SMYTHEMAN
ARCHITECTURAL

Flood Risk Assessment

35 Riverdale, Cheadle Road, Upper Tean, Staffordshire, ST10 4DR

PP-06095309

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Introduction

This Flood Risk Assessment has been prepared by Smytheman Architectural in support of an application for full planning consent submitted to Staffordshire Moorlands District Council, commissioned on behalf of the homeowner; Mr D Johnson.

A Flood Risk Assessment is a mandatory document for the determination of a planning application for a “minor extension (household extensions or non-domestic extensions less than 250 square metres) in a flood zone 2 or 3” location.

This document intends to demonstrate that the applicant has carefully considered the site, the building, proposals and the wider context when formulating the proposals.

This document should be read in conjunction with the following drawings:

- 3039- 01 EXISTING SURVEY
- 3039- 02 SCHEME PROPOSALS
- 3039- 03 SITE LOCATION PLAN & BLOCK PLAN

Location

The application site is located at:

Easting (X): **400802**
Northing (Y): **339868**

National Grid Reference: **SK007399**

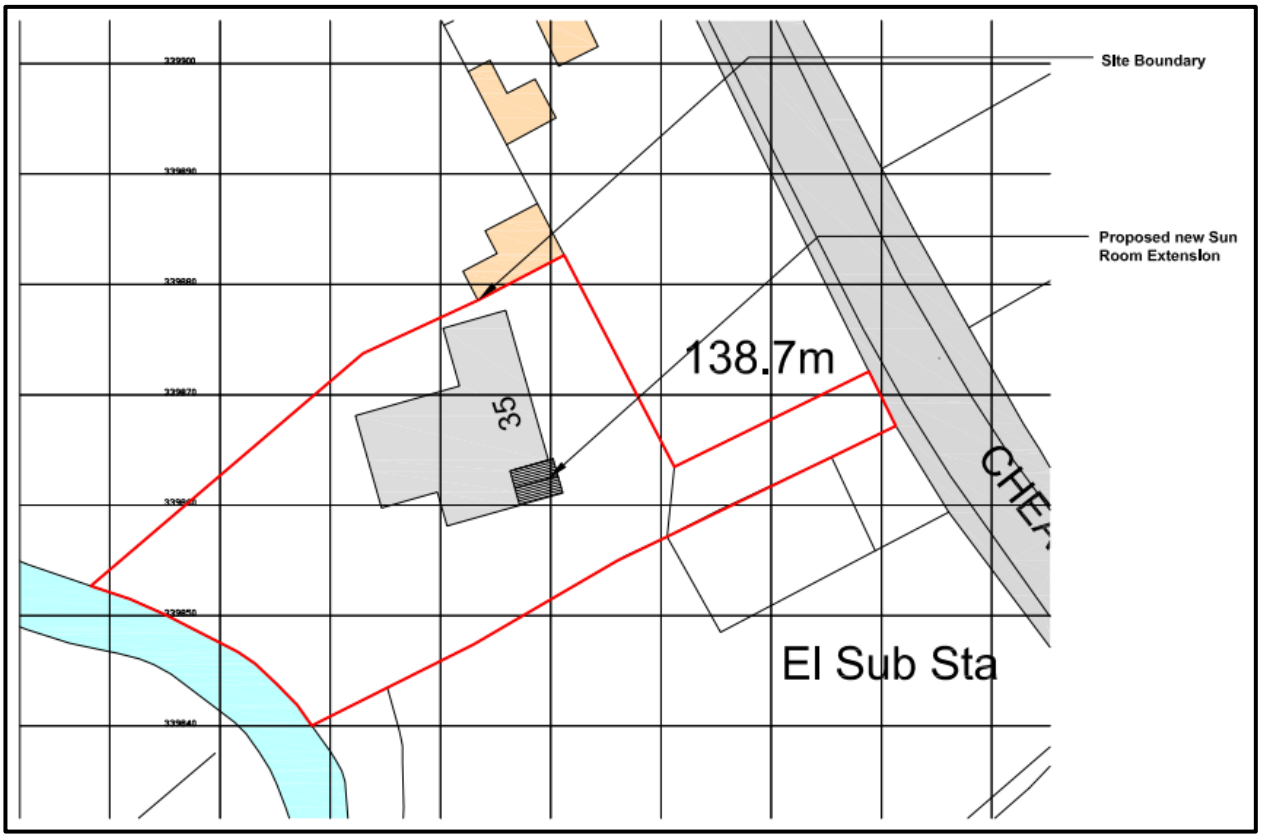

Figure 1: Site edged in Red with relevent watercourse to the westerley boundary.

The proposal site is domestic plot within a ribbon of development fronting Cheadle Road in Upper Tean. To the south west of the site on the boundary there is the River Tean.

At its closest point, the existing structure is 18.5m from the watercourse on the site boundary. The proposed extension is 27m from this same watercourse.

The proposal site area (defined by the Red Boundary) is **1270m²**.

Proposals

The applicant seeks consent to construct a new masonry extension to the principal (north east) elevation. For this reason, full planning consent is sought.

Currently the site houses a 193m^2 footprint single dwelling. The proposals look to form a modest extension to increase this by 13m^2 to 206m^2 in total.

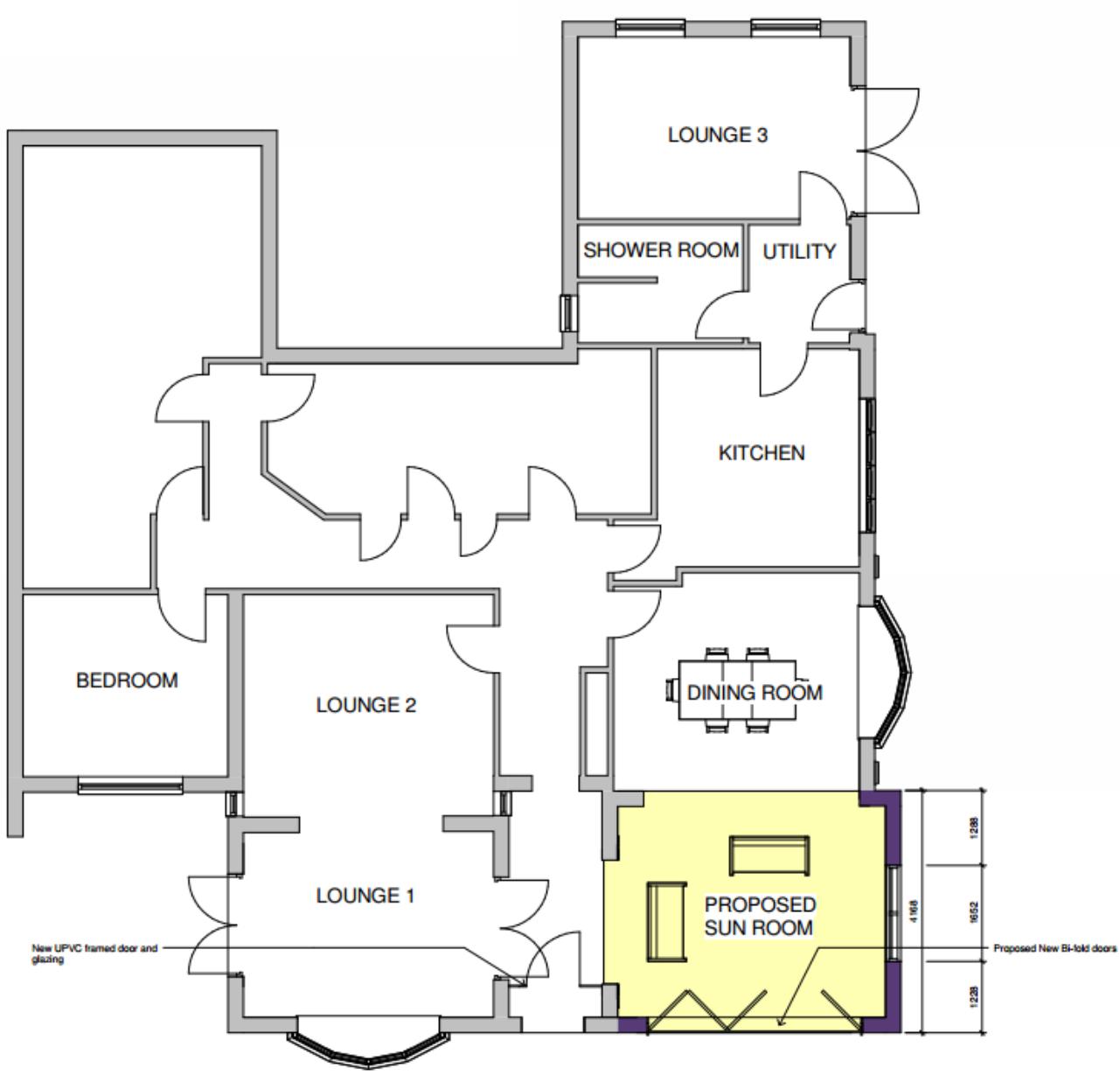

Figure 2: Proposed Floor Plan with extension shown in shaded Purple by Smytheman Architectural.



Figure 3: Proposed 3D Visual by Smytheman Architectural with the extension in the foreground with the gable window.

Flood Risk Considerations

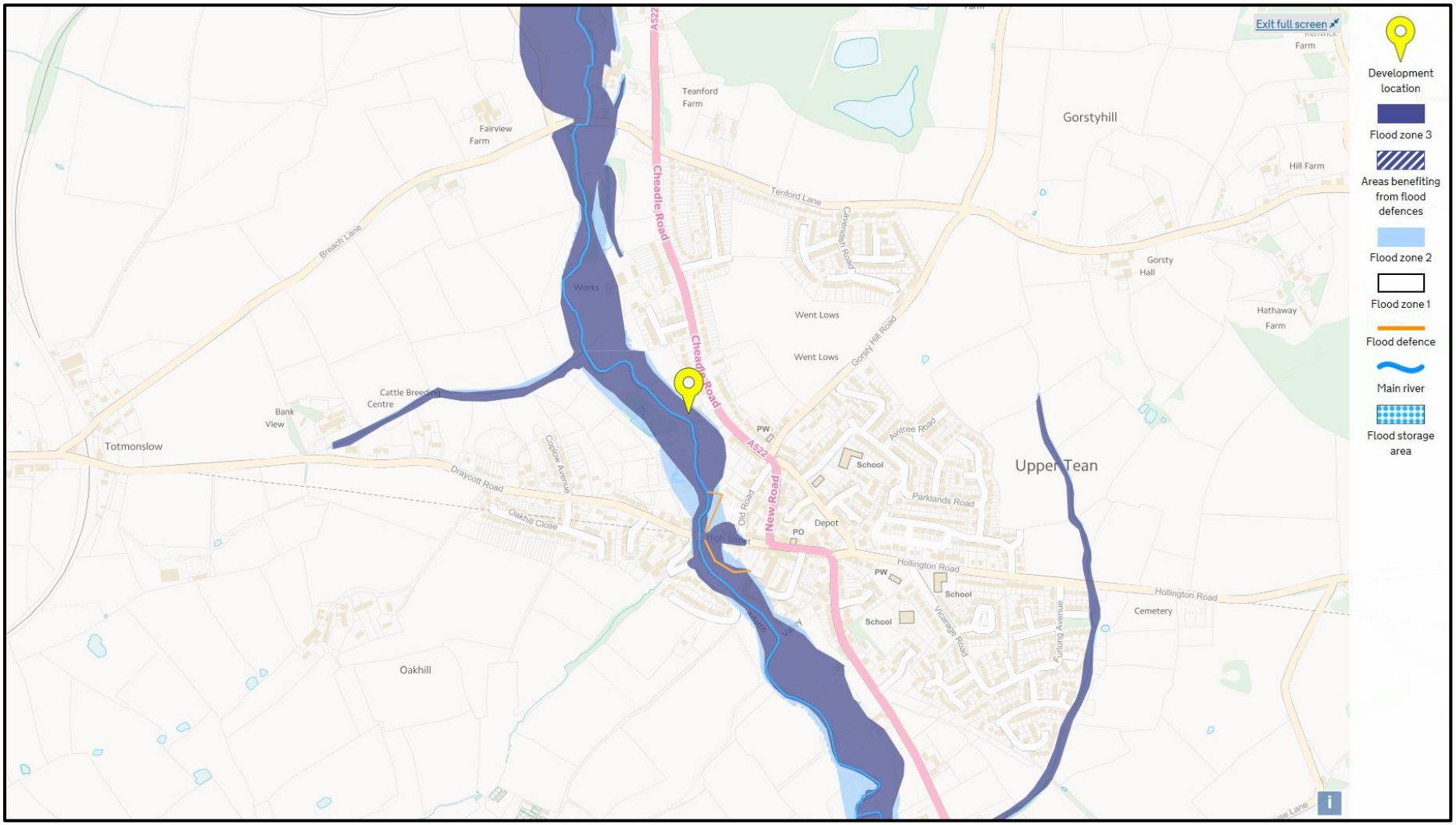

Figure 4: Environment Agency Map indicating that the site is partly within Flood Zone 3, partly Zone 2 and a final segment is within Zone 1.

Flood Risk Considerations (continued)

The adjacent map from the Environment Agency demonstrated that the application site is considered at greater flood risk than the surrounding development.

The rear (westerly) part of the site falls within Flood Zone 3, this is defined as having a: “high probability of flooding”

The middle of the site falls within Flood Zone 2, this is defined as having a: “medium probability of flooding”

The front (easterly) part of the site falls within Flood Zone 1, this is defined as having a: “low probability of flooding”. On this zone a flood assessment and mitigation techniques would not be necessary.

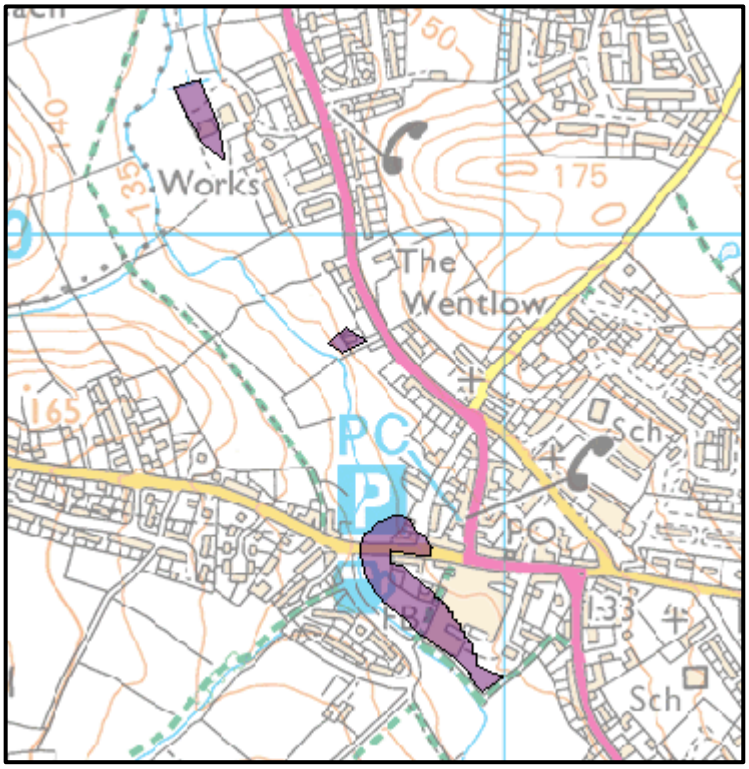

Figure 5: Environment Agency Extract demonstrating properties which are notified of flood warnings. The application site is shaded in Purple (centrally).

It should be noted that the rear of the existing property falls within Zone 3 (only 18.5m from the River Tean. However, the closest part of the new proposals (circa 27m away) falls within Zone 2 whilst some of the extension is within Zone 1.

By virtue of size, the proposals are considered to be “minor development”. For domestic extensions, such as the proposals in a Flood Zone 2 it is required to carry out the following mitigation techniques.

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)

Figure 6: Flood risk probability is defined in the above table.

Design Techniques to mitigate Risk

The existing dwelling has no insurance history of flooding since it's construction. According to the Ordnance Survey street level is around 138.7m above sea level. This is a similar level to that which the house is constructed on.

The site then steps down to the rear within the garden and the land then fails away lower towards the River Tean. By constructing the house in this elevated position, this mitigates flood risk.

Assessment of the flood risk for your development: Risk of river flooding primarily

Estimated flood level for your development: 1% chance or 1 in 100years risk of river flooding and 0.5% or 1 in 200years risk of tidal flooding.

Details of your flood resilience and resistance plans: Photos and levels to be provided in relation to existing building.

The Environment Agency advise designers to:

"Make sure that floor levels are either no lower than existing floor levels or 300 millimeters (mm) above the estimated flood level." **This has been achieved in the proposals by ensuring floor levels are the same as or greater than the existing.**

Floor levels

The following levels are important in determining whether adequate design provisions have been made:

Finished floor level of the lowest habitable room in your building: **0.000m**
Average ground level of your building: **-0.150m**
Highest known flood level: **-5.080m**
Level of nearest watercourse**: -6.640m**

Generally ground floor levels should be a minimum of whichever is higher of:

- 300mm above the general ground level of the site
- 600mm above the estimated river or sea flood level

The application site finished floor level is 5080mm above the highest known flood level and 6640mm above the watercourse bed level.



Figure 7: Generally, the site is level to the frontage and the footprint of the house. It then steps down steeply towards the permeable garden areas. The driveway access drains towards the house.



Figure 8: The site falls away steeply towards the River Tean. The river is at a significantly lower level than the house and hardstanding areas.



Figure 7: Generally, the finished floor is circa 150mm (2 courses) above external ground level.

Conclusion

To conclude, although the site does lie within a flood zone the existing house is 6.640m above the river bed level. The river has never been known to rise any closer than 5.080m below the house finished floor level, therefore it is safe to say there is no foreseeable risk of flooding due to the river levels.

It is the intention of Smytheman Architectural to match the existing finished floor level of the property. Given the proximity of the extension to the watercourse this would be perfectly acceptable.

The property DPC and finished floor level is already circa 150mm (2 courses) above the surrounding paved hardstanding around the property, this will be matched like-for-like.

Therefore, for the reasons rehearsed above it is considered that there a low likelihood of the proposals flooding and the application should be **approved**.