

15 GRANGE ROAD, WICKHAM SKEITH: FLOOD RISK ASSESSMENT

Introduction:

This assessment accompanies an application for planning permission to extend 15 Grange Road, Wickham Skeith, IP23 8NE and should be read in conjunction with the associated information that has been submitted in support of the proposal.

The proposed development comprises the demolition of two existing flat roofed single storey extensions and replacement with a new combined pitched roof single storey extension.

The proposal when considered in terms of flood risk is deemed to be a “Minor Extension”

Flood Hazard Review:

Flood Maps for Planning

The flood maps for planning is shown below and indicate that the site lies in Flood Zone 1 (Low Risk) with a “Very Low” likelihood of flooding (Less than 0.1% each year)

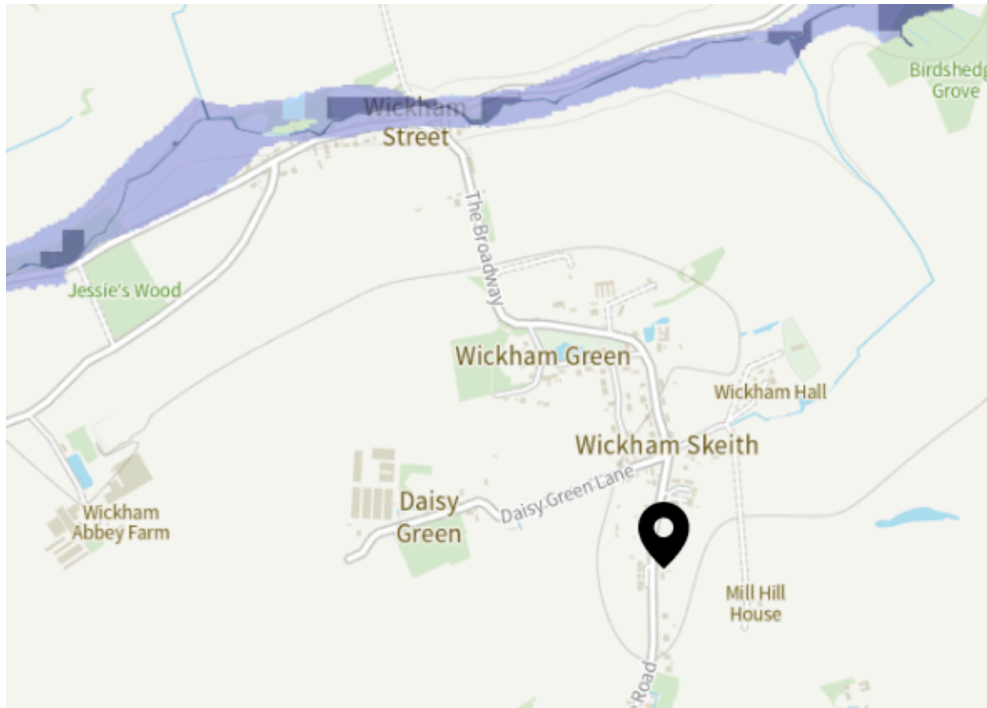


Source of Flooding:

Fluvial Flooding

Fluvial Flooding is caused by rivers and occurs when the river channel capacity is exceeded by the flow. Most rivers have a natural floodplain which in built up areas is sometimes encroached upon by development.

The fluvial and tidal flood mapping available on the GOV.UK website, as shown below, demonstrates that the entire development site is located within an area at Very Low Risk



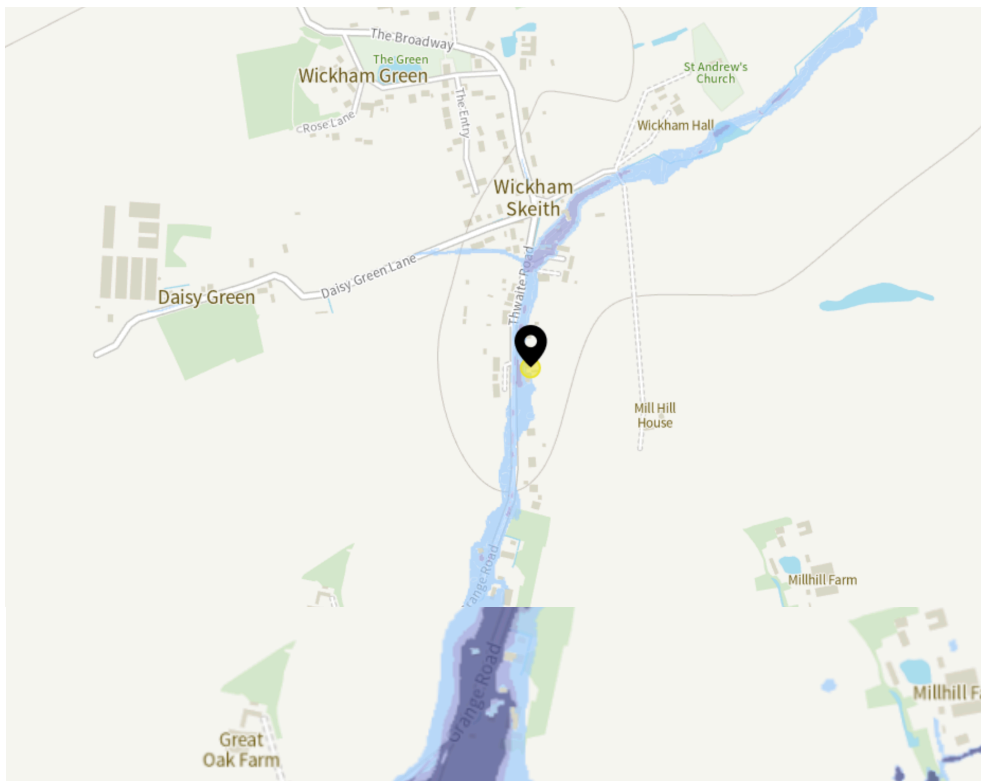
Surface Water Flooding:

Surface Water Flooding can occur within a dense developed area where there are large areas of impermeable surfacing e.g. roofs, driveways and roads. It is possible during high intensity rainfall storms for surface water runoff to be unable to soak into the ground or enter the man-made drainage system at a quick enough rate. Where this occurs, the excess water can flow across land and potentially cause flooding.

The indicative Surface Water Flood Mapping Extent associated with the site is shown below and highlights that there are areas at High Risk to the west of the site and other areas at Low Risk at the building area.

The areas shown to be at higher risk of flooding correlate with the approximate line of Grange Road and the low lying surrounding ground. Therefore, the main development area is therefore considered at Medium Risk from this source.

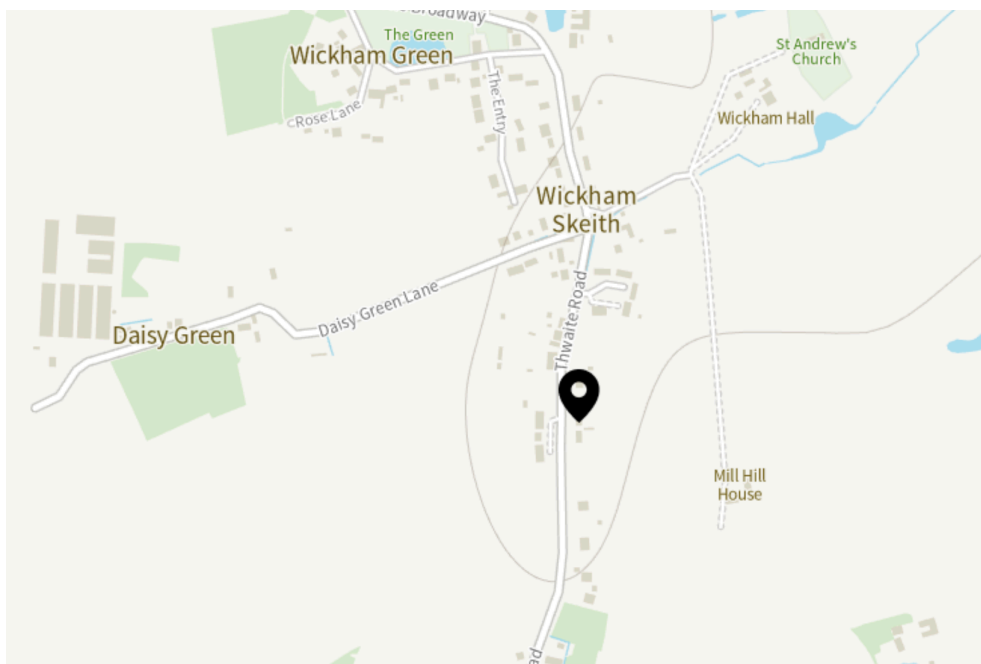
The indicative Surface Water Flood Mapping Depth associated with the site is shown below and highlights that the area around Grange Road has a potential flood depth of 30-90cm, whereas the area at the building line is below 30cm.



Non Natural or Artificial Flooding

Non Natural or Artificial Flooding can include reservoirs, canals and lakes where water is retained above the natural ground level and flooding may occur as a result of the facility being overwhelmed and/or as a result of dam or bank failure. The potential effects of flood risk management infrastructure should also be considered.

The reservoir flood mapping available on the GOV.UK website and as shown below demonstrates that the site is considered at Low Risk.



Conclusion and Recommendations:

There is a level of surface water flood risk identified within the application red line, therefore the Environment Agency “Householder and other minor extensions in Flood Zones 2 and 3” recommendations should be complied with, as follows:-

Water Exclusion Strategy

Due to the low level of flood likelihood it is recommended that a “Water Exclusion Strategy” is implemented, rather than a “Water Entry Strategy”

Where concrete ground floor slabs are used, the blockwork substructure is often the weakest point in terms of water penetration from the ground into a dwelling. Whereas there is a general perception that water can ingress through the blockwork structure of the external face of a wall into the property, it is less apparent, but equally possible, that water will penetrate from the ground on the inside of the property.

Work Below Ground

Floor levels within the proposed development will be set no lower than existing levels AND, flood proofing of the proposed development has been incorporated where appropriate.

Concrete strip or trench fill foundations are to be adopted

Blockwork below ground level should be sealed with an impermeable material (tanking) or encased in concrete to prevent water movement from the ground to the wall construction

Ground Floor:

A minimum 150mm thick unreinforced ground bearing slab will be provided, on a 1200 gauge polythene vapour barrier with min 300mm laps, all joints taped, on 150mm well compacted hardcore.

The insulation will be placed above the slab on a 500 gauge polythene barrier, and finished with “sacrificial” chipboard flooring.

Concrete screeds above polystyrene or polyurethane insulation should be avoided as they hinder drying of the insulation material.

Walls:

External wall construction is to comprise - facing brick outer skin, cavity with PIR foam insulation, aircrete internal blockwork skin, finished with cement/sand render.

Internal walls should be aircrete blockwork rather than timber, finished with cement/sand render, unless a sacrificial approach to finishes (plasterboard) is considered.

The use of hand made bricks and mineral wool insulation in walls should be avoided, along with plasterboard linings which disintegrate when immersed in water

External Doors:

Sealed double glazed UPVC personnel and patio doors should be used, with particular attention given to ensure a tight fit and sealing all perimeter gaps.

Services:

Where possible, all service entries should be sealed (e.g. with expanding foam or similar closed cell material).

Pipework: Closed cell insulation should be used for pipes which are below the predicted flood level.

Drainage services: Non-return valves are recommended in the drainage system to prevent back-flow of diluted sewage in situations where there is an identified risk of the foul sewer surcharging. Maintenance of these valves is important to ensure their continued effectiveness.

Electrical services: electrical and communications sockets should be installed above flood level to minimise damage to electrical services and allow speedy re-occupation. Electric ring mains should be installed at ceiling level with drops to ground floor sockets and switches.

Heating systems: Hot water pipes are unlikely to be significantly affected by flood water unless it contains a large amount of salts.

This concludes the statement