Floor risk assessment for proposed 2 dwellings at the old mission, Tongue end, Spalding, Lincolnshire, PE11 3JJ.



The old mission, tongue end, Spalding, Lincolnshire, PE11 3JJ

21st January 2023

This flood risk assessment has been prepared solely to support the planning application for proposed 2 dwellings at the old mission, tongue end, Spalding, Lincolnshire, PE11 3JJ. the author has made every effort to provide an accurate assessment of the flood risk but accepts no liability should the information be found to be incorrect or incomplete.

Introduction

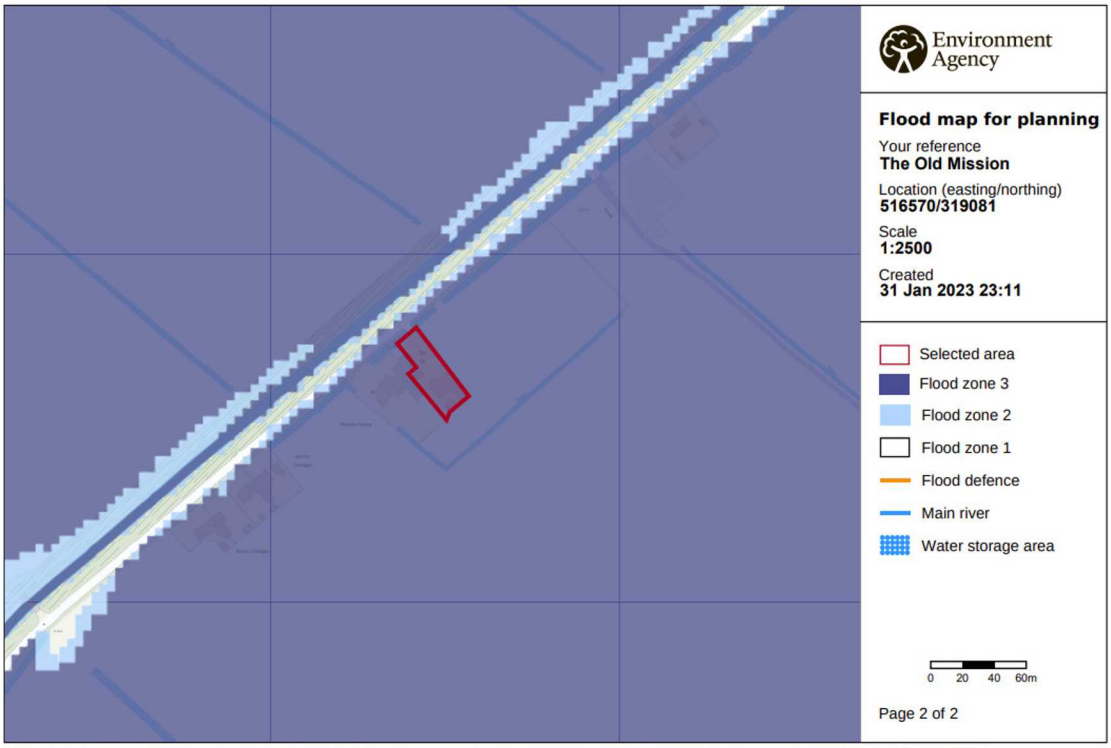
Proposed planning application for 2 new dwellings at the old mission, tongue end, Spalding, Lincolnshire, PE11 3JJ. Existing building to be demolished to allow for new dwellings.

The flood risk assessment is required to accompany the planning application and meet the requirements and general principles contained in the planning practices guidance to the national planning policy framework (NPPF).

The site, as situated is located within flood zone 3 of the environment agency's floor map for planning. The latest agency flood maps have been created as a tool to raise awareness of flood risk with the public and our partner organisations, such as local authorities, emergency services and
drainage authorities. The maps do not take into account any flood defences.

Environment Agency (EA) Flood Zones

The map below is taken from the environment agency website and shows the flood zones in this area.



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Location

The development site is located at The old mission, tongue end, Spalding, Lincolnshire, PE11 3JJ. The national grid reference of the central point of the development is Easting: 516568 / Northing 319081.

The site located within the Welland & Deepings internal drainage board district is shown within flood zone 3 as detailed on the environment agency flood map for planning.

The position and extent of the site is shown on the plan at the end of this document.

The proposed development is within flood zone 3 (a) as detailed on the Environment Agency's flood zone maps without defences, as defined in table 1 of the technical guidance.

Table 1: Flood zones

Zone 3a - high probability
Definition This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year. **Appropriate uses** The water-compatible and less vulnerable uses of land (table 2) are appropriate in this zone. The highly vulnerable uses should not be permitted in this zone. The more vulnerable uses and essential infrastructure should only be permitted in this zone if the Exception Test is passed. Essential infrastructure permitted in this zone should be designed and constructed to remain operational and safe for users in times of flood. **Flood risk assessment requirements** All development proposals in this zone should be accompanied by a flood risk assessment. **Policy aims** In this zone, developers and local authorities should seek opportunities to: • reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of sustainable drainage systems; • relocate existing development to land in zones with a lower probability of flooding; and • create space for flooding to occur by restoring functional floodplain and flood flow pathways and by identifying, allocating and safeguarding open space for flood storage.

Applying the flood risk vulnerability classification in table 2 of the guidance, a development consisting of dwelling houses is a classified as "more vulnerable".

Table 2: Flood risk vulnerability classification

More vulnerable

- Hospitals.
- Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.
- Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels.
- Non–residential uses for health services, nurseries and educational establishments.
- Landfill and sites used for waste management facilities for hazardous waste.
- Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

Table 3: Flood risk vulnerability and flood zone 'compatibility'

Flood risk vulnerability classification (see table 2)		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood zone (see table 1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	×	Exception Test required	✓
	Zone 3b functional floodplain	Exception Test required	✓	×	×	×

Key: ✓ Development is appropriate.
× Development should not be permitted.

Therefore, it can be seen that "more Vulnerable" development is appropriate with the exception test applied to the development which is within flood zone 3.

Sequential Test

As the proposed development is located in flood zone 3 (a) the NPPF requires the sequential test to be applied to determine if there are any reasonably available and suitable alternative sites in a lower flood risk zone for this type of this type of development.

The area of development is a proximately 0.1 hectare. The proposed site layout consists the demolishment of two unused/derelict buildings which has an overall square meter of 160 sq. The proposed 2 semidetached 3-bedroom homes including the garage only totals up to 137m sq. Therefore, the proposal doesn't make the development any more vulnerable. Further details in this
report will show that the proposed site has long standing and very effective flood defences and even if these are breached or overtopped the risk of floodwaters from tidal and fluvial sources reaching the site are less than 0.1% in any year.

Existing flood Alleviation Measures

The site is within a defended flood plain, as defined in Appendix 1 of the environment agency's "policy and Practice for the protection of Flood Plains", which is considered to be passive until such time that a flood greater than the defences can withstand occurs. The likelihood of flooding occurring due to
overtopping or failures of the defences is considered to be very low.

The site is located approximately 0.5km from the tidal section of the river Glen, which has a tidal defence bank which is maintained by the environment agency.

There are watercourses in the area that are maintained by Welland & Deepings IDB. The watercourse on the northern boundary of the site is a counter drain.

Potential sources of flooding

The potential sources of flooding to the site are: -

1. Failure or overtopping of tidal defences of the river Glen
2. Failure of Bourne south fen pumping station and Sluice (IDB)
3. Blockages in IDB drains or culverts
4. Surface water flooding

1. Failure or overtopping of tidal defences

The river Glen which is approximately 0.4km from the site and there been no evidence of this flooding the site.

2. Failure of Bourne south fen pumping station

The water level in the internal dykes and drains on the north & south of the development is controlled by Bourne south fen pumping station which is 1.5km west of the development site.

3. Blockages in IDB drains or culverts

The watercourse near the site is a watercourse call counter drain which is maintained by welland & Deepings IDB. All drains maintained by Welland & Deepings IDB have a regular maintenance programme.

The Welland & Deepings IDB have a regular maintenance programme which ensures that drains and culverts are regularly inspected and any blockages in the system are quickly rectified. The risk of a large blockage in the system causing high water levels which would flood the proposed houses is extremely low.

4. Surface water flooding

There is a risk that surface water has been discharged from roofs. Roads or hardstanding on the site could accumulate and flood some of the dwellings on the site.

The risk from this source will be mitigated by carrying out the following measures:

- Surface water drainage from the development site will be to soakaways designed to BRE365 requirements & building regulations approval.
- Finished floor level will be set a minimum of 300mm above ground level.

The houses will be constructed with normal strip foundations and ground floors will be elevated by using precast concrete beam and block type floors.

Extent of known flooding

During the preparation of this assessment, no evidence was discovered of the site or any of the adjoining properties being flooded.

Probabilities and trends of flooding

The probability of this development flooding from environment agency main river is very low. In an extreme event any effect on this location would not be sudden and there would be time for residents to take precautionary measures to limit the impact of any flooding that may occur.

Residual Risk – Extreme Events

The residual risk from extreme events is very low on this site. The major risk to the site is from a breach or overtopping of the tidal defences. The risk of this happening in this case is low and the hazard from any flooding is also low.

Conclusion & Recommendations

As a result of the assessment, the flowing conclusions have been reached: -

- During the preparation of this assessment, no evidence was discovered of the site or any of the adjoining properties being flooded.

- The proposed site layout consists the demolishment of two unused/derelict buildings which has an overall square meter of 160 sq. The proposed 2 semidetached 3-bedroom homes including the garage only totals up to 137m sq. Therefore, the proposal doesn't make the development any more vulnerable. Further details in this report will show that the proposed site has long standing and very effective flood defences and even if these are breached or overtopped the risk of floodwaters from tidal and fluvial sources reaching the site are less than 0.1% in any year.

- Flood risk from surface water is very low risk means that each year this area has a chance of flooding of less than 0.1%.

- Although the site is located within an internal drainage district with a minimum standard of drainage of 1 in 50 years, this accords with Defra guidelines for rural development. Freeboard to design water level off 900m to lowest land level is available for events greater than 1 in 50 year providing further storage within the drainage channels.

- On site Surface water drainage from the development site will be to soakaways designed to BRE365 requirements & building regulations approval.

- The proposal of 2 dwellings both to be 2 storeys with the 2nd floor sleeping accommodations. The finished floor level will be set a minimum of 300mm above ground level.

- "From the environment Agency" Finally, we would support the recommendation of a FRA advising that future occupiers of the development will sign up to the free Floodline Warnings Direct Service. More information on this service can be found at the following link: https://fwd.environment-agency.gov.uk/app/olr/home This site is located in an area of low sensitivity for groundwater, underlain by Tidal Flat Deposits and the Oxford Clay Formation, which are classified as Unproductive Strata. On this basis, we consider the site to pose a low risk to controlled waters and would not have any concerns with the development in so far as it relates to the risk to controlled waters. Limited information is known about the former use of the site, however, a workshop is noted to be present on site. As such, there may be the potential for contamination to be present. Whilst we consider the risks to controlled waters to be low, we would recommend that the Local Authority are consulted, as they can advise on risk to other receptors, such as human health. We recommend that developers should follow the risk management framework provided in the Land contamination: risk management guidance on GOV.UK, when dealing with land affected by contamination.