Flood Risk Assessment for Planning

January 2026

Prepared for:

Stag Construction Services Ltd

Location:

9 Station Parade

Tarring Road

West Sussex

BN11 4SS

Our reference:

95586-Boys-StationRd

Unda

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Document Issue Record

Project Details	
Project:	Flood Risk Assessment for Planning
Prepared for:	Stag Construction Services Ltd
Application:	Construction of a new single residential unit
Location:	9 Station Parade, Tarring Road, West Sussex, BN11 4SS
Our reference:	95586-Boys-StationRd
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Project Consultants	
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Document Check:	Ms Jackie Stone, MSc DIC
Authorisation:	Mrs Emma Jeffery, MSci (Hons)

Contents

1. Key Facts

Flood Risk Posed:

- The site is located within Flood Zone 1 (Low Probability), which means it is defined as land having a less than 1 in 1,000 annual probability of river or sea flooding.
- No Flood Storage Areas located in close proximity to the site.
- EA Risk of Flooding from Surface Water Map suggests that the site lies within an area of "High" risk of flooding from surface water during the present day and between 2040 – 2060.
- The EA Risk of Flooding from Surface Water Map suggests that risk at the site appears to be "High" chance for the present day and between 2040 - 2060.
- The site is partially within the "Low" chance of having 0.2m and 0.3m of surface water at any given year between 2040-2060. The proposed residential development is shown to be outside of areas reaching or exceeding 0.3m between 2040-2060.
- The site is entirely outside of the "Low" chance of having 0.6m, 0.9m and 1.2m of surface water flooding in any given year.
- It should be noted that surface water flood data for the 1:100 year + appropriate climate change event for planning (up to 2125), is not provided within the EA surface water data set. Communication with WSP at Adur and Worthing Councils has confirmed that an appropriate substitute for the 1:100yr+CC for planning event, is to use the 1:1000 year for 2040-2060 (Low) event.
- As such, the proposed residential development is shown to have a maximum flood depth of 0.2m for the 1:100yr+CC for planning event (Low).
- No information has been provided to suggest that the site itself has previously been affected by flooding from groundwater, sewer surcharge or reservoirs.
- No EA records of historic flooding having affected the site or surrounding area.

Flood Risk Mitigation:

- The proposed application is for the construction of a new single residential unit.
- No increase to impermeable area is proposed as part of this development.
- Post development, the site will be classified as "more vulnerable" (residential).
- Flood proofing will be incorporated within the design, were feasible and appropriate.
- The applicant has agreed to raise the finished floor level (FFL) of the residential unit by 425mm above ground level. Additionally, the FFL of the bedroom will be raised by a further 15mm, resulting in a total elevation of 440mm above ground level for the bedroom.
- The development will utilise floodable voids as part of the proposal.
- There will be no unacceptable loss of fluvial or pluvial floodplain storage.
- Safe escape will be provided by a formal 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.
- Post development, a formal flood warning and evacuation plan will be implemented.
- The applicant will register with the National Severe Weather Warning Service.

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

2. Introduction

2.1. Unda Consulting Limited have been appointed by Stag Construction Services Ltd (hereinafter referred to as "the applicant") to undertake a Flood Risk Assessment for the proposed development at 9 Station Parade, Tarring Road, West Sussex, BN11 4SS (hereinafter referred to as "the site"). The purpose of the study is to support a planning application for the proposed development.

2.2. This report presents our findings based on the readily available information and data relating to the site and surrounding drainage area.

2.3. The site appears to be located within Flood Zone 1 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.

2.4. Given that the proposed development is located within Flood Zone 1 (Low Risk of flooding from rivers or the sea) and the site is under 1ha In area, a FRA would not normally be required under the NPPF. However, it is understood that the site falls within an area at potential risk of surface water flooding.

2.5. 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 Site

3.1. The site comprises of a two storey building. The ground floor is a commercial entity. A residential unit is situated on the first floor. The site also has an associated parking area towards the rear.

3.2. The surrounding area is characterised by residential properties and commercial buildings.

3.3. Existing plans are provided in the report Appendix.

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

Figure 2: Site block plan (Source: BPM architects)

Figure 3: Existing ground floor plan and elevations (Source: BPM architecs)

Site Topography:

3.4. 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 +/-5cm to 15cm with spatial resolutions ranging from 25cm to 2 metres. This dataset is derived from a combination of the 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. 1.0m horizontal resolution DTM LiDAR data has been used for the purposes of this study.

3.5. LiDAR remotely sensed digital elevation data suggests that the ground topography on site ranges from approximately 7.60mAOD to 7.90mAOD.

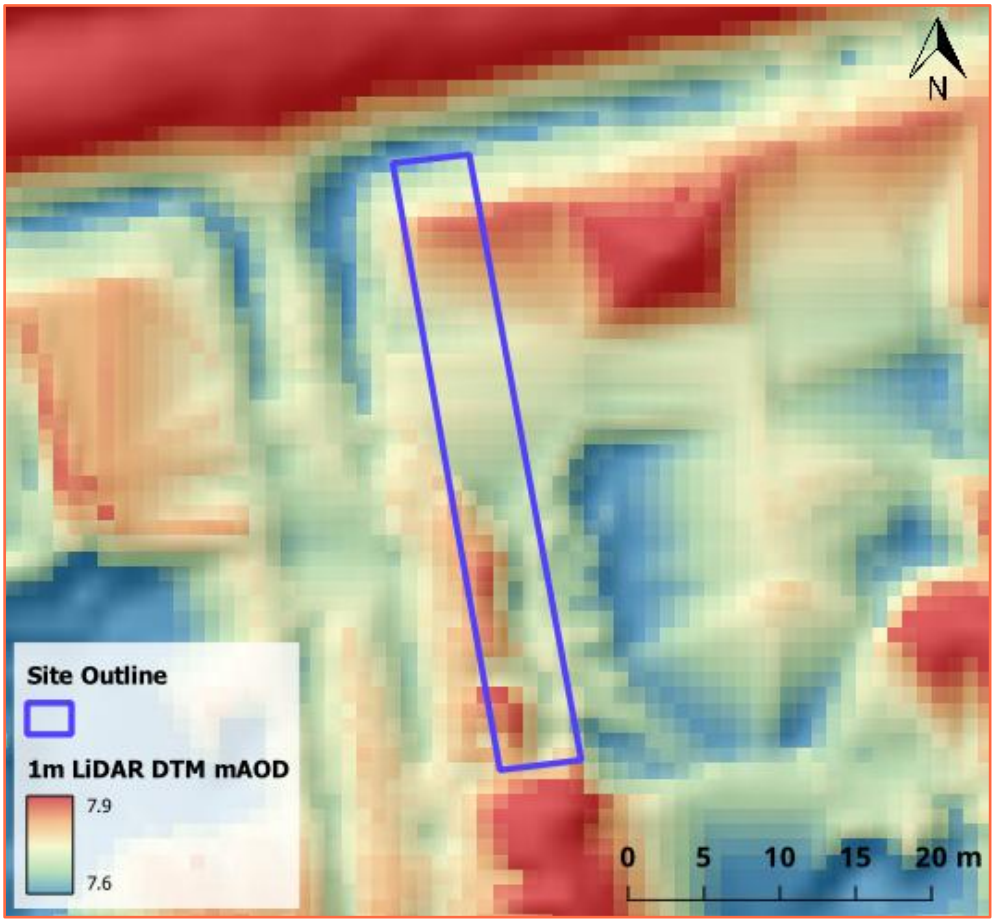


Figure 4: 1m LiDAR DTM (Source: EA, OS)

Existing Ground Conditions:

3.6. The 1:50,000 BGS map shows that the bedrock underlying the site is Seaford Chalk Formation – Chalk.

3.7. The BGS mapping shows superficial deposits of River Terrace deposits (Undifferentiated) – sand, silt, and clay underlying the site.

3.8. The soil type taken from the UKSO Soil Map Viewer, shows the site to located upon relatively deep soils of sand Loess soil parent material with a soil texture of silt to sand.

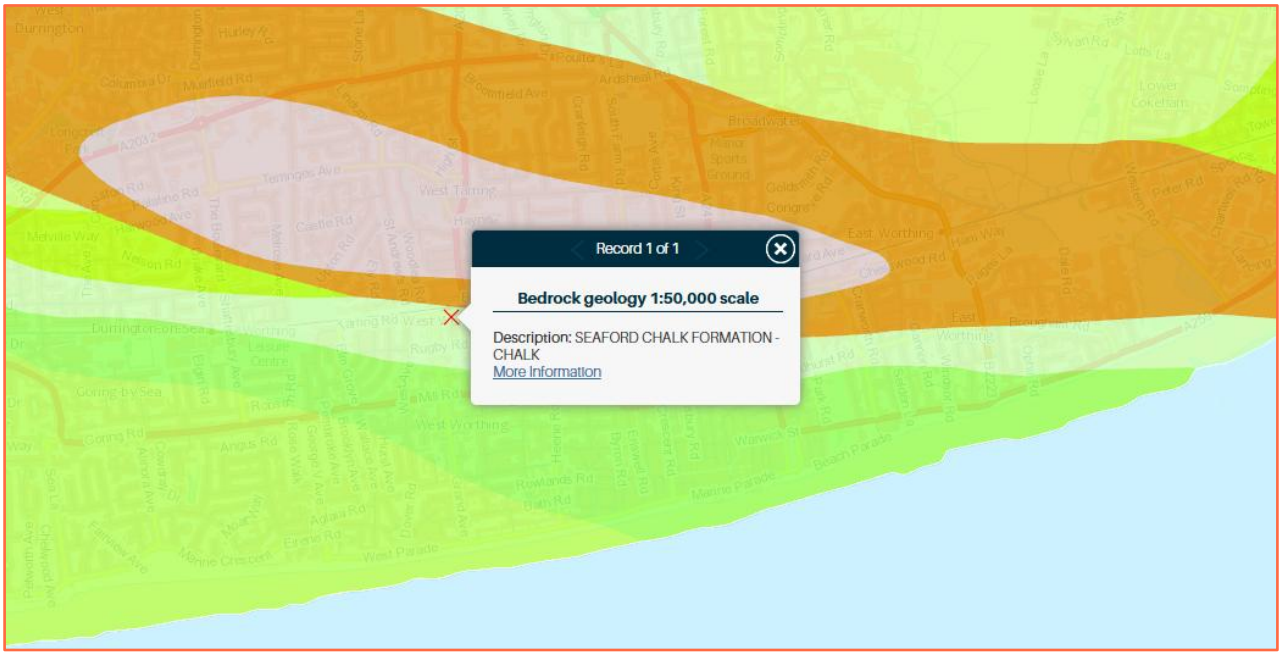


Figure 5: BGS Bedrock Geology (Source: BGS)

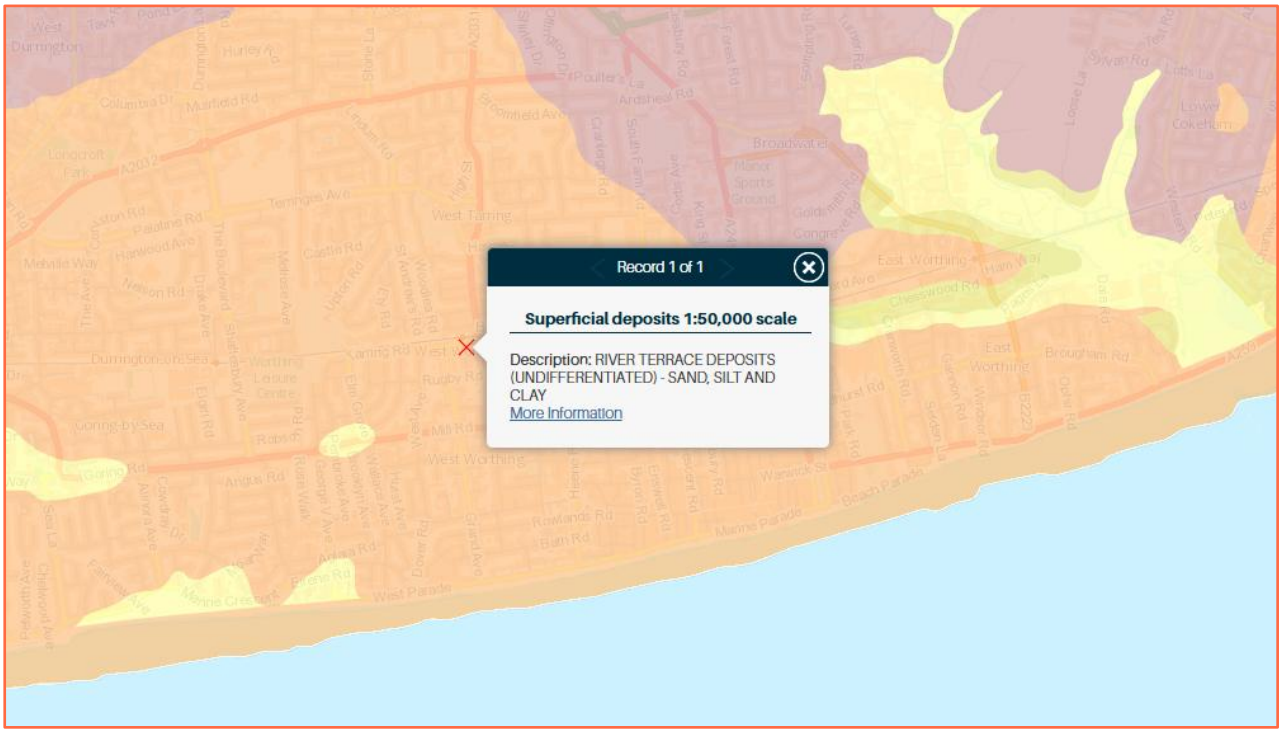


Figure 6: BGS superficial deposits (Source: BGS)

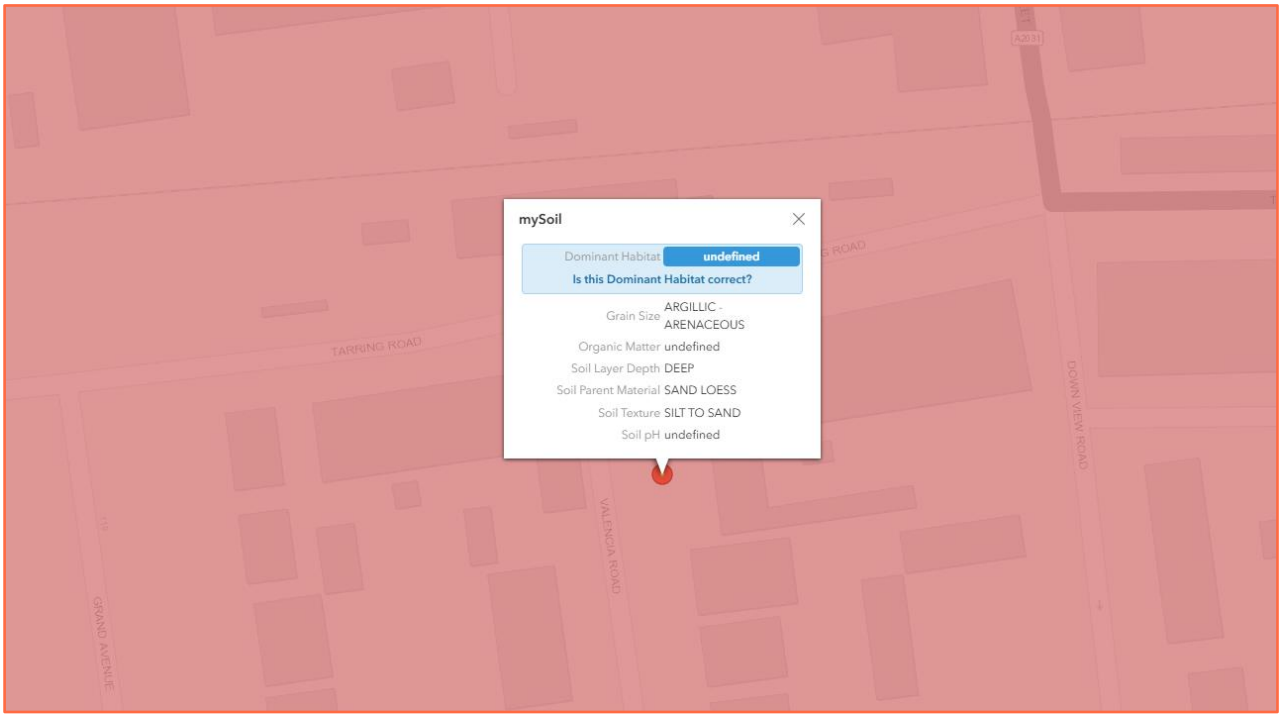


Figure 7: Soil map (Source: UK Soils, BGS)

Nearby Watercourses / Drainage Features:

3.9. The English channel is approximately 1.3km south of the site.

4. Development Proposal

4.1. The proposed application is for the construction of a new single residential unit.

4.2. No increase to impermeable area is proposed as part of this development.

4.3. The applicant has agreed to raise the finished floor level (FFL) of the residential unit by 425mm above ground level. Additionally, the FFL of the bedroom will be raised by a further 15mm, resulting in a total elevation of 440mm above ground level for the bedroom.

4.4. The development will utilise floodable voids as part of the proposal.

4.5. Proposed plans are provided in the report Appendix.

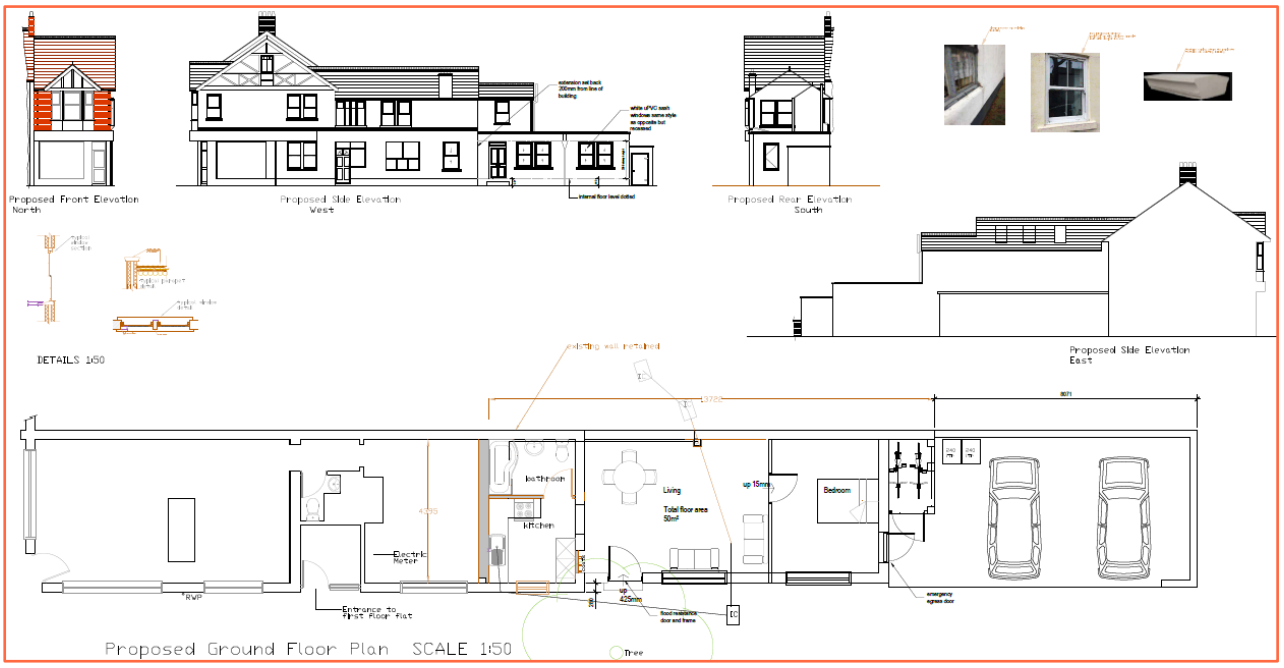


Figure 8: Proposed ground floor and elevation plan (Source: bpm architects)

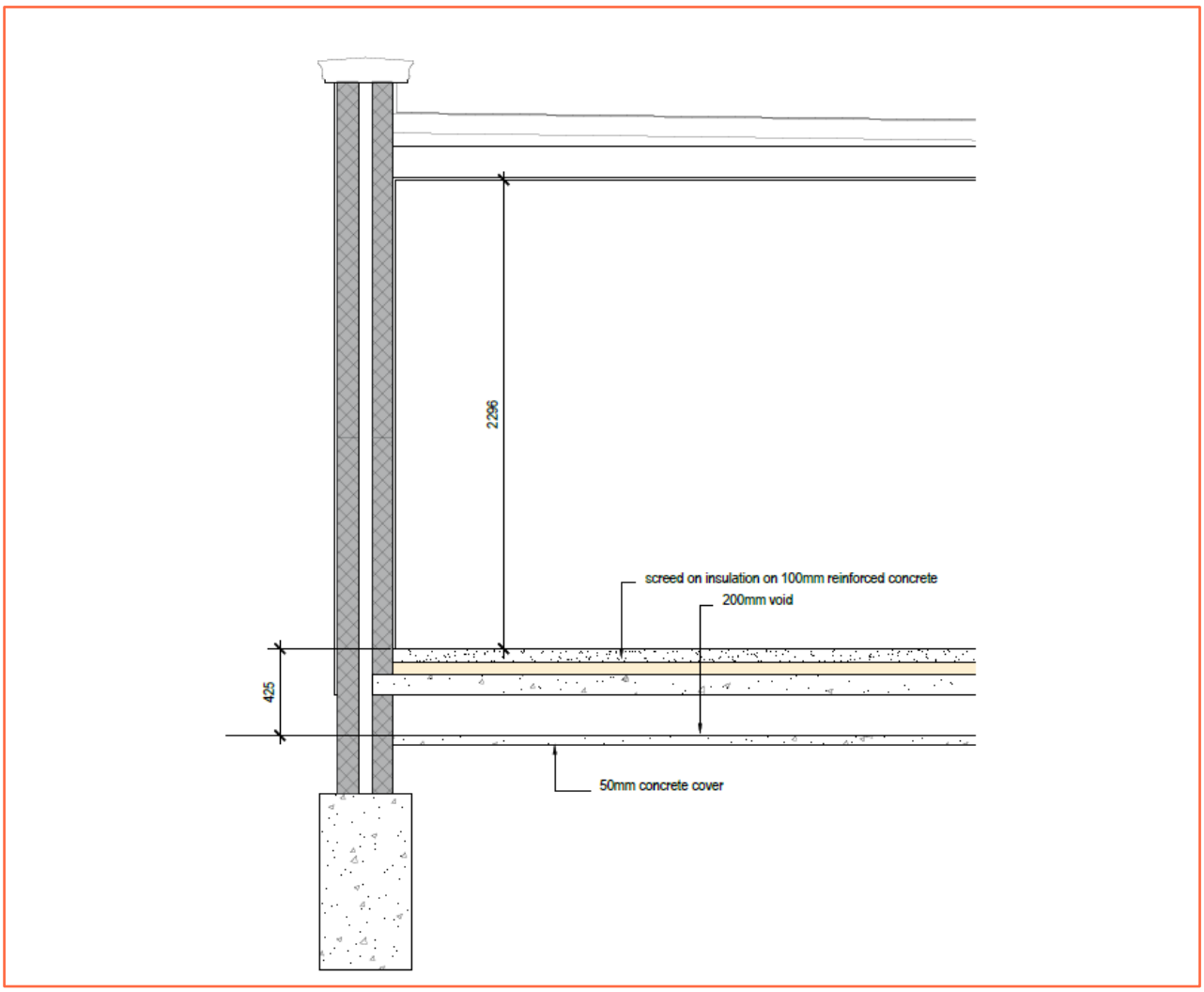


Figure 9: Proposed void with ground floor finished floor level (Source: bpm architects)

5. Flood Risk Assessment

EA Flood Zones:

5.1. 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 0.1% annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map for Planning – all land outside Zones 2, 3a and 3b)
Zone 2 **Medium Probability**	Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a **High Probability**	Land having a 1% or greater annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea. (Land shown in dark blue on the Flood Map)
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)

Table 1: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

5.2. 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.

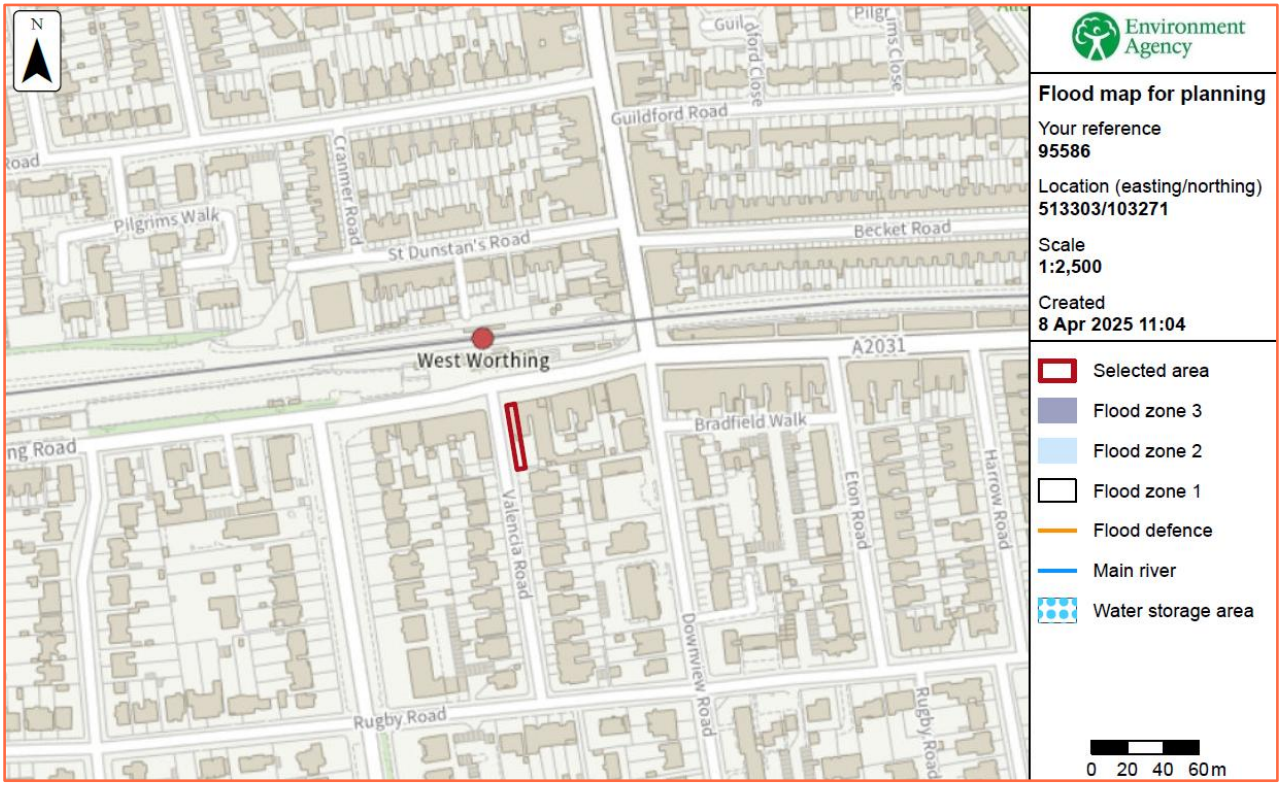


Figure 10: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

5.3. The site is located within Flood Zone 1 (Low Probability), which means it is defined as land having a less than 1 in 1,000 annual probability of river or sea flooding.

EA Flood Zones plus Climate Change:

5.4. The Flood Zones plus climate change dataset shows how the combined extent of Flood Zones 2 and 3 could increase with climate change over the next century, ignoring the benefits of any existing flood defences. The EA have assumed no changes to flood defences or land-use that could occur in future. The effects of climate change on flood risk which may be seen in the future could be different to those currently considered.

5.5. 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.

5.6. The datasets shown on Flood Map for Planning are aimed at supporting planners and developers to make long-term decisions about the location and design of development and the use of land. Such decisions need to account for the full anticipated lifetime of the development being planned.

5.7. The EA have therefore chosen:

- the 'Central' allowance for the 2080s epoch (2070-2125) for risk of flooding from rivers
- the 'Upper End' allowance for risk of flooding from the sea, accounting for cumulative sea level rise to 2125

5.8. The Flood Zones plus climate change dataset is created using local flood model outputs, recorded flood outlines and national flood model information, and by adding climate change scenarios from local and national modelling, using the maximum extents from:

- Rivers and sea with defences 3.3%, 1%/0.5% and 0.1% AEPs
- Rivers and sea without defences 1%/0.5% and 0.1% AEPs

5.9. The extents are merged to create a single outline.

5.10. The site is shown to be outside of the EA Flood Zones plus climate change (2070 to 2125) extent.

Fluvial:

5.11. The site is situated entirely in Flood Zone 1 (Low Probability), defined as land having a less than 1:1000 year probability of river or sea flooding.

Flood Storage Areas:

5.12. Flood Storage Areas are areas that act as a balancing reservoir, storage basin or balancing pond. Their purpose is to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel. It may also delay the timing of a flood peak so that its volume is discharged over a longer time interval. Flood storage areas do not completely remove the chance of flooding and can be overtopped or fail in extreme weather conditions.

5.13. According to EA data, there are no Flood Storage Areas located in close proximity to the site.

Flood Defences:

5.14. Flood defences are typically raised structures that alter natural flow patterns and prevent floodwater from entering property in times of flooding. They are generally categorised as either 'formal' or 'informal' defences. A 'formal' flood defence is a structure that was built specifically for the purpose of flood defence, and is maintained by its respective owner, which could be the EA, Local Authority, or an individual. An 'informal' flood defence is a structure that has

not been specifically built to retain floodwater, and is not maintained for this specific purpose, but may afford some protection against flooding.

5.15. Asset inspections are undertaken on average every six months, although some critical assets are assessed on a more regular basis. It is possible that adjacent assets are inspected on different dates, which may result in two assets of a similar state of repair having different condition ratings. It is unclear when both assets were last inspected.

5.16. Condition ratings of assets may also be affected by the time of year the surveys are conducted, as vegetation may obscure the asset in the summer months, or accessibility may be an issue during winter months. These factors would not usually affect the recorded condition rating of an asset unless the asset is on a borderline between two ratings.

5.17. According to the EA, there are no formal raised flood defences owned or operated by the EA protecting the site.

Residual Risk (breach or overtopping of flood defences):

5.18. 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.

5.19. 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.

5.20. The site is not shown to be defended by formal flood defences.

Tidal Flooding:

5.21. Due to the site topography and distance to the nearest coast/tidal watercourse, the risk of tidal flooding is considered to be very low.

Pluvial (Surface Water):

5.22. Pluvial (surface water) flooding occurs 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.

5.23. The mapping below shows the Risk of Flooding from Surface Water (RoFSW). 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. This information tells you the flood risk of the land around a building, not the building itself.

5.24. The RoFSW products are an assessment of where surface water flooding may occur.

5.25. The mapping shows the following likelihood categories, for the present day risk of flooding from surface water, and the climate change scenarios have been produced to indicate the predicted impacts of climate change on future flood risk.

- 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.

5.26. 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.

5.27. The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at "High" chance of flooding from surface water during the present day.

5.28. The EA Risk of Flooding from Surface Water mapping shows the site to be at "High" chance of flooding between 2040 and 2060.

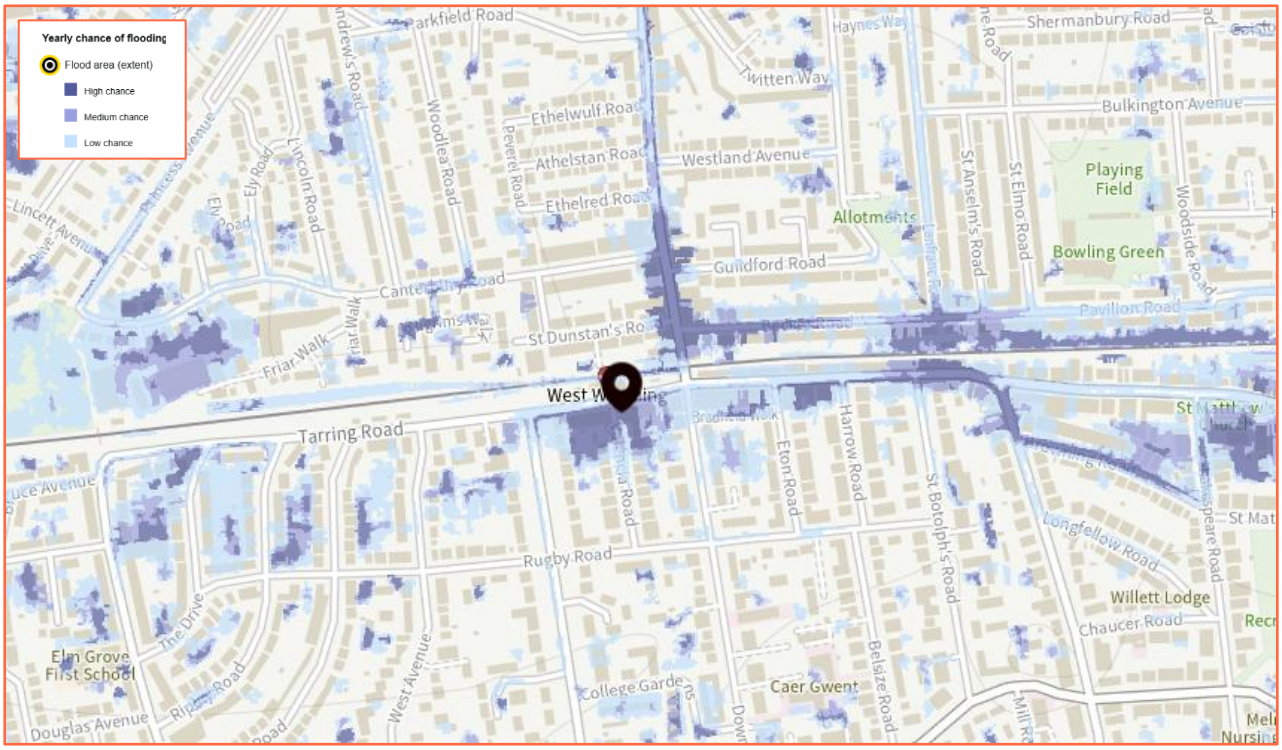


Figure 11: Extract from EA Risk of Flooding from Surface Water mapping – present day (Source: EA)

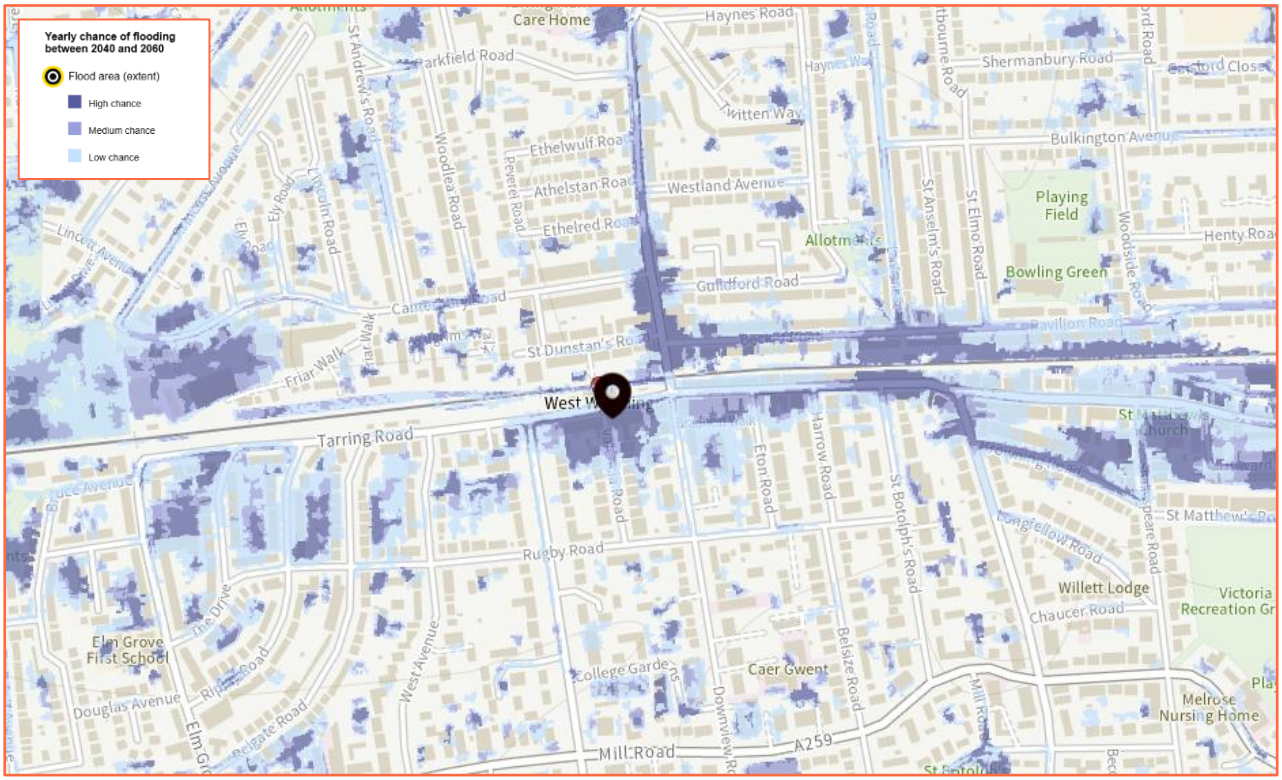


Figure 12: Extract from Environment Agency RoFSW map – between 2040 and 2060 (Source: EA)

Depth of Surface Water Flooding:

5.29. The EA have also released depth bands for the present day and with climate change 2040 – 2060. These depth bands are:

- 0.2m
- 0.3m
- 0.6m
- 0.9m
- 1.2m

5.30. The maps provide information on flood depths to show the chance that different depths of flooding could be reached or exceeded each year.

	The yearly chance of surface water flooding
High	means more than 3.3% (1 in 30) chance of a flood each year
Medium	means between 1% (1 in 100) and 3.3% (1 in 30) chance of a flood each year
Low	means between 0.1% (1 in 1000) and 1% (1 in 100) chance of a flood each year
Very low	means less than 0.1% (1 in 1000) chance of a flood each year* *The EA have not provided the "Very Low" surface water flood depth banding data as a part of the surface water data package.

Table 2: Chance of surface water flooding definitions (Source: EA)

5.31. A more detailed review of the surface water flood depths at the site identified the following likelihoods of surface water flood chances.

Depth of Surface Water Flooding at Present Day

5.32. The site is partially within the "Low" chance of having 0.2m of surface water at any given year. The area of the proposed residential unit is partially within this extent.

5.33. This shows the site to have between 1 in 1000 and 1 in 100 chance of flood each year to reach or exceed 0.2m at the present day.

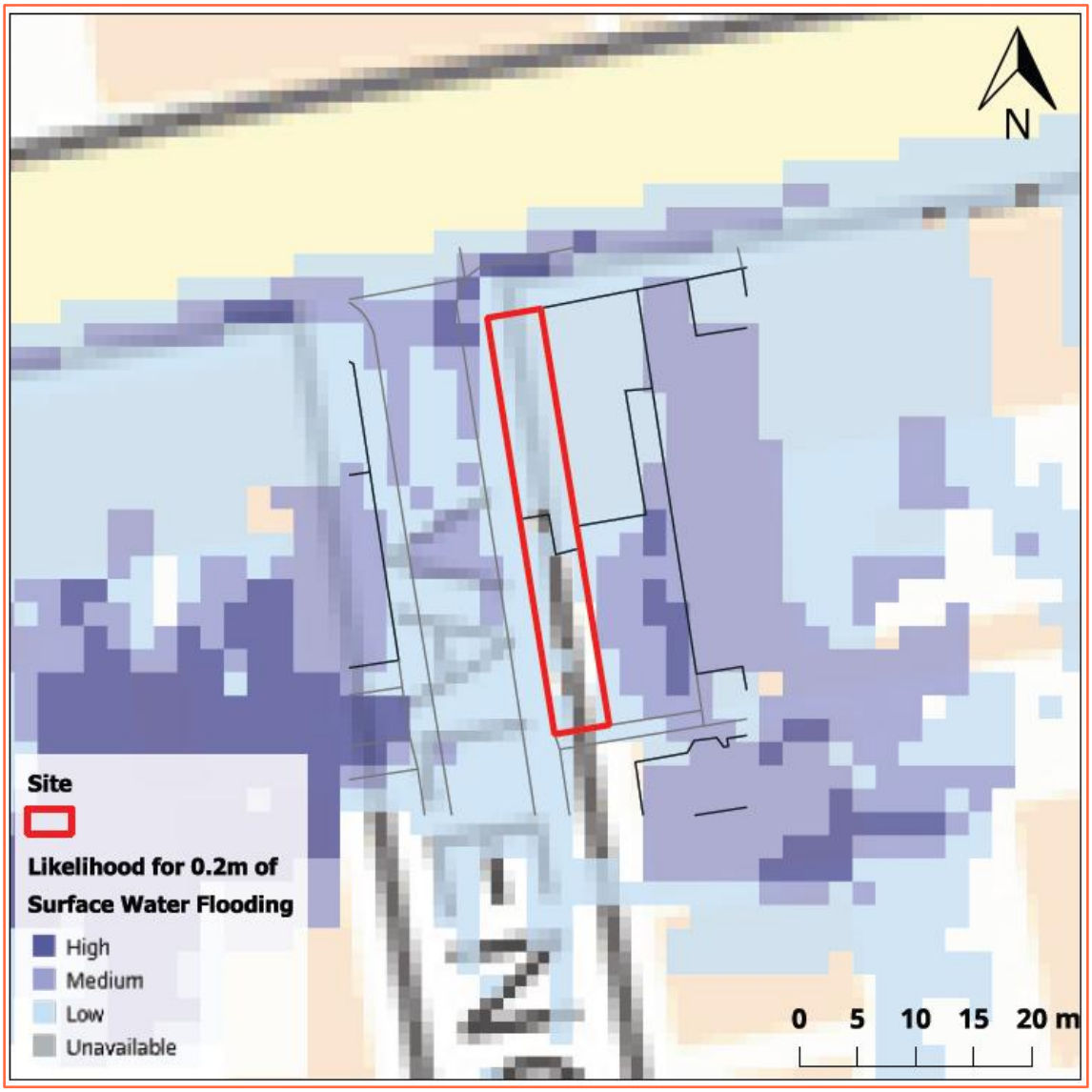


Figure 13: Likelihood for 0.2m of Surface Water Flooding at the site – Present Day (Source: EA, OS)

5.34. The site is partially within the "Low" chance of having 0.3m of surface water at any given year. The area of the proposed residential unit is partially within this extent.

5.35. This shows the site to have between 1 in 1000 and 1 in 100 chance of flood each year to reach or exceed 0.3m at the present day.

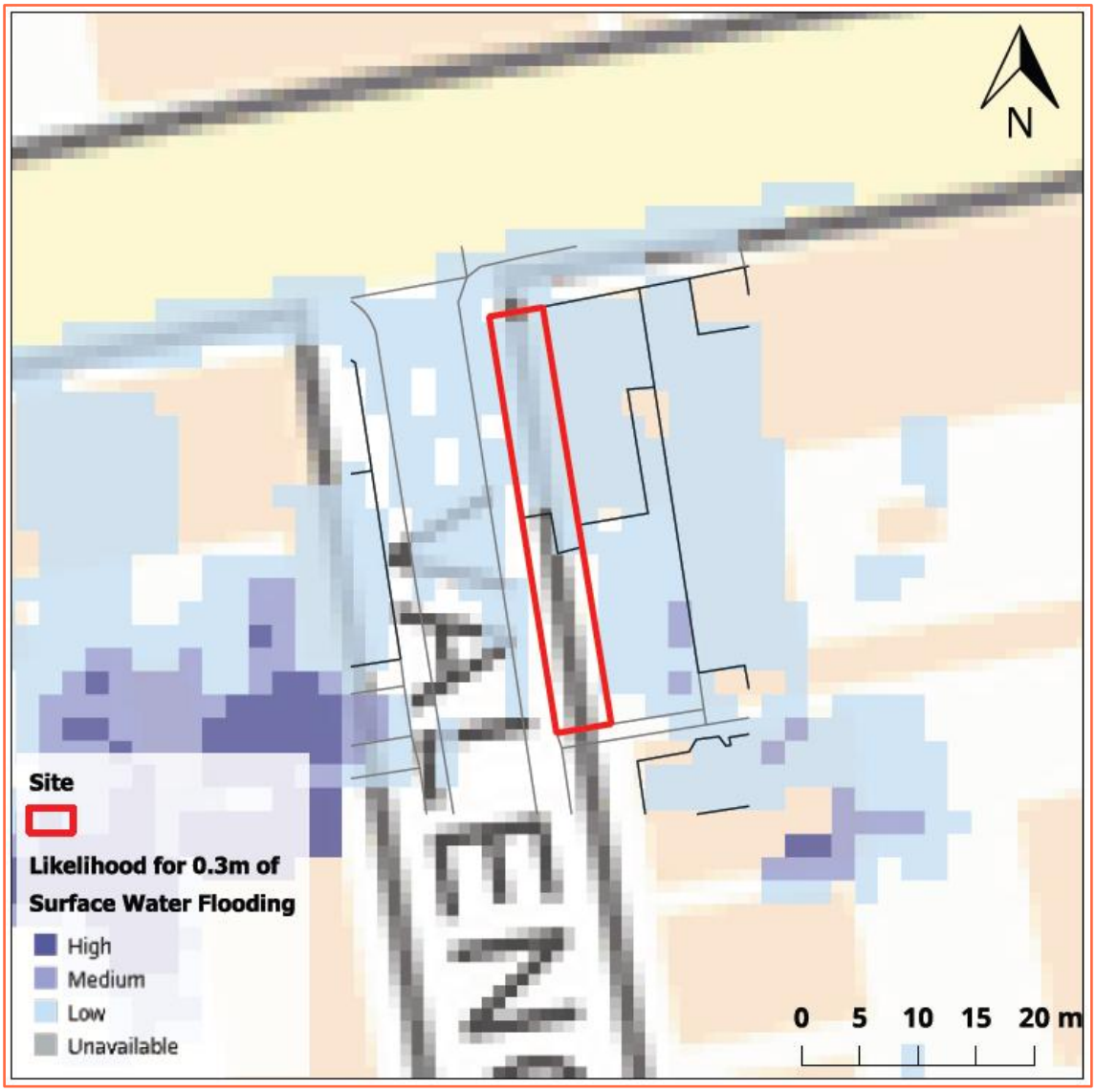


Figure 14: Likelihood for 0.3m of Surface Water Flooding at the site – Present Day (Source: EA, OS)

5.36. The site is entirely outside of the "Low" chance of having 0.6m, 0.9m and 1.2m of surface water flooding in any given year.

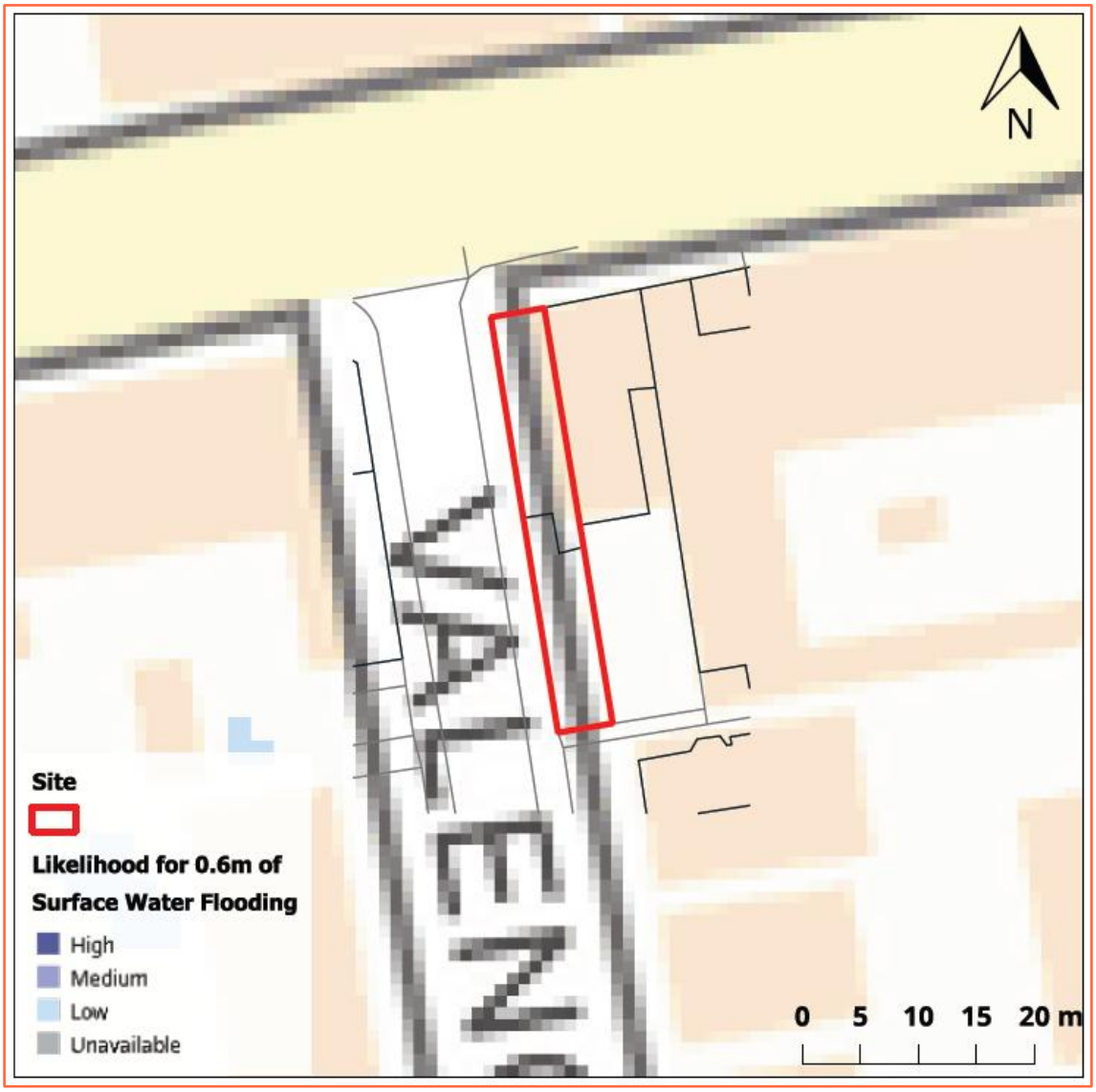


Figure 15: Likelihood for 0.6m of Surface Water Flooding at the site – Present Day (Source: EA, OS)

Depth of Surface Water Flooding Between 2040 – 2060

5.37. The site is partially within the "Medium" and "Low" chance of having 0.2m of surface water.

5.38. This shows the site to have between 1 in 100 and 1 in 30 chance and between 1 in 1000 and 1 in 100 chance of flood each year to reach or exceed 0.2m between 2040 - 2060.

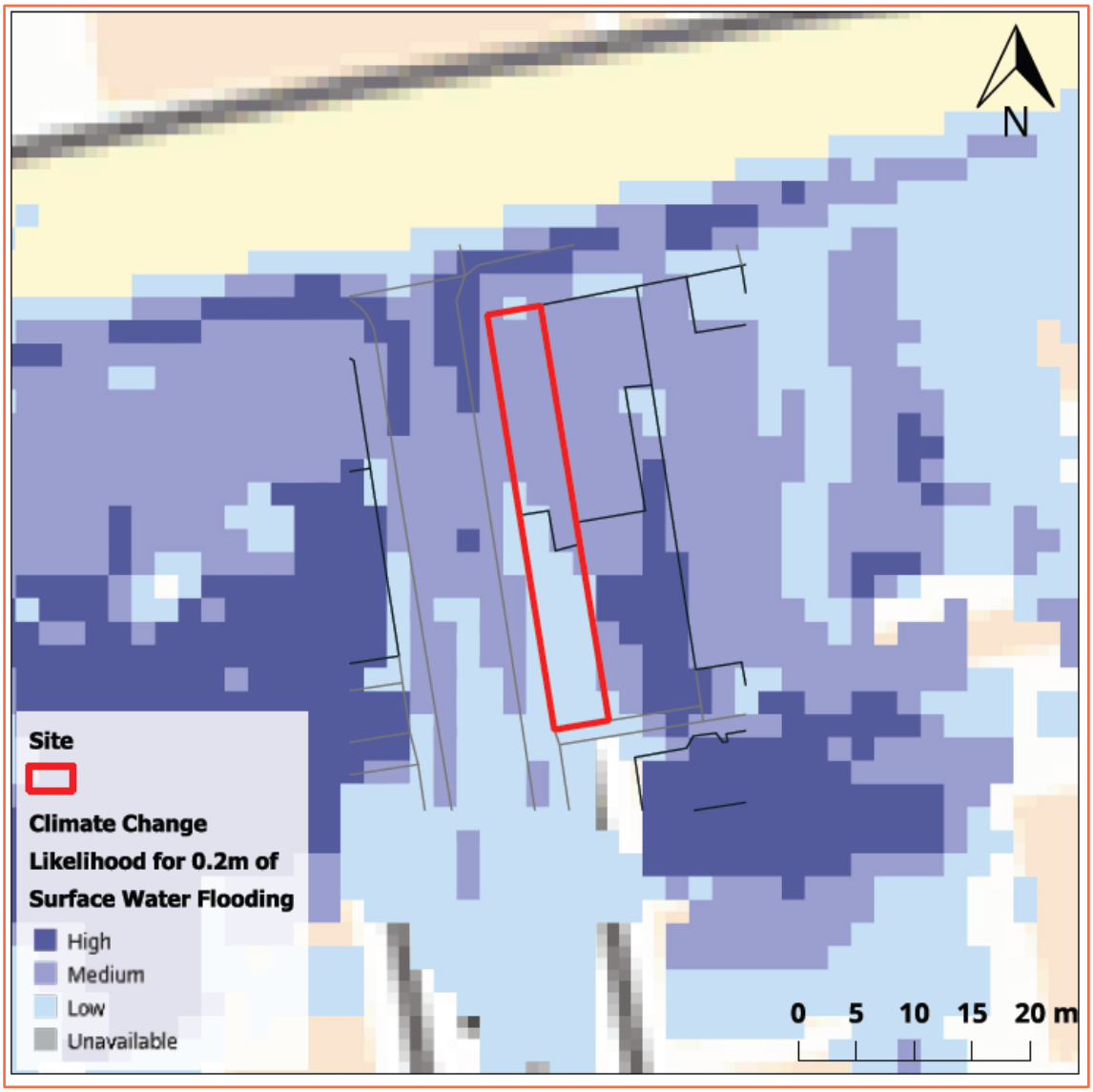


Figure 16: Likelihood for 0.2m of Surface Water Flooding at the site – Climate change (Source: EA, OS)

5.39. The site is partially within the "Low" chance of having 0.3m of surface water.

5.40. This shows the site to have between 1 in 1000 and 1 in 100 chance of flood each year to reach or exceed 0.3m between 2040 - 2060. The proposed residential development is shown to be outside of areas reaching or exceeding 0.3m between 2040-2060.

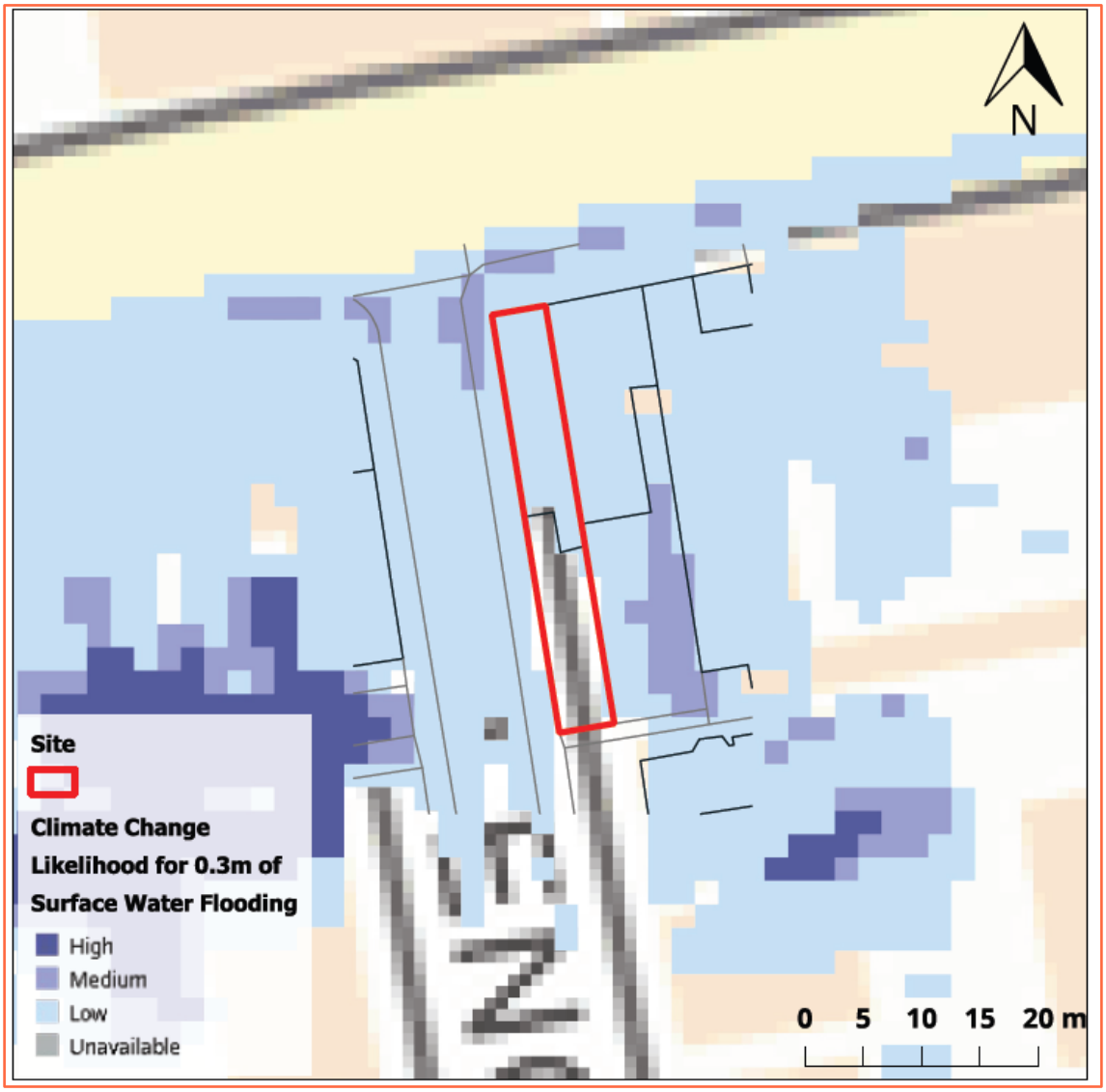


Figure 17: Likelihood for 0.3m of Surface Water Flooding at the site – Climate change (Source: EA, OS)

5.41. The site is entirely outside of the "Low" chance of having 0.6m, 0.9m and 1.2m of surface water flooding in any given year.

5.42. It should be noted that surface water flood data for the 1:100 year + appropriate climate change event for planning (up to 2125), is not provided within the EA surface water data set. Communication with WSP at Adur and Worthing Councils has confirmed that an appropriate substitute for the 1:100yr+CC for planning event, is to use the 1:1000 year for 2040-2060 (Low) event.

5.43. As such, the proposed residential development is shown to have a maximum flood depth of 0.2m for the 1:100yr+CC for planning event (Low).

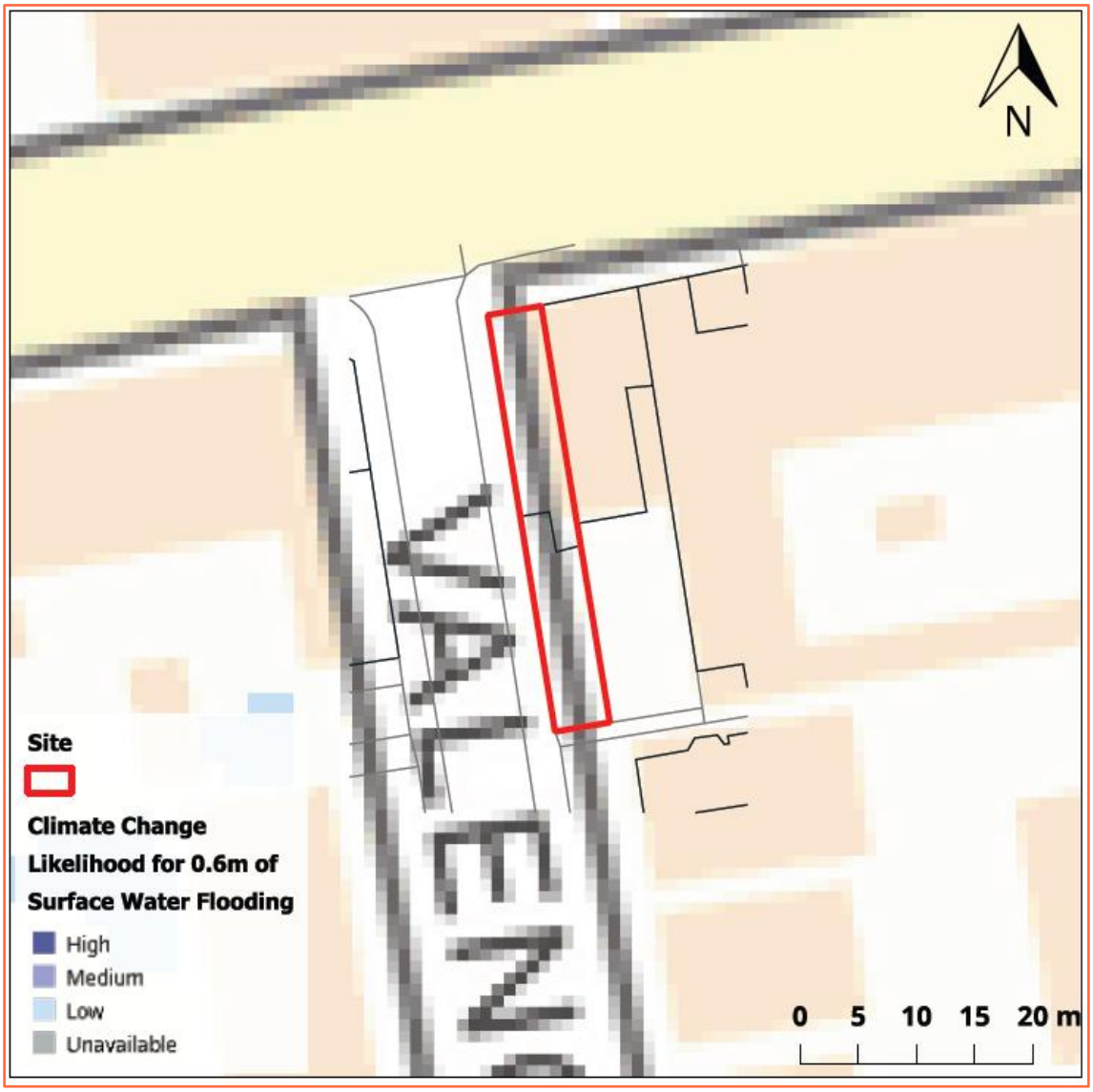


Figure 18: Likelihood for 0.6m of Surface Water Flooding at the site – Climate change (Source: EA, OS)

Groundwater:

5.44. 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.

5.45. 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.

5.46. The 2024 Worthing Strategic Flood Risk Assessment (SFRA) shows the site lies within an area where there is groundwater 0.025m to 5m below the surface.

5.47. The EA advise that flooding from groundwater is unlikely in this area.

5.48. No information has been provided to suggest that the site has flooded historically due to groundwater.

Sewer:

5.49. 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.

5.50. 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.

5.51. According to the 2024 Worthing SFRA the site's postcode area (BN11 4) has had 3 recorded incidents of sewer flooding.

5.52. No further information has been presented to suggest that the site is susceptible to sewer flooding.

Other Sources:

5.53. 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 is located entirely outside of 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.

5.54. 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.

5.55. 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.

5.56. No information has been provided to suggest that the site is susceptible to flooding from other sources.

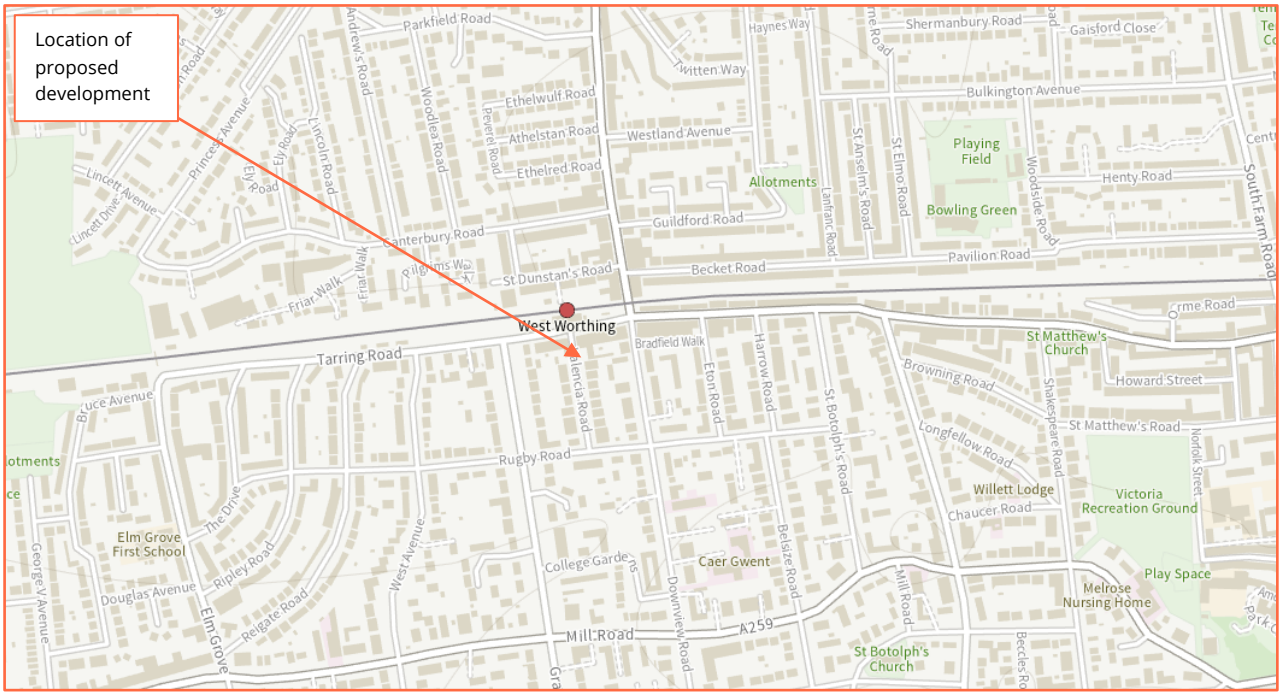


Figure 19: Extract from Environment Agency Reservoir Flood Map (Source: EA)

Historical Flood Events:

5.57. The EA hold records of historic flood events from rivers and the sea. The EA map flooding to land, not individual properties. Their historic flood event record outlines are an indication of the geographical extent of an observed flood event. Their historic flood event outlines do not give any indication of flood levels for individual properties. They also do not imply that any property within the outline has flooded internally.

5.58. The EA hold no records of historic flooding having affected the site or surrounding area.

5.59. The EA historical flood records are not comprehensive, and they advise that further enquiries locally are made with specific reference to flooding at the location.

6. Flood Risk Management

Vulnerability to Flooding:

6.1. The NPPF classifies property usage by vulnerability to flooding.

6.2. The existing site usage is classified as “less vulnerable” on the ground floor (shop) and “more vulnerable” on the first floor (residential unit).

6.3. Post development, the site will be classified as “more vulnerable” (residential) throughout, as the application is for the construction of a new single residential unit.

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

EA Standing Advice for Minor Extensions:

6.5. 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 annexe or additional commercial unit.

6.6. The application is for the construction of a new single residential unit.

6.7. No increase to impermeable area is proposed as part of this development.

Physical Design Measures:

6.8. The site lies entirely within Flood Zone 1 according to the EA Flood Map for planning (Rivers and the Sea).

6.9. The site is partially within the “Medium” and “Low” chance of having 0.2m of surface water between 2040 – 2060.

6.10. The site is partially within the “Low” chance of having 0.3m of surface water between 2040 - 2060.

6.11. The site is entirely outside of the “Low” chance of having 0.6m, 0.9m and 1.2m of surface water flooding at any given year between 2040 - 2060.

6.12. It should be noted that surface water flood data for the 1:100 year + appropriate climate change event for planning (up to 2125), is not provided within the EA surface water data set. Communication with WSP at Adur and Worthing Councils has confirmed that an appropriate substitute for the 1:100yr+CC for planning event, is to use the 1:1000 year for 2040-2060 (Low) event.

6.13. As such, the proposed residential development is shown to have a maximum flood depth of 0.2m for the 1:100yr+CC for planning event (Low).

6.14. The applicant has agreed to raise the finished floor level (FFL) of the residential unit by 425mm above ground level. Additionally, the FFL of the bedroom will be raised by a further 15mm, resulting in a total elevation of 440mm above ground level for the bedroom.

6.15. The development will utilise floodable voids of 200mm to ensure there is no displacement of surface water by the proposal for the 1:100 year plus climate change for planning event (Low).

6.16. To help protect against flooding during extreme events, the applicant has confirmed that the following measures will be incorporated into the design of the proposed development:

- Solid concrete ground floor slab, with waterproof membrane;
- Closed-cell foam used in wall cavities;
- Waterproof ground floor internal render;
- Waterproof screed used on ground floors;
- Damp proof membranes;
- External walls rendered resistant to flooding to at least 600mm above ground floor level;
- Exterior ventilation outlets, utility points and air bricks fitted with removable waterproof covers;
- Raised wiring and power outlets at least 600mm above ground floor level;
- Ground floor electrical main ring run from a high level;
- Electrical incomer and meter situated at least 600mm above ground floor level;
- Boilers, control and water storage / immersion installed at least 600mm above ground floor level;
- Gas meter installed at least 600mm above ground floor level;
- Plumbing insulation of closed-cell design;
- Non-return valves fitted to all drain and sewer outlets;
- Manhole covers secured;
- Kitchen units of solid, water resistant material at ground floor level;
- Use of MDF carpentry (i.e. skirting, architrave, built-in storage) avoided at ground floor level.

6.17. The applicant has confirmed the inclusion of flood proof doors for all ground floor entry/exit points.

Safe Escape:

6.18. The Flood Risk and Coastal Change Planning Practice Guidance (PPG) states that access considerations should include the voluntary and free movement of people during a design flood, as well as the potential for evacuation before a more extreme flood, considering the effects of climate change for the lifetime of the development. Emergency access and escape plans are needed if any part of a development is below the estimated design flood level, which connects the site to an area away from current or future flood risk.

6.19. A potential safe route of escape has been identified. It should be noted that occupants should not attempt to use this route once surface water flooding has commenced and should instead remain within the building as a place of safe refuge.

6.20. It should be noted that surface water flood data for the 1:100 year + appropriate climate change event for planning (up to 2125), is not provided within the EA surface water data set. Communication with WSP at Adur and Worthing Councils has confirmed that an appropriate substitute for the 1:100yr+CC for planning event, is to use the 1:1000 year for 2040-2060 (Low) event.

6.21. The safe escape route is entirely within Flood Zone 1 according to the EA Flood Map for planning (Rivers and the Sea), and entirely outside of the EA Flood Zones plus climate change (2070 to 2125) extent. The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at “High” chance of flooding from surface water at the present day and between 2040 and 2060.

6.22. The flood hazard along an escape route can be calculated using flood depth, flood velocity and an associated debris factor using the FD2320 analysis. The degree of flood hazard is given four classifications. Under the NPPF routes should not be subject to any combination of depth and velocity that would result in a flood hazard rating of 0.75 (‘danger for some’) or greater.

6.23. A “danger for all” degree of flood hazard includes the emergency services.

Flood Hazard Rating (HR)	Hazard to People Classification
Less than 0.75	Very low hazard – caution
0.75 to 1.25	Danger for some – includes children, the elderly and the infirm
1.25 to 2.0	Danger for most – includes the general public
More than 2.0	Danger for all – includes the emergency services

Table 3: Hazard to People Classification using Hazard Rating (Source: Table 13.1 of FD2320/TR2 – Extended Version)

6.24. The EA have released a Risk of Flooding from Surface Water (RoFSW) dataset including information about hazard ratings. Flood hazard ratings are a measure of how dangerous a flood might be. They are calculated using a combination of flood depth and speed – higher depths and speed mean more dangerous flooding and a higher flood hazard rating.

6.25. The RoFSW is a probabilistic product, meaning that it shows the overall risk, rather than the risk associated with a specific event or scenario. In externally published versions of this dataset, risk is displayed as one of three likelihood bandings, High, Medium or Low.

6.26. The hazard data shows the chance (High, Medium or Low) of a flood occurring with a given flood hazard rating (or higher). There are separate layers for hazard ratings of 0 (i.e. flooding extent), 0.25, 0.5, 0.75, 1.25 and 2.

6.27. The EA RoFSW data includes the 1:30 year (Low), 1:100 year (Medium) and 1:1000 year (High) events with a climate change allowance for between 2040 and 2060.

6.28. For the 0.75, 1.25 and 2.0 hazard ratings, the proposed escape route are entirely outside of the “Medium” (1:100 year) and “High” (1:30 year) flood likelihood categories between 2040 and 2060.

6.29. The escape route is shown to be withing the flood hazard rating of 0.75 for the “Low” flood likelihood category between 2040 and 2060, which is used as a substitute for the 1:100yr+CC for planning event. The entire site and escape route is shown to be outside of the 1.25 flood hazard rating.

6.30. As such, safe escape will therefore be provided by a formal flood warning and evacuation plan, which will be prepared in liaison with the Emergency Planners and tied in with the existing Emergency Plans for the area.

6.31. A potential route of safe escape is provided below.

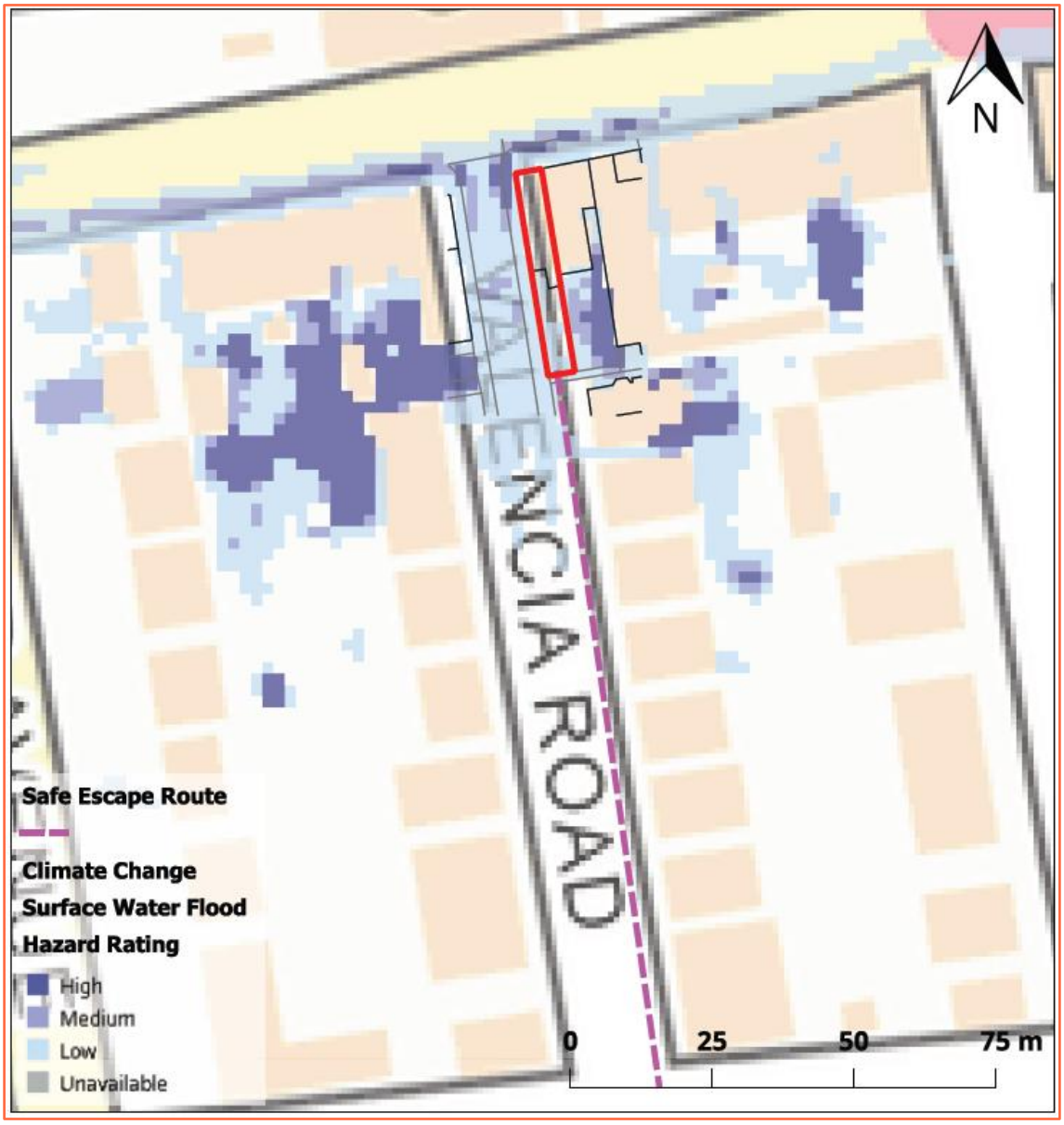


Figure 20: Potential route of safe egress through surface water with reaching or exceeding 0.75 flood hazard rating (Source: EA, OS)

6.32. Flood warning notices will be erected around the site to inform site users of the risk of flooding, and the flood warning and evacuation measures.

6.33. Site users will follow the Flood Warning and Evacuation Plan detailed in the following section.

Flood Warning:

6.34. As the UK's official weather service, the Met Office is responsible for issuing weather warnings, which warn of impacts caused by severe weather. The Met Office provide warnings up to seven days ahead for rain, thunderstorms, wind, snow, lightning, ice and fog.

6.35. Met Office weather warnings are available in a number of ways, which make it easy to get the very latest information wherever you are. These include the Met Office app and website, social media, email alerts, TV, radio and RSS.

6.36. It is recommended that the site owner sign up to the National Severe Weather Warning Service. More information can be found here: https://www.metoffice.gov.uk/weather/guides/warnings.

6.37. The Met Office issues weather warnings, through the National Severe Weather Warning Service, when severe weather has the potential to bring impacts to the UK. These warnings are given a colour (yellow, amber or red) depending on a combination of both the impact the weather may have and the likelihood of those impacts occurring.

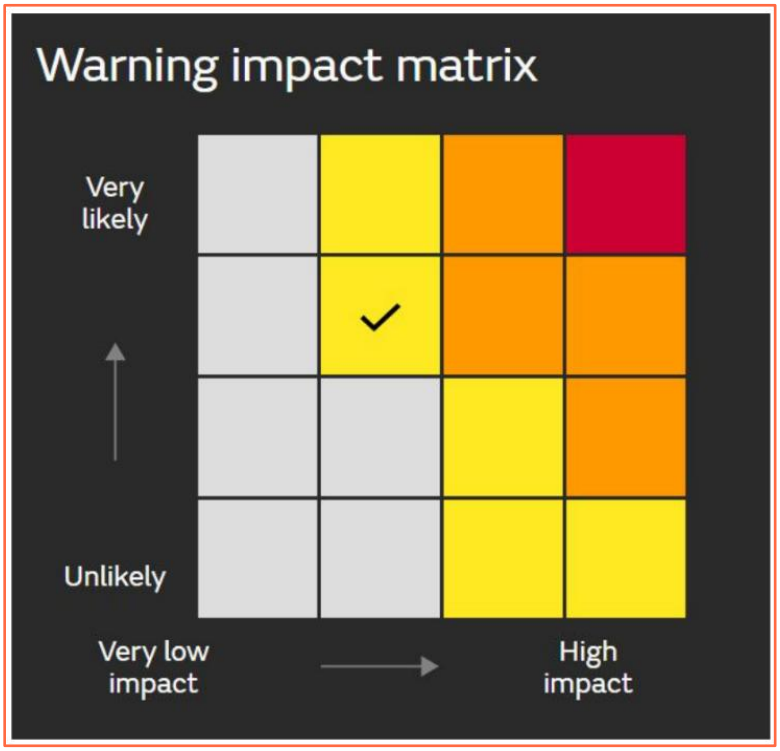


Figure 21: Met Office Weather Warning Impact Matrix (Source: Met Office)

6.38. **Yellow Warning:** Yellow warnings can be issued for a range of weather situations. Many are issued when it is likely that the weather will cause some low level impacts, including some disruption to travel in a few places. Many people may be able to continue with their daily routine, but there will be some that will be directly impacted and so it is important to assess if you could be affected. Other yellow warnings are issued when the weather could bring much more severe impacts to the majority of people but the certainty of those impacts occurring is much lower. It is important to read the content of yellow warnings to determine which weather situation is being covered by the yellow warning.

6.39. **Amber Warning:** There is an increased likelihood of impacts from severe weather, which could potentially disrupt your plans. This means there is the possibility of travel delays, road and rail closures, power cuts and the potential risk to life and property. You should think about changing your plans and taking action to protect yourself and your property. You may want to consider the impact of the weather on your family and your community and whether there is anything you need to do ahead of the severe weather to minimise the impact.

6.40. **Red Warning:** Dangerous weather is expected and, if you haven't already done so, you should take action now to keep yourself and others safe from the impact of the severe weather. It is very likely that there will be a risk to life, with substantial disruption to travel, energy supplies and possibly widespread damage to property and infrastructure. You should avoid travelling, where possible, and follow the advice of the emergency services and local authorities.

Flood Plan:

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

Action	
Before a flood	• Find out if you are at risk of flooding. • Find out if you can receive flood warnings. • 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 such as pets, cars, furniture, and electrical equipment. • Know how to turn off gas, electricity and water supplies. • 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. • Consider buying flood protection products such as flood boards and airbrick covers to help reduce flood water getting into your property.
During a flood	• Tune into your local radio station on a battery or wind-up radio. • Fill jugs and saucepans with water. • Grab your flood kit - if you have prepared one. • Collect blankets, torch, first aid kit, medication and food. • Move important documents, personal items, valuables, and lightweight belongings upstairs or to high shelves. • Raise large items of furniture, or put them in large bags if you have them. • Move people, outdoor belongings, cars and pets to higher ground. • Switch off water, gas and electricity at mains when water is about to enter your home. Do not touch sources of electricity when standing in water. • Fit flood protection products, if you have them, for example flood boards, airbrick covers, sandbags. • Put plugs in sinks and baths. Weigh them down with a pillowcase or plastic bag filled with soil. • If you do not have non-return valves fitted, plug water inlet pipes with towels or cloths. • Move your family and pets upstairs or to a high place with a means of escape. • 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, central heating and water checked by qualified engineers before switching them back on.

Table 4: Flood plan

Off-Site Impacts:

Fluvial Floodplain Storage:

6.42. 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.

6.43. 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.

6.44. 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.

6.45. The site is located within Flood Zone 1, entirely outside of the functional floodplain. Therefore, no fluvial floodwater would be displaced by the proposed development.

Surface Water Drainage:

6.46. The development will utilise Sustainable drainage systems (SuDS) design in accordance with the NPPF for Planning Applications and the drainage 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.

6.47. A full Surface Water Drainage Strategy (Planning Application: AWDM/0168/25 document ref - 92090-210722) has been provided as part of the proposed development. It is stated that the proposed development will utilise cellular storage and permeable paving to manage surface water on site.

Surface Water Floodplain Storage:

6.48. The site is located within Flood Zone 1, however is situated within an area at “High” chance of surface water flooding at present day and between 2040 – 2060.

6.49. It should be noted that surface water flood data for the 1:100 year + appropriate climate change event for planning (up to 2125), is not provided within the EA surface water data set. Communication with WSP at Adur and Worthing Councils has confirmed that an appropriate substitute for the 1:100yr+CC for planning event, is to use the 1:1000 year for 2040-2060 (Low) event.

6.50. As such, the proposed residential development is shown to have a maximum flood depth of 0.2m for the 1:100yr+CC for planning event (Low).

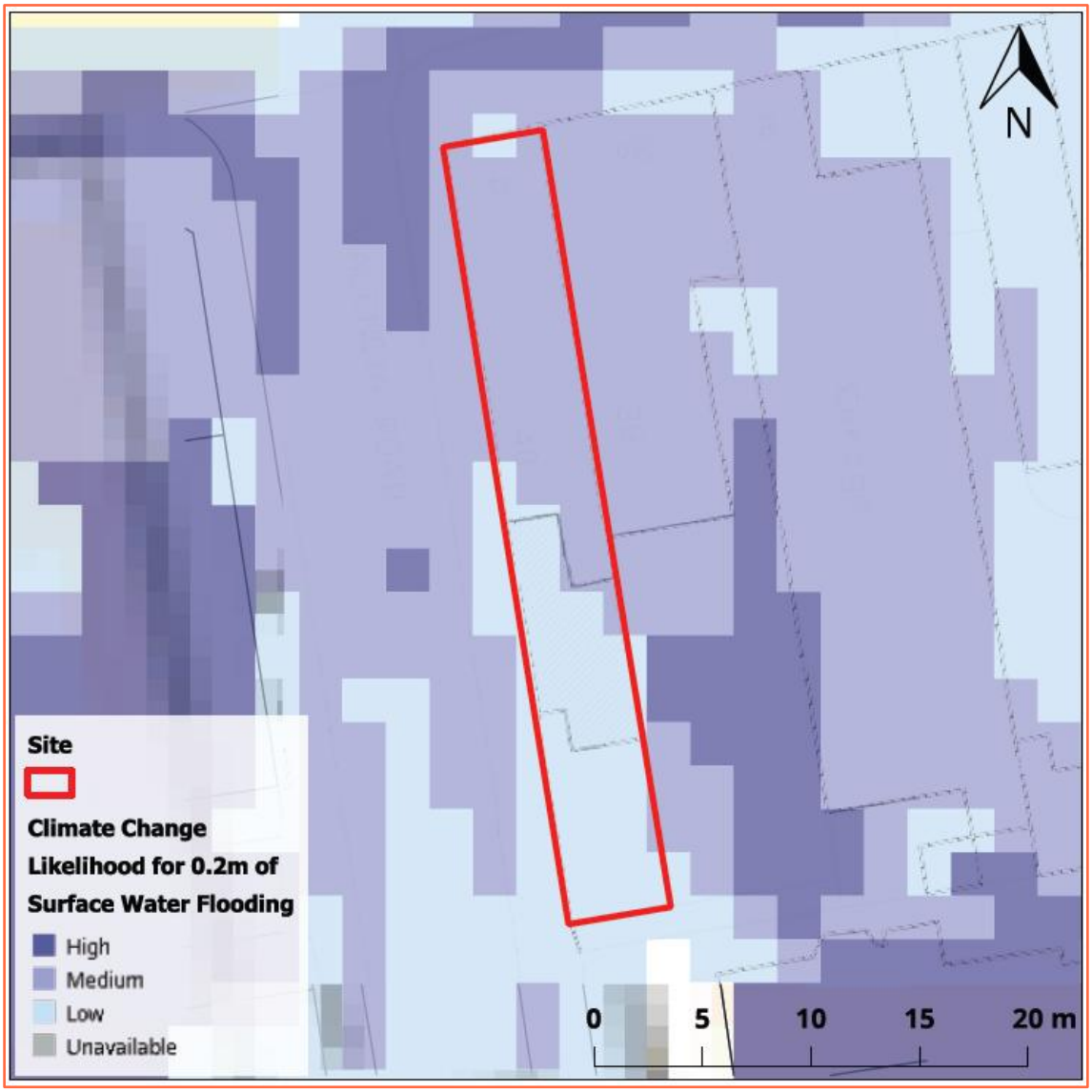


Figure 22: EA Surface Water Climate Change 0.2m flood depth with area of proposed development within flood extent outlined (Source: EA)

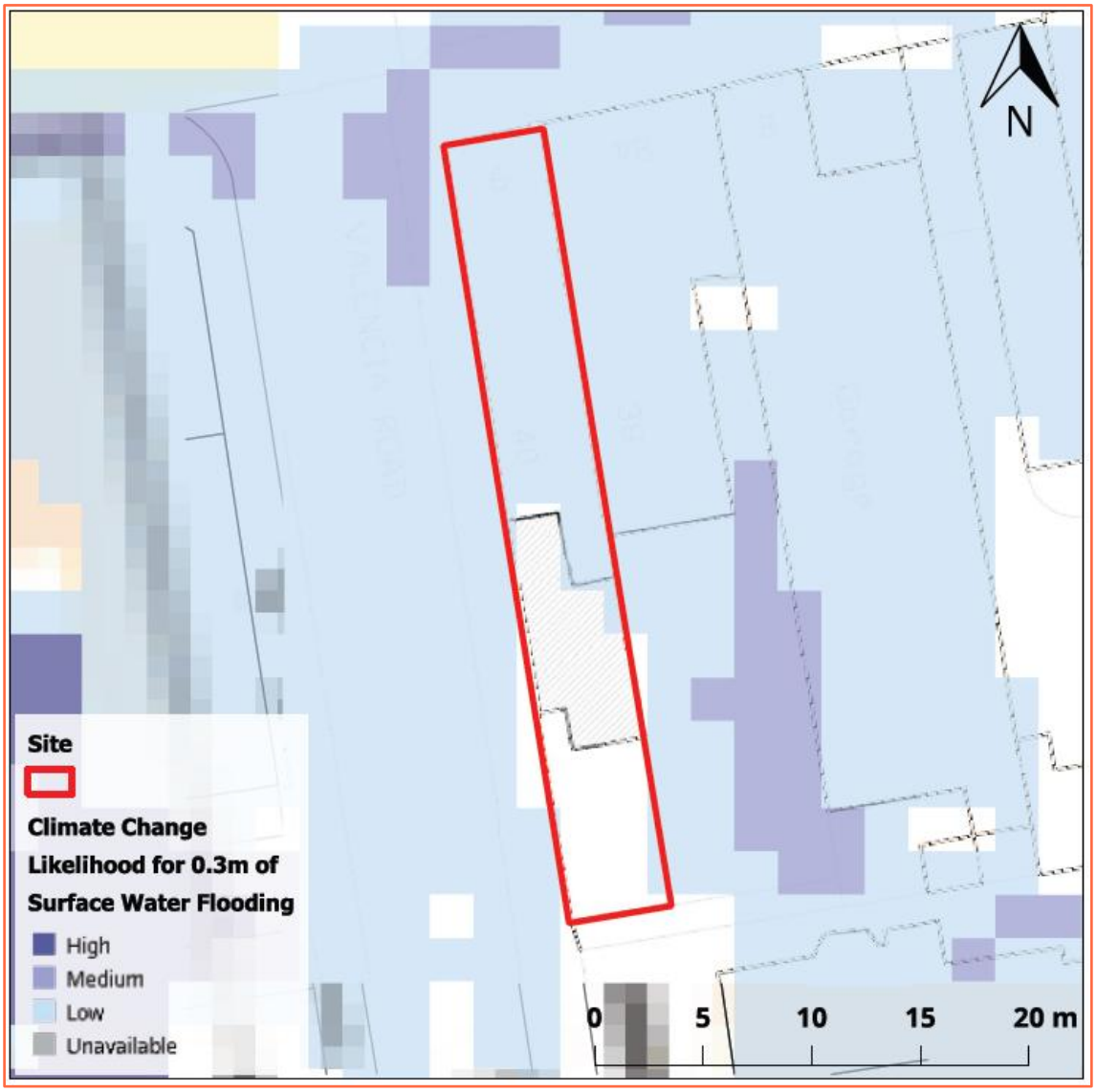


Figure 23: EA Surface Water Climate Change 0.3m flood depth with area of proposed development within flood extent outlined (Source: EA)

6.51. The probability of exceeding 0.3m, 0.6m, 0.9m and 1.2m on site is shown to be less than Low (less than 1 in 1000 chance of flooding in any given year) for 2040-2060. As such, the probability of reaching or exceeding 0.3m or greater is shown to be less than 1:100 year plus climate change for planning (2125) in the area of the proposed residential development.

6.52. Given the confined nature of the site and the associated physical constraints there is not sufficient higher land on site which can be lowered to provide direct floodplain compensation.

6.53. The proposed development will introduce an increase in built footprint. As such, the applicant has agreed that the finished floor level will be elevated on voids of 200mm, covering the whole footprint.

6.54. It is recommended that the design and maintenance of the voids is secured through inclusion in the deeds of the properties such that it remains accessible and clear for the lifetime of the development.

6.55. As such there will be no unacceptable loss in surface water flood storage post development.

7. Sequential and Exception Test

7.1. 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.

7.2. 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.

7.3. 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.

7.4. The site is situated within Flood Zone 1 when using the Environment Agency Flood Map for Planning (Rivers and Sea) and within an area of "High" chance of flooding from surface water during the present day and between 2040 - 2060. Post development, the site will be classified as "more vulnerable", as the application is for the construction of a new single residential unit.

	Flood Risk Vulnerability Classification				
Flood Zones	**Essential Infrastructure**	**Highly Vulnerable**	**More Vulnerable**	**Less Vulnerable**	**Water Compatible**
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a	Exception Test required	X	Exception Test required	✓	✓
Zone 3b	Exception Test required	X	X	X	✓

Table 5: Flood risk vulnerability and flood zone 'compatibility' (Source: NPPF Table 3 Technical Guidance)

7.5. Using the table above, the proposed application ("more vulnerable") is considered to be suitable within Flood Zone 1.

7.6. The Flood Risk and Coastal Change Guidance, Paragraph 027 states that:

7.7. *"Where a site-specific flood risk assessment demonstrates clearly that the proposed layout, design, and mitigation measures would ensure that occupiers and users would remain safe from current and future surface water flood risk for the lifetime of the development (therefore addressing the risks identified e.g. by Environment Agency flood risk mapping), without increasing flood risk elsewhere, then the sequential test need not be applied."*

8. Discussion and Conclusion

8.1. Unda Consulting Limited have been appointed by Stag Construction Services Ltd to undertake a Flood Risk Assessment for the proposed development at 9 Station Parade, Tarring Road, West Sussex, BN11 4SS. The purpose of the study is to support a planning application for the proposed development.

8.2. The site comprises of a two storey building. The ground floor is a commercial entity. A residential unit is situated on the first floor. The site also has an associated parking area towards the rear.

8.3. The proposed application is for the construction of a new single residential unit.

8.4. No increase to impermeable area is proposed as part of this development.

8.5. The existing site usage is classified as “less vulnerable” on the ground floor (shop) and “more vulnerable” on the first floor (residential unit). Post development, the site will be classified as “more vulnerable” (residential), as the application is for the construction of a new single residential unit. Accordingly, it is considered that the vulnerability of the site as a whole will increase post development.

8.6. The site is located within Flood Zone 1 (Low Probability), which means it is defined as land having a less than 1 in 1,000 annual probability of river or sea flooding.

8.7. The English channel is approximately 1.3km south of the site.

8.8. According to EA data, there are no Flood Storage Areas located in close proximity to the site.

8.9. According to the EA, there are no formal raised flood defences owned or operated by the EA protecting the site.

8.10. The EA Risk of Flooding from Surface Water Map suggests that risk at the site appears to be “High” chance for the present day and between 2040 - 2060.

8.11. The site is partially within the “Low” chance of having 0.2m and 0.3m of surface water at any given year between 2040-2060. The proposed residential development is shown to be outside of areas reaching or exceeding 0.3m between 2040-2060.

8.12. The site is entirely outside of the “Low” chance of having 0.6m, 0.9m and 1.2m of surface water flooding in any given year.

8.13. It should be noted that surface water flood data for the 1:100 year + appropriate climate change event for planning (up to 2125), is not provided within the EA surface water data set. Communication with WSP at Adur and Worthing Councils has confirmed that an appropriate substitute for the 1:100yr+CC for planning event, is to use the 1:1000 year for 2040-2060 (Low) event.

8.14. As such, the proposed residential development is shown to have a maximum flood depth of 0.2m for the 1:100yr+CC for planning event (Low).

8.15. The applicant has agreed to raise the finished floor level (FFL) of the residential unit by 425mm above ground level. Additionally, the FFL of the bedroom will be raised by a further 15mm, resulting in a total elevation of 440mm above ground level for the bedroom.

8.16. The development will utilise floodable voids of 200mm to ensure there is no displacement of surface water by the proposal for the 1:100 year plus climate change for planning event (Low).

8.17. No information has been provided to suggest that the site itself has previously been affected by flooding from groundwater, sewer surcharge or reservoirs.

8.18. The EA hold no records of historic flooding having affected the site or surrounding area.

8.19. Safe escape will therefore be provided by a formal flood warning and evacuation plan, which will be prepared in liaison with the Emergency Planners and tied in with the existing Emergency Plans for the area.

8.20. The escape route is shown to be withing the flood hazard rating of 0.75 for the "Low" flood likelihood category between 2040 and 2060, which is used as a substitute for the 1:100yr+CC for planning event. The entire site and escape route is shown to be outside of the 1.25 flood hazard rating.

In Summary:

- The proposed application is for the construction of a new single residential unit.
- No increase to impermeable area is proposed as part of this development.
- Post development, the site will be classified as "more vulnerable" (residential).
- Flood proofing will be incorporated within the design, were feasible and appropriate.
- The applicant has agreed to raise the finished floor level (FFL) of the residential unit by 425mm above ground level. Additionally, the FFL of the bedroom will be raised by a further 15mm, resulting in a total elevation of 440mm above ground level for the bedroom.
- The development will utilise floodable voids as part of the proposal.
- There will be no unacceptable loss of fluvial or pluvial floodplain storage.
- Safe escape will be provided by a formal 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.
- Post development, a formal flood warning and evacuation plan will be implemented.
- The applicant will register with the National Severe Weather Warning Service.

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

Unda Consulting Limited
January 2026

Appendix

A – Development Plans:

- Site location, existing and proposed plans – bpm architects.

B – EA Flood Map for Planning:

- Flood Map for Planning – Environment Agency.

C – WSP Communication:

- Communication with WSP regarding Surface Water.

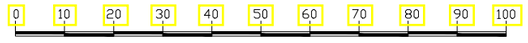
D – NPPF Annex 3:

- NPPF Annex 3: Flood risk vulnerability classification table.

Appendix A

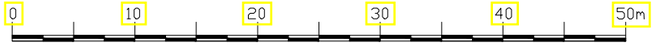
Location plan 1:1250

1:1250



Block plan 1:500

1:500



amendments
RevA: 23/03/22

bpm Architectural Services Ltd.

client	Lea Daniel
project	9 Station Parade Tarring Road Worthing BN11 4SS
project ref:	17057
Drawing No.	03A
drawing title	Location and block plan
drawn by	L.F.
date	Mar 22
scale	1:500/1250@ A3

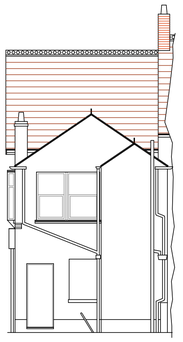
www.bpmnet.co.uk
info@bpmnet.co.uk

Do not scale off drawing, check all dimensions on site before all work is commenced

All goods materials workmanship to conform with current building regs BSS and COP's

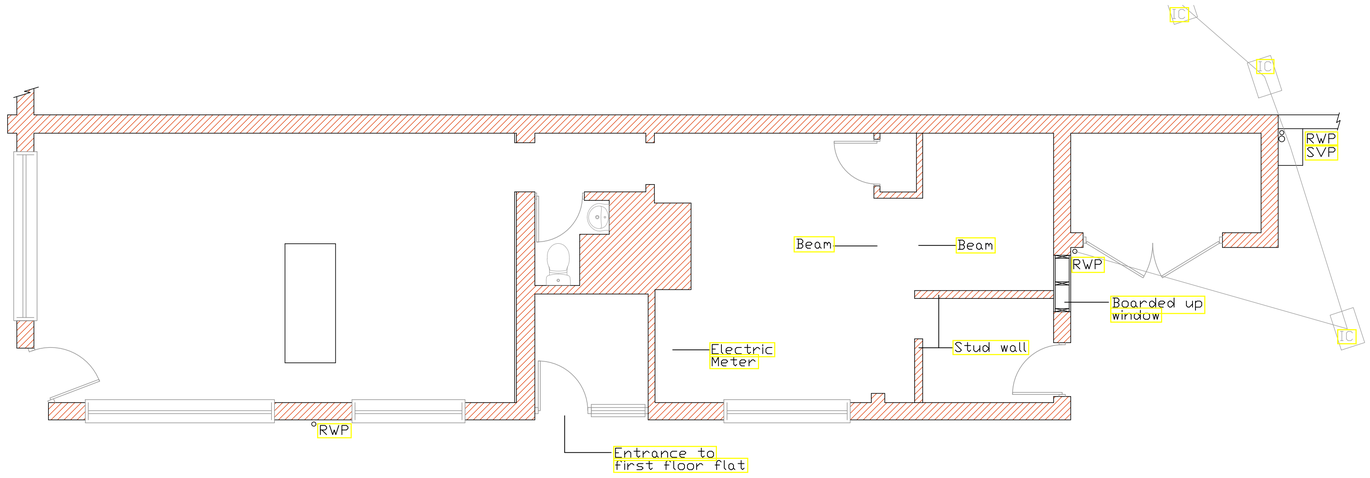
Existing Front Elevation
North

Existing Side Elevation
West

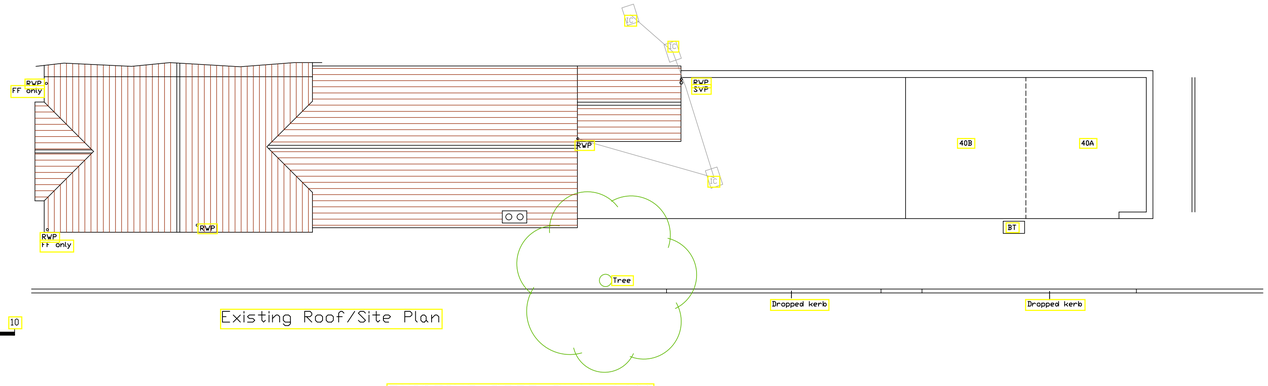


Existing Rear Elevation
South

EXISTING ELEVATIONS 1:100

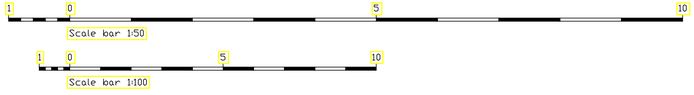


EXISTING FLOOR PLANS 1:50



Existing Roof/Site Plan

EXISTING ROOF PLAN 1:100



CALDOTEC LTD
11 THE PARADE
WILLOWHAYNE CRESCENT
EAST PRESTON
WEST SUSSEX
BN16 1NS
Telephone
01903 859176

EXISTING FLOOR PLANS, SECTION & REAR ELEVATION
9 Station Parade
Rear of Dovetail Interiors
Tarring Road
West Sussex
BN11 4SS

CLIENT Messrs Hurdley & Atkins

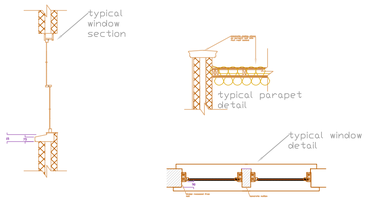
Issue	Details	By	Date

SCALE AS SHOWN on A1
DATE 17/07/17
DRAWING NUMBER 17/057/01

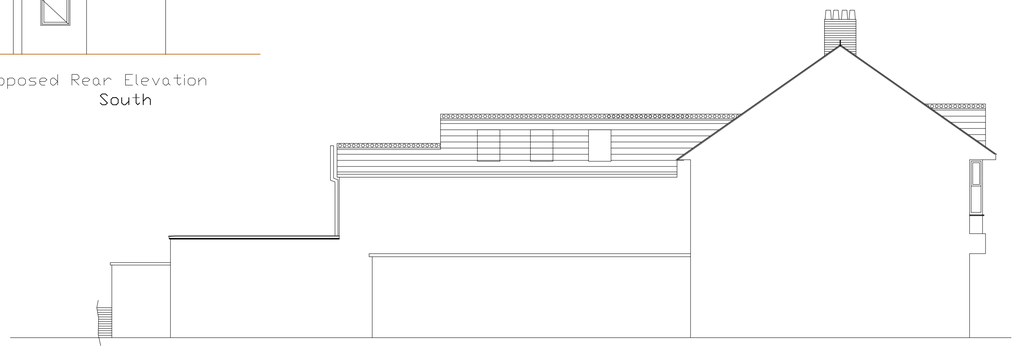
Proposed Front Elevation
North

Proposed Side Elevation
West

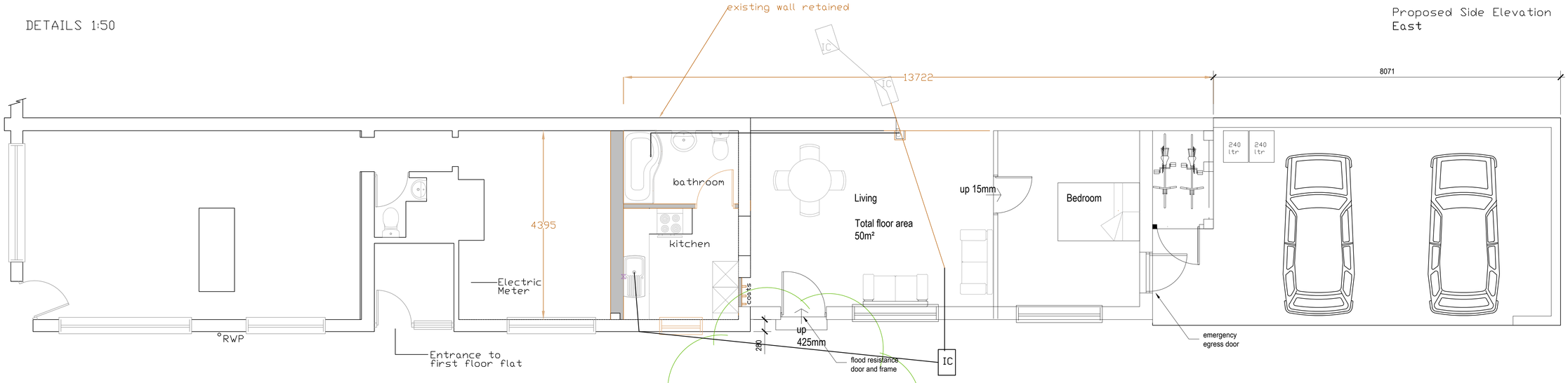
Proposed Rear Elevation
South



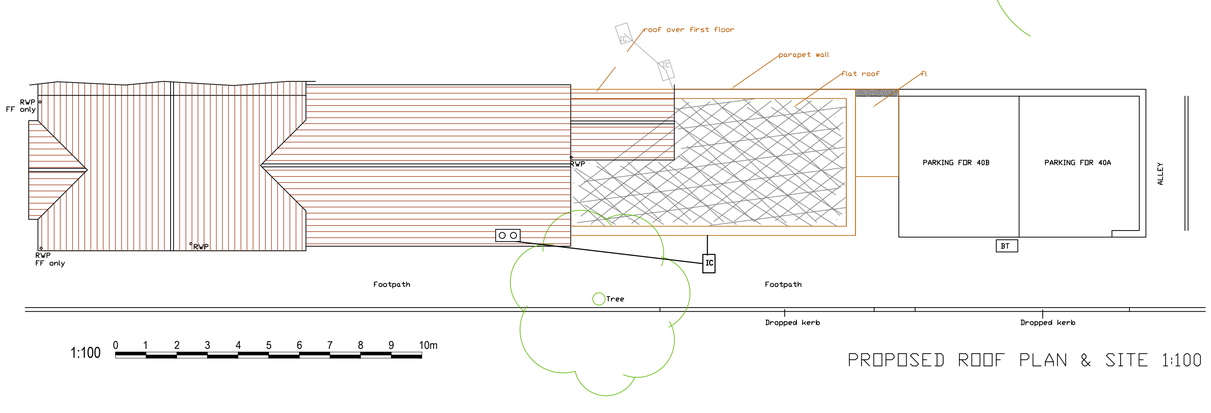
DETAILS 1:50



Proposed Side Elevation
East



Proposed Ground Floor Plan SCALE 1:50



PROPOSED ROOF PLAN & SITE 1:100

Tree

- Solid concrete ground floor slab, with waterproof membrane;
- Closed-cell foam used in wall cavities;
- Waterproof ground floor internal render;
- Waterproof screed used on ground floors;
- Damp proof membranes;
- External walls rendered resistant to flooding to at least 600mm above ground floor level;
- Exterior ventilation outlets, utility points and air bricks fitted with removable waterproof covers;
- Raised wiring and power outlets at least 600mm above ground floor level;
- Ground floor electrical main ring run from first floor level; and on separately switched circuit from first floor;
- Electrical incomer and meter situated at least 600mm above ground floor level;
- Boilers, control and water storage / immersion installed at least 600mm above ground floor level;
- Gas meter installed at least 600mm above ground floor level;
- Plumbing insulation of closed-cell design;
- Non-return valves fitted to all drain and sewer outlets;
- Manhole covers secured;
- Kitchen units of solid, water resistant material at ground floor level;
- Use of MDF carpentry (i.e. skirting, architrave, built-in storage) avoided at ground floor level;

1:50 0 1 2 3 4 5 6 7 8 9 10m

Rev C 23.01.26 Floor height
Rev B 23.09.25 Flat roof to cycle store
Rev A 17.04.25 Flood measures amendments

bpm Architectural Services Ltd.

client: Lea Daniel

project: 9 Station Parade, Tarring Road, Worthing BN11 4SS

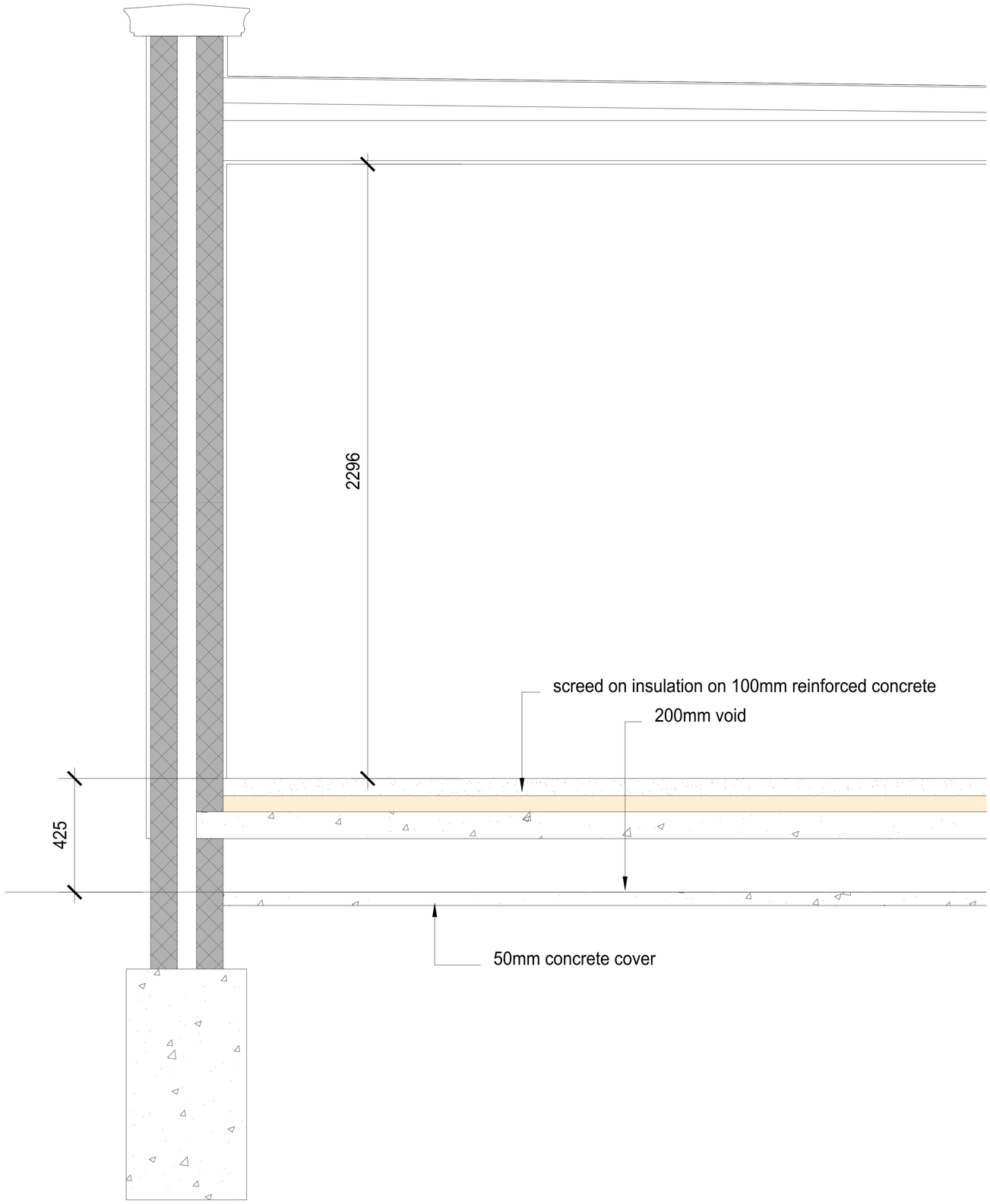
project ref: 17057 Drawing No. 02C

drawing title: Proposed

drawn by: J Boys

date: Feb 25 scale: 1:50/100@ A1

www.bpmnet.co.uk
info@bpmnet.co.uk


2296
425
screed on insulation on 100mm reinforced concrete
200mm void
50mm concrete cover

Appendix B

Flood map for planning

Your reference	Location (easting/northing)	Created
Unspecified	**513303/103270**	**27 January 2026 14:45**

Your selected location is in flood zone 1, an area with a low probability of flooding.

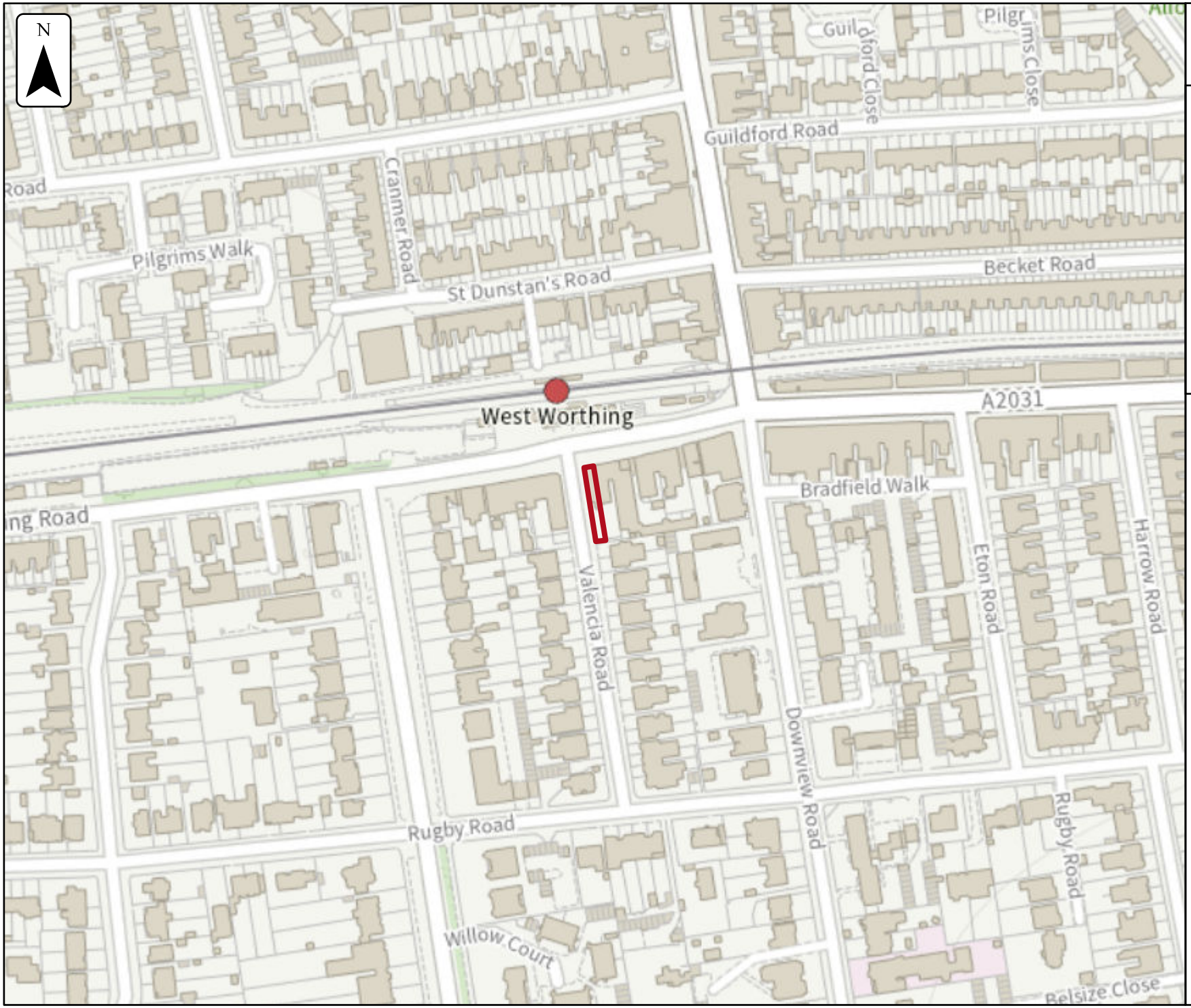
You will need to do a flood risk assessment if your site is **any of the following**:

- bigger than 1 hectare (ha)
- in an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

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.



Environment Agency

Flood map for planning

Your reference
Unspecified

Location (easting/northing)
513303/103270

Scale
1:2,500

Created
27 Jan 2026 14:45

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

0 20 40 60 m

Appendix C

Jesy Ferry

From: AdurWorthing-Planning <AdurWorthing-Planning@wsp.com>
Sent: 01 July 2025 10:38
To: Jesy Ferry
Cc: Tedridge, Louise
Subject: Re: AWDM/0168/25 9 Station Parade Worthing (Our ref: 95586)

Good morning Jesy,

Following our chat earlier, I am providing confirmation of what we discussed.

Safe Access
We appreciate that it is not possible to always model the surface water flood risk for development sites of this size. As an alternative, we would be willing to accept the use of the Environment Agency's data for the 1000 year (2040 to 2060) extents when assessing the safe access to the site for this development.

Infiltration Testing
For any application, we would expect the drainage hierarchy to be followed which expects infiltration to be investigated as the initial form of surface water discharge. Therefore, the use of soakaways and other infiltration techniques should be ruled out before an attenuation strategy is proposed. While we appreciate, winter infiltration testing may be difficult for this application we would still need to see detailed justification as to why infiltration cannot be used at the site. Simpler percolation testing could be carried out which would determine whether infiltration is viable at the site or not. Other constraints will also be considered.

Sequential Test
We provide flood risk guidance to the Planning Officers on the Sequential Test. We will review any identified sites and advise the LPA on whether we believe they are more suitable when assessing the flood risk at the development site and the alternative site. The decision on whether a site is suitable for development lies with the Planning and Development department at the local council. We would ask that you speak with them directly for clarification on the search area for the Sequential Test and for guidance on any of the identified alternative sites.

Kind regards,

Alex

Alex Jones
Senior Consultant, Sustainable Water Management
BSc, MSc

From: Jesy Ferry <jesy.ferry@unda.co.uk>
Sent: 24 June 2025 09:27

To: Tedridge, Louise <Louise.Tedridge@wsp.com>
Subject: AWDM/0168/25 9 Station Parade Worthing (Our ref: 95586)

Dear Louise,

I hope you are well.

Please may you give me a call on 01293 214 444 to discuss the comments for the following planning application - AWDM/0168/25

I look forward to hearing from you.

Kind regards,

Jesy Ferry | Graduate Flood Risk and Drainage Consultant

T: +44 (0) 1293 214 444 **M:** +44 (0) 7415 726 461 **E:** jesy.ferry@unda.co.uk

-LAEmHhHzdJzBlTWfa4Hgs7pbKI

Appendix D

Annex 3: Flood Risk Vulnerability Classification	
Essential Infrastructure:	• Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk. • Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including infrastructure for electricity supply including generation, storage and distribution systems; including electricity generating power stations, grid and primary substations storage; and water treatment works that need to remain operational in times of flood. • Wind turbines. • Solar farms.
Highly Vulnerable:	• Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes and park homes intended for permanent residential use. • Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure'.)
More Vulnerable: * Landfill is as defined in Schedule 10 of the Environmental Permitting (England and Wales) Regulations 2010	• Hospitals. • Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. • Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels. • Non–residential uses for health services, nurseries and educational establishments. • Landfill* and sites used for waste management facilities for hazardous waste. • Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.
Less Vulnerable:	• Police, ambulance and fire stations which are not required to be operational during flooding. • Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill* and hazardous waste facilities). • Minerals working and processing (except for sand and gravel working). • Water treatment works which do not need to remain operational during times of flood. • Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place. • Car parks.
Water-Compatible Development:	• Flood control infrastructure. • Water transmission infrastructure and pumping stations. • Sewage transmission infrastructure and pumping stations. • Sand and gravel working. • Docks, marinas and wharves. • Navigation facilities. • Ministry of Defence installations. • Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location. • Water-based recreation (excluding sleeping accommodation). • Lifeguard and coastguard stations. • Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms. • Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

National Planning Policy Framework Annex 3: Flood risk vulnerability classification