# FLOOD RISK ASSESSMENT

**Zone 2**

for:

**Erection of Outbuilding**

at:

**Chestnuts**

**Back Street**

**Ashton Keynes**

**Wiltshire**

**SN6 6PD**

on behalf of:

**Mr Martin & Mrs Sharon Gator**

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# 1.0 Introduction

1.1 Christopher Stanley Architecture & Planning Ltd ("the agent") have been appointed by Mrs Sharon Gator ("the applicant") to apply for Planning Approval at Chestnuts, Back Street, Ashton Keynes, Wiltshire SN6 6PD.

1.2 The main dwelling is in the Ashton Keynes Conservation Area. It has been extended to the side and rear in the late 20th Century. The intension is to erect an outbuilding for a covered outdoor dining space.

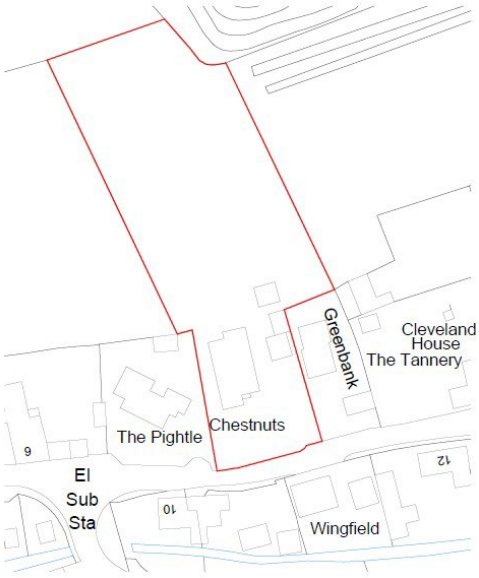
1.3 The site appears to be located partially within Flood Zone 2 when using the Environment Agency Flood Map for Planning (Rivers and Sea). Under the National Planning Policy Framework (NPPF). The purpose of the study therefore is to support a planning application for the proposed development.

1.4 The assessment should demonstrate to the Local Planning Authority (LPA) and EA how flood risk will be managed now and over the development's lifetime, taking climate change into account, and have regard to the vulnerability of its potential users.

- whether the proposed development is likely to be 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.

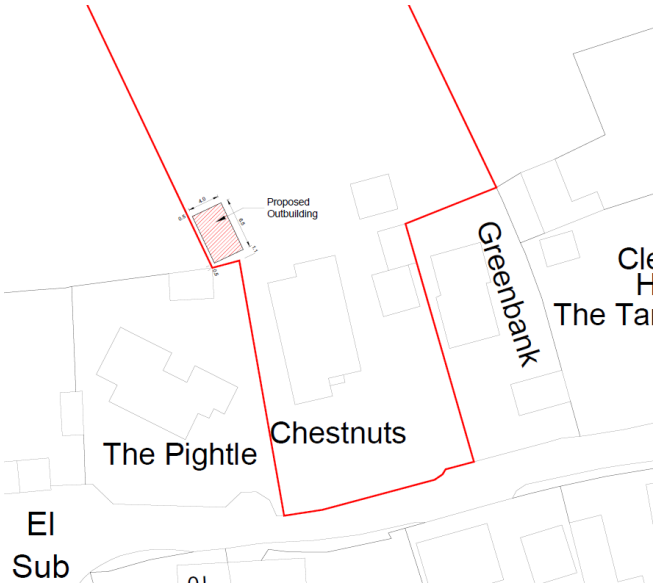
## 2.0 Flood Risk Mapping

2.1 The main dwelling is in the Ashton Keynes Conservation Area. It has been extended to the side and rear in the late 20th Century. The intension is to erect an outbuilding for a covered outdoor dining space.




**Existing Site Location Plan**

2.2 The proposals are to erect an outbuilding for a covered outdoor dining space.



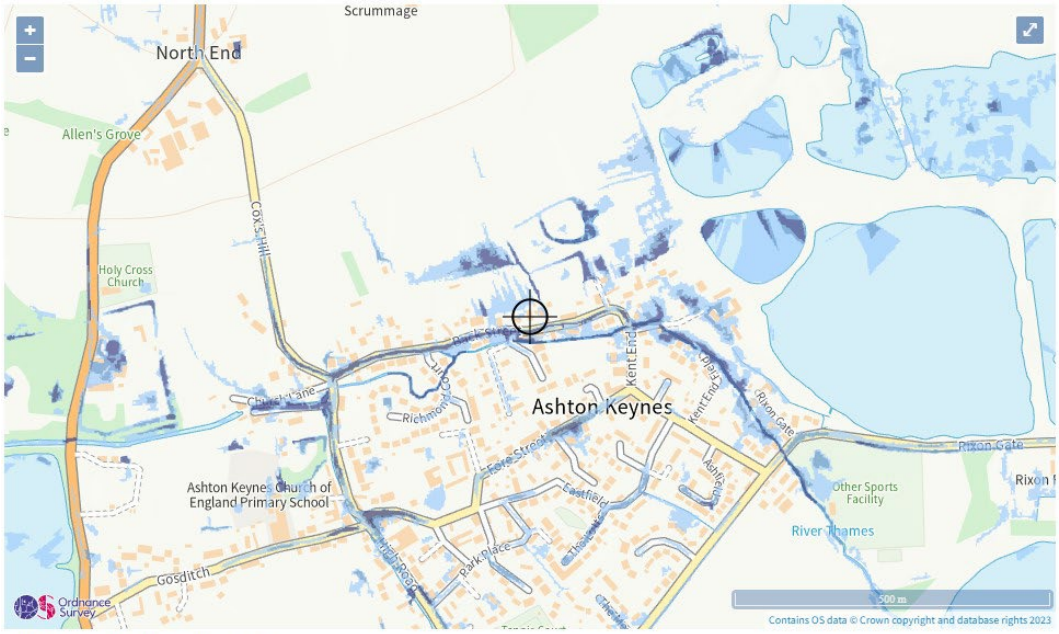

**Proposed Site Location Plan**

## 2.3 Surface water (GOV.UK)

### Low risk

Surface water flooding happens when rainwater cannot drain away through the normal drainage systems. Instead, it lies on or flows over the ground. Surface water flooding is sometimes known as flash flooding. It can:

- be difficult to predict as it depends on rainfall volume and location
- happen up hills and away from rivers and other bodies of water
- affect areas with harder surfaces, like concrete, more severely




Extent of flooding from surface water

High Medium Low Very low Location you selected

## 2.4 Reservoirs (GOV.UK)

### Flooding from reservoirs is unlikely in this area

A reservoir is a large natural or artificial lake that is designed to collect and store water.

We use predicted scenarios to understand the risk of flooding from reservoirs.

Flooding from reservoirs is extremely unlikely. An area is considered at risk if people's lives could be threatened in the event of a dam or reservoir failure

## 2.5 Groundwater (GOV.UK)

### Flooding from groundwater is unlikely in this area

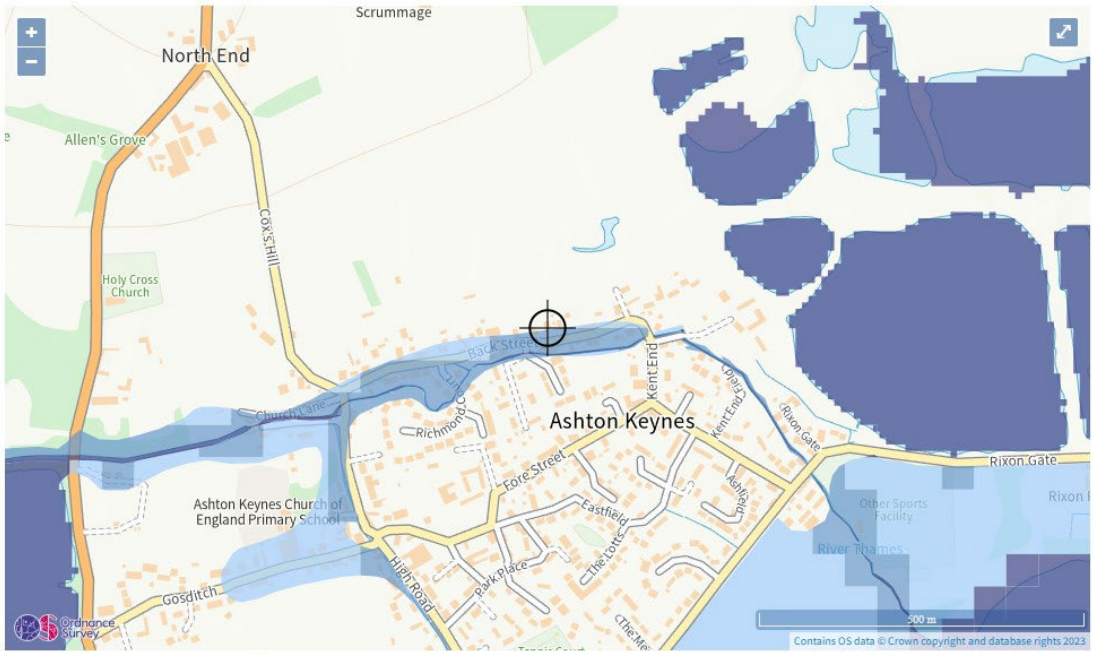
Flooding caused by groundwater happens when water underground that is usually held in the rocks and soil (known as the water table) gets so high that it flows above the surface.

We use flood alert data to check the risk of flooding from groundwater.

## 2.6 Rivers and the sea (GOV.UK)

### Very low risk

The Environment Agency is responsible for managing the flood risk from rivers and the sea.




Extent of flooding from rivers or the sea

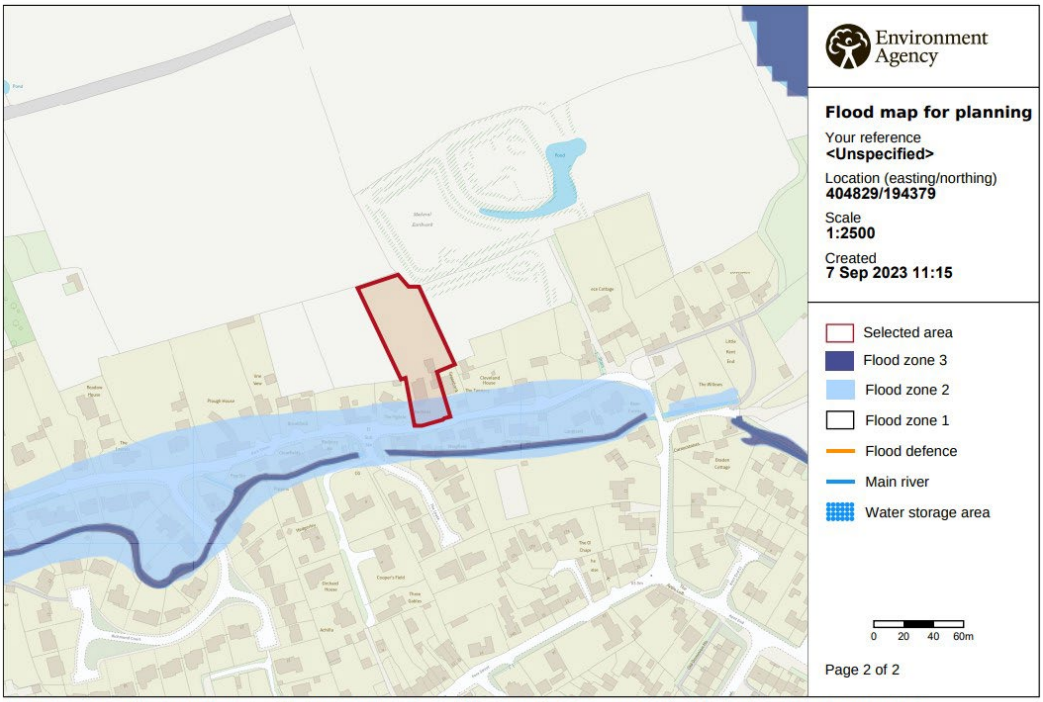
High Medium Low Very low Location you selected

## 2.7 Environment Agency Flood Map for Planning

### Flood Zone 2

As identified by Environment Agency the Red Line Site Boundary is situated partially within Flood Zone 2.

Grid Reference 404829/194379

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Red Line Boundary of Planning Application is in flood zone 2, an area with a medium probability of flooding.

The proposed Outbuilding is outside of Flood Zone 2

## 3.0 Flood Risk Assessment Statement

3.1 Within planning, Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency's Flood Map for Planning (Rivers and Sea), available on the Environment Agency's website.

| Flood Zone | Definition |
|---|---|
| Zone 1 **Low Probability** | Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3) |
| Zone 2 **Medium Probability** | Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map) |
| Zone 3a **High Probability** | Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map) |
| Zone 3b **The Functional Floodplain** | This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map) |

Table 1: Flood Zones

3.2 The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding.

3.3 The site is situated partially within Flood Zone 2 when using the Environment Agency Flood Map for Planning.

3.4 The source of the River Thames is traditionally identified as north of the village of Kemble in Gloucestershire, but the headwaters extend down into the north of Wiltshire and include Swill Brook that has its source close to the villages of Crudwell, and Hankerton and Derry Brook which has its source close to Minety. The Thames then flows through Ashton Keynes before being joined by The River Key and River Ray (which have their sources close to Purton and Lydiard Millicent respectively) in Cricklade and leaves the study area north of Swindon. The upper headwaters consist of an area underlain by Great Oolite Group (sandstone, limestone and argillaceous rocks), the area around Minety, Ashton Keynes and Cricklade is underlain by Kellaways formation and Oxford Clay formation.

3.5 The EA modelled flood data from the Thames (MRL to St Johns) 2014, and 2017 climate change re-run.

| Return Period | 1:20 year | 1:100 year | 1:100 year + 25% climate change | 1:1000 year |
|---|---|---|---|---|
| **Modelled In-channel flood level** | 83.45mAOD | 83.50mAOD | 83.53mAOD | 83.58mAOD |

Table 2: Modelled in-channel flood levels for node 061_00_2014_AKB1553 (Source: EA)

The site is located partially within Flood Zone 2 and is classified as "more vulnerable" (residential). The Flood Risk Assessments: climate change allowances guidance – updated May 2022, states that the Central climate change allowance should be applied. The site falls within the Gloucestershire and the Vale Management Catchment, where the Central climate change allowance for the 2080's is a 26%

increase in river flows. As such, the most suitable modelled flood data provided in the Thames modelling is a 25% increase in flows, and as such this will be used for this assessment.

3.6 Comparison of the modelled in-channel flood levels provided with topographic site levels (84.50mAOD in the North to 84.15mAOD in the South) shows that the site is entirely above all the modelled flood levels.

3.7 The proposed extension is sited on the edge of the maximum modelled 1:100 year plus 25% climate change flood extent.

3.8 The Flood Zone 2 extent at the site is based on the 1947 historic flood outline.

## 4.0 Conclusions

4.1 The NPPF classifies property usage by vulnerability to flooding.

4.2 The existing site has a front porch "more vulnerable".

4.3 Post development, the site will become "more vulnerable" (construction of an oiutbuilding).

4.4 The EA Standing Advice guidance for vulnerable (for example, more vulnerable, less vulnerable and water compatible) development in Flood Zone 2 states that finished floor levels should be a minimum of whichever is higher of 300mm above the:

- average ground level of the site
- adjacent road level to the building
- estimated river or sea flood level

4.5 If you cannot raise floor levels to meet the minimum requirement, you will need to:

- raise them as much as possible
- consider moving vulnerable uses to upper floors
- include extra flood resistance and resilience measures

4.6 As such, to meet the EA Standing Advice, the finished ground floor level will be raised a minimum of 300mm above the average ground level in the area of the proposed new outbuilding

4.7 The site is situated partially within Flood Zone 2 when using the Environment Agency Flood Map for Planning (Rivers and Sea). Safe escape can be provided entirely outside of Flood Zone 3. As such a proposed escape route is to exit the site via the side access and travel east along Back Street until it reaches Kent End.

4.8 The site is situated partially within Flood Zone 2 when using the Environment Agency Flood Map for Planning (Rivers and Sea).

4.9 The Flood Zone 2 extent at the site is based on the 1947 historic flood outline.

4.10 The EA Risk of Flooding from Surface Water Map suggests that the site lies predominantly in an area of "Very Low" risk of flooding from surface water.

4.11 As such and in accordance with these flood risk measures, it is considered the proposed application is to be suitable in flood risk terms.