10 Harbour Road, PO11 0HR

Flood Risk Assessment (FRA)

Site Address: 10 Harbour Road, Hayling Island, PO11 0HR
Proposal: Conversion of existing attached garage into a self-contained residential annex (habitable accommodation)
Planning Reference: APP/26/00432

1. Introduction

This Flood Risk Assessment (FRA) has been prepared in support of a planning application for the conversion of an existing attached domestic garage into a habitable annex at 10 Harbour Road, Hayling Island. The application (ref: APP/26/00432) was made invalid by Havant Borough Council on the grounds that a Flood Risk Assessment had not been submitted. This document addresses that requirement, following the guidance of the Environment Agency (EA) and the National Planning Policy Framework (NPPF), together with Havant Borough Council's Local Information Requirements.

Aim

To demonstrate that the proposed development will be safe for its lifetime, will not increase flood risk elsewhere, and, where possible, will reduce flood risk overall. The assessment considers all sources of flooding, identifies appropriate mitigation measures, and provides a clear conclusion on flood risk acceptability.

2. Site Setting and Development Proposals

Site Location

The application site is a residential property on the north side of Harbour Road, Hayling Island, facing towards Langstone Harbour. The site is approximately 60 m from the ordinary water line of the harbour. The property comprises a two-storey main dwelling with an attached single-storey garage on its western elevation.

Existing Site Features

- The existing garage has a concrete slab floor, assumed to be at roughly the same level as the main house ground floor.
- External ground levels around the property have been estimated from LiDAR data as 3.20 m AOD (metres above Ordnance Datum).
- The existing garage floor level (EFL) is approximately 3.40 m AOD, being slightly raised above the surrounding paved drive and garden.

Proposed Development

The garage is to be converted into a self-contained annex for ancillary residential use. The conversion will provide habitable space. The annex will retain an internal linking door to the main dwelling, giving occupants direct access to the upper floor of the main house. No external footprint alterations are proposed, and finished floor levels will remain unchanged at 3.40 m AOD.

3. Flood Risk Context

Policy Framework

Under the NPPF and the Planning Practice Guidance (PPG), a site-specific Flood Risk Assessment is required for any development within Flood Zones 2 or 3, and for all "more vulnerable" development (which includes residential annexes) in Flood Zone 1 where the site area is 1 hectare or more. The proposed annex is "more vulnerable" because it provides habitable space.

Flood Zone Classification

The Environment Agency's *Flood Map for Planning* categorises the entirety of the application site as lying within Flood Zone 3 – land having a high probability of flooding from rivers or the sea. In this location the dominant source is tidal flooding from Langstone Harbour. Flood Zone 3 corresponds to

an annual exceedance probability (AEP) of 1 in 200 (0.5%) or greater for tidal flooding.

Historic Flooding
Hayling Island has experienced tidal flooding during extreme surge events (e.g., December 2013). Harbour Road lies within a zone known to be susceptible to flooding from storm tides. The EA's *Risk of Flooding from Rivers and the Sea* map confirms a high chance of flooding each year.

4. Sources of Flooding

Source	Risk to Site & Commentary
Tidal / Coastal	**High risk**. The dominant flood mechanism is extreme tide plus surge and wave action entering Langstone Harbour. Present-day 1 in 200 year still water level at Portsmouth is 3.90 m AOD (EA data). With wave set-up and overtopping, flood depths on the site could exceed 0.5 m. The existing floor level (3.40 m AOD) is below this threshold.
Fluvial (river)	**Negligible**. No main rivers flow through the immediate area. Hayling Island has no significant fluvial flood source.
Surface Water	**Low**. The EA's *Risk of Flooding from Surface Water* map indicates a very low hazard for the property, with modelled depths of less than 0.1 m during a 1 in 100-year rainfall event. The driveway and paved areas drain to a soakaway within the rear garden.
Groundwater	**Low**. The British Geological Survey maps show bedrock geology of the London Clay Formation, with overlying superficial deposits of Brickearth. High groundwater may occur during prolonged wet periods, but groundwater emergence is not identified as a significant flood risk. The site is outside any groundwater flood alert area.
Reservoirs	**Very low**. The nearest large raised reservoir is several kilometres distant. The site is not in a reservoir inundation zone according to EA mapping.
Sewers / Artificial	**Low**. The existing property connects to the public foul sewer. No historic sewer flooding incidents are recorded at this address. Surface water is managed via a soakaway; no combined sewer issues have been identified.

5. Tidal Flood Risk Assessment
Design Flood Level
To ensure the development is safe over its lifetime (assumed 100 years), the appropriate climate change allowance for "more vulnerable" development in the South East river basin district (Solent tidal area) has been applied. Using the EA's peak river flow and sea level allowances (issued February 2022), the "Higher Central" allowance for the epoch 2080–2125 is 1.05 m of sea level rise.
Total design still water level (SWL):
Present-day 0.5% AEP still water level + climate change
= 3.90 m AOD + 1.05 m
= 4.95 m AOD
Wave overtopping and local setup can further elevate water levels. However, the site lies behind the sea defences of the Langstone Harbour shoreline, and the existing property is not directly exposed

to wave run-up. Consequently, a freeboard of 300 mm above the design SWL is considered adequate for safe finished floor levels.

Recommended Finished Floor Level (new development):

4.95 m + 0.30 m = 5.25 m AOD

Impact of Proposed Floor Level

The proposed annex retains the existing garage floor at 3.40 m AOD, significantly below the recommended FFL. It is not feasible to raise the floor due to the connection with the main house and headroom restrictions. The development therefore relies on flood resilience and resistance measures, coupled with safe access and egress, to manage residual risk.

6. Flood Risk Mitigation Strategy

Flood Resilience and Resistance

Because the floor level cannot be raised further than the level of the donor dwelling, the building will be made resilient to floodwater ingress and enable rapid recovery. The following measures, in line with EA guidance "Improving the flood performance of new buildings", will be incorporated:

- **Flood-resistant construction** up to a height of 5.0 m AOD (i.e., above the design SWL):
    - External doorsets to be certified flood-resistant (e.g., BSI Kitemark PAS 1188) with demountable flood boards for the main entrance.
    - All door thresholds, wall penetrations, and air bricks to be sealed or fitted with automatic flood-proof air vents.
    - External walls up to 5.0 m AOD to be constructed of water-resistant materials (e.g., engineering brick with waterproof render) and incorporate a water-impermeable barrier.

- **Internal resilience** (water entry accepted but damage minimised):
    - Floor finishes within the proposal to be ceramic tiles on a screed over a concrete slab, capable of being washed down.
    - Wall plaster to be replaced with cement-based plaster or lime-based plaster up to 1.0 m above floor, with the continuation line concealed behind skirting.
    - Kitchen units to be of water-resistant material and raised off the floor on legs; electrical sockets, boiler controls and consumer unit to be located at least 1.2 m above finished floor level, with wiring dropping from above.
    - Non-return valves to be fitted to foul and surface water drains to prevent backflow.

A schedule of resilience measures will be agreed with Building Control and conditioned as part of any approval.

6.2 Safe Access and Egress

- The annex has an internal connecting door to the main dwelling. The main house upper floor (first-floor level approx. 6.10 m AOD) is well above the design flood level, providing a permanent safe refuge.
- An evacuation plan will direct occupants to move upstairs upon receipt of a flood warning. The upper floor provides a habitable space with access to a telephone and external window escape.
- The site is not reliant on external emergency access through floodwaters. Harbour Road itself may become inundated, but the internal vertical escape route ensures safety without external rescue.

Flood Warning and Evacuation Plan

The site is within the Environment Agency's Flood Warning Area (Hayling Island). Occupants will register for the EA's free Floodline Warnings Direct service. A written flood plan will be provided to the residents, specifying:

- Trigger levels for action (e.g., EA Flood Alert / Flood Warning).
- The internal escape route and refuge location.
- Procedures for moving valuables and shutting off services before water entry.

Surface Water Management

The conversion does not increase the impermeable area; the driveway and any rainwater goods will continue to discharge to the existing soakaway in the rear garden. Permeable paving will be retained. No increase in surface water run-off to the public sewer or highway will occur.

7. Conclusions and Compliance

This Flood Risk Assessment has demonstrated that:

1. The site lies within Flood Zone 3, at high risk of tidal flooding. A detailed assessment has been carried out.
2. The design still water level with climate change is 4.95 m AOD, and the recommended finished floor level for new habitable space is 5.25 m AOD.
3. The proposed annex retains the existing floor level of 3.40 m AOD; therefore, flood resilience and resistance measures, combined with a safe internal refuge, are essential.
4. The development will be constructed to a robust flood-resilient standard, ensuring that damage is minimised and the building can be quickly re-occupied after an event.
5. A safe means of escape is provided through the internal link to the first floor of the main dwelling, which remains dry during a design flood event. Residents will be warned by the EA Flood Warning Service, enabling timely evacuation to the upper storey.
6. The proposal does not increase flood risk elsewhere and incorporates appropriate surface water drainage.

In accordance with the NPPF, the Planning Practice Guidance, and the requirements of Havant Borough Council, the conversion is considered acceptable in flood risk terms subject to the implementation of the mitigation measures described. These measures can be secured by planning condition.