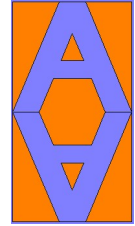


ARTHUR ARCHITECTS

Architecture
Interior Design
Structural Design
Project Management
www.arthur-architects.com



Flood Risk Assessment

10 Meadow Way, Yaverland, Sandown Ground floor rear extension with Internal Alterations Widen driveway and altering parking area for 2 extra vehicles

14 December 2023

The Site

The application site is a 3 bedroom detached property with an existing rear addition and single storey rear extension. The site is positioned on the Southern Side of Meadow Way. The property is not listed and is not within a Conservation Area. Similar residential properties surround the site and similar extensions and alterations are found in the local area.

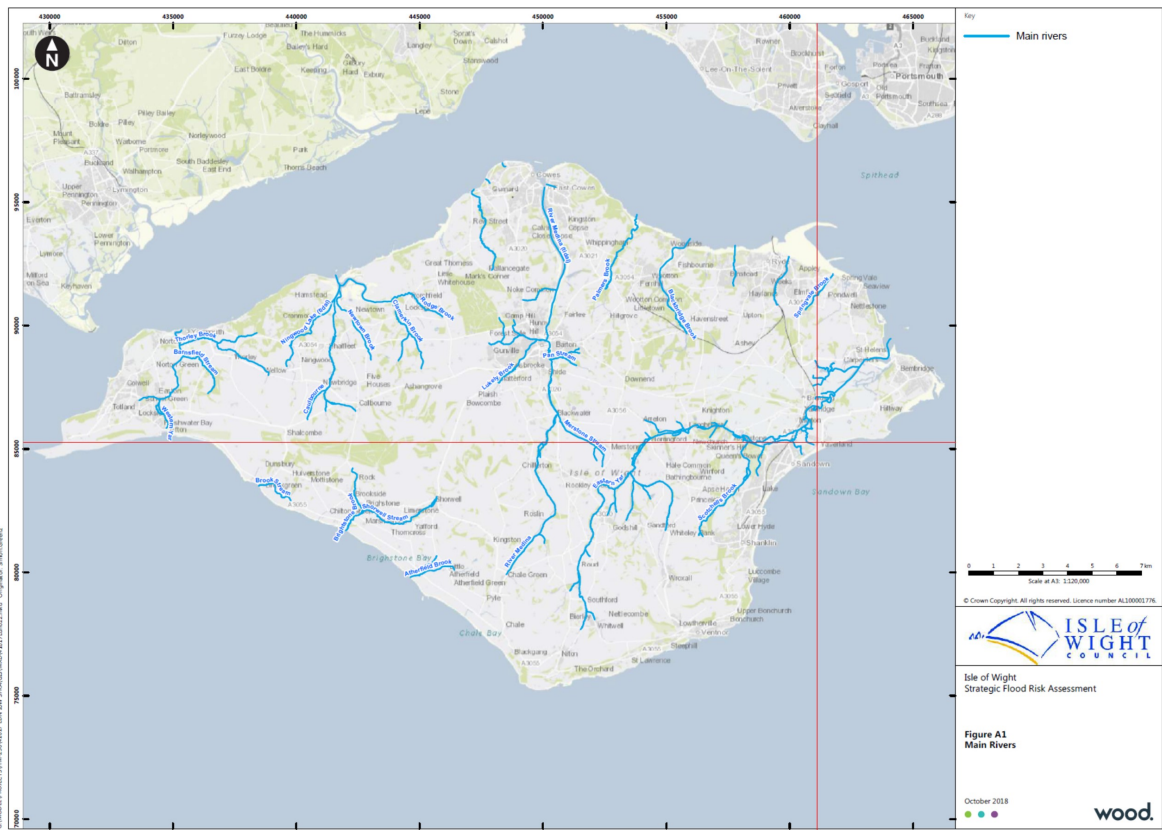
1.0 Identify Risk



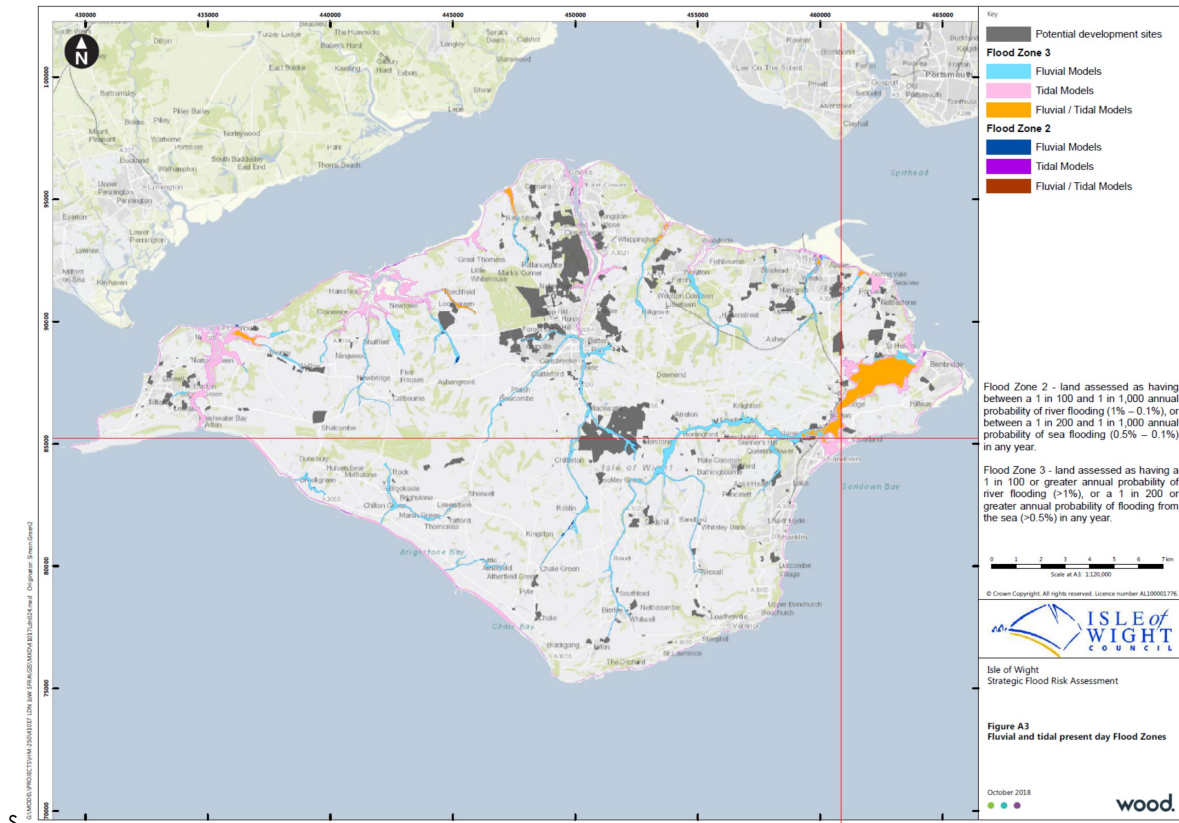
The site is located at 10 Meadow Way, Yaverland, Sandown P036 8QE



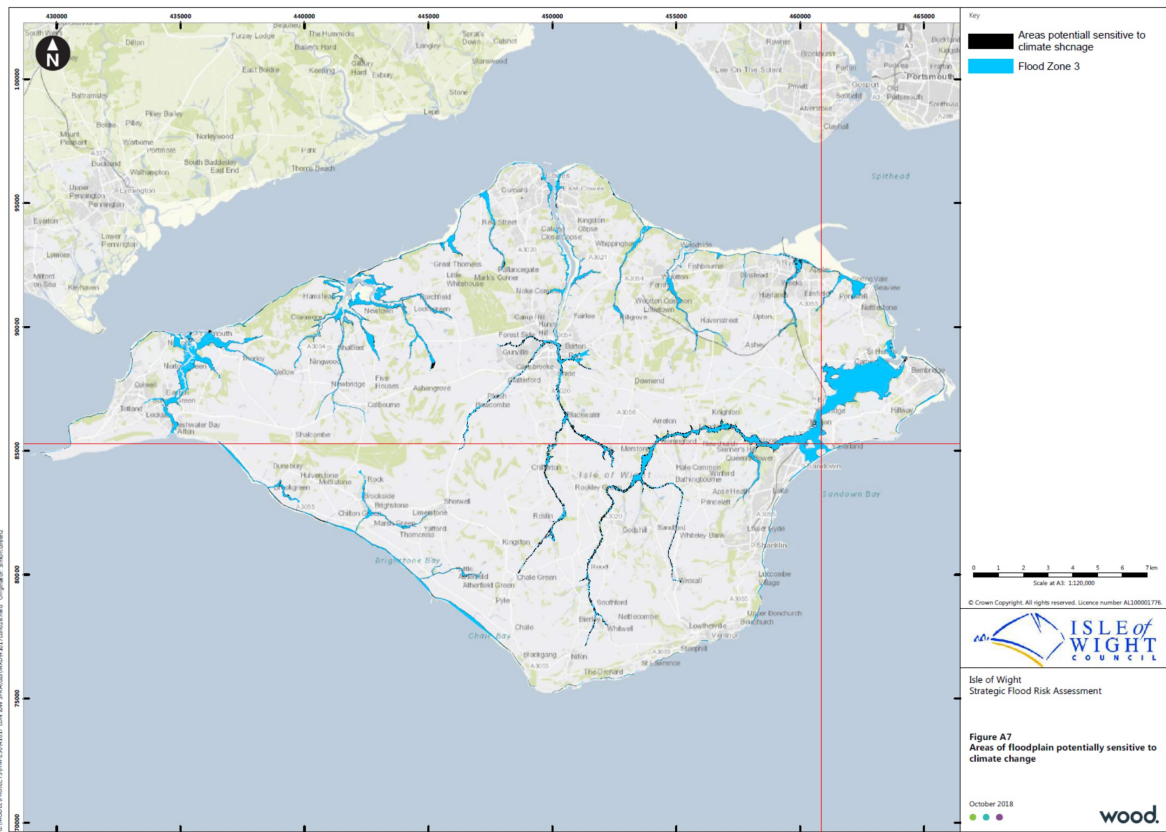
The site is located within the red crosshairs.



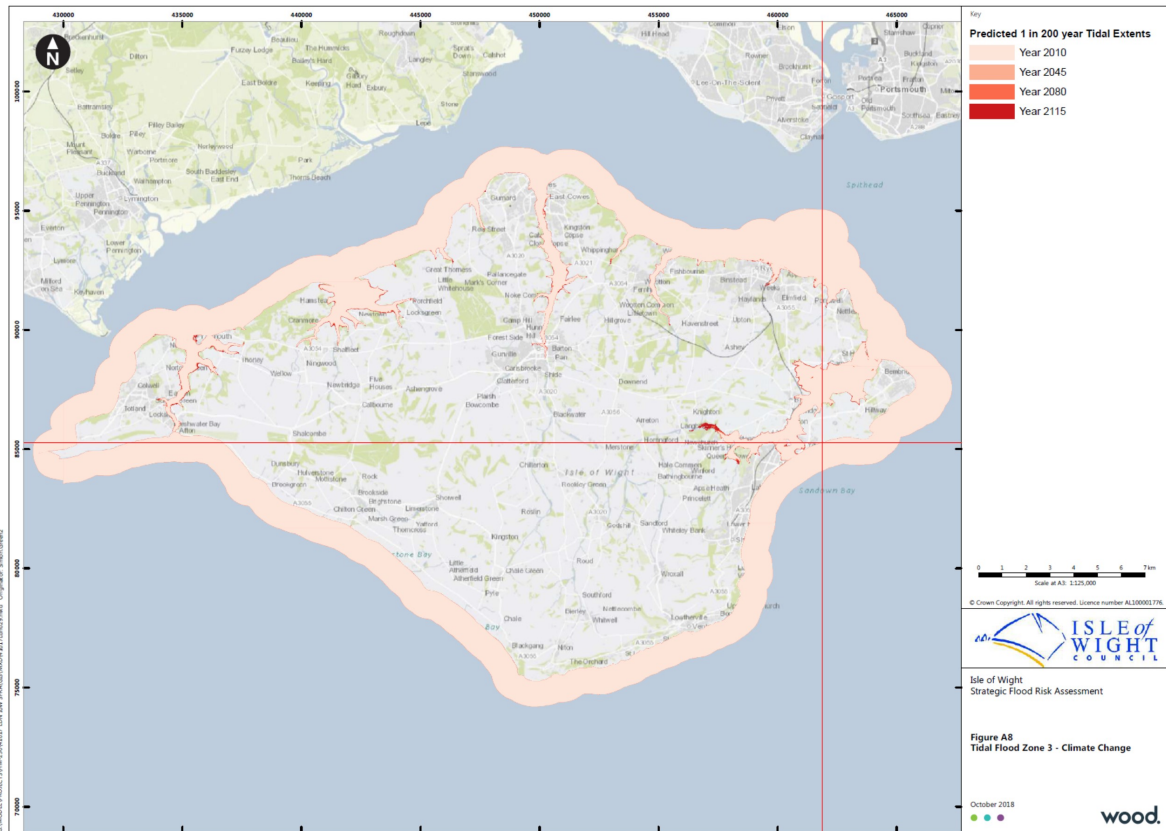
The site is located away from Main River



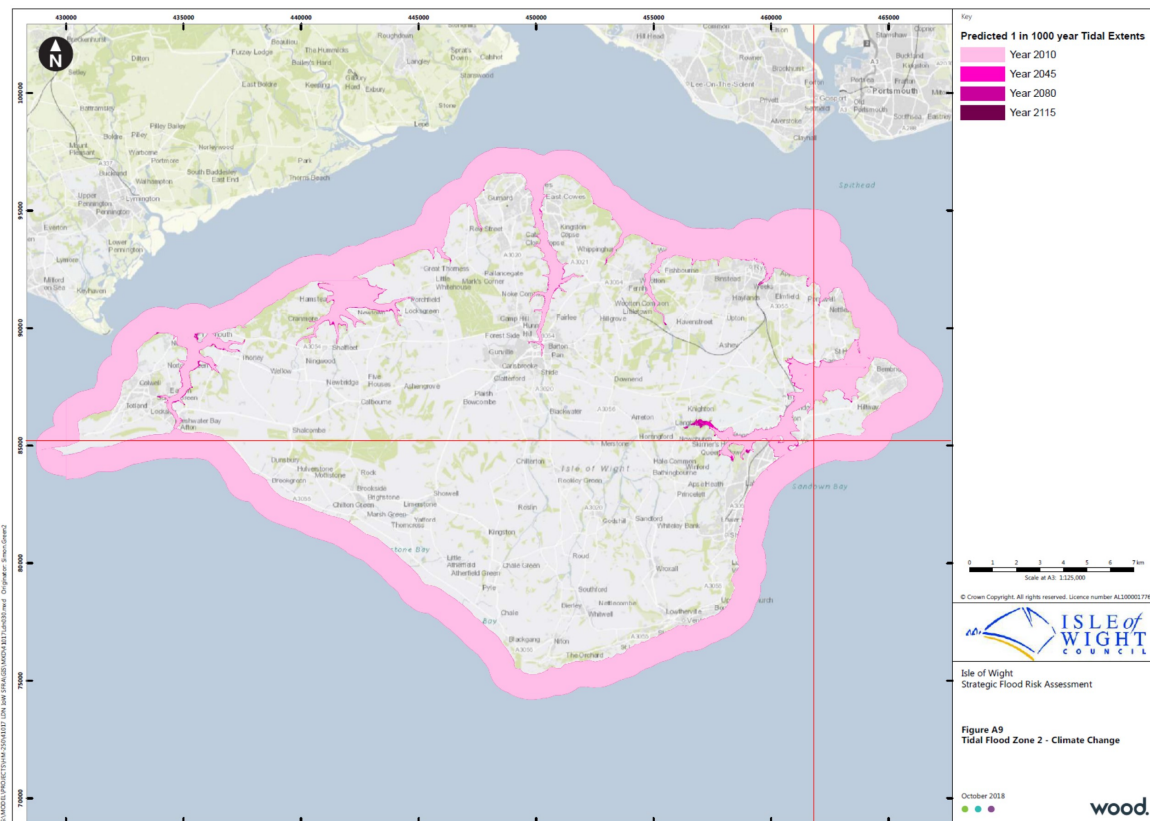
The site is within Flood Zone 3 Tidal model, having greater than >1% greater risk of flooding from the sea.



The site is within Flood Zone 3 area potentially sensitive to climate change



The site is on the border of a Tidal Flood 3 zone with 0.2% chance per year of climate change tidal flooding .



The site is on the border of a Tidal Flood 2 zone with 0.01% chance per year of climate change tidal flooding.

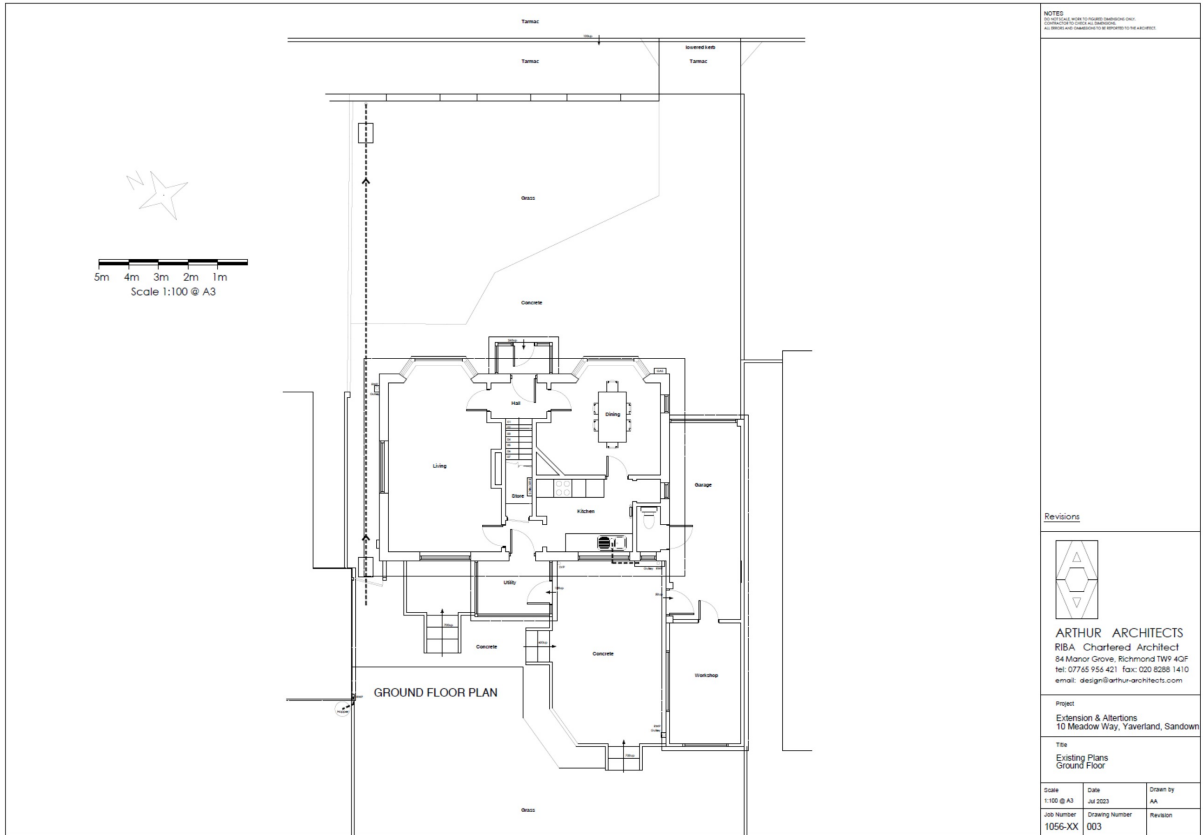
2.0 Implications of the extension

- We acknowledge that all new structures will impact on where flood water will go, this could include the dispersing of flood water flows beyond the site boundaries.
- The greater the size of the extension the greater the impact on flood flows.
- We confirm the existing ground surface that the extension will be partly cover is an existing non-permeable patio plus an existing conservatory concrete slab to be demolished.

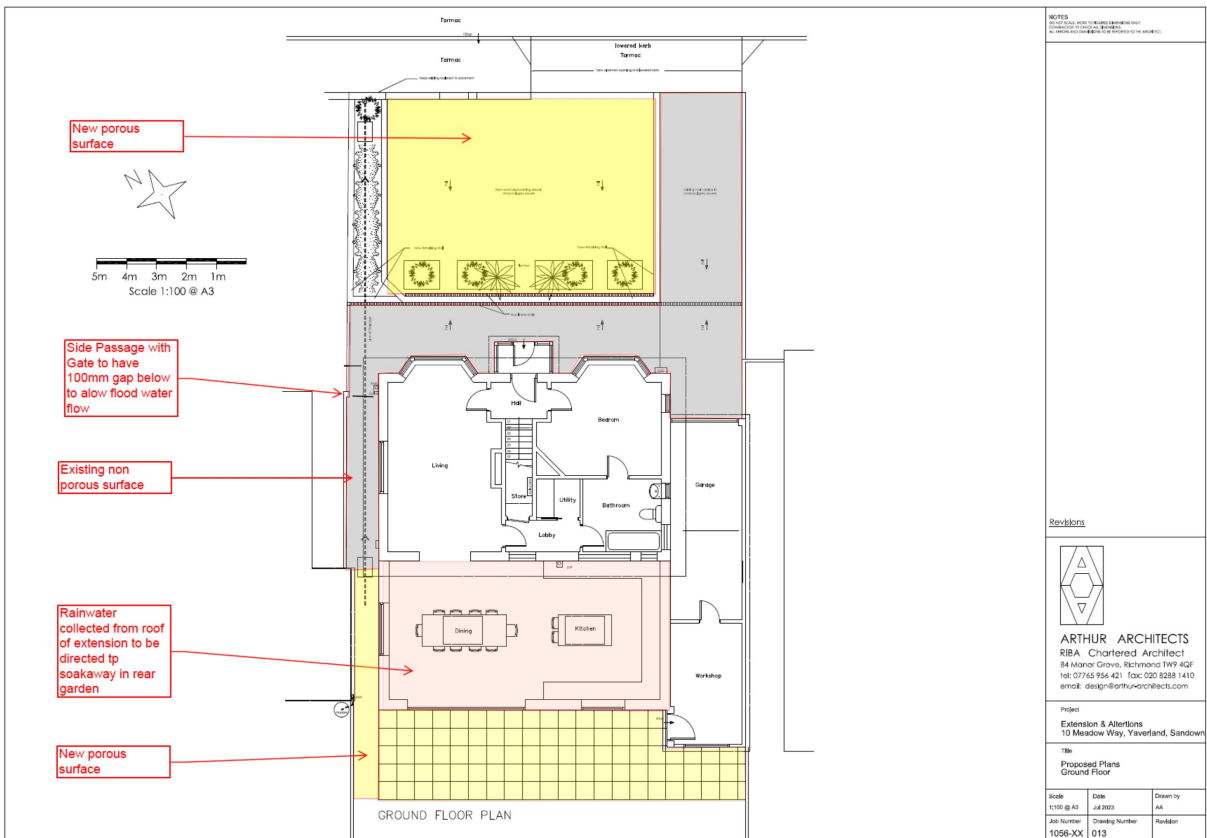
3.0 Mitigation Measures

- In order to allow the flow of water around the proposed extension of the detached house the side passage has been retained and there will be a gap of 100mm at the base of the gate to allow flood water to flow freely
- Rain water collected from the roof of the extension will directed to a soakaway in the rear garden subject to soil infiltration tests.
- New external surface areas will have porous paving.

Existing



Proposed



4.0 Resistance and Resilience Measures

We confirm that all floor levels within proposed extension will be set no lower than the existing external levels. The front entrance from the main road is at a higher level and flood proofing of the proposed extension will be incorporated where appropriate.

The construction will be completed in accordance with the document '*Improving the Flood Performance of New dwellings*'.

The internal ground floor level of the extension will be extended through at the same level as existing building and above the surrounding ground level. The proposed details for the external walls, internal walls, ground floors and building services and fitting will be incorporated as appropriate when detailed construction design has been completed.

The flood resilience and resistance techniques are as follows:

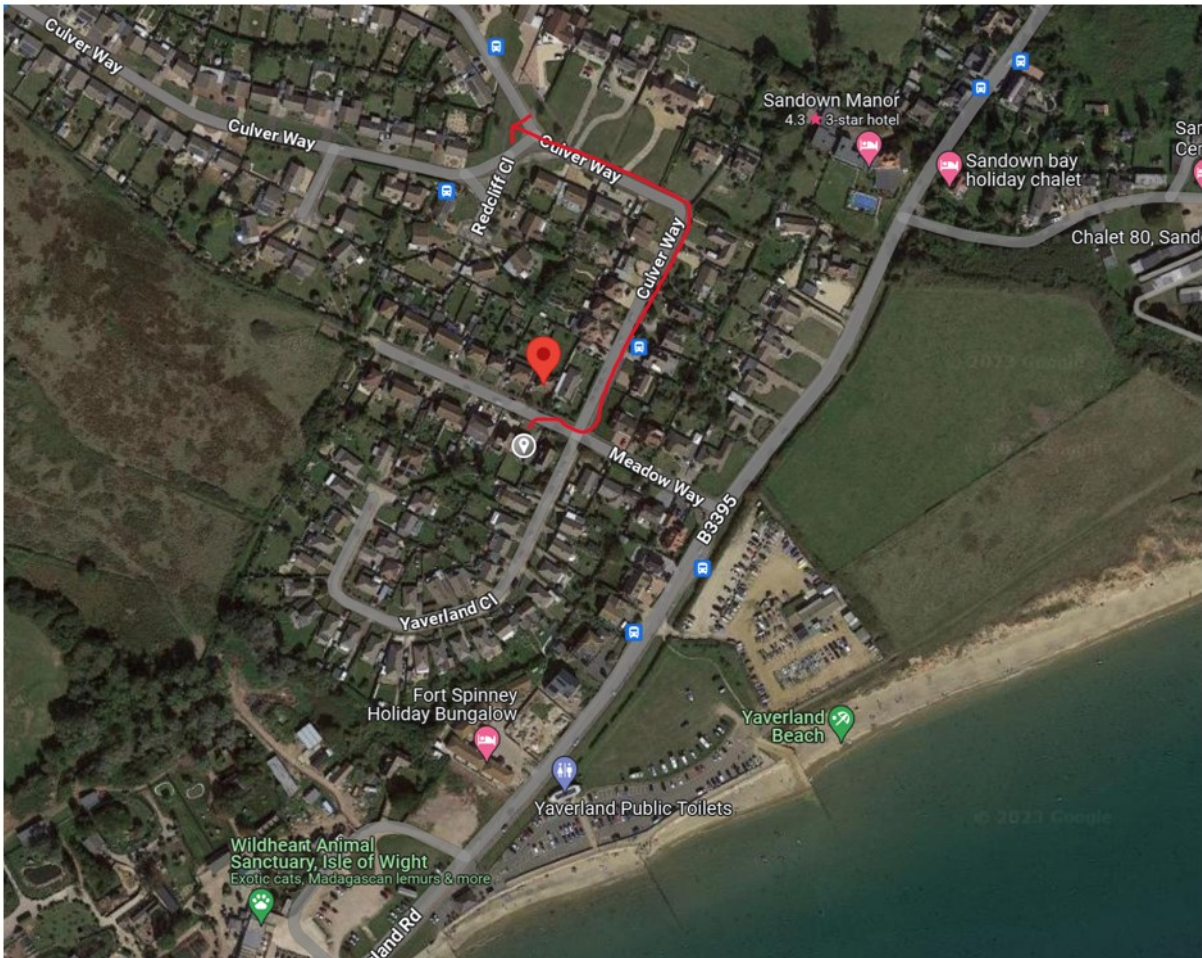
- Ground floor slab will be ground bearing concrete slab with closed cell insulation and 1200 gauge DPM.
- No external vents or air bricks will be used below a height of 600mm
- Closed cell type insulation will be used for cavity fill
- No under floor ferrous pipe work will be used for building services, and all penetrations sealed.
- All electric fixtures and fittings will be set above 450mm level.
- External patio doors are provided with good quality seal and double glazing which should be able to resist flood waters.

5.0 Personal Flood Plan

- The occupants would sign up to the EA early warning system and in a flood event turn off electricity and put out sandbags.
- Below is a simple map showing how the occupants can reach a safer locality in a flood event

Evacuation Route from Flood Zone 3 to Flood Zone 1

From Site at 10 Meadow Way to Culver Way



The occupant will complete a personal flood plan template produced by the Government can be found at:

<https://www.gov.uk/government/publications/personal-flood-plan> and let the Environment Agency know when they've completed the flood plan by calling Floodline on 0345 988 1188.

5.0 6. Managing Surface Water Runoff

All developments should not result in an increase in surface water runoff, and where possible, should demonstrate an improvement in terms of rates and volumes of surface water runoff. Sustainable Drainage Systems (SuDS) should be used to reduce and manage surface water run-off to and from proposed developments as near to source as possible.

Generally the aim should be to discharge surface water run-off as high up the following hierarchy of drainage options as reasonably practicable and subject to suitability:

1. Into the ground (infiltration)
2. To a surface water body
3. To a surface water sewer, highway drain, or another drainage system
4. To a combined sewer

SuDS techniques can be used to reduce the rate and volume and improve the water quality of surface water discharges from sites to the receiving environment (i.e. natural watercourse or public sewer etc.). The SuDS Manual²⁴ identified several processes that can be used to manage and control runoff from developed areas. Each option can provide opportunities for storm water control, flood risk management, water conservation and groundwater recharge.

· **Infiltration:** the soaking of water into the ground. This is the most desirable solution as it mimics the natural hydrological process. Where groundwater sources are vulnerable or there is risk of contamination, infiltration techniques are not suitable.

· **Detention/Attenuation:** the slowing down of surface flows before their transfer downstream, usually achieved by creating a storage volume and a constrained outlet.

· **Conveyance:** the transfer of surface runoff from one place to another, e.g. through open channels, pipes and trenches.

· **Water Harvesting:** the direct capture and use of runoff on site, e.g. for domestic use (flushing toilets) or irrigation of urban landscapes. The ability of these systems to perform a flood risk management function will be dependent on their scale, and whether there will be a suitable amount of storage always available in the event of a flood.

See diagram in Section 3 showing location of Soakaway in rear garden collecting rainwater from proposed extension.