levels either within the curtilage of the development or elsewhere in the floodplain, in order to maintain at least the same volume of flood storage capacity within the floodplain.

In undefended tidal areas, raising ground levels is unlikely to impact on maximum tidal levels so the provision of compensatory storage should not be necessary.

For development in a defended flood risk area, the impact on residual flood risk to other properties needs to be considered. New development behind flood defences can increase the residual risk of flooding if the flood defences are breached or overtopped by changing the conveyance of the flow paths or by displacing flood water elsewhere. If the potential impact on residual risk is unacceptable then mitigation should be provided.

The site is partially situated within Flood Zones 1, 2 and 3 when using the Environment Agency Flood Map for Planning (Rivers and Sea).

No modelled flood levels are available from the EA. There is no open watercourse at or near the site (and it is understood that there is no culverted watercourse at or near the site), and it would appear that JFlow has picked up a potential overland flow route or a dry valley. In addition, no land raising is proposed.

6.7.2 Surface Water Drainage:

The development will utilise Sustainable Urban Drainage (SuDs) design in accordance with the NPPF for Planning Applications hierarchy as follows:

1. Store rainwater for later use;
2. Infiltration techniques;
3. Attenuate rainwater by storing in tanks for gradual release;
4. Discharge rainwater direct into watercourse;
5. Discharge rainwater into surface water sewer;
6. Discharge rainwater into a combined sewer;
7. Attenuation of rainwater in ponds or open water features with controlled discharge into the local watercourse.

All surface water runoff generated by the proposed development up to 1:100 year rainfall event (plus climate change) will be stored on site, prior to being discharged.

Due to the scale of the development, a full Surface Water Drainage Strategy is not required at this stage of planning.

7. Sequential and Exception Test

The Sequential Test aims to ensure that development does not take place in areas at high risk of flooding when appropriate areas of lower risk are reasonably available.

The Sequential Test is applied to developments in areas identified as being at risk of any source of flooding now or in the future. The Sequential Test ensures that a sequential, risk-based approach is followed to steer new development to areas with the lowest risk of flooding, taking all sources of flood risk and climate change into account.

The sequential approach is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding. Other forms of flooding need to be treated consistently with river and tidal flooding in mapping probability and assessing vulnerability, so that the sequential approach can be applied across all areas of flood risk

The site is situated partially within Flood Zones 1, 2 and 3 when using the Environment Agency Flood Map for Planning (Rivers and Sea), and within an area at “very low” risk of flooding from surface water.

Post development, the site will remain “more vulnerable”, as the application is for the erection of a single dwelling.

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	✗	Exception Test required	✓	✓
Zone 3b	Exception Test required	✗	✗	✗	✓

Table 3: Flood risk vulnerability and flood zone ‘compatibility’

Using the table above, the proposed application is considered to be suitable within Flood Zones 1, 2 and 3, subject to passing the Sequential and Exception Tests.

8. Conclusions

Unda Consulting Limited have been appointed by Sheridan Morrish (hereinafter referred to as “the applicant”) to undertake a Flood Risk Assessment for the proposed development Land Adjacent To 22 Hillside, Hatherden Lane, Hatherden SP11 0HP. The FRA has been undertaken in accordance with the National Planning Policy Framework (NPPF) and the associated technical guidance.

The purpose of the study is to support a planning application for the proposed development.

Post development, the site will become “more vulnerable”, as the application is for construction of a new dwelling. Accordingly, it is considered that the vulnerability of the site as a whole will be increased post development (introduction of a new residential unit).

The site is located partially within Flood Zones 1, 2 and 3 (Low, Medium and High probability), which means it is defined as land having between a more than 1 in 100, and a less than 1 in 1,000 annual probability of river flooding.

The applicant has confirmed there are no rivers, watercourses or ditches located on the site or the surrounding area.

The risk would appear to be predominantly fluvial/surface/groundwater water, the actual origin of which is unknown as there does not appear to be an open watercourse at or near the site. It is likely that JFlow has picked up an overland surface water flow path or dry valley. A dry valley may develop on many kinds of permeable rock, such as limestone and chalk. Dry valleys do not hold surface water because it sinks into the permeable bedrock. It appears that the flow path flows in a southerly direction away from the site.

According to the Test Valley Borough Council, Strategic Flood Risk Assessment for Local Development Framework, Final September 2007, detailed computer simulation of flooding using the ISIS modelling program has been undertaken for the Rivers Anton and Pillhill Brook, and the formal flood maps were changed to reflect the flood outlines yielded. This modelling did not extend up the Charlton River. Therefore there is no detailed flood modelling in this area.

It is understood that The Test and the tributaries within its catchment are mainly chalk fed watercourse's. The Charlton River is an ephemeral tributary.

No formal flood defences have been identified in this location.

A Flood Risk Activity Permit or Ordinary Watercourse Land Drainage Consent is not required.

The Environment Agency confirm that they hold no records of historical flood events at the site only downstream at the Chalton River which flows in a southerly direction.

The Test Valley Borough Council Strategic Flood Risk Assessment (SFRA) shows the site to be located outside of areas identified as a Localised Flooding Area.

The EA Risk of Flooding from Surface Water Map suggests that the site lies in an area of “Very Low” to “High” risk of flooding from surface water.

The location of the proposed dwelling however is shown to be within an area with a “Very Low” to “Low” risk of flooding from surface water.

The Environment Agency risk of flooding from surface water depth maps show:

- For the 1:30 year event (High), the site is entirely flood free during this event.
- For the 1:100 year event (Medium), the maximum depth of flooding on the site is 0.15m - 0.30m. The area of the proposed built footprint is entirely flood free during this event.
- For the 1:1000 year event (Low), the maximum depth of flooding on the site is 0.30m - 0.60m. The area of the proposed built footprint has a maximum depth of 0.15m - 0.30m during this event.

According to the Test Valley Borough Council Strategic Flood Risk Assessment (SFRA), no historical pluvial has occurred on site or in the immediate surrounding area.

No records of groundwater flooding at the site previously have been provided. However, according to EA data groundwater flooding is possible in the local area when groundwater levels are high.

The published Environment Agency Groundwater Vulnerability map shows the site to be located outside a Source Protection Zone.

No information has been provided to suggest that the site or surrounding area is susceptible to sewer surcharge or reservoir flooding.

In the absence of suitable flood modelling including an allowance for climate change, the applicant has agreed to set the internal finished floor levels of the new dwelling at least 150mm above the adjacent ground level.

In addition, no basement or land raising is proposed.

To help protect against flooding during extreme events, the applicant has agreed to implement flood resistant design measures into the proposal, in consultation with the Local Authority building control department.

Safe escape will be provided by a formal flood warning and evacuation plan which will need to be prepared in liaison with the Council's Emergency Planners, and tied in with the existing emergency plans for the area. The applicant has agreed to implement a flood warning and evacuation plan post development, and subscribe to the EA's flood warning service.

The applicant has confirmed that:

- There are no rivers, watercourses or ditches located on the site or the surrounding area
- The internal finished floor levels of the new dwelling at least 150mm above the adjacent ground level
- No basement or land raising is proposed
- Flood proofing of the dwelling will be incorporated as appropriate.
- The applicant will register with the free Environment Agency Floodline Alert Direct service.
- Safe escape will be provided by a flood warning and evacuation plan, which will be prepared in liaison with the Council's Emergency Planners and tied in with the existing emergency plans for the area.

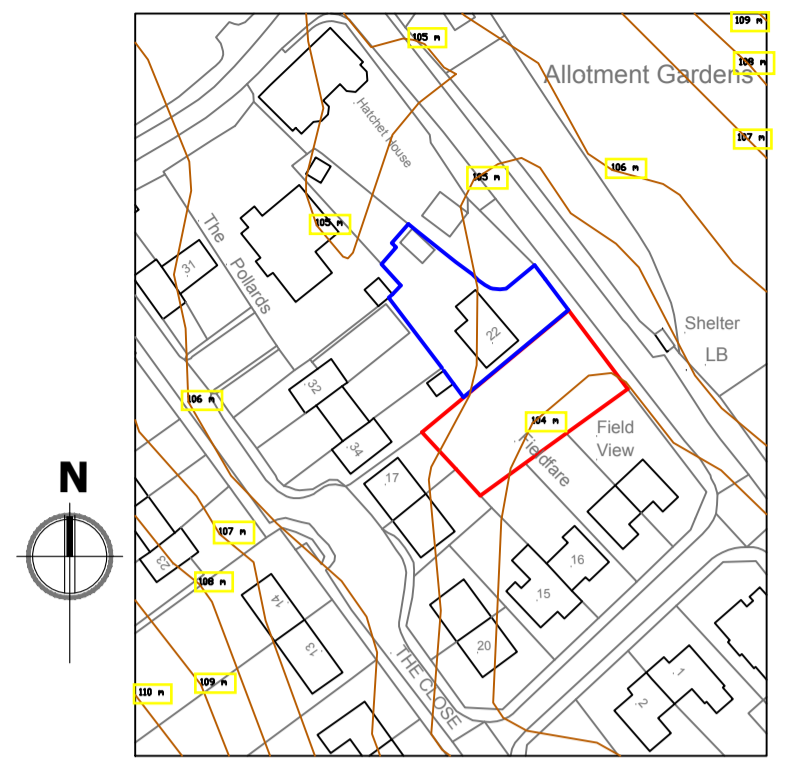
Assuming accordance with these flood risk management measures, Unda Consulting Limited consider the proposed application to be suitable in flood risk terms.

Appendix

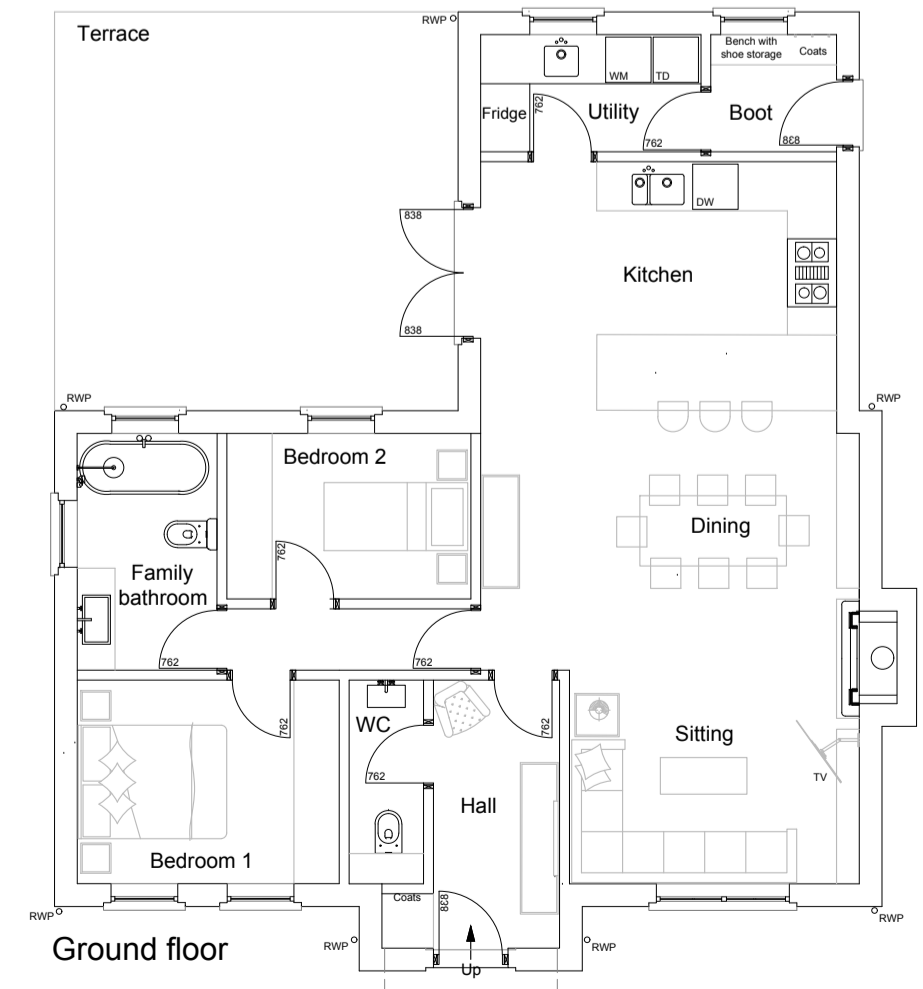
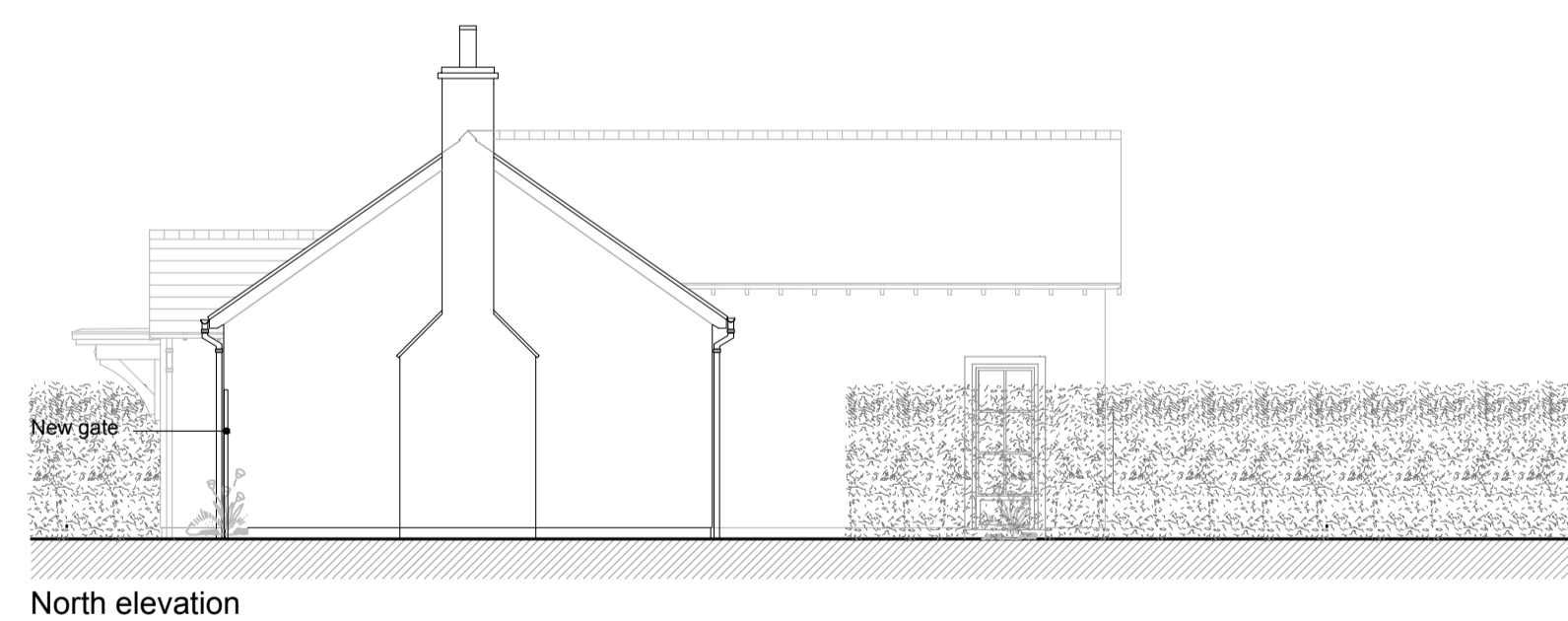
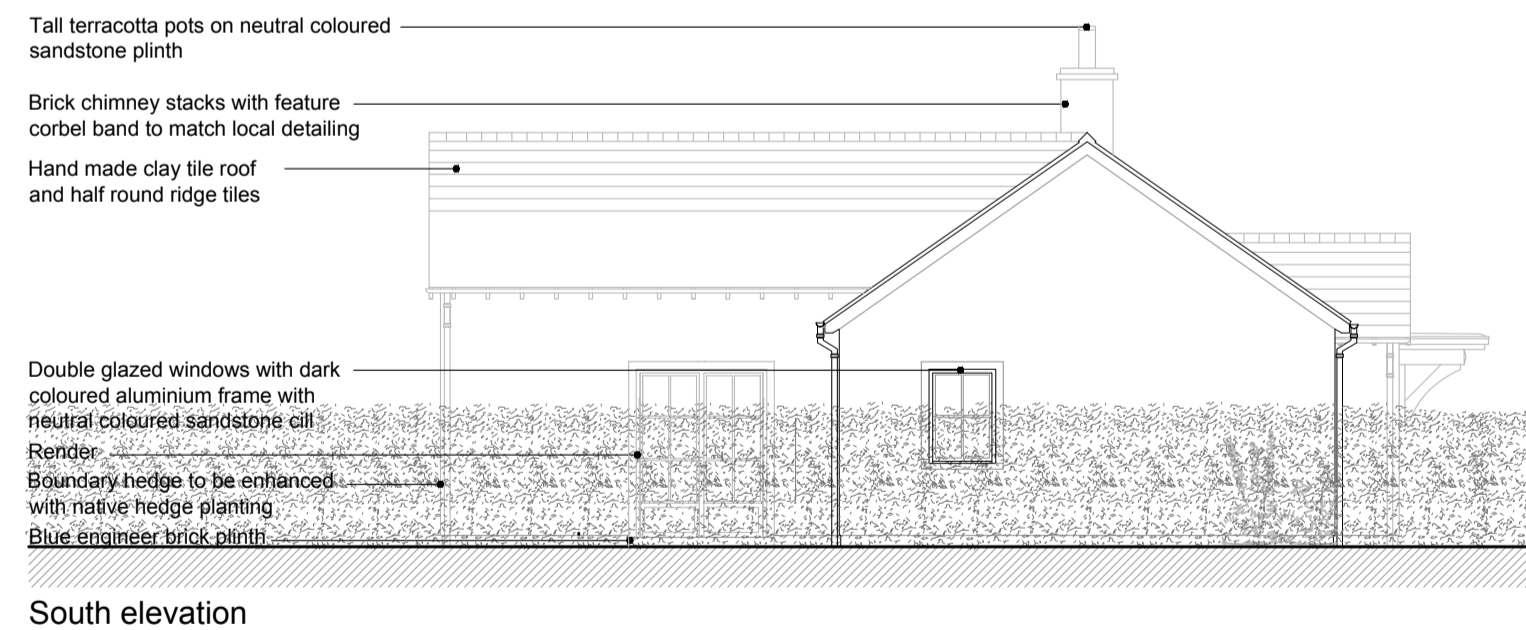
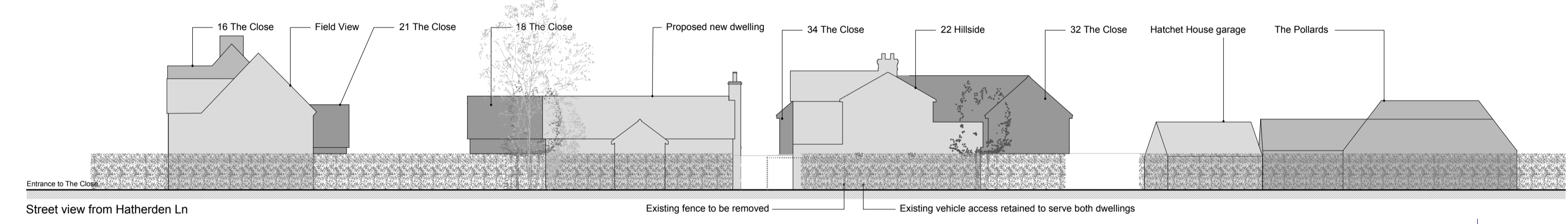
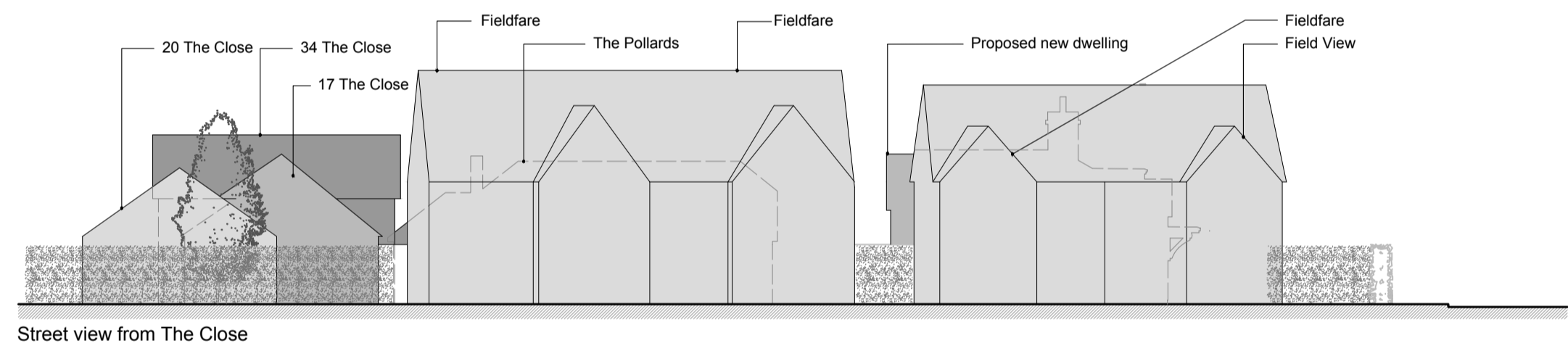
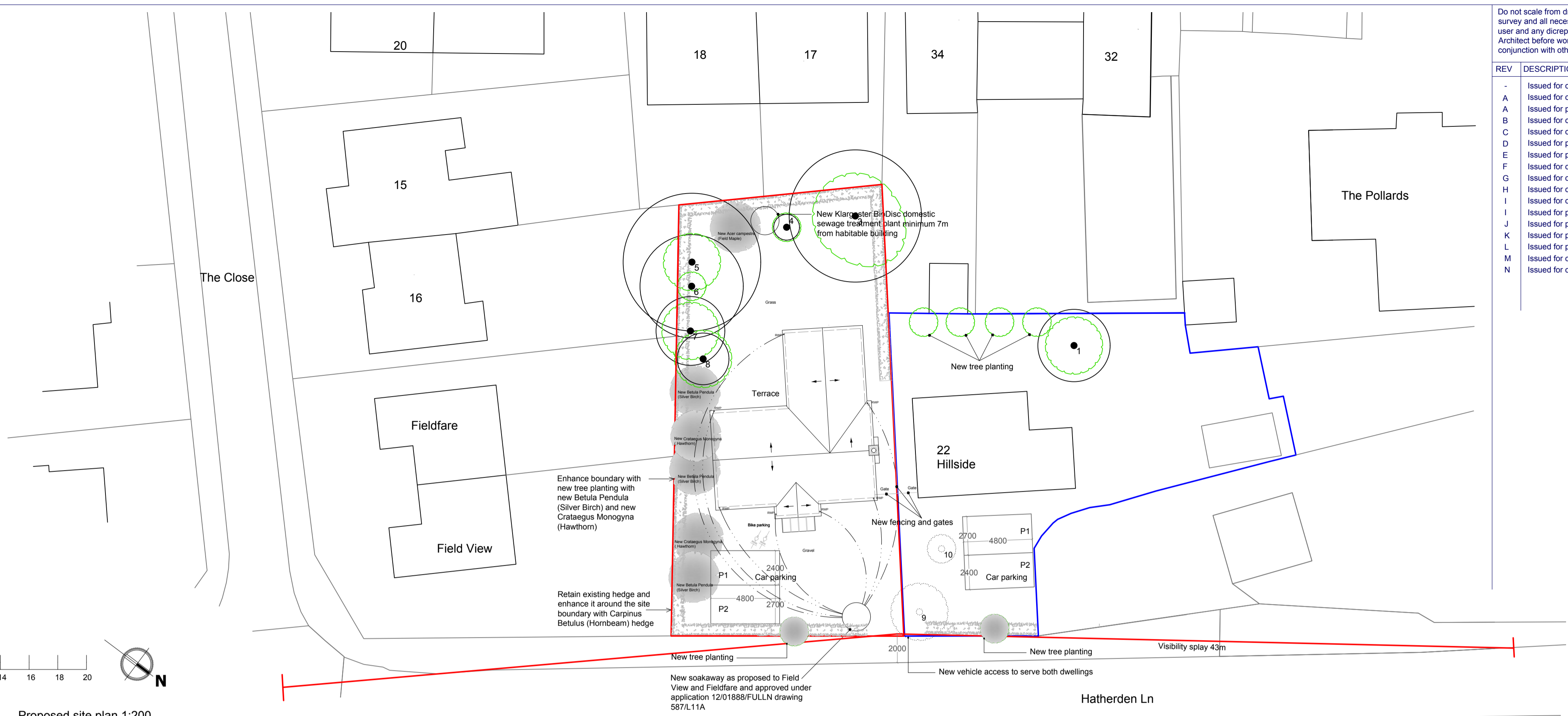
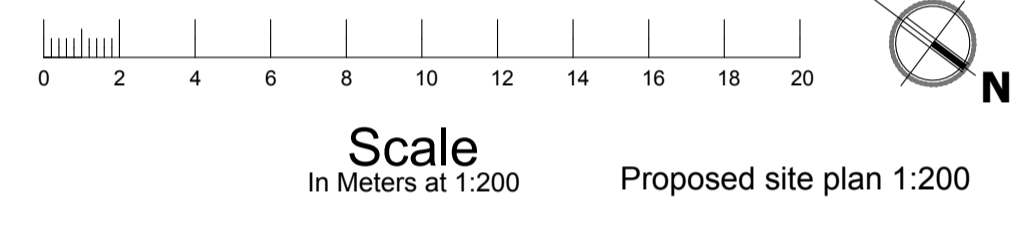
- Location, existing and proposed Plans and drawings.
- Environment Agency Flood Map for Planning.

Do not scale from drawing, use figured dimensions only. Subject to site survey and all necessary consents. All dimensions to be checked by user and any discrepancies, errors or omissions to be reported to the Architect before work commences. This drawing is to be read in conjunction with other relevant materials.

REV	DESCRIPTION	DATE	AUTH
-	Issued for client approval	150921	LR
A	Issued for client approval	071021	LR
A	Issued for pre-planning	111021	LR
B	Issued for client approval	230222	LR
C	Issued for client approval	150322	LR
D	Issued for planning	080422	LR
E	Issued for planning	300522	LR
F	Issued for client approval	010722	LR
G	Issued for client approval	050722	LR
H	Issued for client approval	120722	LR
I	Issued for client approval	270722	LR
J	Issued for planning	290722	LR
J	Issued for planning	130922	LR
K	Issued for pre-planning	210223	LR
L	Issued for pre-planning	120523	LR
M	Issued for client approval	200823	LR
N	Issued for client approval	131023	LR



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Location plan 1:1250



DRAWING ISSUE
Planning

LUKE ROSE
ARCHITECT

Beck Cottage, Abbots Ann
Hampshire SP11 7NW
tel: +44 (0) 1264 710163
email: info@lukerose.co.uk
www.lukerose.co.uk

Architecture | Construction | Design | Development

JOB
**Land adjacent 22 Hillside
Hatherden, Andover
SP11 0HP**

TITLE
**Location plan, proposed site
plan, street views, floor plan
and elevations**

SCALE
1:100

DATE
Oct 23

AUTHOR
LR

DRAWING NO
21/375/01

REV
N

Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
434226/150609

Created
14 Nov 2023 13:42

Your selected location is in flood zone 3, an area with a high probability of flooding.

This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see www.gov.uk/guidance/flood-risk-assessment-standing-advice)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2022 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>

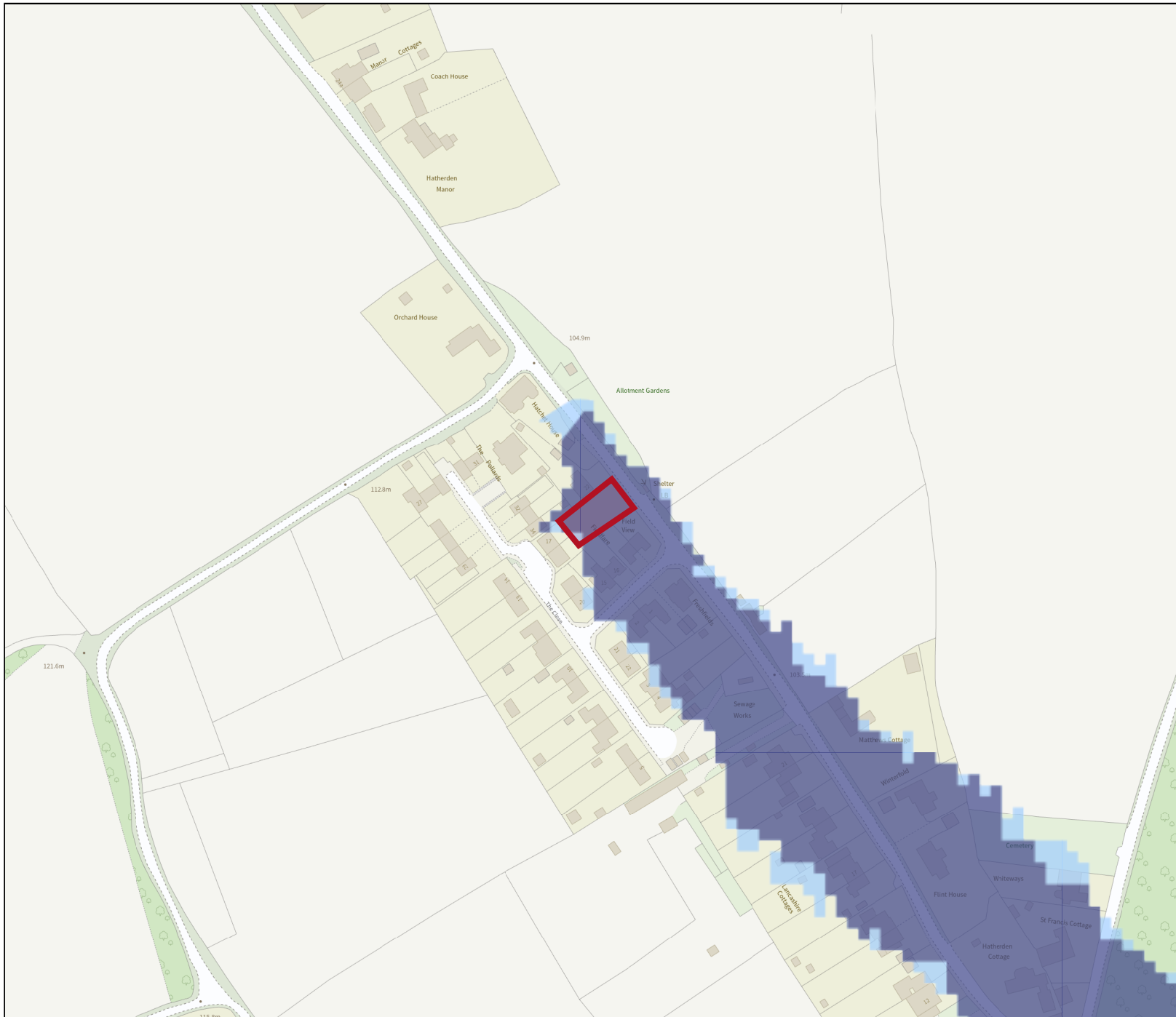
Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
434226/150609

Scale
1:2500

Created
14 Nov 2023 13:42



-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area

