

Flood Risk Assessment for Planning

Client: Dawn Thornton

Address: Ocean View, 87 Sea Avenue, Rustington, West Sussex BN16 2DR

Application description: Single storey outbuilding to rear for use as a garden studio.

Planning application reference: R/147/20/HH

Key Facts

Flood risk posed:

- The site is situated in Flood Zone 3 according to the Environment Agency Flood Map for Planning (Rivers and Sea).
- Tidal risk originating from the English Channel
- High risk of groundwater flooding (Arun SFRA)
- Medium/High Risk of pluvial flooding (EA)
- Historical evidence of sewer surcharge flooding in the vicinity (Arun SFRA)

Flood risk management:

- There will be no loss of fluvial flood storage.
- Safe refuge is provided on the upper floors on the property.
- The studio will be built on level ground in the rear garden of the property at existing floor level.

Introduction

Since the property appears to be located in Flood Zone 3 according to the Environment Agency on their flood map for planning, under the National Policy Planning Framework, a Flood Risk Assessment (FRA) is required for this proposed development to demonstrate to Arun District Council how flood risk will be managed and mitigated against.

The objectives of an FRA to support a planning application are to establish:

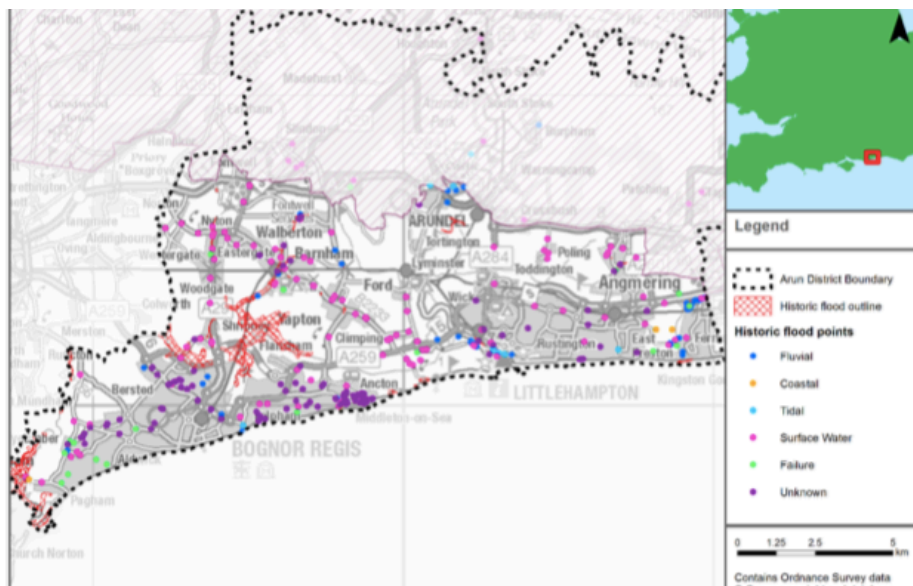
- whether the building will be likely affected by current or future flooding from any source;
- whether it will increase flood risk elsewhere;
- whether the measures proposed to deal with these effects and risks are appropriate.

Detailed site and elevation plans are included as supporting documents within the online planning application for this garden room.

Risk of flooding

The Arun District has a long history of flood events, with multiple sources of flooding. In particular, three notable flood events have affected the district in the last 60 years and these have been associated primarily with heavy rainfall, high groundwater levels, high river flows and high tides (but not necessarily in combination). The most recent events of 1974, 2000 and 2012 caused widespread flooding in the district after significantly high rainfall over an extensive period. According to the Arun District Council SRFA (August 2016), however, the Environment Agency did not identify the area around the property as ever having had a recorded historical flood.

Historical flooding map



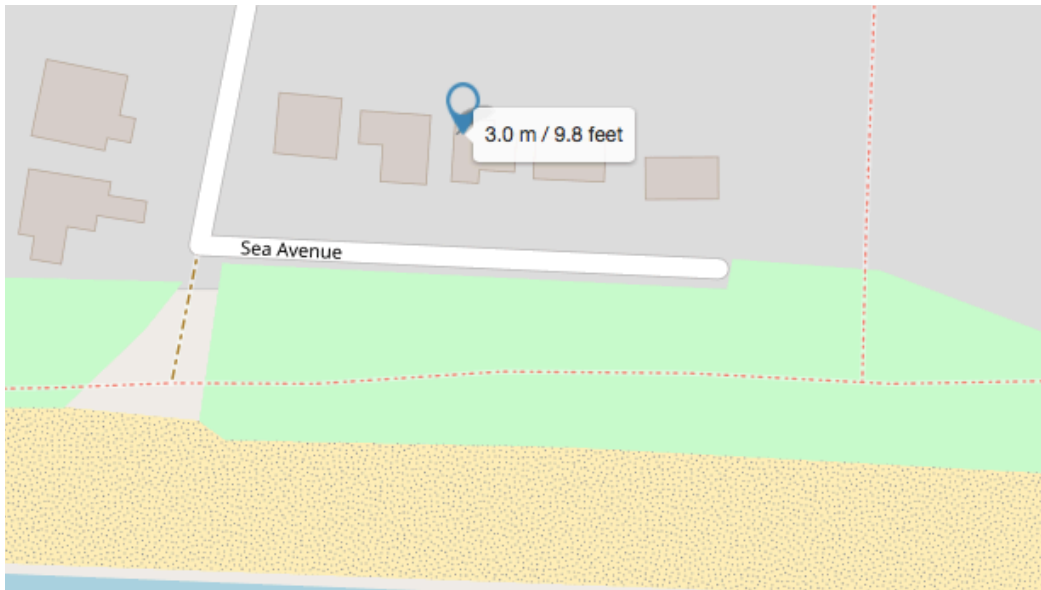
According to the Groundsure Homebuyers report dated 24 October 2019 which accompanies this FRA, the property's overall risk assessment for river, coastal, surface water and groundwater flooding is **low-moderate**. Ambiantal (a leading flood risk analysis company) gave the property a Floodscore rating of 'low'.

The property has a '**low**' chance of flooding in any given year, according to Risk of Flooding from Rivers and Sea (RoFRaS) data which has assessed flood risk from rivers and the sea in England and Wales, using local data and expertise. It shows the chance of flooding from rivers or the sea, taking account of flood defences and the condition those defences are in. The RoFRaS model uses local water level and flood defence data to model flood risk. **Low**: The chance of flooding from rivers or the sea is considered to be less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) in any given year.

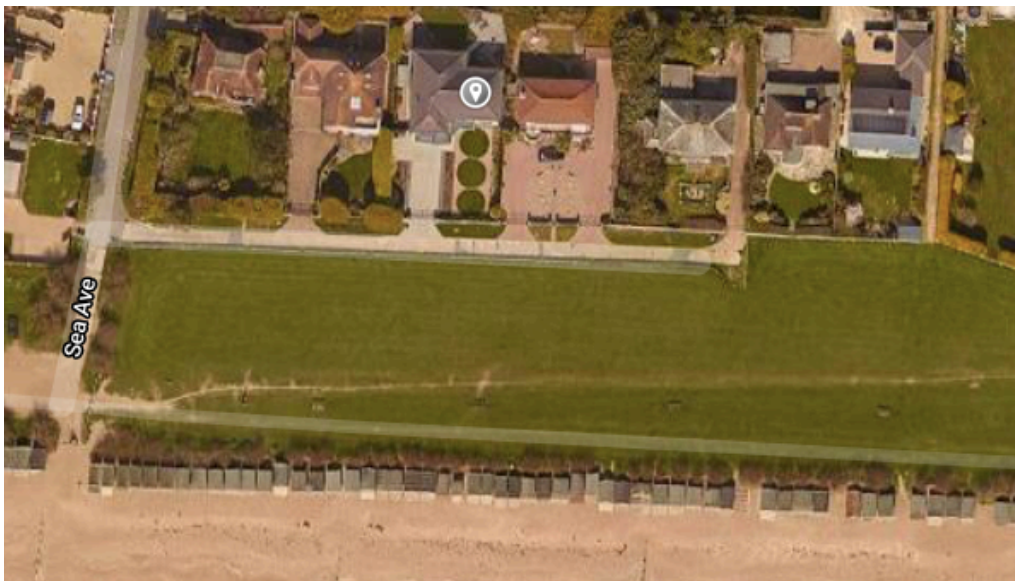
Ambiental data indicates that the property is in an area with a moderate risk of groundwater flooding, which would only affect the property if it had a basement (which it does not).

The property is estimated to be 3m above ordnance datum (AOD) or mean sea level, and the building will be constructed approximately 100m north of the English Channel. (Please refer to maps below).

87 Sea Avenue level in relation to Ordnance Datum

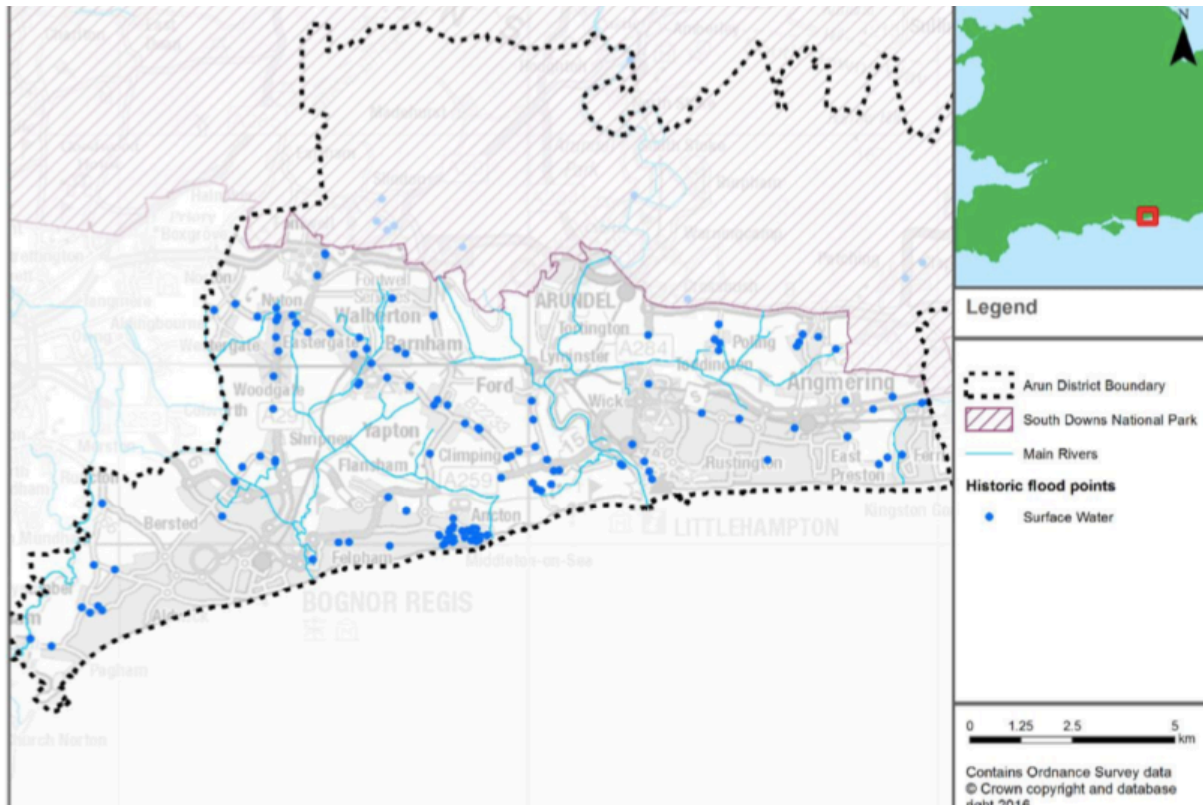


87 Sea Avenue proximity to beach



Surface water flooding records

According to the 2016 Arun SFRA, only one incidence of surface water flooding has been recorded in the Rustington area.

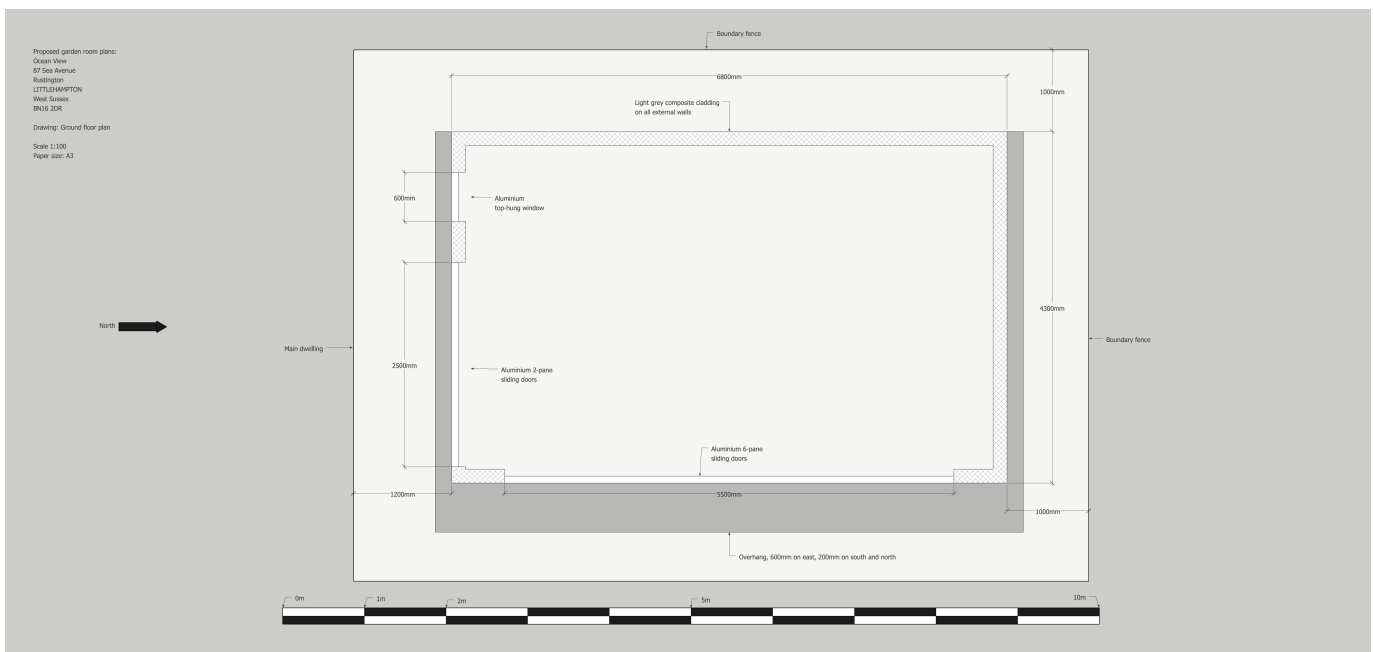


According to the Arun SRFA, Rustington sea defences are a mix of man-made (red) and natural (green).



Single storey outbuilding to rear for use as a garden studio

Elevation plans (click on image and scroll through).



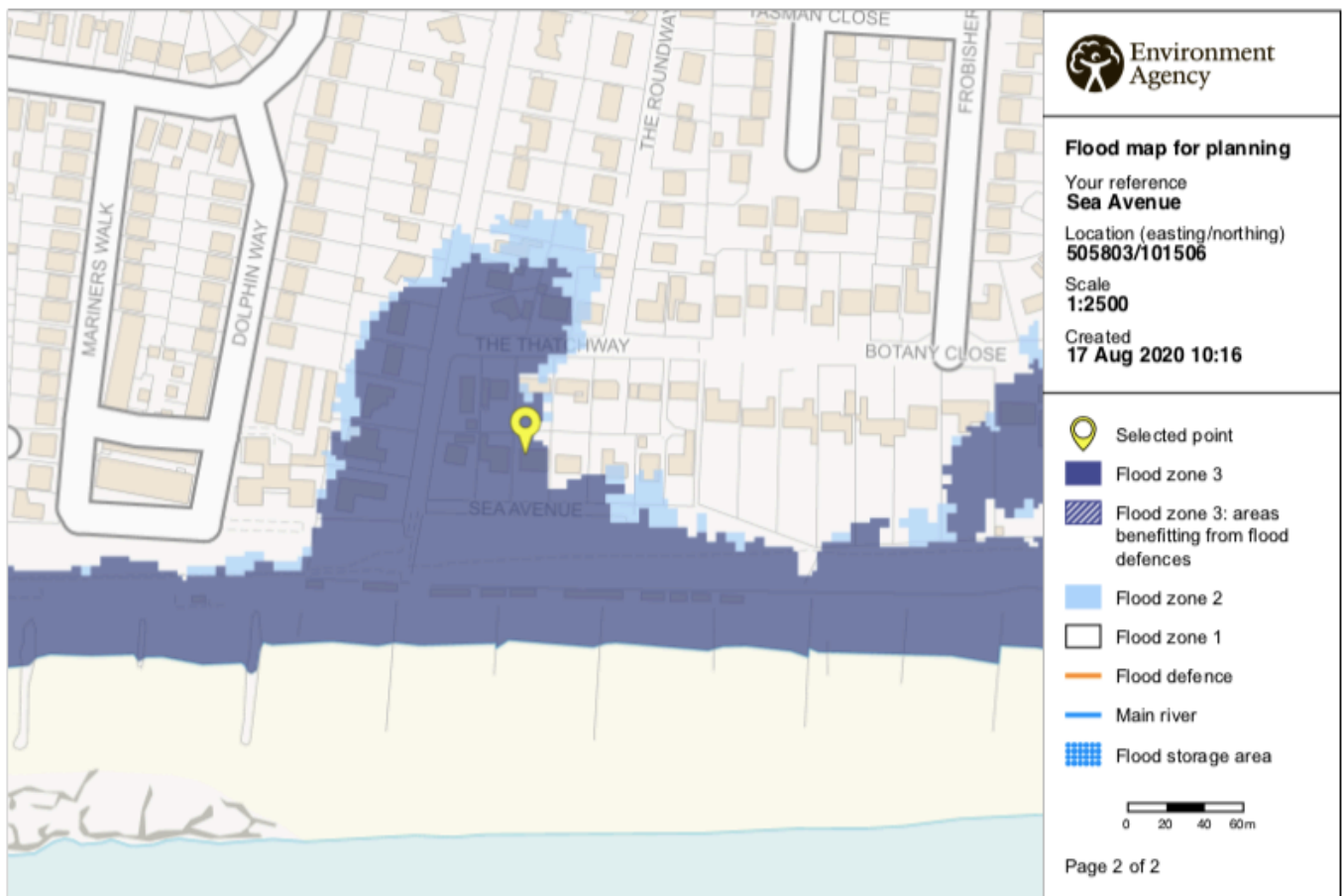
87 SEA AVENUE GROUND FLOOR PLAN

Existing site

The studio will be built in the north west corner of the rear garden of the property (shown in aerial photo on right), furthest from the coastline.

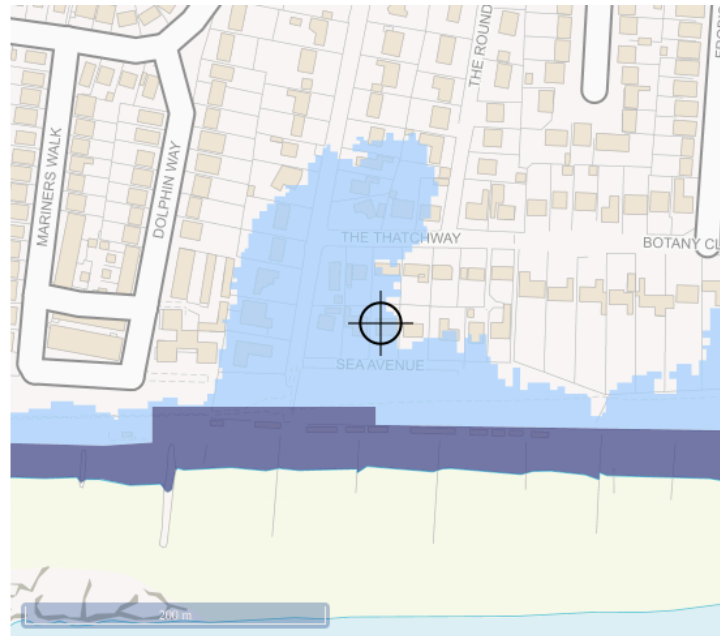
The site (marked in yellow on map below) is located within Flood Zone 3, defined by the Environmental Agency as having a 1 in 200 annual probability of tidal flooding originating from the English Channel 100m to the south of the site.

The East Bank Tidal Flood Defence Scheme, completed in April 2015 replaced flood defences between the mouth of the harbour to upstream of the A259 bridge reducing tidal flood risk to more than 1,900 residential and over 500 commercial properties over the next 100 years, allowing for climate change. These flood defences will provide an acceptable standard of protection, including an allowance for climate change for the lifetime of the development.



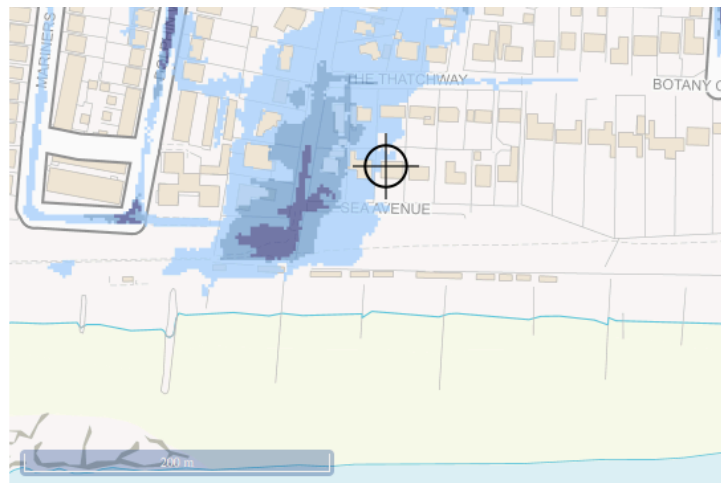
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According to the Government Flood Warning Information Service, the flood risk from rivers or the sea, and from surface water is 'low' for this property.



Extent of flooding from rivers or the sea

☒ High
 ☒ Medium
 ☒ Low
 ☐ Very low
 ☒ Location you selected



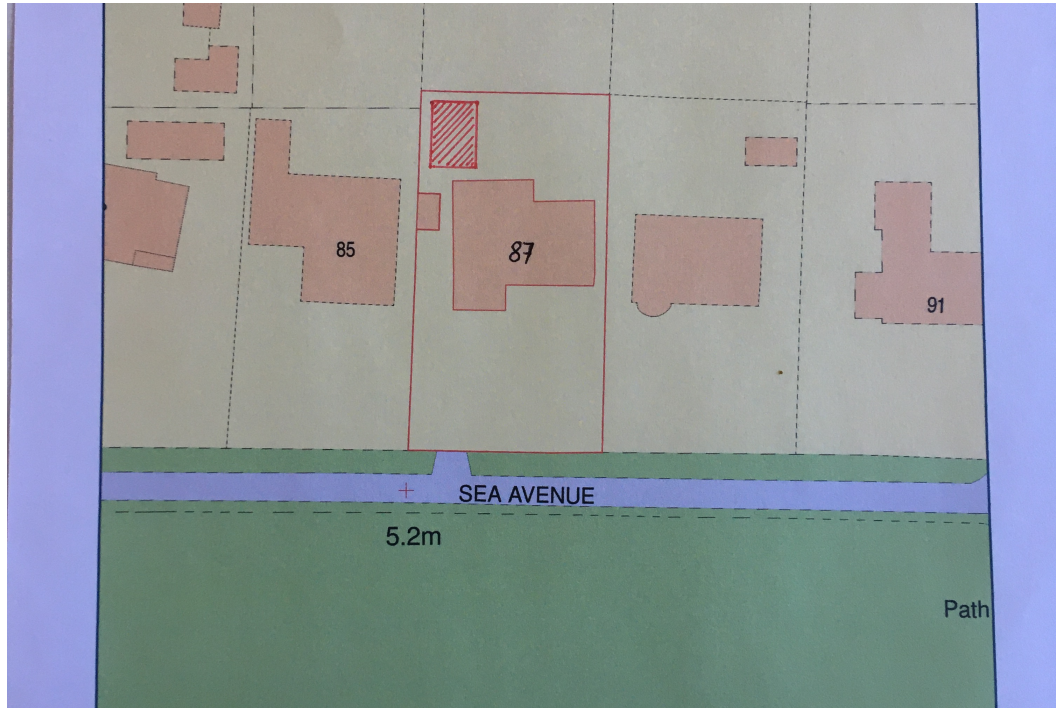
Extent of flooding from surface water

☒ High
 ☒ Medium
 ☒ Low
 ☐ Very low
 ☒ Location you selected

Low risk means that each year this area has a chance of flooding of between 0.1% and 1%.

Garden studio construction

The garden studio (shown in red hatching in the diagram below) is being built as an ancillary unit which will be used as an art studio by the client, and will not be used as accommodation or permanent residence of any kind.



The main structure of the studio will be 50mm above ground level, built on concrete supports, so at no point will the main structure be in contact with the ground. The internal level of the studio floor will be 200mm above ground level. The walls of the studio will be constructed from composite cladding which is water-resistant, and the studio will be fronted with a composite deck.

Since the internal floor area for the studio is less than 30m², the impact on the vulnerability to flooding of the property will be minimal, particularly as the roof of the studio will be planted with sedum. This will intercept rainwater from small storms and, depending on the amount of rainfall, absorb water and then release it as transpiration. Intercepting rainwater this way mimics the natural condition of plants absorbing and releasing water, which helps prevent flooding downstream. Shallow green roofs are able to fully intercept stormwater when rainfall is less than an inch at a time. This lessens the stormwater runoff load on the water bodies downstream from the property.

The green roof will also filter and buffer water during long, intense rainfall periods. Water takes longer to travel through the plant and other media layers on a green roof compared with a traditional roof, where water runs straight off into guttering. Slowing down runoff returns water to the aquifer at a slower rate and reduces flooding downstream.

There is a 1m wide pathway between the studio and the house, and safe refuge from flood water would be provided on the upper floors of the property in the event of an imminent or extreme flood event.

We will recommend that our clients create a flood plan, and sign up to The Environment Agency's flood warning service in order to receive warnings of flooding from rivers, the sea and groundwater.

The Environment Agency advises those living in flood risk zones to prepare in advance for a possible incident.

- Prepare a bag that includes medicines and insurance documents
- Visit flood-warning-information.service.gov.uk
- Turn off gas, water and electricity
- Move things upstairs or to safety
- Move family, pets and car to safety
- Call 999 if in immediate danger
- Follow advice from emergency services
- Keep yourself and your family safe