

Nutbourne Road, Hayling Island, PO11 9RT

Reference: 436 FRA- 001

Dec-22

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FLOOD RISK ASSESSMENTS &
DRAINAGE STRATEGIES

Flood Risk Assessment

Nutbourne Road, Hayling Island, PO11 9RT

Reference: 436 FRA- 001

Report Limitations

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All Environment Agency mapping data used under special license. Data is current as the data on the correspondence given by the Environment Agency and is subject to change.

The information presented and conclusions drawn are based on statistical data and are for guidance purposes only.

The study provides no guarantee against flooding of the study site or elsewhere, nor of the absolute accuracy of water levels, flow rates and associated probabilities.

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Purpose of this report

- 1.1 RIDA Reports Ltd has been appointed to undertake a Level 2 – Scoping Study Flood Risk Assessment for a development located at PO11 9RT.

Objectives

- 1.2 The objectives of this FRA are to demonstrate the following:
- * Whether the proposed development is likely to be affected by current or future flooding.
 - * Whether the proposed development will increase flood risk elsewhere.
 - * Whether the flood risks associated with the proposed development can be satisfactorily managed.
 - * Whether the measures proposed to deal with the flood risk are sustainable.

Documents Consulted

- 1.3 To achieve these objectives the following documents have been consulted and/or referenced:

The National Planning Policy Framework (NPPF)
CIRIA C753 document The SuDS Manual, 2015
Local Flood Risk Management Strategy (LFRMS)
Level 1 Strategic Flood Risk Assessment (SFRA)
Aerial photographs and topographical survey of the site
British Geological Society Records
Local Council flood Maps
Environment Agency flood maps
The CIRIA publication 'C635 Designing for exceedance in urban drainage— Good practice'

Development Site and Location

- 2.1 The site is located at Nutbourne Road, Hayling Island. The nearest post code is PO11 9RT. Refer to appendix A for site location plan.
- 2.2 The current use of the site is a building used as a sub-station. The current use vulnerability classification of the site is Essential infrastructure. The site is located in the River Flood Zone 2. Refer to Appendix B for more details.

Development Proposals

- 2.3 The proposed development includes the change of use to a dwelling. Refer to Appendix B for layout of the proposed development.
- 2.4 The vulnerability classification of the proposed development is More vulnerable with an estimated lifetime between 50 and 100 years.

Site Hydrology and Hydrogeology

- Hydrology 2.5 The English Channel is located approximately 270 m away from the development.
- Aquifer 2.6 The development is located within a secondary aquifer type A. Aquifers type A consist of permeable layers capable of supporting water supplies at a local rather than strategic scale. They are generally aquifers formerly classified as minor aquifers.
- Source Protection Zone 2.7 The site is not located within a Source Protection Zone.
- Groundwater Levels 2.8 The ground water levels for this site are unknown.

Site Geology

- Bedrock 2.9 The British Geological Society records of the site show that it is located within the Wittering Formation - Sand, Silt and Clay.
- Superficial Deposits 2.10 The British Geological Society records show that the superficial deposits are River Terrace Deposits (Undifferentiated) - Sand, Silt and Clay.

National Planning Policy Framework (NPPF)

- 3.1 The NPPF and its technical guidance is a set of planning policies with the key objective to contribute to the achievement of sustainable development. As part of it, they ensure that flood risk and sustainability are taken into account during the planning process. This ensures that developments are not located in flood risk areas and directs developments to lower risk areas. The NPPF applies a sequential risk-based approach to determining the suitability of land for development in flood risk areas. The NPPF also encourages developers to seek opportunities to reduce the overall level of flood risk through the layout of the development and the application of Sustainable Drainage Systems (SuDS).

The Flood and Water Management Act (2010)

- 3.2 The Flood and Water Management Act aims to reduce the flood risk associated with extreme weather events. It provides a robust management of flood risk for people, homes and businesses and also encourages the use of SuDS for developments. A robust SuDS strategy should take into account the recommendations given in this Flood Risk Assessment.

Strategic Flood Risk Assessment (SFRA)

- 3.3 Planning policy with regard to development and flood risk in the area is detailed in the Preliminary Flood Risk Assessment (PFRA) which was published in 2021. The proposed development site is located within the administrative boundary of the Hampshire County Council.
- 3.4 The SFRA commits to direct new development to locations at lowest flood risk. The SFRA provides information on the levels and flood hazards that could result from flooding. The Environment Agency flood zone maps and the SFRA ignore the presence of existing flood defences when defining the potential extent of flooding.
- 3.5 This report follows the guidance given in the Preliminary Flood Risk Assessment by evaluating the flood risk and providing relevant flood mitigation.

- 4.1 The NPPF guidance states that the sequential test "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."

Applicability of the Sequential Test

- 4.2 The flood risks were determined by identifying all the sources of flooding and assessing their possible impact and likelihood to the development. It is confirmed that the development is:
- In Flood Zone 2
 - At Very Low risk of surface flooding
 - At medium risk of groundwater flooding
 - Outside of a critical drainage area
 - Outside of an area with sewer flooding
- 4.3 Due to the flood risk on the development a sequential test is required for this site. For this development, it is unlikely that there may be any reasonably available sites in areas with a lower probability of flooding that would be appropriate to accommodate the type of development or land use proposed. A more detailed assessment may be required as part of the planning application process and liaison with the local council.

Exception Test

- 4.2 Fluvial flood risk was assessed using the Environment Agency Flood Zone Maps and the sequential risk-based approach recommended in the NPPF guidance. The exception test requirement takes into account the flood risk vulnerability of land uses in relation to the flood zone categorisation. These parameters are assessed in order to determine whether the development requires an exception test or it is not appropriate.

Step 1
Flood Zone categorisation

- 4.3 The proposed development falls within The Environment Agency Flood Zone 2. The Flood Zone 2 is considered to have a medium probability of flooding with a 1000 to 100 years annual probability or 0.1-1.0%AEP.

Step 2
Flood risk vulnerability

- 4.4 Within Table 2 (Flood Risk Vulnerability Classification) of the NPPF Planning Practice Guide, the proposed development is classified as 'More vulnerable'.

Step 3 4.5 The Flood Risk vulnerability and Flood Zone incompatibility table of the
Flood Zone incompatibility NPPF Planning Practice Guide states that More vulnerable
developments do not require an exception test in this area.

The Exception Test

4.6 The exception test is not required.

- 5.1 The development has been assessed for all potential flood risks such as river and tidal flood risk, surface water flooding, flooding from groundwater, reservoir flood risk and drainage systems.

Historic Flooding

- 5.2 The site does not benefit from flood defences. The Environment Agency records show that the area around the site has not been flooded in the past.

Flooding from river and sea

- 5.3 The proposed development falls within The Environment Agency Flood Zone 2. The Flood Zone 2 is considered to have a medium probability of flooding with a 1000 to 100 years annual probability or 0.1-1.0%AEP.

- 5.4 Tidal flood level data for the river has been provided by the Environment Agency. Predicted flood levels for a range of flood frequencies can be compared to the elevation of existing coastal defences to establish tidal flood risk. It has been assumed that wave action (overtopping) is unlikely to be at significant risk of flooding due to the distance of the development to the coast.

- 5.5 The modelled in channel flood level for the site are also shown in the table below.

Flood Levels

Return Period Flood Level (m AOD)	
1 in 200 - 2070	3.80
1 in 200 - 2115	4.40

- 5.6 The life of the development is between 50 and 100 years. A climate change period for the year 2100 is appropriate for this assessment. The peak level for the year 2100 would be 4.4mAOD. This assessment is undertaken assuming that there are not flood defences.

Breach Flood Levels

Description	Flood Depth
Breach depth (m)	0.82

- 5.7 The Environment Agency has provided site specific flood hazard mapping related to the breach of coastal defences. The full results are included within Appendix C of this FRA.
- 5.8 The site would be at risk of flooding in response to a breach of coastal defences during a 1 in 200 year tidal flood event at 2115. A flood water level of 4.4m AOD is expected at the property. The depth of water is 0.82m.

Surface water (overland flows) flood risk

5.9 The Environment Agency maps show that the flood risk from surface water is very low. A residual risk of localised ponding remains unlikely. The Environment Agency surface water flood risk maps are defined through application of a specific procedure based on digital terrain models and assumptions regarding losses to infiltration and/or urban drainage. The surface water flood maps is defined by the Environment Agency as follows.

5.10 *"The nationally produced surface water flood mapping only indicates where surface water flooding could occur as a result of local rainfall. It does not fully represent flooding that occurs from:*

- Ordinary watercourses*
- Drainage systems or public sewers caused by catchment-wide rainfall events*
- Rivers*
- Groundwater*

Due to the modelling techniques used, the mapping picks out depressions in the ground surface and simulates some flow along natural drainage channels, rivers, low areas in floodplains, and flow paths between buildings. Although the maps appear to show flooding from ordinary watercourses, they should not be taken as definitive mapping of flood risk from these as the conveyance effect of ordinary watercourses or drainage channels is not explicitly modelled. Also, structures (such as bridges, culverts and weirs) and flood risk management infrastructure (such as defences) are not represented.

The nationally produced surface water flood mapping does not take account of the effect of pumping stations in catchments with pumped drainage. No allowance is made for tide locking, high tidal or fluvial levels where sewers cannot discharge in to rivers or the sea."

5.11 The strategic flood risk for the Hampshire County Council confirms that the flood risk for the site is Very Low.

5.12 On the basis of Environment Agency and the Strategic flood risk assessment's surface water mapping, together with the presence of surface water drainage systems at the site and surrounding area it is concluded that the site is at Very Low risk of flooding from surface water sources.

Flooding from drainage systems in adjacent areas

- 5.13 The council records have been reviewed. The flooding from drainage incidents maps were not found in the Strategic Flood Risk Assessment. Therefore, for the purpose of this report, it has been assumed that the risk of flooding from drainage systems is low.

Reservoirs Risks

- 5.14 The Reservoir Flood Map (RFM) produced by the Environment Agency do not show the risk to individual properties of dam breach flooding. The maps do not indicate or relate to any particular probability of dam breach flooding. The maps were prepared for emergency planning purposes and can be used to help reservoir owners produce on-site plans and the Local Resilience Forum produce off-site plans, and to prioritise areas for evacuation/early warning in the event of a potential dam failure. The RFM shows that the development could be outside of the possible dam breach flooding path. See Appendix C.

Groundwater flood risk

- 5.15 The British Geological Survey's flood risk susceptibility maps show that the development has potential for groundwater flooding below ground level. Groundwater levels would tend to vary seasonally and are influenced by ground and meteorological conditions and proximity to water features. The groundwater flooding risk for this site is considered to be medium. Refer to appendix C for record drawings.

Critical Drainage Areas

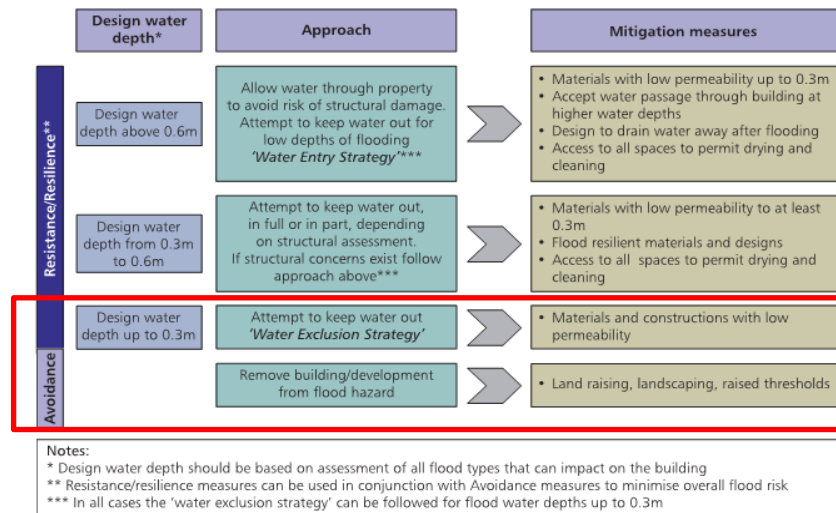
- 5.16 The Strategic Flood Risk Assessment was reviewed as part of this assessment. However, it does not show the critical drainage areas within the council. For the purpose of this report, it has been assumed that the site is outside of a notified critical drainage area.

- 6.1 The Flood hazard assessment has demonstrated that the site is:
- In Flood Zone 2
 - At Very Low risk of surface flooding
 - At medium risk of groundwater flooding
 - Outside of a critical drainage area
 - Outside of an area with sewer flooding
- 6.2 Under the NPPF it is necessary to demonstrate that, for any new development on the site, it is possible to provide an adequate level of flood protection for personnel working or living at the development.

Flood Protection

- 6.3 The proposed development is a change of use of the current buildings. There are not changes to the levels of the building neither major changes to the fabric of the building.
- 6.4 The appropriate 1:200+CC reference level for the proposed development site is 4.4 mAOD. The existing ground level at the site is an average of 3.58mAOD.
- 6.5 As the site is protected by existing coastal defences, it is proposed that further flood protection assessment related to risk of breach flooding.
- 6.6 It is anticipated that ground floor level of the development is established 300mm above the breach level at approximately 4.7mAOD which is 0.82m above existing average ground level. It is not possible to achieve this level. As parts of the building are in contact with water, it is proposed that the following flood protection is provided.
- 6.7 Should changes to the fabric of the building be made, the flood resilience strategy for the development should be based on the CLG 2007 Improving the Flood Performance of New Building. See figure below. The strategy is based on the water level within the proximity to the building.

Rationale for flood resilient and/or resistant design strategies.



6.8 The design water depth for this site is 0.82m. The building should utilise building materials that are suitable for a 'water exclusion strategy'. Materials classified as "Good" (highlighted in red) in the Figure below shall be used for construction upto the water depth.

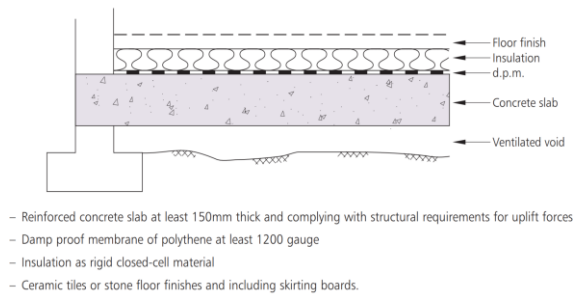
Figure 2: Flood resilience characteristics of building materials (based on laboratory testing)

Material	Resilience characteristics*		
	Water penetration	Drying ability	Retention of pre-flood dimensions, integrity
Bricks			
Engineering bricks (Classes A and B)	Good	Good	Good
Facing bricks (pressed)	Medium	Medium	Good
Facing bricks (handmade)	Poor	Poor	Poor
Blocks			
Concrete (3.5N, 7N)	Poor	Medium	Good
Aircrete	Medium	Poor	Good
Timber board			
OSB2, 11mm thick	Medium	Poor	Poor
OSB3, 18mm thick	Medium	Poor	Poor
Gypsum plasterboard			
Gypsum Plasterboard, 9mm thick	Poor	Not assessed	Poor
Mortars			
Below d.p.c. 1:3(cement:sand)	Good	Good	Good
Above d.p.c. 1:6(cement:sand)	Good	Good	Good

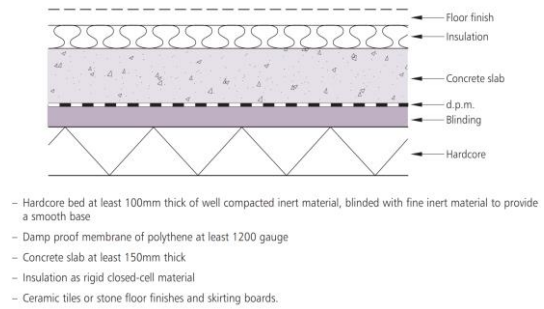
Resilience characteristics are related to the testing carried out and exclude aspects such as ability to withstand freeze/thaw cycles, cleanability and mould growth

6.9 Where floors are being replaced use ground-bearing solid concrete slabs; use ceramic, stone or concrete-based tiled surfaces to floors and skirtings (with cement-based adhesive and water-resistant grout) ideally draining to a floor sump pump; paint timber skirtings on the reverse before fitting; avoid concrete screeds above insulation; damp-proof courses and membranes should be durable (minimum 1200 gauge for polythene) with laps, and use closed-cell insulation.

Suspended Concrete Slab detail



Ground bearing Concrete Slab detail



6.10 In areas where new walls are being installed – use closed-cell insulation below predicted flood level in external walls; specify water-resistant walling materials such as pressed-face or engineering brick or rendered blockwork.

6.11 In new walls use extended periscope subfloor ventilators or fit removable airbrick covers; fix plasterboard sheets horizontally rather than vertically, or split sheets mid-height with a dado rail, to reduce the extent of replacement; specify lime- or cement-based renovating plasters or renders rather than gypsum-based, with water-resistant paint finishes. The use of water-proof, water-resistant or micro-porous surface coatings on masonry should be avoided as they can inhibit the drying-out of the building fabric.

- 6.12 Services and fittings (communications wiring, hearing systems, electrical services, water, electricity and gas meters) should be placed at above the flood level. Where possible, all service entries should be sealed (e.g. with expanding foam or similar closed cell material). Closed cell insulation should be used for pipes which are below the predicted flood levels. Sealed PVC external framed doors should be used. Should wooden doors be used then a good fit and sealed to the frames must be obtained. Hollow core timber internal doors should not be used unless sufficient flood warning is given, butt hinges, can be used to allow internal doors to be easily removed and stored.
- 6.13 Fittings should be designed to be replaced after a flood, it is advisable to specify durable fittings that are not appreciably affected by water and can be easily cleaned (e.g. use of plastic materials or stainless steel). The cost of these units may need to be balanced against the predicted frequency of flooding. Avoid wood fibre based carcasses and use easily removable solid wood doors and drawers.

7.1 The NPPF specifically stipulates that consideration should be given to potential off-site flood impacts of any proposed development. These off-site impacts are in relation to:

- Surface water management
- Flood flow conveyance, storage and climate change

Surface Water Management

7.2 The surface water run-off is not being increased by the development as this is a change of use in which no extensions or changes to the external areas are proposed. It is concluded that the proposed development does not increase the off-site impact.

Flood Flow conveyance and storage

7.3 In tidal flooding environments, the volume of available on-shore flood storage is usually not a material consideration as the volume of flood water is usually too large to be attenuated.

7.4 The proposed development will have no effect on flood flow conveyance through the site or surrounding area in relation to either defence overtopping or a defence breach. Similarly, although the development would reduce the volume of flood storage available, as the flooding mechanism is tidal, there will be no impact on flood risk in the surrounding area.

- 8.1 This flood risk assessment has identified the potential flooding mechanisms that could affect the site. This assessment has concluded that the development site requires additional flood risk mitigation strategies so all the flood risk can be addressed.

Site access and public safety

- 8.2 This assessment has demonstrated that the proposed development will have no adverse impact on flood risk in the area surrounding the site. Available evidence indicates that the development would result in no change in surface water generation. There is therefore no basis to indicate that, with respect to flood risk, the proposed development would have adverse impact on public safety.
- 8.3 It will be necessary to ensure that all building users are fully informed of procedures to be implemented during threat of imminent flooding.

Flood Warning and evacuation

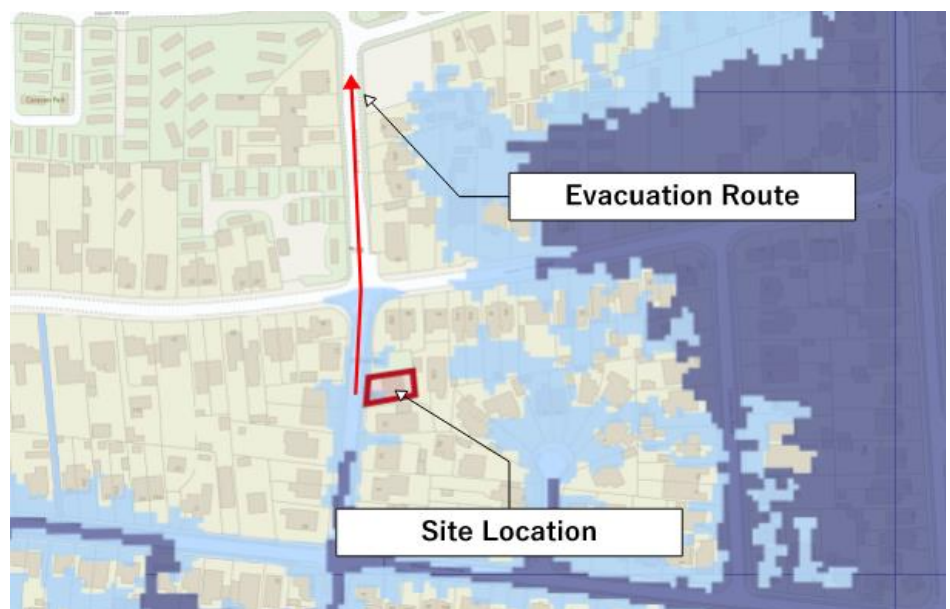
- 8.4 The site is located outside of an area that is covered by the Environment Agency Flood Alert service. It is recommended that a site specific evacuation plan is provided.
- 8.6 The Flood Management and Evacuation Plan should be tailored to the site use and be in place prior to occupation of the site. The below paragraphs give basic information on evacuation and Table below shows the actions that will be taken for each flood warning.
- 8.7 Action to be taken in the event of Alarm being Raised or Flood Warning Received:
- Raise the alarm and evacuate the site following the established Fire Drill procedures. The main assembly as per the main house fire drill assembly point.
 - Contact Emergency Fire Services (999) if necessary and/or Environment Agency Floodline: (0845 988 1188) if event was not expected.
 - If safe to do so, locate and turn off key services e.g. water, gas & electricity.
 - Follow the routes below to evacuate the site completely.

Actions that will be taken for each flood warning

Warning	Message	Timing	Action
 FLOOD ALERT	Flooding is possible. Be prepared.	2 hours to 2 days in advance of flooding.	- Be prepared for flooding. - Prepare a flood kit.
 FLOOD WARNING	Flooding is expected. Immediate action required.	Half an hour to 1 day in advance of flooding.	- Act now to protect your property. - Block doors with flood boards or sandbags and cover airbricks and other ventilation holes. - Move pets and valuables to a safe place. - Keep a flood kit ready. - Move any critical equipment and information to a safe location
 SEVERE FLOOD WARNING	Severe flooding. Danger to life.	When flooding poses a significant threat to life and different actions are required.	- Be ready should you need to evacuate from the property. - Co-operate with the emergency services and call 999 if you are in immediate danger.
Warning Removed	No further flooding is currently expected for your area.	Issued when a flood warning is no longer in force.	- Flood water may still be around and could be contaminated. - If you've been flooded, ring your buildings and contents insurance company as soon as possible.

8.8 Safe egress is achievable by following Nutbourne Road, which is shown to be beyond the extent of flooding. See figure below for details.

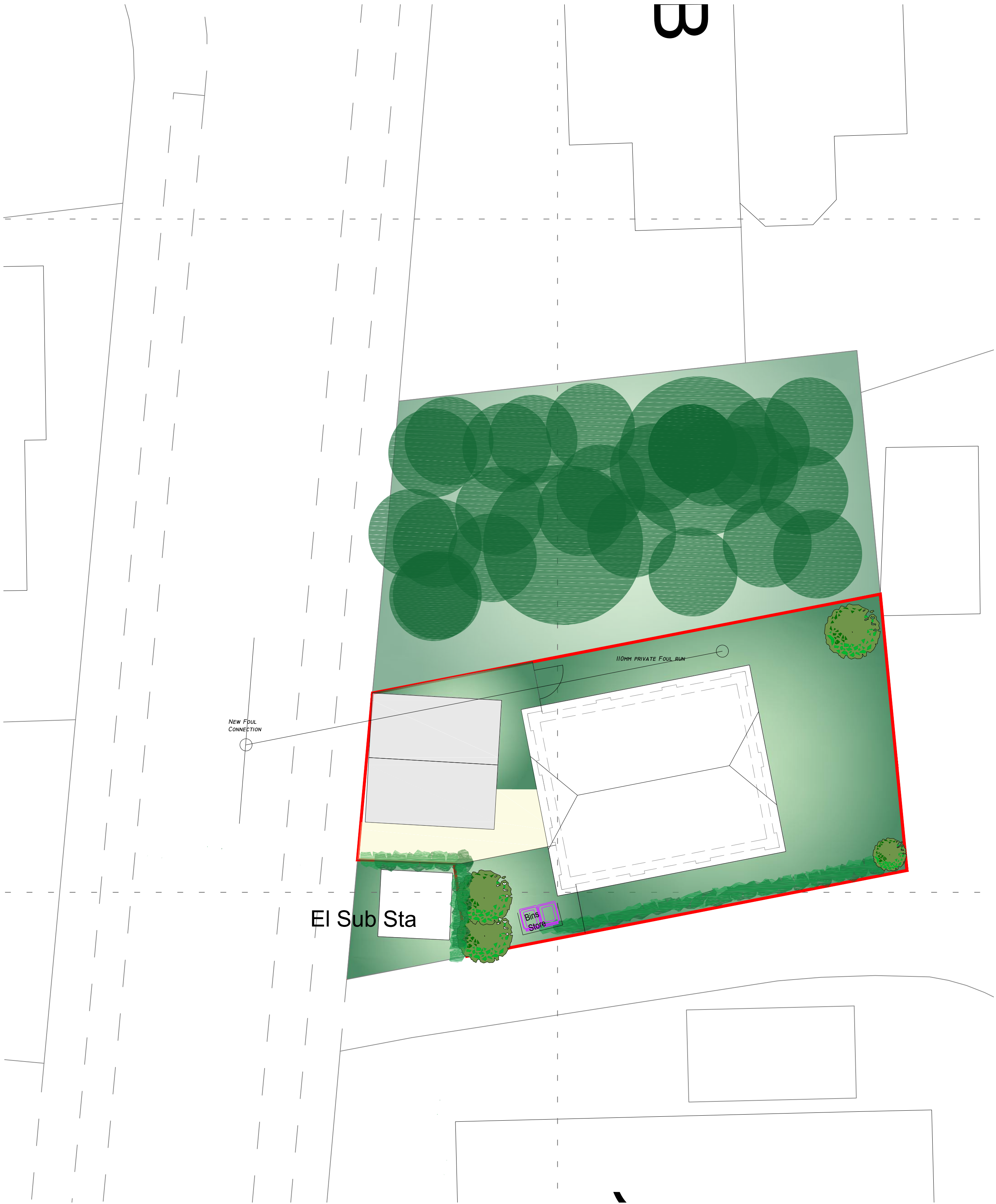
Evacuation Route



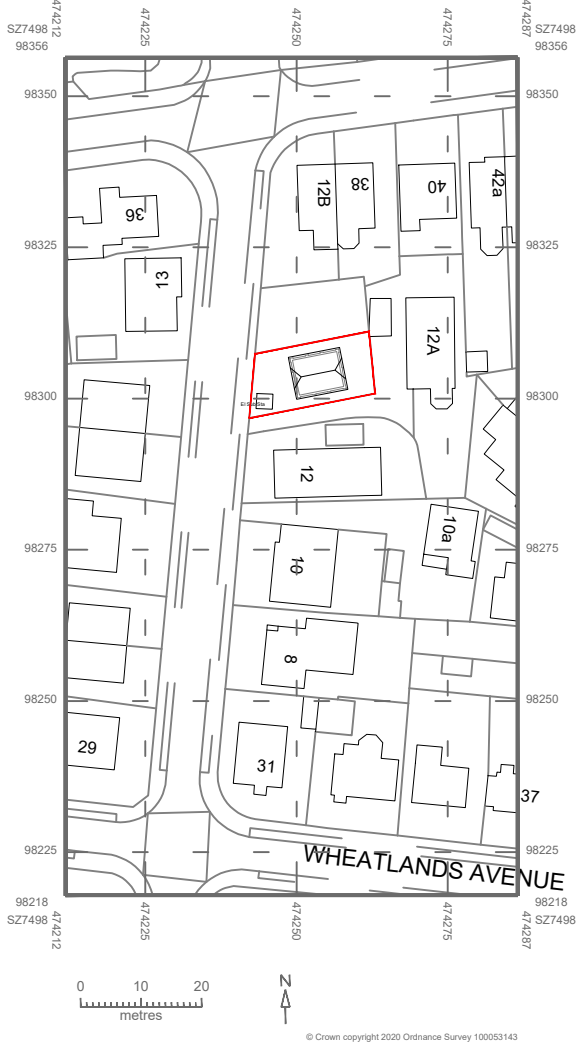
- 9.1 It is concluded that subject to the proposed mitigation measures, the site can be developed in accordance with the provisions of the NPPF and the requirements of the Environment Agency and the local planning authority.
- 9.2 It is proposed that a formal Flood Warning and Emergency Response Plan is developed for the proposed development to communicate flood emergency response procedures to all the occupants of the site.
- 9.3 This report demonstrates that the proposal will be safe, in terms of flood risk, for its design life and will not increase the flood risk elsewhere.

Appendix A

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MapServe



Solent Design Ltd
5 The old Railway
Spring Garden Lane
Gosport
PO12 1FQ



tel: 02392 580745 mob: 07771 355742 e-mail: info@solentplans.com

PROJECT DESCRIPTION:
Former Sub station
DRAWING TITLE:
Proposed Site and Location Plan

ADDRESS:
Nutbourne rd
Hayling Island
PO11 9RT

CLIENT:
Winlaz Ltd
FIRST DRAWN:
July 2020

DRAWING No.
SD-2049-00 B

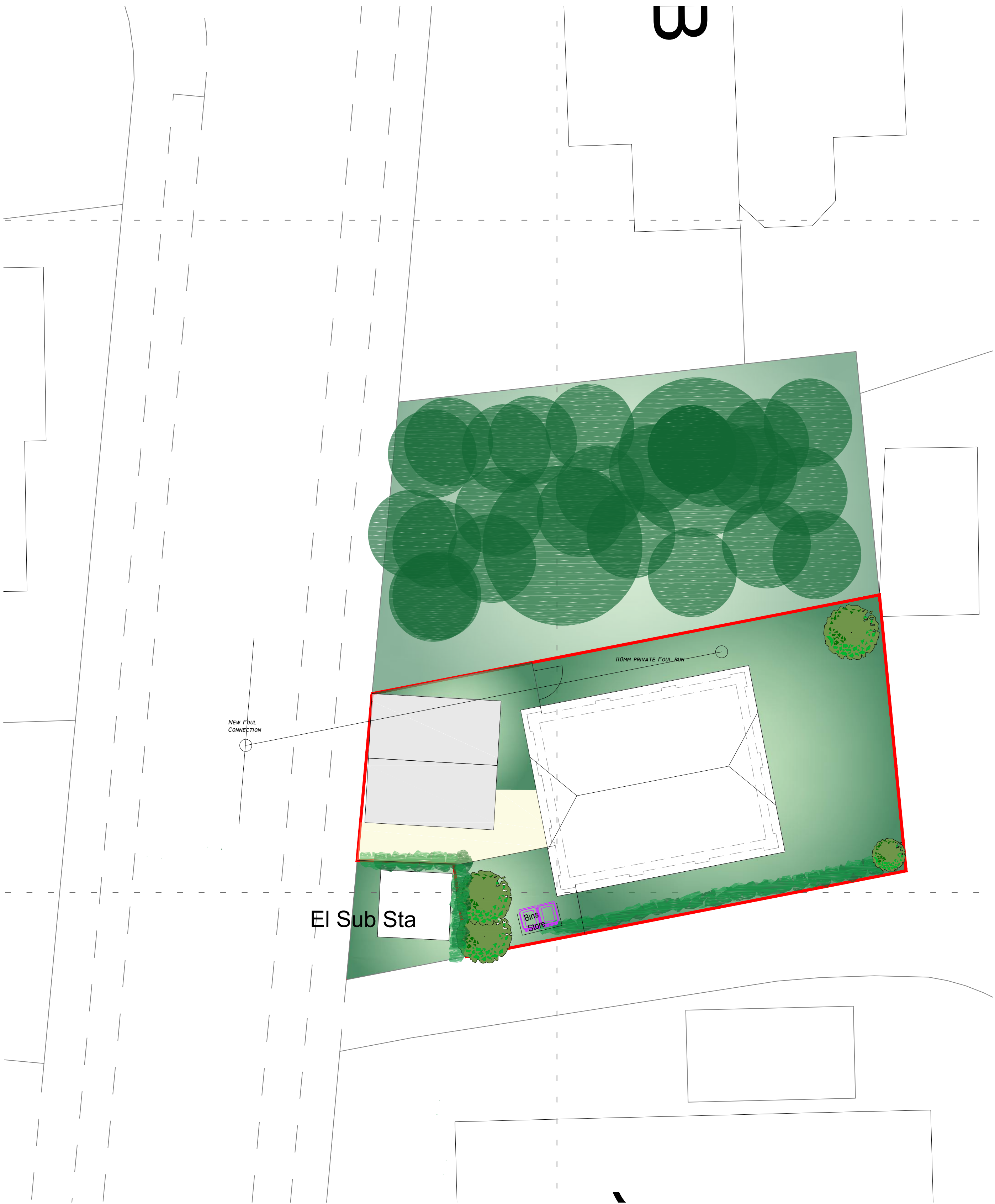
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drawing status: Issued for Comment

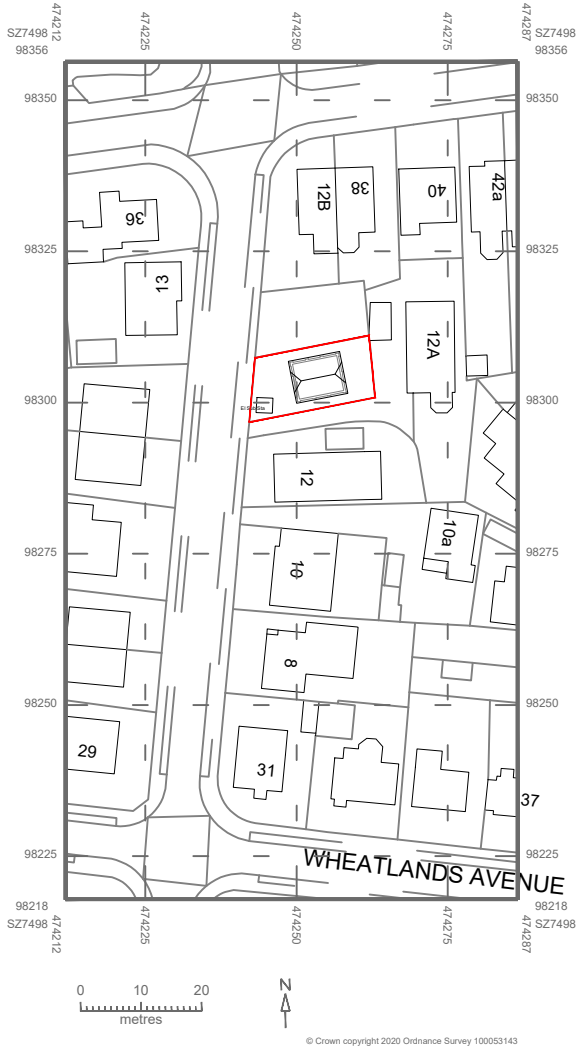


Appendix B

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PROJECT DESCRIPTION:
Former Sub station
DRAWING TITLE:
Proposed Site and Location Plan

ADDRESS:
Nutbourne rd
Hayling Island
PO11 9RT

CLIENT:
Winlaz Ltd
FIRST DRAWN:
July 2020

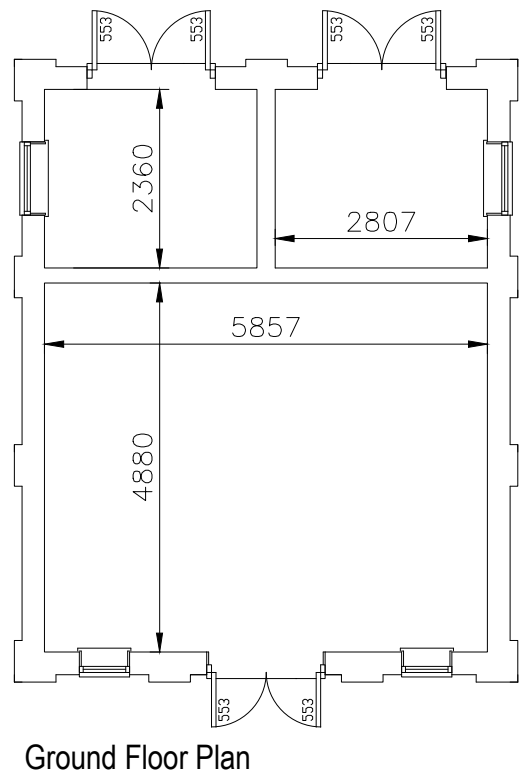
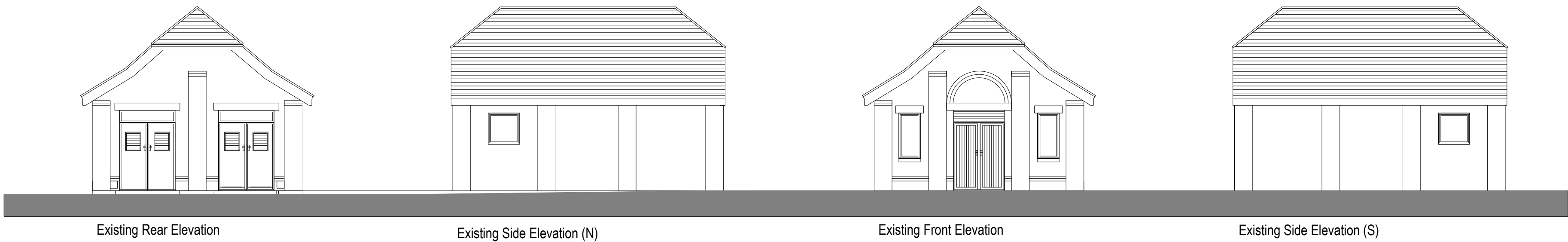
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SD-2049-00 B

SCALE:
1:100
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drawing status: Issued for Comment



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PROJECT DESCRIPTION:
Former Sub station
DRAWING TITLE:
Existing plans and elevations

ADDRESS:
Nutbourne rd
Hayling Island
PO11 9RT

CLIENT:
Winlaz Ltd
FIRST DRAWN:
July 2020

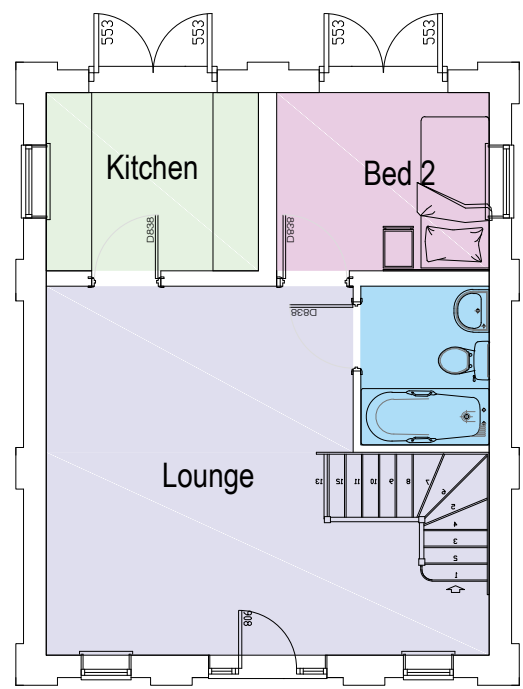
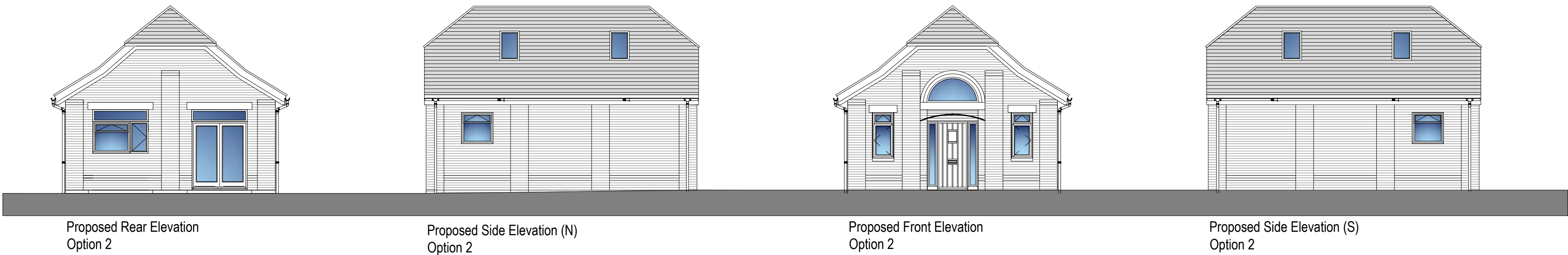
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SD-2049-01 | B

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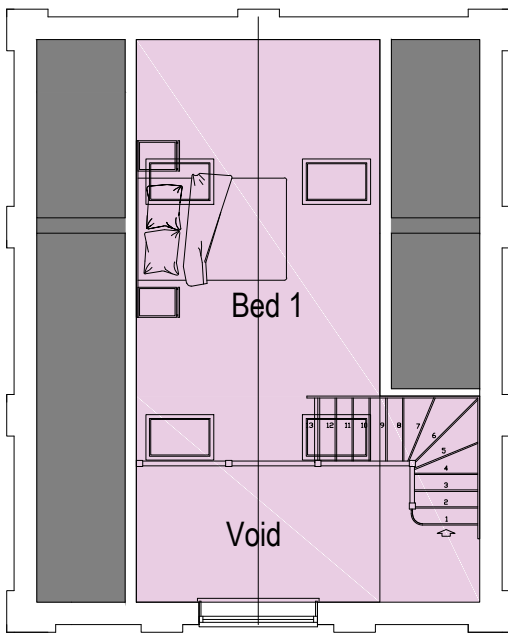
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Ground Floor Plan



First Floor Plan

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5 The old Railway
Spring Garden Lane
Gosport
PO12 1FQ



tel: 02392 580745 mob: 07771 355742 e-mail: info@solentplans.com

PROJECT DESCRIPTION:
Former Sub station

DRAWING TITLE:
Conversion to Holiday Let

ADDRESS:
Nutbourne rd
Hayling Island
PO11 9RT

CLIENT:
Winlaz Ltd

FIRST DRAWN:
July 2020

DRAWING No.
SD-2049-02 B

drawing status: Issued for Comment

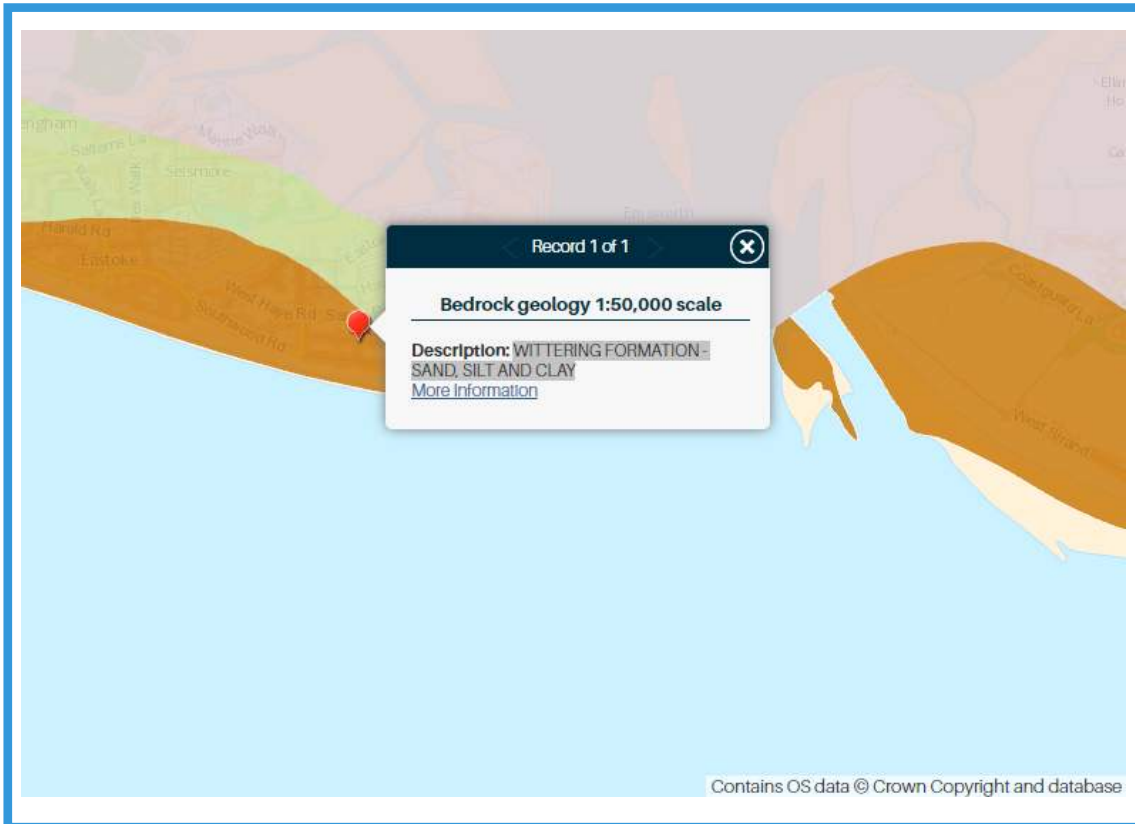
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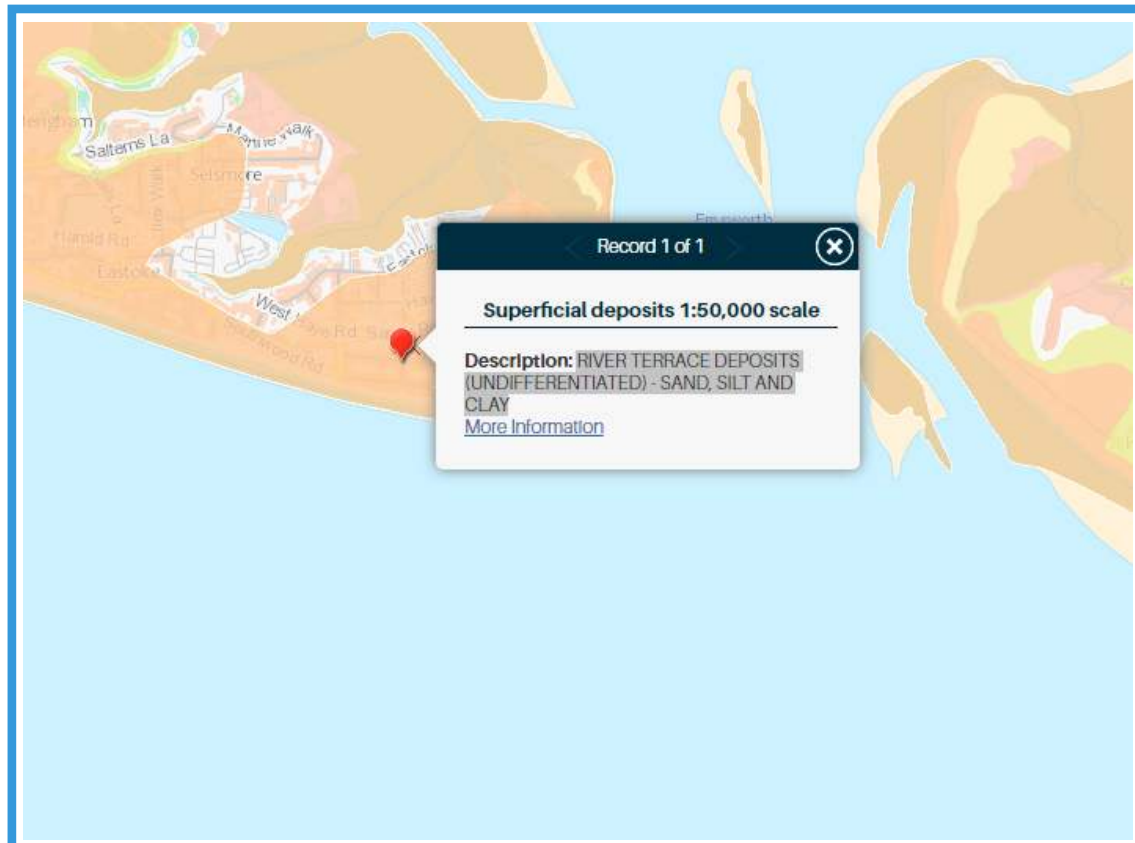
Appendix C



GEOLOGY - BEDROCK - WITTERING FORMATION - SAND, SILT AND CLAY

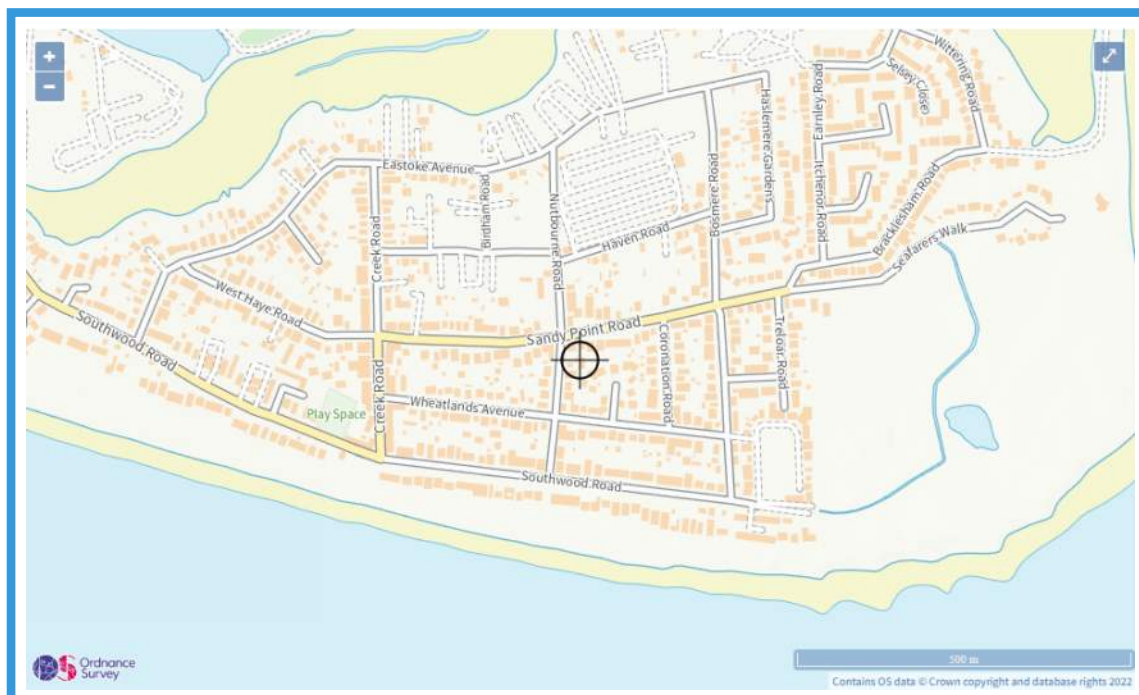
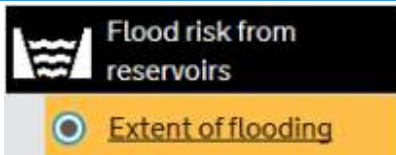


GEOLOGY - SUPERFICIAL DEPOSITS - RIVER TERRACE DEPOSITS (UNDIFFERENTIATED) - SAND, SILT AND CLAY





Main River Map



 when river levels are normal
  when there is also flooding from rivers

SITE SURFACE WATER FLOOD RISK

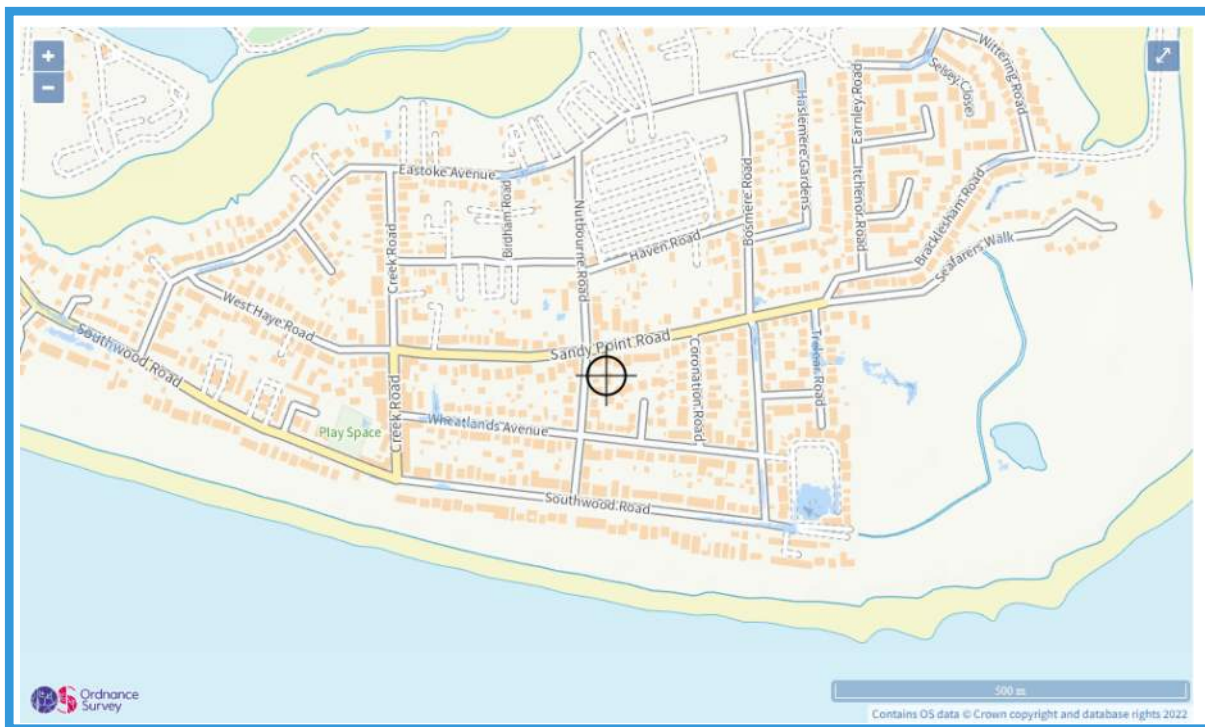


Flood risk from surface water

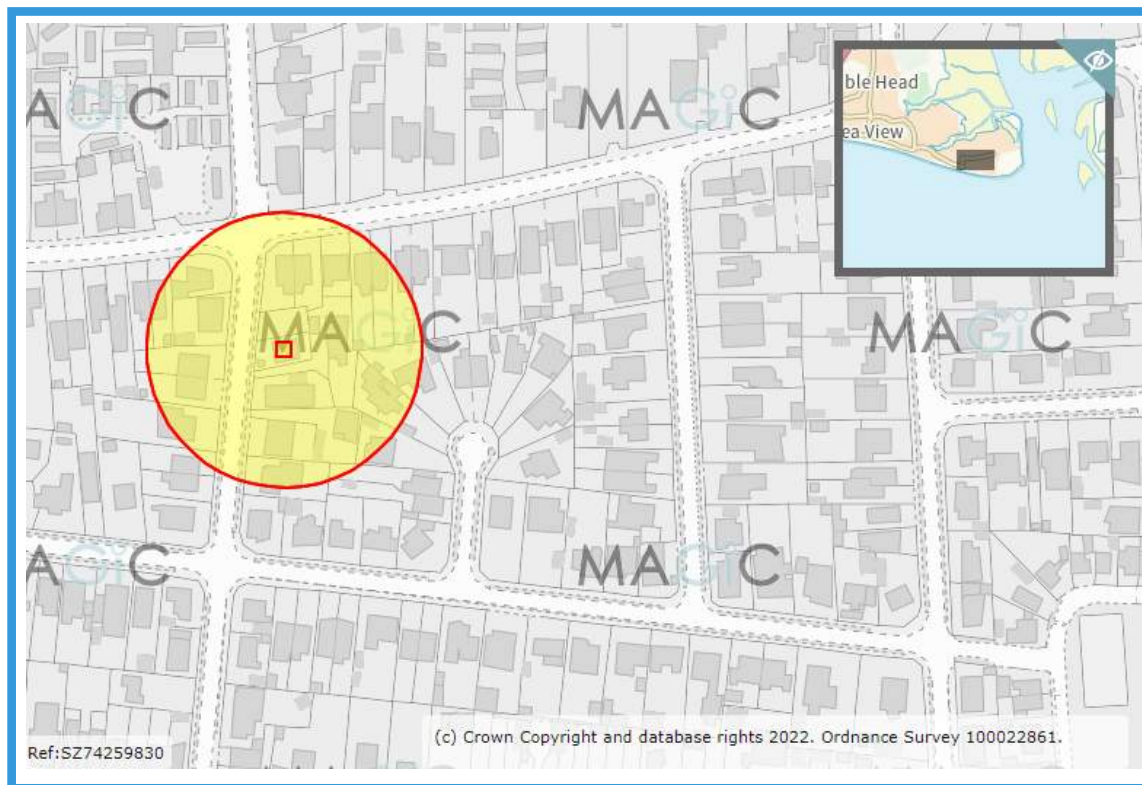


Extent of flooding

High risk means a chance of flooding greater than 3.3% (1:30)
 Medium risk means a chance of flooding of btw 1% (1:100) and 3.3%
 Low risk means a chance of flooding of btw 0.1% (1:1000) and 1%
 Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding



MAGIC RESULTS



Site Check Results

Site Check Report Report generated on Thu Dec 01 2022

You selected the location: Centroid Grid Ref: SZ74259830

The following features have been found in your search area:

Aquifer Designation Map (Bedrock) (England)

Typology

Secondary A

Aquifer Designation Map (Superficial Drift) (England)

Typology

Secondary A

Source Protection Zones merged (England)

No Features found

OK

Cancel

Export to CSV

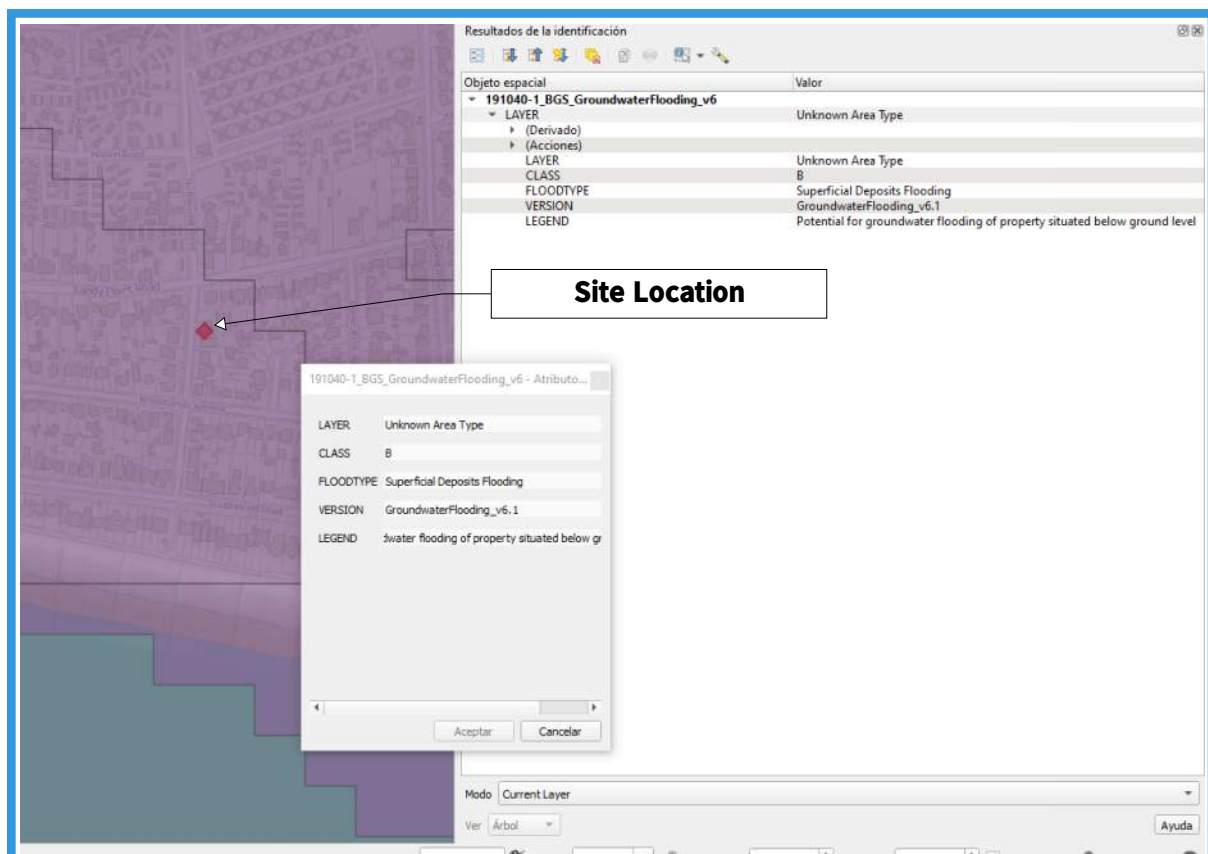
Print

FLOOD WARNING AREA



 Flood Warning areas

GROUND WATER FLOOD RISK



HISTORIC FLOOD MAP



 Historic Flood Outline

Flood map for planning

Your reference
PO11 9RT

Location (easting/northing)
474252/98303

Created
1 Dec 2022 14:13

Your selected location is in flood zone 2, an area with a medium 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)

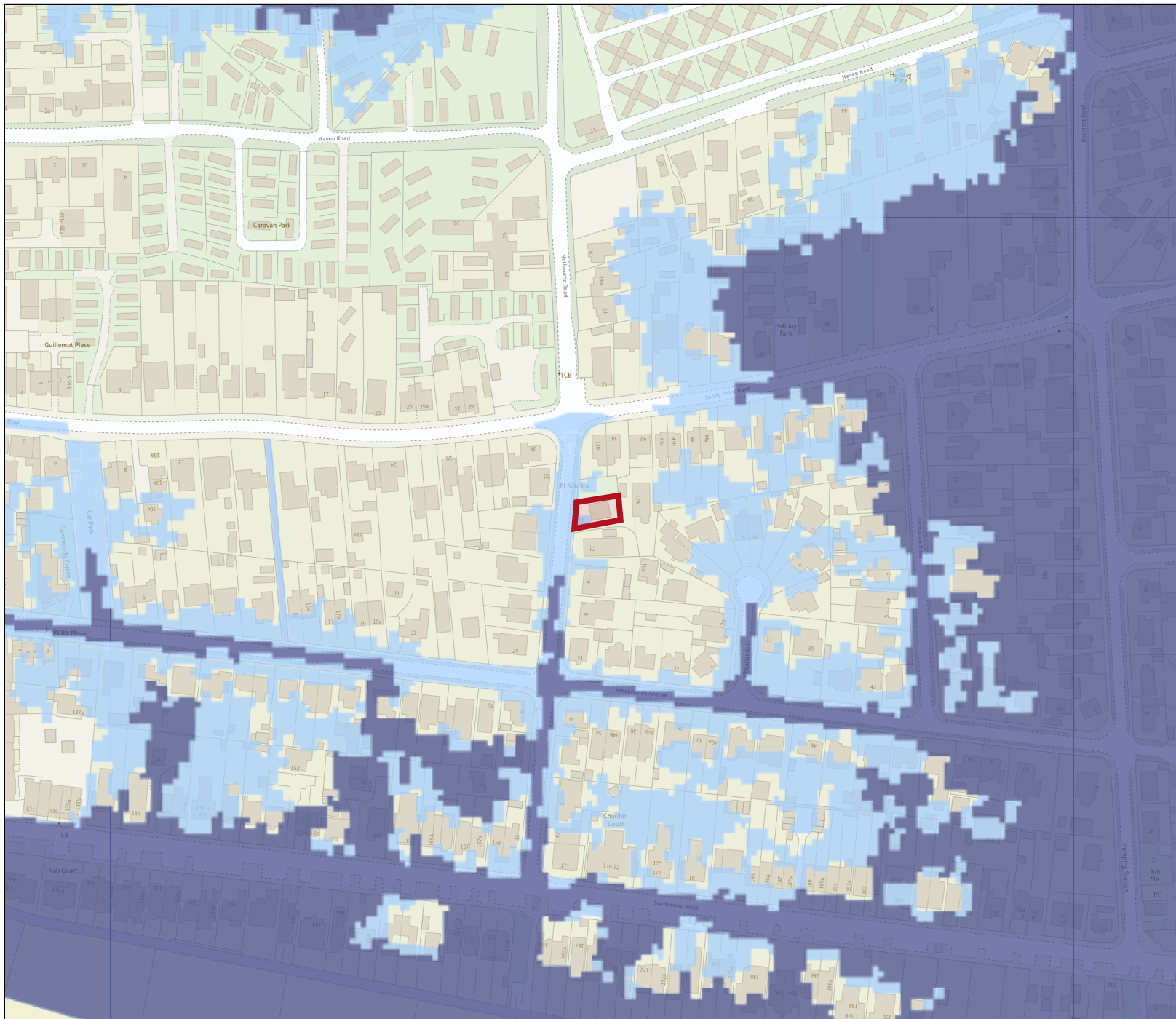
Notes

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
PO11 9RT

Location (easting/northing)
474252/98303

Scale
1:2500

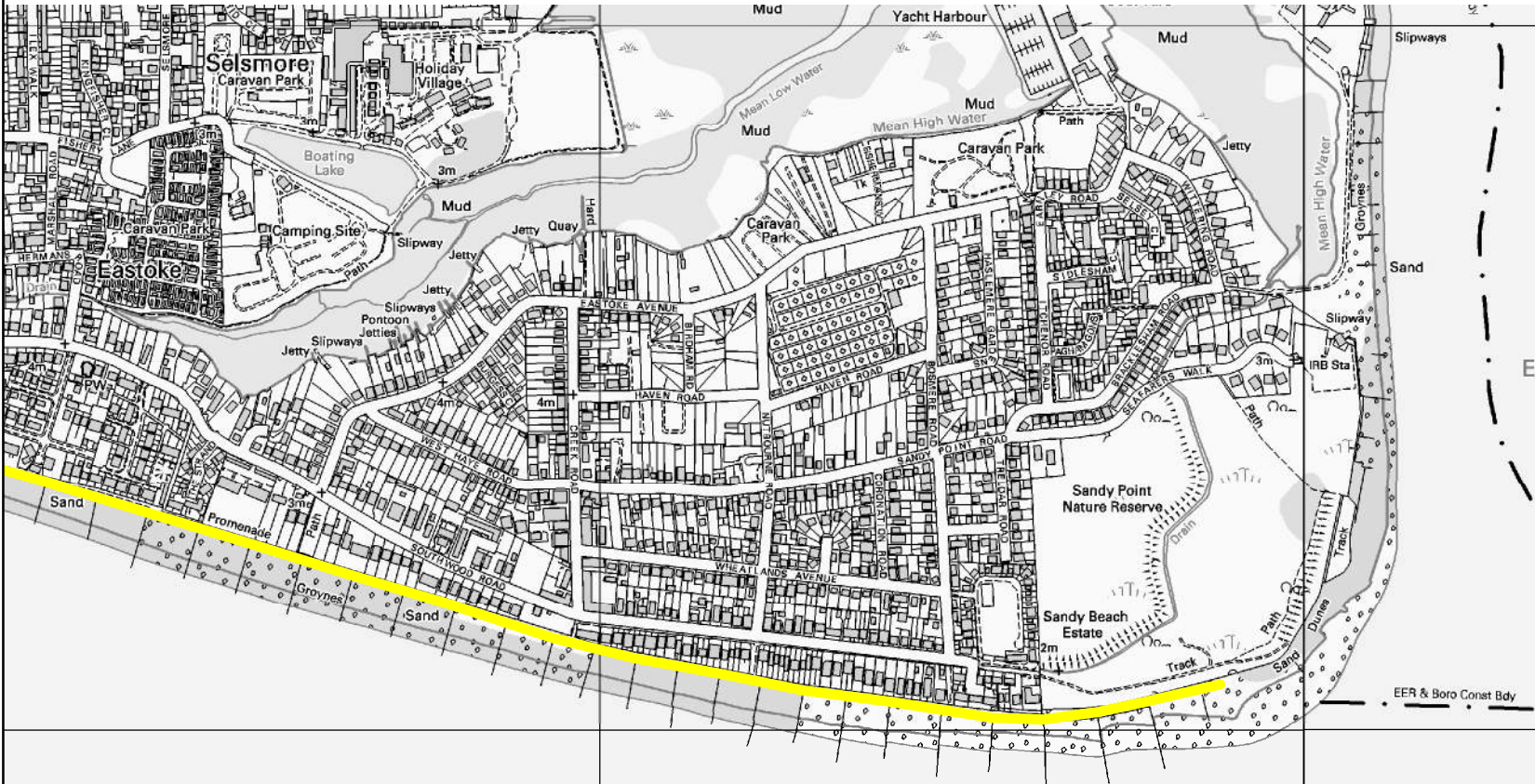
Created
1 Dec 2022 14:13

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


0 20 40 60m

Appendix D

Defence Data and Location Map



Legend

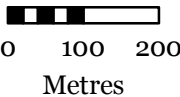
GEOM_002

<all other values>

ASSET_ID

470251

1:10,000 *
*when printed at A4.



Asset ID	Description	Length (m)	Protection Type
470251	Shingle embankment	1905.26	coastal

Flood Map for Planning (Rivers and Sea)



Scale 1: 5,000



Flood Map for Planning (Rivers & Sea)

- Defences
- Flood Storage Areas
- Areas benefiting from flood defences
- Flood Zone 3
- Flood Zone 2

Flood Map Areas (assuming no defences)

Flood Zone 3 shows the area that could be affected by flooding:

- from the sea with a 1 in 200 or greater chance of happening each year
- or from a river with a 1 in 100 or greater chance of happening each year.

Flood Zone 2 shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.

The Environment Agency is aware of flooding to this area prior to 1985 and also in 2005, 2008 and can provide the following information.

Name:	Hayling Island 2005-2006
Start Date:	03/11/2005
End Date:	03/11/2005
Flood Source:	Sea
Flood Cause:	Overtopping of defence
Comments:	High tide was at 11:48. Actual wind direction at 11:45 was 206 degrees (South/ Southwesterly) and wind speed in knots was 39.8, equivalent to Force 8 (Chimet 2005). Barometric pressure was measured at 1001.3millibars. Significant Wave Height was 1.91m an

Name:	Hayling Island Prior to 1985
Flood Source:	Sea
Flood Cause:	Overtopping of defence
Comments:	Regular flooding occurred prior to the 1985 Beach Nourishment Scheme. The addresses are taken from December 2007 records which have been matched to records of properties flooded in 1985. Therefore the address/building name may have altered since 1985.

Name:	Hayling Island 2008
Start Date:	10/03/2008
End Date:	10/03/2008
Flood Source:	Sea
Flood Cause:	Overtopping of defence

Defences – See attached map.

Coastal Boundary Data

The Environment Agency holds data about extreme sea levels around the coast of England, Wales and Scotland.

Sea levels (still water design estimates) for the 0.5% (1:200) and the 0.1% (1:1000) annual exceedance probabilities relevant to your site are provided in the table below.

Chainage point: 63	Easting: 472810	Northing: 96359
--------------------	-----------------	-----------------

Year	Tide Level (mAOD*)	
	0.5% annual exceedance probability/1 in 200 Year (Flood Zone 3)	0.1% annual exceedance probability/1 in 1000 Year (Flood Zone 2)
2008	3.3	3.5
2070	3.8	4.0
2115	4.4	4.6

* Levels in metres above Ordnance Datum Newlyn.

* All levels include Climate Change Allowance

These values are based on 2008 base data, and have been projected for climate change using estimates for sea level rise presented in Table 4 of the Technical Guidance to the National Planning Policy Framework.

Note 1:

Extreme sea level values are for still water sea levels only. Extreme sea level values include the effect of storm surge but do not account for any local increase in sea level that may be induced by onshore wave action. Wave set-up would need to be estimated separately.

Note 2:

Annual exceedance probability describes the likelihood (chance) of being exceeded in any given year.

This information is provided subject to the enclosed notice, which you should read.

I hope that we have correctly interpreted your request. Please see the attached Standard Notice or licence for details of permitted use.

We respond to requests for recorded information that we hold under the Freedom of Information Act 2000 (FOIA) and the associated Environmental Information Regulations 2004 (EIR).

If you are not satisfied with our response to your request for information you can contact us within 2 calendar months to ask for our decision to be reviewed.

If you have any queries or would like to discuss the content of this letter further please call us on 08708 506506.

If you have any queries or would like to discuss the content of this letter further please contact the Partnership and Strategic Overview Team at the Environment Agency.

Yours faithfully

Alex Haydon
Partnership and Strategic Overview team, Hampshire and Isle of Wight
Environment Agency

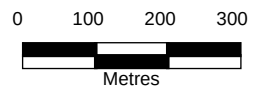
Email psohiow@environment-agency.gov.uk

Historic Flood Map



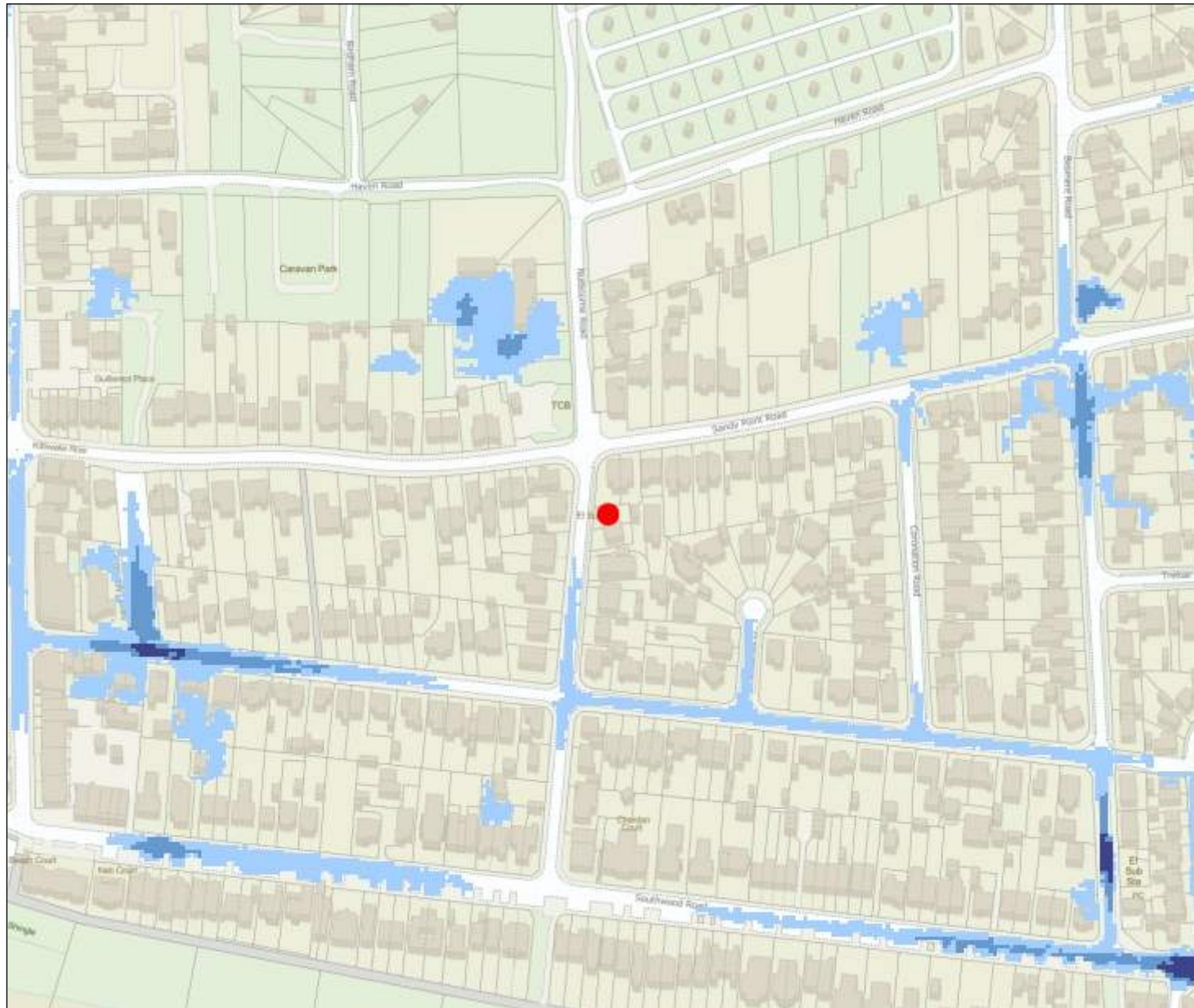
Legend

 Historic Flood Map



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Risk of flooding from Surface Water



Scale 1:3,000



Likelihood of flooding from Surface Water

- High ($\geq 3.3\%$)
- Medium ($3.3\% - 1\%$)
- Low ($1\% - 0.1\%$)
- Very Low

Likelihood of flooding from Surface Water

- High:** Greater than or equal to 3.3% (1 in 30) chance in any given year
- 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

This information is shown on the Risk of Flooding from Surface Water map on our website.