Flood Risk Assessment

The flood risk assessment has been compiled for the purpose of a residential planning application on the address 46 Knight Street, Pinchbeck PE11 3RB, for the change of use from mixed use retail to single dwellinghouse. There are no structural changes required for this proposed development.

Site Information:

The property sits on the south end of Knight Street, part of the bottom floor is being utilised as a bakery shop with the remaining ground floor and first floor being a dwelling.

Environment Agency data shows that ground levels north of the site are typically +3.6m AOD. Ground levels in the garden of the property are typically +3.4m AOD.

The site is in the Welling and Deepings Internal Drainage Board (IDB) district. Surface water at the site drains through a local network and hence the IDB drain system. The nearest IDB maintained watercourse is approximately 50m to the west of the property.

The online British Geological Survey maps indicate that the site is likely to be underlain by Oxford Clay Formation mudstone. The bedrock is shown to be overlain with superficial deposits of clay and silt.

Flood risk information

The property is located within Flood Zone 3, an area with a high probability of flooding that benefits from flood defences, information obtained from the Environmental Agency flood maps for planning

The long term flood risk maps show that:

- The site has a low risk of flooding from rivers or the sea (annual probability: 0.1-1%)
- The site has a very low risk of flooding due to surface water (annual probability: <0.1%)
- The site is not within an area at risk of reservoir flooding.

The SFRA Map states that for low hazard areas, where this property lies, the peak flood depth is between 0-0.25m.

Flood defences

The property is approximately 2.5km west of the River Welland which has tidal defences downstream, protecting Pinchbeck. These are maintained by the Environmental Agency every 5 years as a long term strategy.

The local drainage is managed by IDB and drain in a westerly direction to Pinchbeck Marsh pumping station, which in turn discharges to Vernatts drain which flows to the River Welland at Surfleet.

The IDB maintain a good standard and regular maintenance to ensure flood protection is provided. Current maintenance standards are good.

Sources of flooding

The potential sources of flooding are:

- local blockages in the IDB main drain system
- an event in the local drainage network that exceeds the standards of protection
- failure of the pumping station
- breach of the River Welland tidal defences

As the long term flood risk is very low for surface water flooding, no further assessment will relate to surface water.

Probabilty of flood

The probability of flood due to blockages in the drainage system is low due to the routine maintenance standards. The standard of the drainage provided is at 2% annual probability (1 in 50 chance per year) which complies with the DEFRA target for rural drainage. The risk of events greater than 2% annual probability is lowered due to the IDB main drains incorporating a freeboard. This provides storage during events greater than 2% annual probability.

The river's tidal defences provide protection during the 0.5% annual probability tidal event.

Historic flooding

There is no evidence to suggest the site has any historic flooding.

Climate Change

Climate change could affect the site with increase rainfall intensity and duration which could affect the local drainage network and increased flood levels of the River Welland. The river's tidal defences have been designed to include a climate change allowance, therefore the existing systems and defences are appropriate for the lifespan of the development.

Conclusion

There is no increased flood risk expected for this development, flood risk is low and appropriate measures are in place in the event the current risk is increased by climate change.