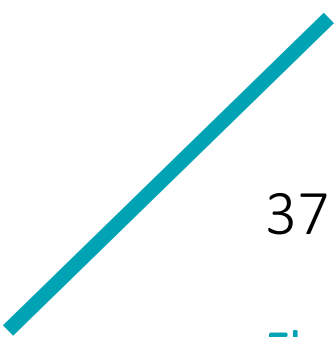




37b Park Parade, Havant

Flood Risk Assessment

April 2025

PDP Architecture LLP



Transport Planning



Travel Planning



Civil & Structural Engineering

RESIDENTIAL
37B PARK PARADE
HAVANT

Flood Risk Assessment

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RESIDENTIAL 37B PARK PARADE HAVANT

FLOOD RISK ASSESSMENT

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1. EXECUTIVE SUMMARY

- 1.1 This Flood Risk Assessment (FRA) and Drainage Strategy has been prepared by Paul Basham Associates on behalf of PDP Architecture LLP to support a planning application for the change of use from a snooker hall into residential apartments. The proposed development is located on the first floor of the building. The land is located to North and East of Tidworth, the postcode for the site is PO9 5AA.
- 1.2 This FRA has been prepared in accordance with the NPPF and Planning Practice Guidance, as well as the local planning policies set out by Havant Borough Council.
- 1.3 The development is in Flood Zone 1 and has been categorised as "more vulnerable"; therefore, in accordance with NPPF, the proposals are acceptable, and the site will not require an exception test.
- 1.4 Residual flood risk from:
- Fluvial and tidal flooding is considered to be **Very Low**
 - Reservoir flooding is considered to be **Very Low**
 - Surface water flooding is considered to be **Low**
 - Groundwater flooding is considered to be **Very Low**
 - Public sewer flooding is considered to be **Low**
- 1.5 In terms of the risk of flooding due to surface water, the apartments are at Low risk of flooding as they are on the first floor of the building and raised above the water level of any potential risk.
- 1.6 As a result of the above proposals, there will be no increase to flood risk on or off the site and therefore the development is considered suitable from a flood risk perspective.

2. INTRODUCTION

- 2.1 This Flood Risk Assessment (FRA) and Drainage Strategy has been prepared by Paul Basham Associates on behalf of PDP Architecture LLP to support a planning application for the change of use from a snooker hall into residential apartments. The proposed development is located on the first floor of the building. The land is located to North and East of Tidworth, the postcode for the site is PO9 5AA.
- 2.2 The plot size is approximately 0.11ha and the site is currently a snooker hall located on the first floor.
- 2.3 The development aspirations are for 7 residential apartments.

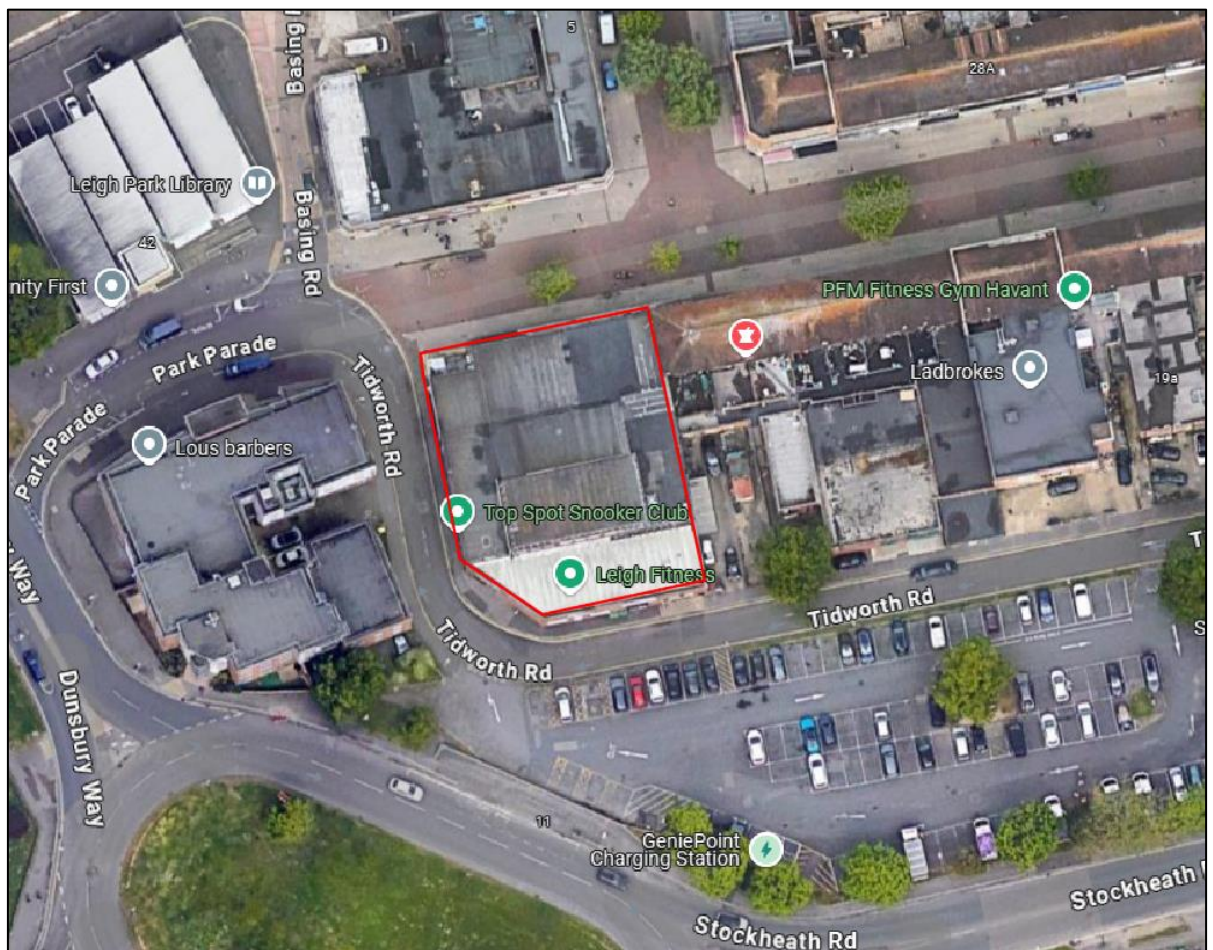


Figure 1: Site Location Plan

3. PLANNING POLICY

3.1 The planning policies and guidance that are relevant to the proposed Development with regard to flood risk and surface water management are outlined below.

National Planning Policy

3.2 2024 updated National Planning Policy Framework (NPPF) and the associated continuously updated Planning Practice Guidance (PPG) by the Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government

- 2022 updated EA Standing Advice
- EA National Strategy for Flood and Coastal Erosion Risk Management 2020
- DEFRA Sustainable Drainage System: Non-Statutory Technical Standards 2015
- CIRIA C753 The SuDS Manual 2015
- Flood and Water Management Act 2010
- Flood Risk Regulations 2009
- Flood risk assessments: climate change allowances 2016 (updated in 2022).

Regional and Local Planning Policy

3.3 The Lead Local Flood Authorities Management of Surface Water contain the following policies.

- Havant Borough Council Strategic Flood Risk Assessment (June 2024)
- Hampshire County Council Surface Water Checklist & Checklist Guidance
- Havant Borough Council Flood Risk Information for Applicants

3.4 The Havant Borough local plan (March 2011) contains the following policies relating to flooding, drainage, and surface water.

Policy CS15 Flood and Coastal Erosion Risk

Development in areas at risk of flooding now and in the future as identified on the latest Environment Agency flood risk maps and Strategic Flood Risk Assessment climate change maps will only be permitted where:

1. It meets the sequential and exception test (where required) in relation to PPS25.
2. The site is located in a low hazard area as defined in the Strategic Flood Risk Assessment.
3. A site-specific flood risk assessment demonstrates that the development will be safe, including the access, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.
4. The scheme incorporates flood protection, flood resilience and resistance measures appropriate to the character and biodiversity of the area and the specific requirements of the site.
5. Appropriate flood warning and evacuation plans are in place.
6. New site drainage systems are designed taking account of events which exceed the normal design standard.

All development will be required to ensure that there is no net increase in surface water run off. Priority should be given to incorporating Sustainable Drainage Systems (SuDS) to manage surface water drainage, unless it is proven that SuDS are not appropriate. Where SuDs are provided arrangements must be put in place for their whole life management and maintenance.

The council will work with partners to implement the Coastal Policy Zones in the North Solent Shoreline Management Plan to ensure that development avoids areas at risk from coastal erosion and coastal flooding and that areas required to offset coastal squeeze and prevent habitat fragmentation, to allow species to adapt to climate change, are identified and protected from development.

Figure 2: Havant Borough Council Local Plan Policy CS15 Flood and Coastal Erosion Risk

3.5 Based on the above policies, the key requirements in relation to the surface water management and flood risk for the proposed Development are considered as to be follows:

- National Planning Policy Framework (2024): “A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.”
- Environment Agency Standing Advice: “The surface water management needs to meet requirements set out in either your local authority’s Surface Water Management Plan (SWMP), Strategic Flood Risk Assessment (SFRA) and Building Regulations Part H. Emergency escape plans for any parts of a building that are below the estimated flood level are required”
- CIRIA C753 The SuDS manual 2015: “Control the quantity of runoff to support the management of flood risk and maintain and protect the natural water cycle. To ensure that the surface water runoff from a developed site does not have a detrimental impact on people, property, and the environment, it is important to control how fast runoff is discharged from the site (i.e., the peak runoff rate) and how much runoff is discharged from the site (i.e., the runoff volume). Suds that are designed to manage water quantity in this way reduce the likelihood of flooding caused by the development. They can help protect natural water cycles by promoting the recharge of soil moisture levels, by maintaining stream and river baseflows and by replenishing groundwater”.

4. CLIMATE CHANGE

Peak Rainfall Intensity Allowance

- 4.1 The “Flood Risk Assessments: Climate Change Allowances Guidance” 2016 (updated in 2022) published by the EA indicates that climate change is currently expected to result in increased peak rainfall and rising sea levels.
- 4.2 Table 1 shows anticipated changes in peak rainfall intensity in small and urban catchments within England. The development is classed as more vulnerable, and the design life is approximately 100 years. Therefore, the upper end allowance would be required for all designs.
- 4.3 The peak rainfall intensity allowance is 40% for a 3.3% AEP Event and 45% AEP Event.

Epoch	Central Allowance	Upper End Allowance
2050s	20%	35%
2070s	25%	40%

Table 1: Peak Rainfall Intensity allowance in small and urban catchments. 3.3%AEP Events

Epoch	Central Allowance	Upper End Allowance
2050s	20%	40%
2070s	25%	45%

Table 2: Peak Rainfall Intensity allowance in small and urban catchments. 1%AEP Events

Source: <https://environment.data.gov.uk/hydrology/climate-change-allowances/rainfall>

National Planning Policy Framework (NPPF)

4.4 This report has been prepared considering the National Planning Policy Framework (NPPF) Technical Guidance and the Environment Agency's (EA) flood risk standing advice.

4.5 Table 2 from the Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government Flood risk and coastal change guidance has been included as *Figure 3* below. This provides the classes of development (based on flood risk vulnerability) that are permitted within each of the flood zones. The Flood Risk Vulnerability Classification for the site is 'More Vulnerable' as it is a housing development, which is defined in Annex 3 of the NPPF.

4.6 The development is in Flood Zone 1; therefore no sequential test or exception test is required.

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 2 - Flood risk vulnerability and flood zone 'compatibility'

Key: ✓ Exception test not required X Development should not be permitted.

Notes to table 2:

- This table does not show the application of the [Sequential Test](#) which should be applied first to guide development to Flood Zone 1, then Zone 2, and then Zone 3; nor does it reflect the need to avoid flood risk from sources other than rivers and the sea;
- The Sequential and [Exception Tests](#) do not need to be applied to [minor developments](#) and changes of use, except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site;
- Some developments may contain different elements of vulnerability and the highest vulnerability category should be used, unless the development is considered in its component parts.

† In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.

* "In Flood Zone 3b (functional floodplain) essential infrastructure that has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

- remain operational and safe for users in times of flood;
- result in no net loss of floodplain storage;
- not impede water flows and not increase flood risk elsewhere.

Figure 3: NPPF Planning Practice Guidance Table – Flood Risk Vulnerability and Flood Zone Compatibility

5. FLOOD RISK

5.1 In line with the EA Standing Advice, the estimated flood level is considered to be the higher of:

- A river flood level with a 1 in 100 or greater annual probability plus an allowance for climate change; and
- A tidal flood level with a 1 in 200 or greater annual probability plus an allowance for climate change.

5.2 The following Flood Zone definitions ignoring flood defence, are set out in the Planning Practice Guidance:

- Zone 1 Low Probability - Land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%);
- Zone 2 Medium Probability - Land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5%–0.1%) in any year; and
- Zone 3 High Probability - Land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.

Fluvial / Tidal Flood Risk

5.3 Flood mapping obtained from the government's 'flood map for planning' website has identified that the site falls within Flood Zone 1 (*Figure 4*).

5.4 Flood mapping obtained from the Havant Borough Council website also confirms that the site lies within Flood Zone 1 (*Figure 5*).

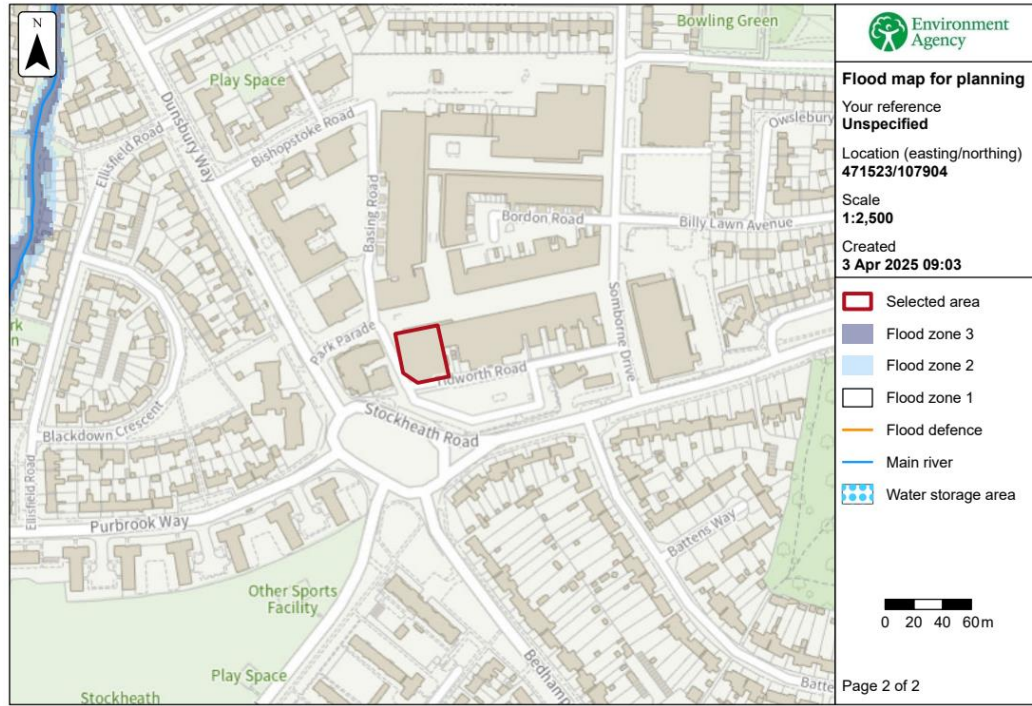


Figure 4: Flood Map for Planning

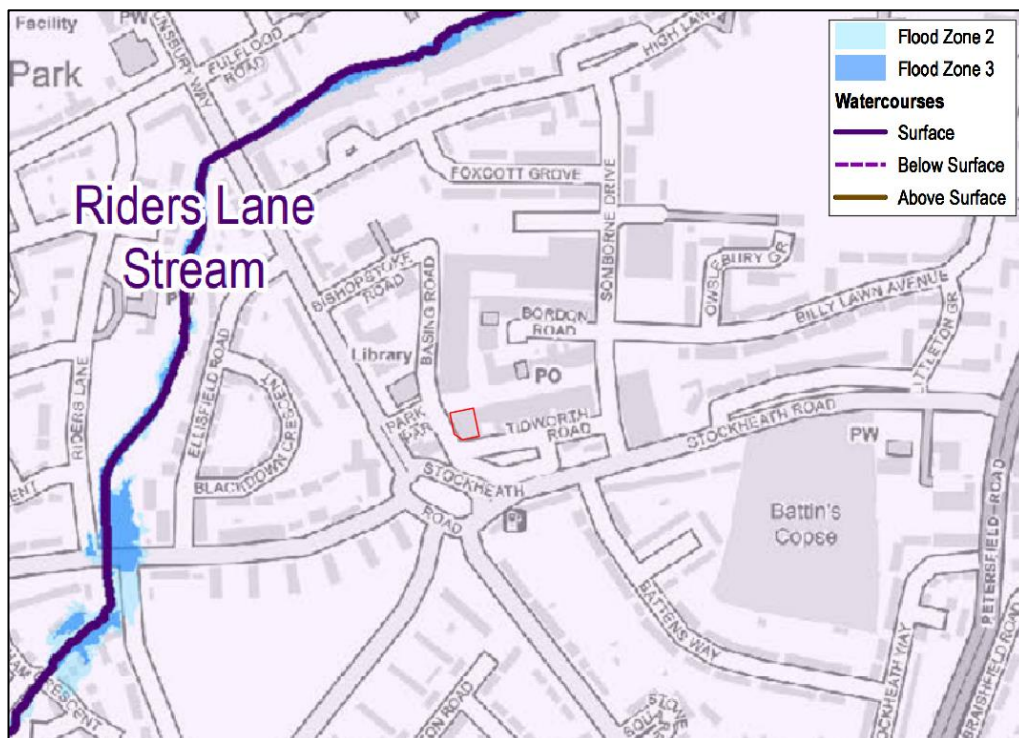


Figure 5: Flood Map for Planning SFRA

- 5.5 The EA long-term flood risk and from rivers and seas mapping shows that the site is considered to be very low risk of flooding from rivers and seas (Yearly chance of flooding between 2036 and 2069).

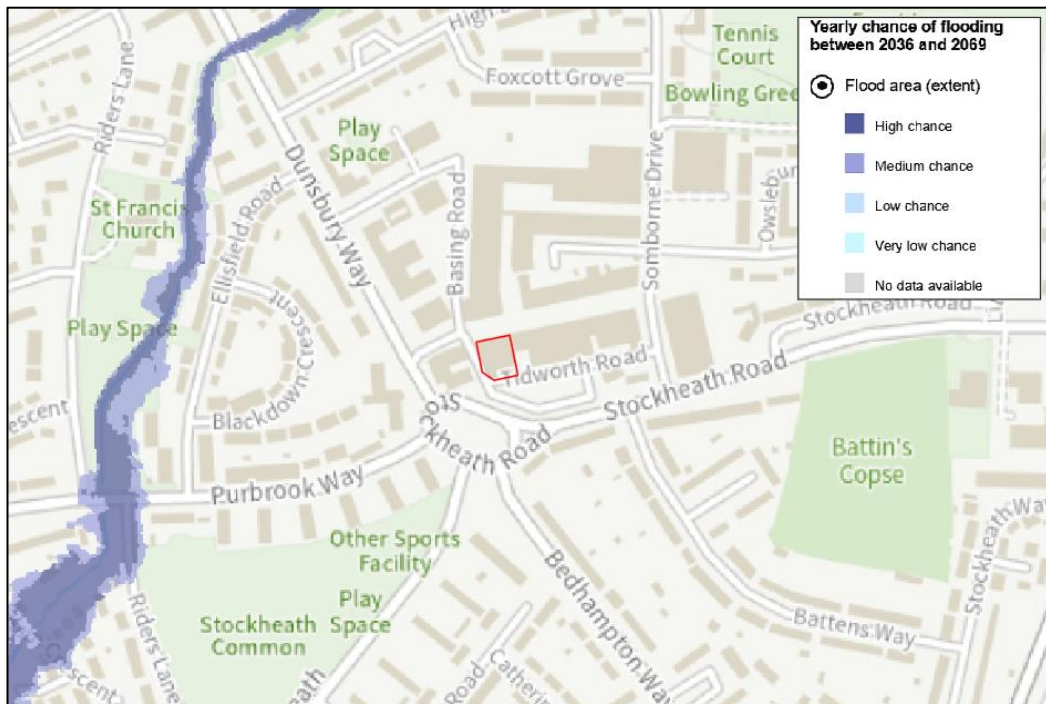


Figure 6: Long-term flood risk from rivers and seas map

Fluvial/tidal flooding – Residual Risk

- 5.6 Based on the above mapping the residual risk of flooding due to rivers and seas is considered to be very low.

Reservoirs Flood Risk

5.7 The long-term flood risk from reservoirs shows the site is not considered to be at risk of flooding from reservoirs.

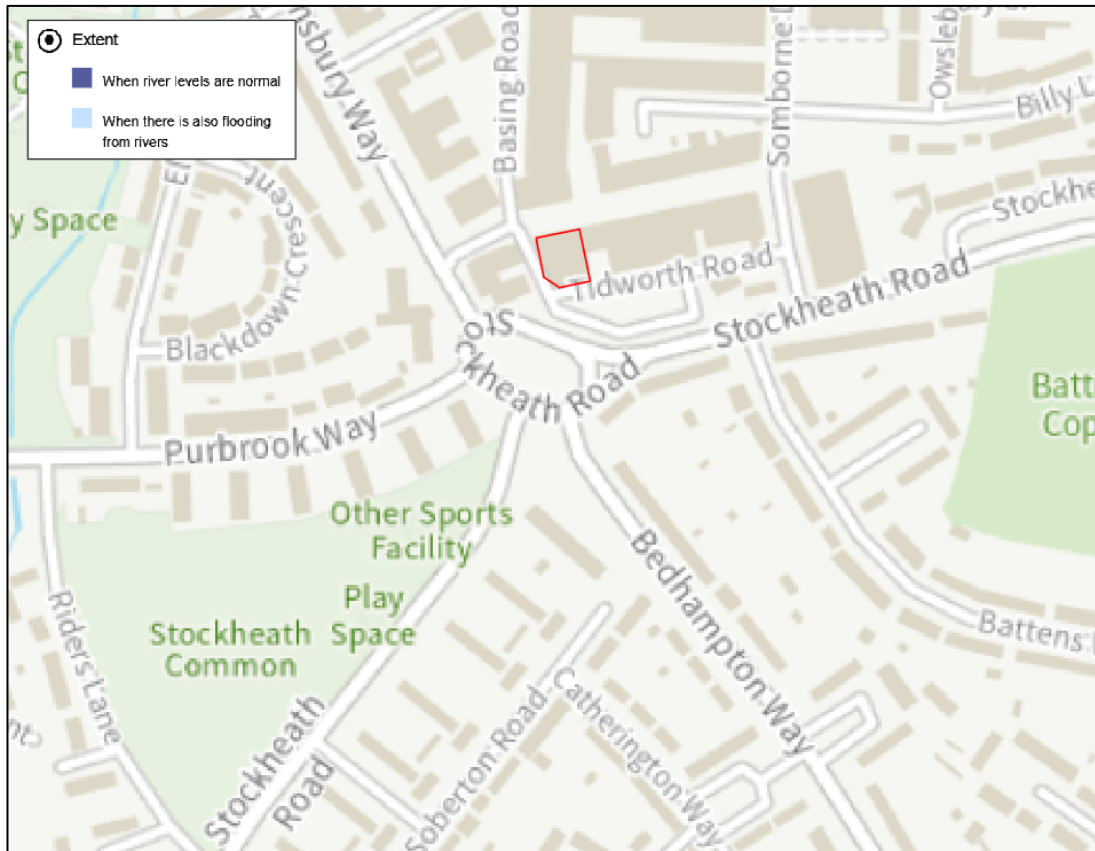


Figure 7: Long term flood risk from reservoirs map

Reservoirs – Residual Risk

5.8 Based on the above mapping, the residual risk of flooding due to reservoirs is considered to be very low.

Surface Water Flood Risk

- 5.9 Surface water or 'pluvial' flooding results from rainfall running over ground before eventually entering a watercourse or sewer. It is usually associated with high intensity rainfall events but can also occur with lower intensity rainfall or melting snow where the ground is already saturated, frozen, developed (for example in an urban setting), or otherwise has low permeability.
- 5.10 The surface water flood risk map is shown in *Figure 8* and indicates that the site has a high chance of flooding due to surface water (Yearly chance of flooding between 2040 and 2060).
- 5.11 The development was reviewed with respect to depth of surface water flooding. *Figure 9* shows that the road running adjacent to the development is considered to be low to high risk when the depth of water is at 0.6m deep. The proposed development area is not considered to be at risk of flooding at this flood depth.
- 5.12 *Figure 10* is an extract taken from the Havant Borough Council SFRA. This identifies that the site boundary is not located within the area of flood risk. However, the adjacent road is considered to be at risk of flooding from surface water. The road has been assessed to have a high probability of flooding.

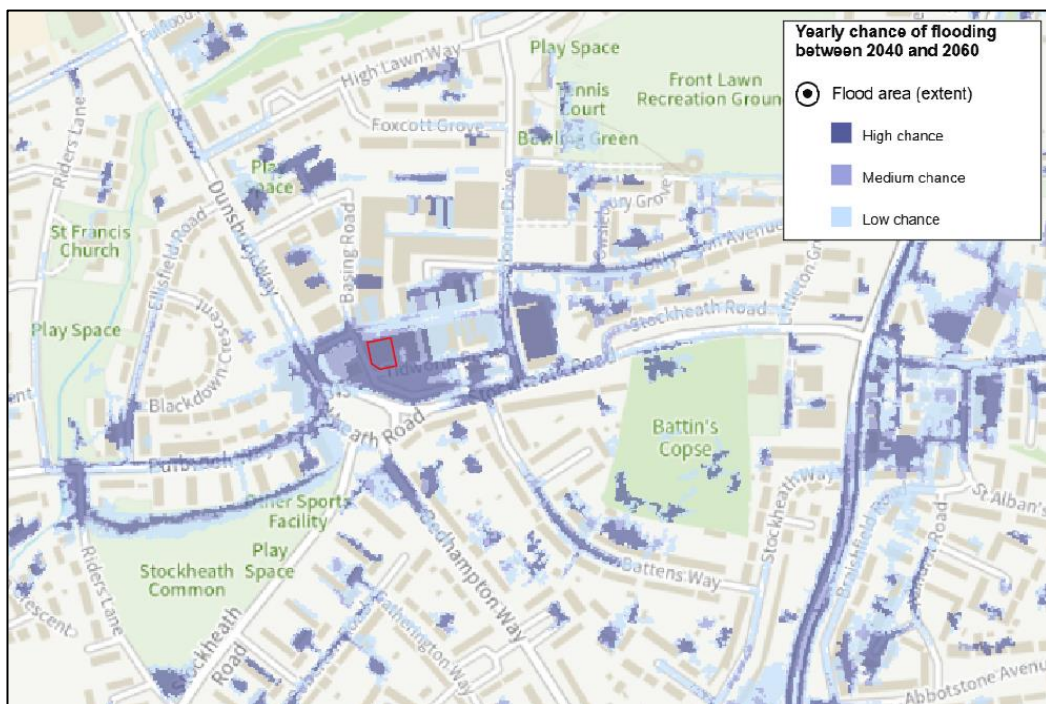


Figure 8: Long term flood risk from surface water

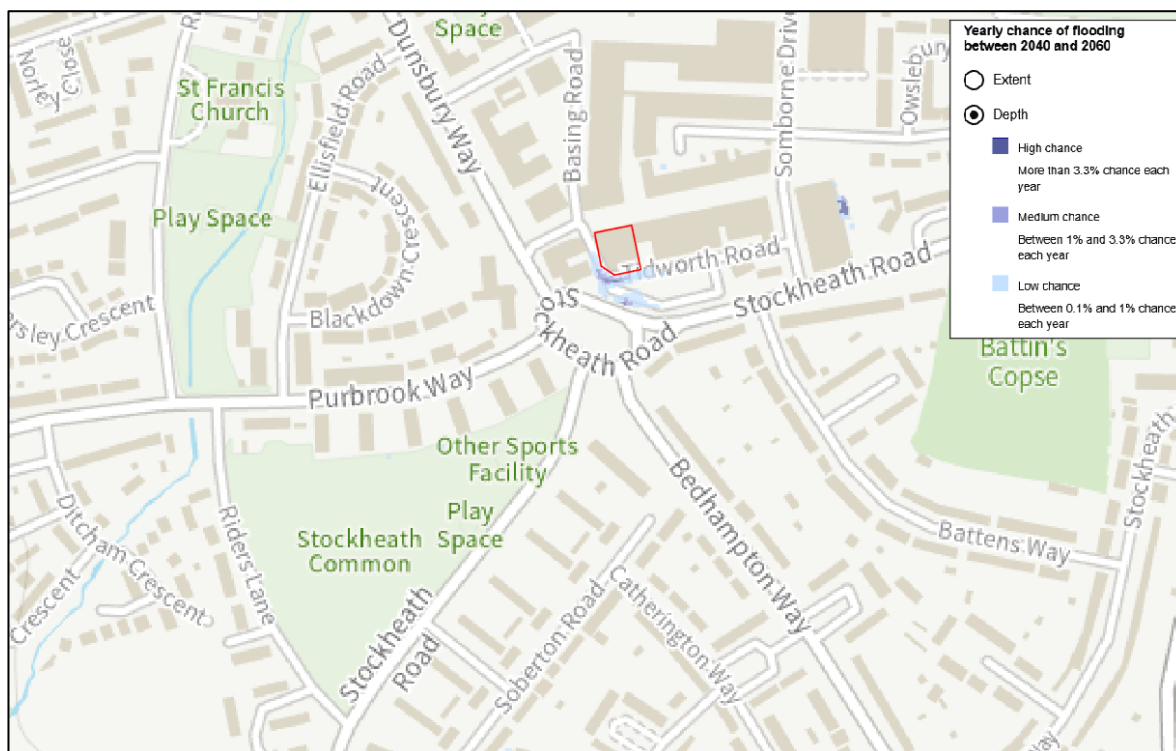


Figure 9: surface water flood risk at 0.6m depth of water

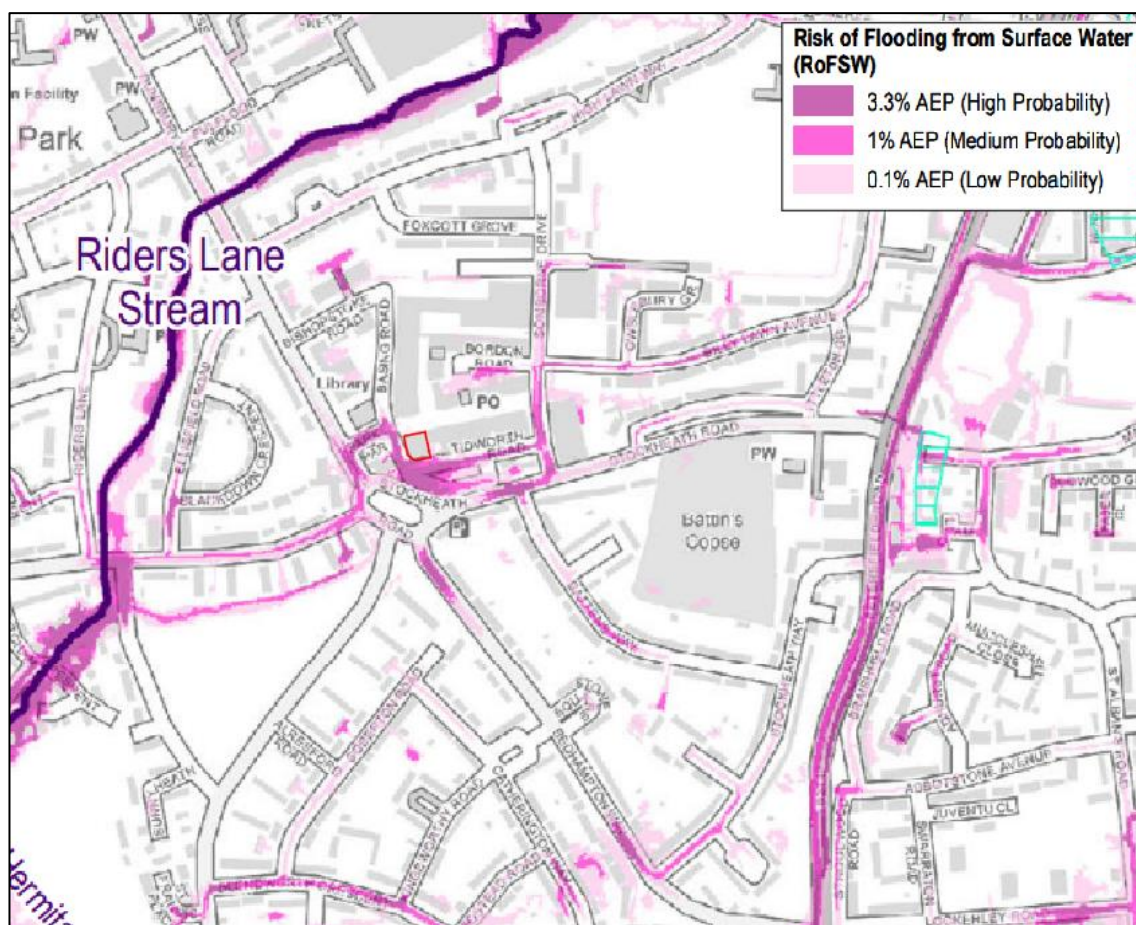


Figure 10: SFRA surface water flood risk extract

Surface Water – Mitigation Measures and Considerations

5.13 The proposed development is for first floor apartments, therefore, the floor level of the apartments will be above the highest level of flooding, which is considered to be up to 0.6m above the existing ground level. Therefore, the development itself will not be at risk of flooding. However, there is a risk of flooding around the access to the building, as such, temporary flood measures such as sandbags may need to be used.

Surface Water – Residual Risk

5.14 Based on the above information the proposed development is considered to be at Low risk of flooding from surface water.

Groundwater Flood Risk

5.15 Groundwater flooding occurs when groundwater levels increase sufficiently for the water table to intersect the ground surface. Groundwater flooding can occur in a variety of geological settings including valleys and in areas underlain by chalk, and in river valleys with thick deposits of alluvium and river gravels.

5.16 The EA Long Term flood map considers “flooding from groundwater is unlikely in this area” as shown in *Figure 11*.

5.17 The British Geological Survey (BGS) borehole records show a borehole (REF: SU70NW139) located approximately 680m to the east of the site. The borehole indicates that the groundwater level was 2.4m below ground level.

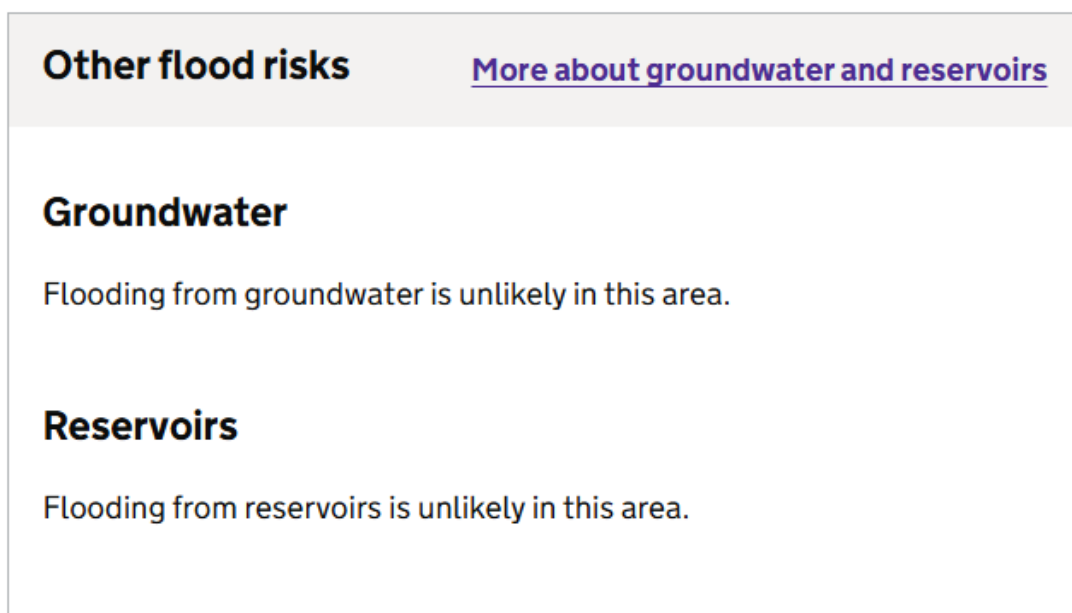


Figure 11: EA Long term flood mapping groundwater and reservoirs

5.18 The SFRA identifies area of potential groundwater flooding based on the underlying geology, *Figure 12* shows that the site has limited potential for groundwater flooding to occur.

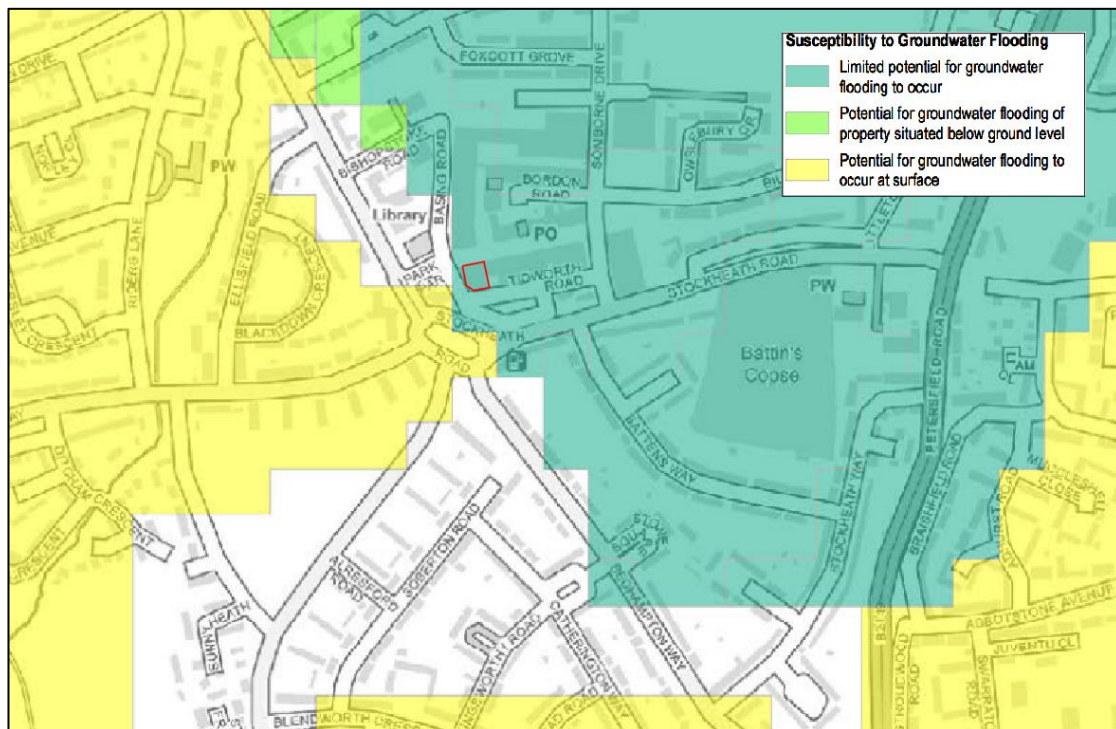


Figure 12: SFRA Susceptibility to groundwater flooding

Groundwater – Residual Risk

5.19 Based on the above information, the development is considered to be very low risk of flooding from groundwater.

Public Sewer Flood Risk

- 5.20 The Southern Water BRAVA risk maps for Sewer flooding in 1 in 50-year storms, identifies the site as being within band 2 (Very significant). This means that the performance of the network is potentially below the minimum threshold set by Southern Water and indicates there is a risk that warrants more investigation.
- 5.21 The SFRA identifies locations of historic Southern Water flooding between 2018 and 2020. There are 3 locations of recorded flooding within approximately 400m of the site.

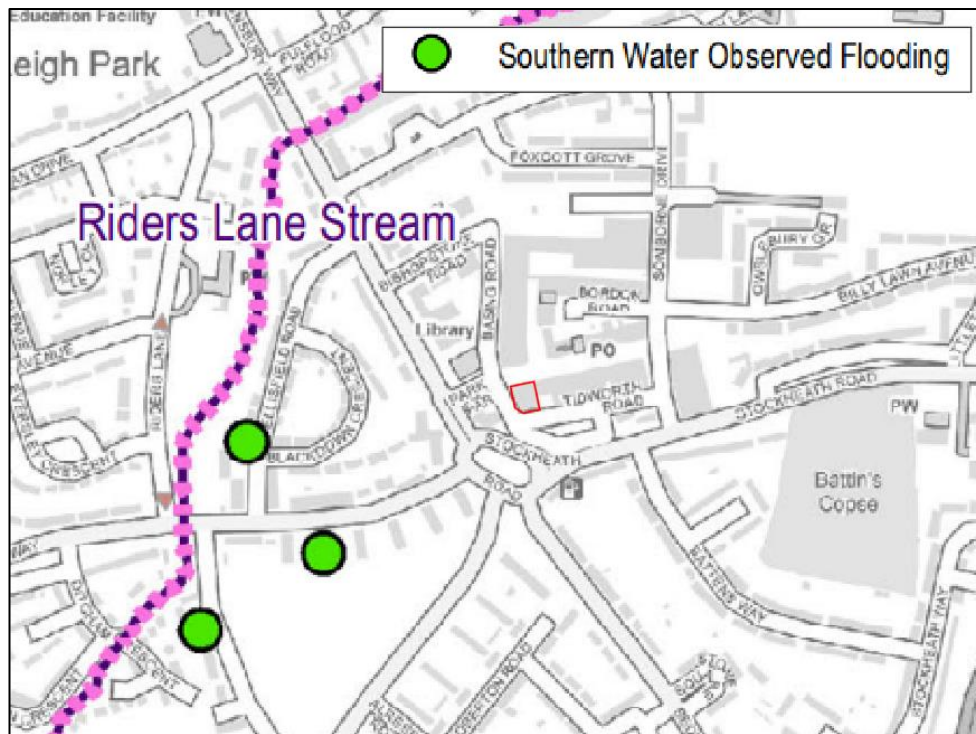


Figure 13: SFRA Southern Water Observed Flooding

Public Sewer – Mitigation Measures and Considerations

- 5.22 The proposed development is for first floor apartments, the apartments will be at a raised level which mean any flooding will potentially impact the access into the building but not the apartments.

Public Sewer – Residual Risk

- 5.23 Based on the above information the development is considered to be at low risk of flooding due to public sewers.

6. RESIDUAL FLOOD RISK

6.1 Table 3 outlines the initial qualitative assessment of risk posed by the potential sources of flooding, the mechanisms for flooding and the likely consequences. It also includes a review of possible mitigation measures and the effect that the proposed mitigation measures are likely to have on the residual risk posed by the potential flood source.

Flood Risk	Flood Mechanism and Possible Consequences	Existing Assessment of Risk	Mitigation Measures	Residual Risk
Fluvial / Tidal	Flooding driven by tidal surges and rivers exceeding their capacity	Very Low		Very Low
Reservoirs	Flooding caused by increase in reservoir water levels	N/A		N/A
Surface Water (Pluvial)	Localised heavy rainfall on impermeable or already saturated surfaces	High	The proposed development is for first floor apartments, therefore, the floor level of the apartments will be above the highest level of flooding, which is considered to be up to 0.6m above the existing ground level. Therefore, the development itself will not be at risk of flooding. However, there is a risk of flooding around the access to the building, as such, temporary flood measures such as sandbags may need to be used.	Low
Groundwater	Flooding caused by a rising in groundwater level	Very Low		Very Low
Public Sewers	Flooding caused by an escape of water and sewage from a public sewer.	Medium	The proposed development is for first floor apartments, the apartment will be at a raised level which mean any flooding will potentially impact the access into the building but not the apartments	Low

Table 3: Summary of Existing and Residual Flood Risk

7. SUMMARY AND CONCLUSION

- 7.1 This Flood Risk Assessment (FRA) and Drainage Strategy has been prepared by Paul Basham Associates on behalf of PDP Architecture LLP to support a planning application for the change of use from a snooker hall into residential apartments. The proposed development is located on the first floor of the building, The land is located to North and East of Tidworth, the postcode for the site is PO9 5AA.
- 7.2 This FRA has been prepared in accordance with the NPPF and Planning Practice Guidance, as well as the local planning policies set out by Havant Borough Council.
- 7.3 The development is in Flood Zone 1 and has been categorised as "more vulnerable"; therefore, in accordance with NPPF, the proposals are acceptable, and the site will not require an exception test.
- 7.4 Residual flood risk from:
- Fluvial and tidal flooding is considered to be **Very Low**
 - Reservoir flooding is considered to be **Very Low**
 - Surface water flooding is considered to be **Low**
 - Groundwater flooding is considered to be **Very Low**
 - Public sewer flooding is considered to be **Low**
- 7.5 In terms of the risk of flooding due to surface water, the apartments are at Low risk of flooding as they are on the first floor of the building and raised above the water level of any potential risk.
- 7.6 As a result of the above proposals, there will be no increase to flood risk on or off the site and therefore the development is considered suitable from a flood risk perspective.