

Flood Risk Assessment

**45 Broom Street,
Great Cornard,
CO10 0JT**

DECEMBER 2023

**D J Barton Associates Ltd
Ref: 2440E**

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Site Details

Site Name	45 Broom Street
Site Address	45 Broom Street, Great Cornard, CO10 0JT
Development Type	Single Story Rear Extension
Existing Land Use	Brownfield
Grid Reference	588728E, 240241N
Local Planning Authority	Babergh District Council

Site Location



Figure 1 Site Location – (Source: OS OpenData)

Existing Site

The proposed development site, the subject of this Flood Risk Assessment, contains one dwelling house and a single attached garage.

Geology of the site

The British Geological Survey websites 'GeoIndex' mapping service identifies the superficial deposits in the area as River Terrace Deposits 1, which is comprised of sand and gravel.

Proposed Development

The proposal is a single-story rear extension, that will be set at the same finished floor level as the existing house.

Photographs of the rear of the existing dwelling house are included in Appendix A.

Flood Risk

A Flood Risk Assessment (FRA) is often required as part of a planning application depending on the nature of a development, its size and the anticipated flood risk as defined by the Environment Agency's flood risk zones. In England flood risk is divided into three zones:

Zone 1 areas have little or no risk with an annual probability of flooding of less than 0.1% per year, above the 1000 year flood level.

Zone 2 areas have a fluvial risk of flooding of between 0.1 and 1% a year, between the 100 year and 1000 year, (the 200 year in tidal areas) and

Zone 3 areas are considered to be at high risk with a fluvial risk of flooding of greater than 1% a year, inside the 100 year flood extent, or the 200 year in tidal areas.

The Environment Agency's flood map (Figure 2) shows the site is in Flood Zone 1 and therefore an FRA is not usually required.

However the planning authority has requested a Flood Risk Assessment to be carried out.

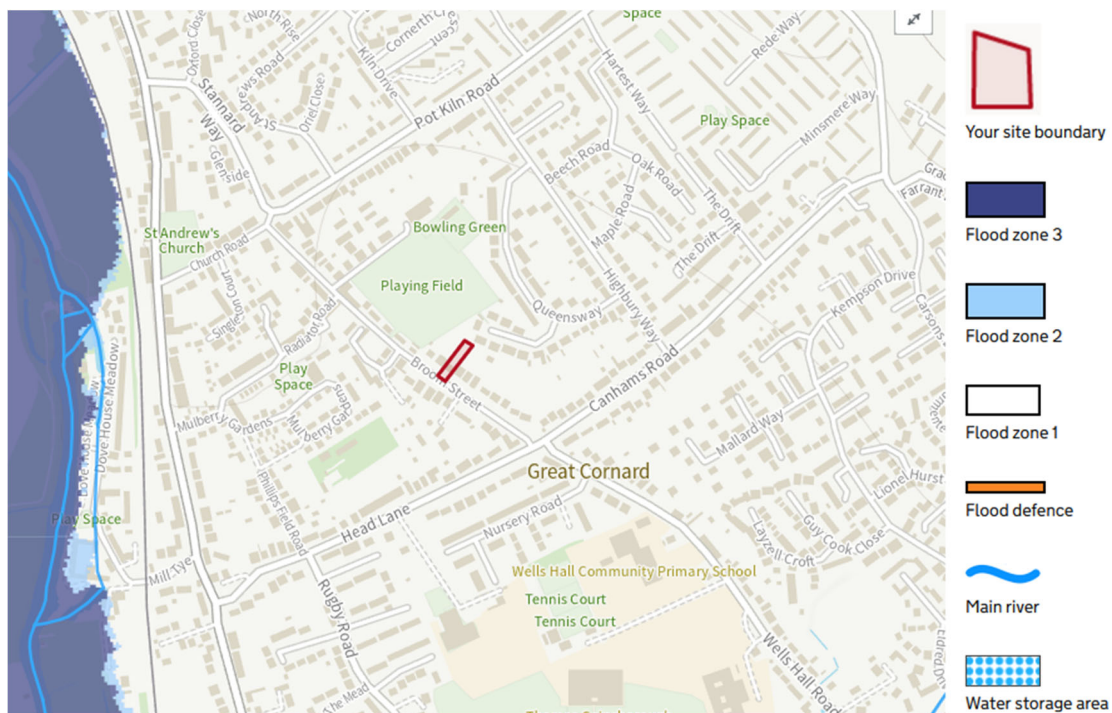


Figure 2 EA Flood Map (Flood Zone Map)

Fluvial Flooding

The main potential source of fluvial flooding is the River Stour, approximately 540m to the east of the site, as mentioned above the site lies within Flood Zone 1, and is considered to be at very low risk of fluvial flooding, as is shown in Figure 3 below.

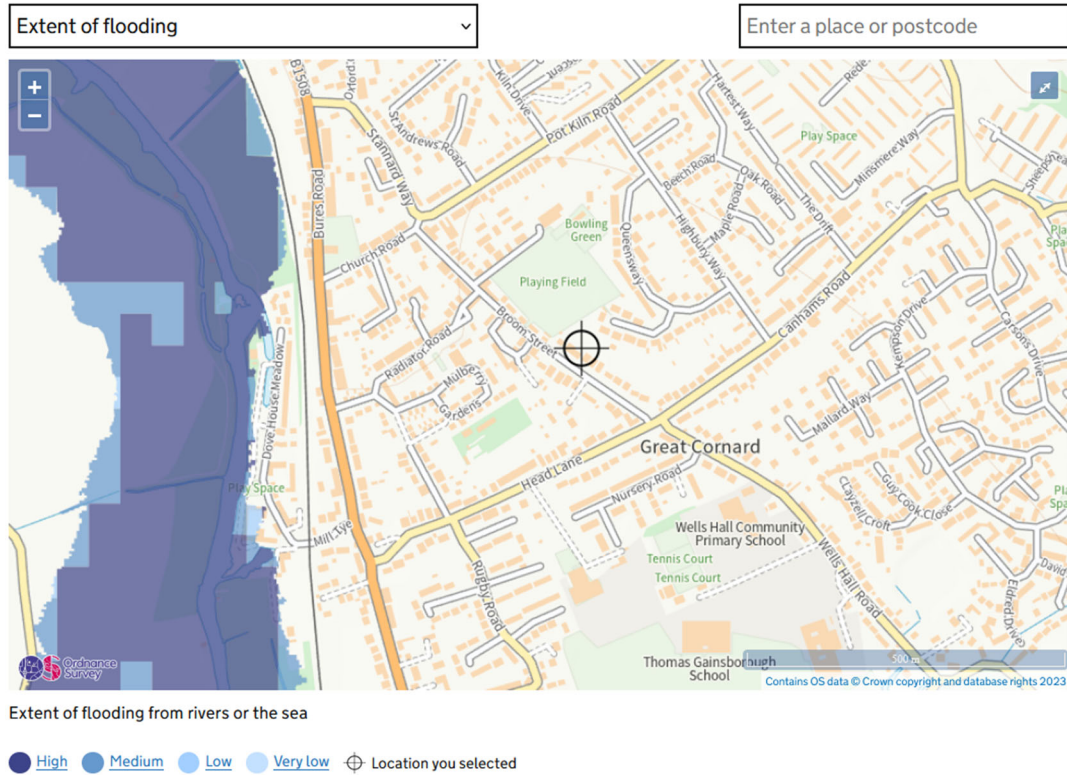
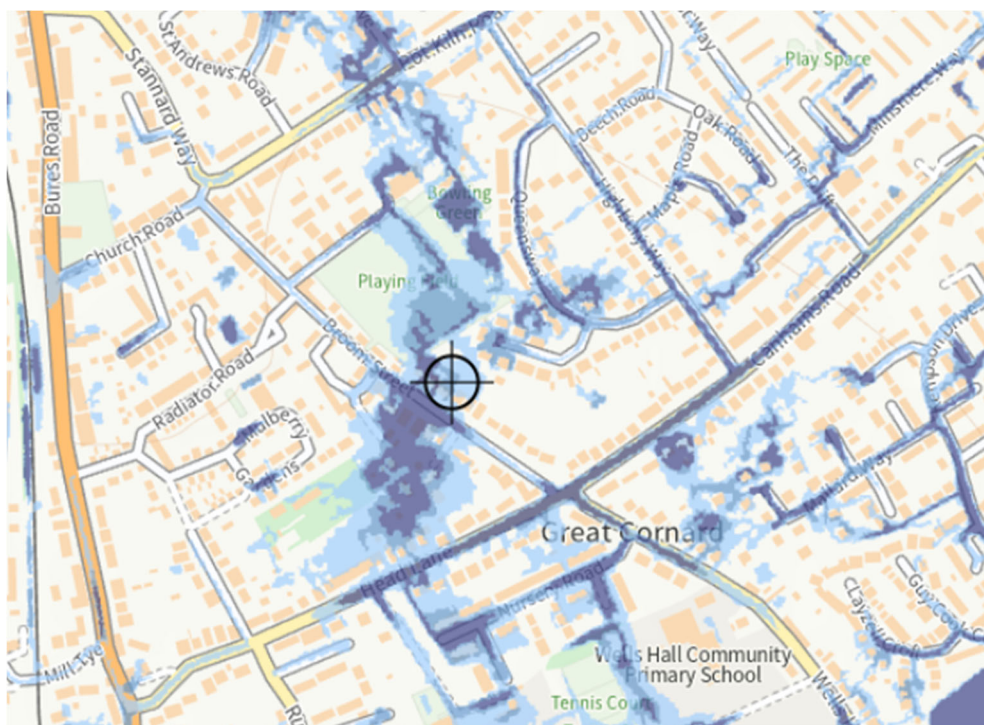


Figure 3 Extent of Flooding from Rivers or the Sea

Flooding from Surface Water

The Surface Water Flood Map for the area shows that there is a Medium to Low risk of flooding from overland surface water flows, these are flows of storm water that have not yet entered the sewer or ditch system.

This area of potential flooding is also shown in Appendix C which identifies the potential flood depth to be below 150mm, which is below the DPC of the existing building, and the proposed extension.



Extent of flooding from surface water



Figure 4 Extent of Flooding From Surface Water Map

The depth of flooding from surface water has been analysed based on data obtained from the government data.gov website and analysed with flood depth labels and a key to depths, in Appendix C.

It can be seen that the depth of flooding modelled by the Environment Agency within the site boundary is generally 0 to 0.15m with some small areas indicating 0.15m to 0.3m, these higher depth figures are considered to be outliers as there are no significant dips/changes in ground level in these areas for this to be the case.

Anecdotal evidence from the applicant also suggests that they have never experienced such flooding.

Flood Resilience Measures

The extension is to be of brick construction to match the existing house, and any mortar mix should be of flood protective material. All electrical sockets should be installed a minimum of 400mm above the floor level and should be fed downwards from the ceiling.

The ground floor construction should be of concrete rather than timber, and doors should be suitably floodproof; this is consistent with flood resistant construction, and as such this FRA and the proposed construction meet the requirements of both the NPPF and EA advice.

Flooding from Groundwater

Groundwater is most commonly found in low-lying areas underlain by aquifers, such as Chalk or sandstone, or localised sands or river gravels in valley bottoms, on this basis we consider the risk of groundwater flooding to be moderate due to the vicinity of the River Stour, however the proposed extension does not increase this risk over that of the existing house.

Flooding from Impounded Water Bodies

The potential risk associated with the failure of artificial sources of flooding is available from the EA mapping (Figure 5) which indicates that there are no reservoirs and/or water storage facilities within or near Great Cornard that may pose a risk of flooding to the development site. The risk of flooding from this source is therefore considered to be low.

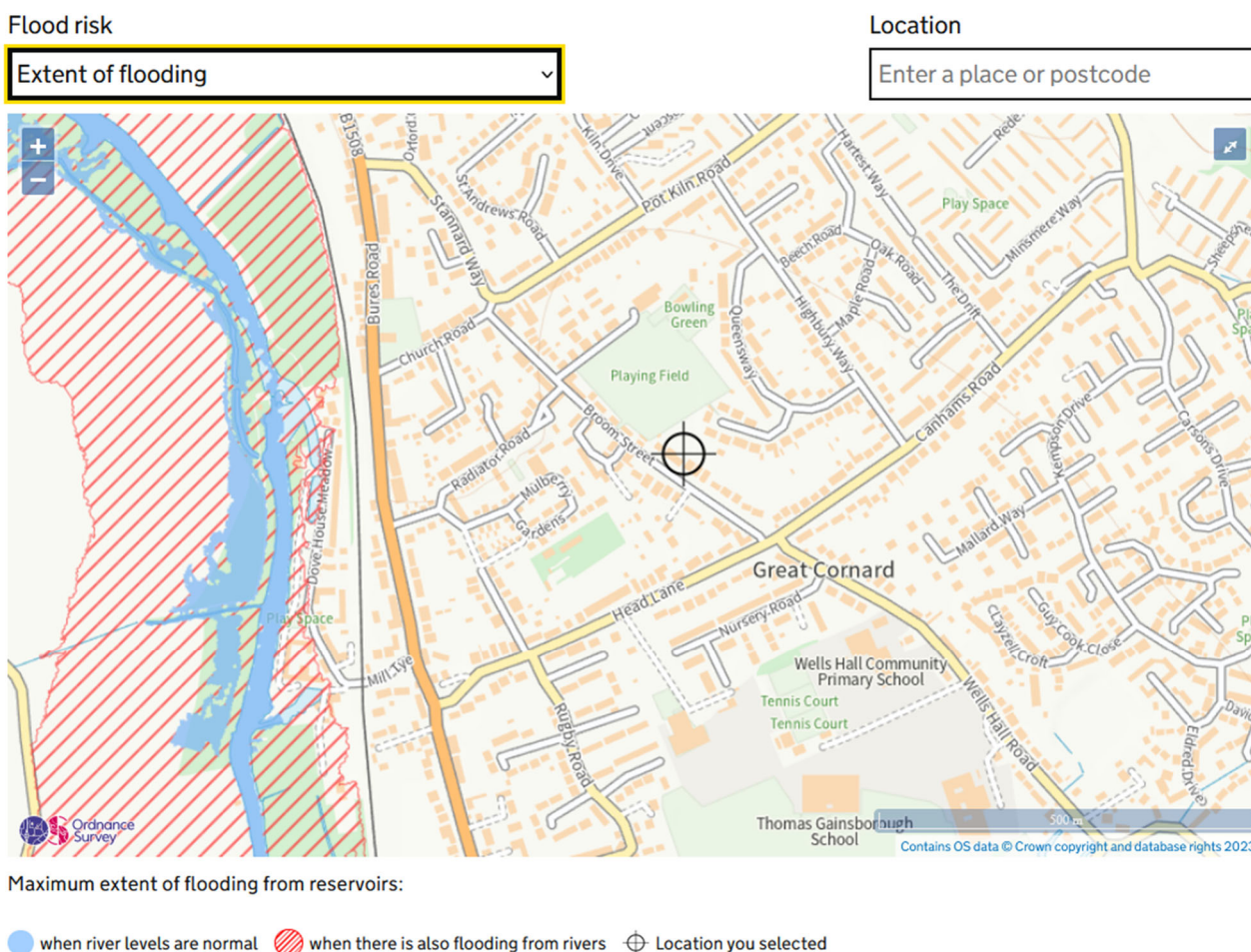


Figure 5 Flood Risk from Reservoirs Map

Foul Sewer Flooding

Appendix E of the Strategic Flood Risk Assessment carried out by JBA Consultants, identifies that the Great Cornard area, around the site, to have had three Anglian Water flooding incidents between 2001 and 2016.

It is noted that the existing house, and therefore the proposed extension is approximately 450mm above the level of Broom Street where the main public sewers are situated, and therefore not at risk of flooding from the public sewers.

Anecdotal evidence from the applicant also suggests that they have never experienced such flooding.

Conclusions

- The environment agencies flood map shows that the site is in Flood Zone 1 and an FRA is not usually required for minor developments unless there is a risk from other sources of flooding.
- As the site is in an area identified as a risk from Surface Water Flooding, it is at a has a chance of flooding of greater than 1% each year, however this minor extension does not increase the existing risk to the dwelling house.
- Other potential sources of flooding have been considered. The proposals are for the new extension to have a finished floor level matching the existing house, and therefore the risk of flooding to the house and proposed extension are no greater than the existing situation.
- The proposal is considered to be a minor development, being an overall increase in ground floor area of just 20 square meters, this can be seen in the attached plan roof plans in Appendix B.

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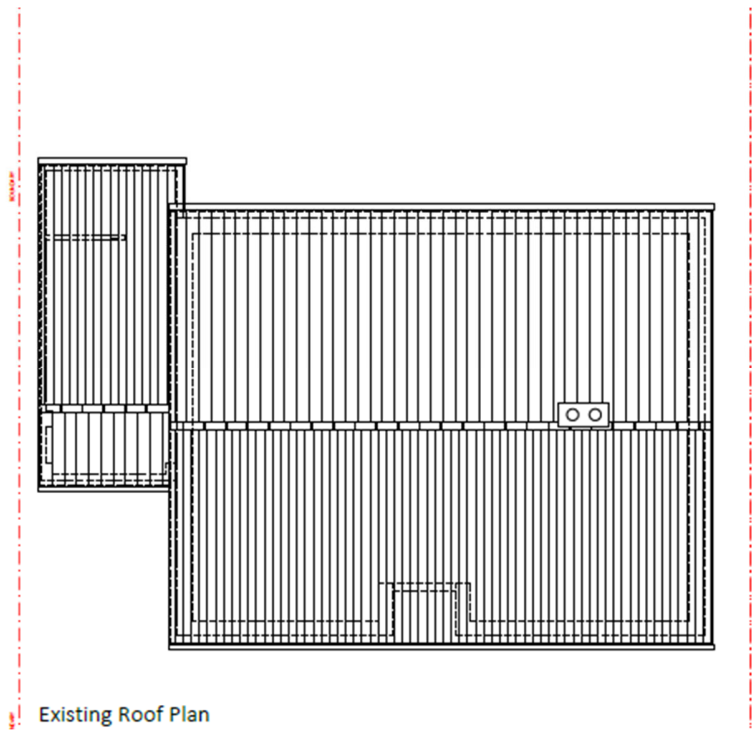
Appendix A – Existing House Photographs

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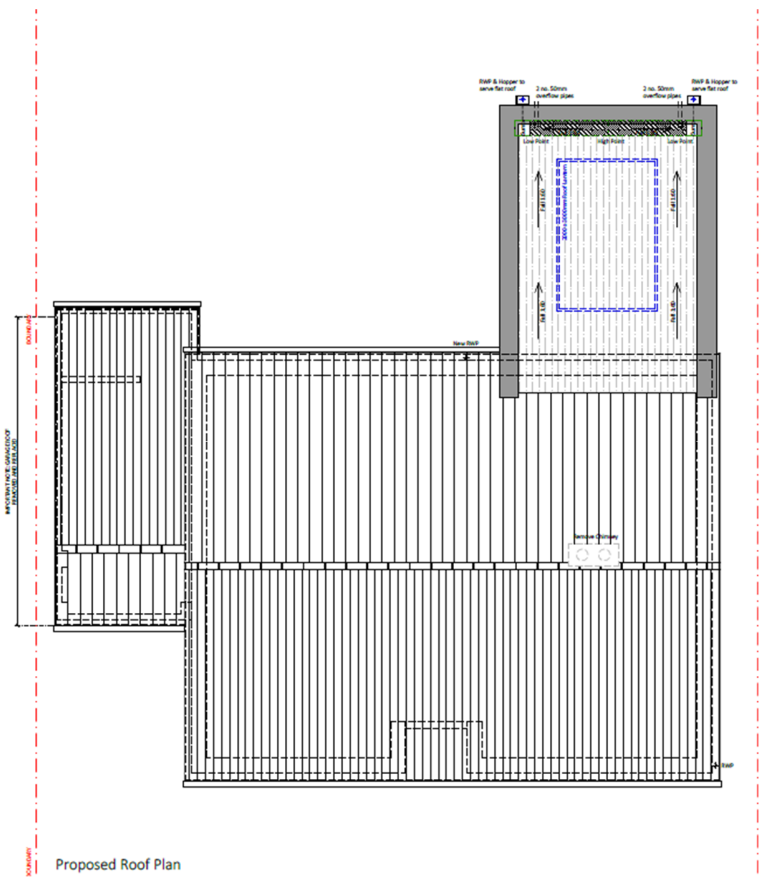
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Appendix B – Existing and Proposed Roof Layout Plan



Existing Roof Plan

Existing Roof



Proposed Roof Plan

Proposed Roof

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Appendix C – Depth of Flooding from Surface Water

Depth of Flooding from Surface Water for the 1 in 100 year storm event

- RoFSW-TL84
- RoFSW_TL84_Depth_1in100.shp
 - > 1.20
 - 0.00 - 0.15
 - 0.15 - 0.30
 - 0.30 - 0.60
 - 0.60 - 0.90
 - 0.90 - 1.20

Indicates the site boundary

Depth data obtained from the Data.gov government website, and analysed in QGIS software.
Map obtained from OS OpenData.

