FLOOD RISK ASSESSMENT
FOR CARDEN CABIN AT
2 SCHOOL LANE, LUTTON.

DATE JAN 2025

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Disclaimer

This document has been prepared as a flood risk assessment in support of a planning application for a Garden Cabin at 2 school lane Lutton. No responsibility or liability whatsoever for any use of this document other than by Mr Ludlam for the purpose it was prepared for is accepted. All comments and opinions are based on information available at the time of the investigation and the conclusions and recommendations, could therefore, differ in the event of material subsequently being found erroneous, incomplete or misleading. Therefore no liability is accepted should this prove to be the case.

1.0 INTRODUCTION

This Flood |Risk Report has been prepared in accordance with National Planning Policy Framework (NPPF) and supporting planning practice Guidance (PPG) on Flood Risk Coastal Change.

A Planning Application H12-0027-25 has been submitted.

2.1 Site Location

The site location is the rear garden of number 2 School Lane Lutton.

The National Grid Reference of the site is TF43235 25501 (fig1)

2.2 Existing Site

The site is on the west side of School Lane and the South Side of Ropers Gate. The area to be used for the Garden Room is 6x2.5 metres.

The site is in the South Drainage Internal Drainage Board (IDB) District. Surface water at the site would naturally drain. The nearest drainage ditch is 60m to the North, East of the proposed Cabin Location.

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

2.3 Proposed Development

The proposed development consists of a single story Garden Cabin measuring 6m in length and 3.5m wide.

2.4 Flood Zones

An extract from the Environment Agency Flood Map for Planning is shown. The site is within Flood Zone 3, an area with high probability of flooding.

The Environment Agency Long Term Flood Risk maps show that:

Rivers and Sea Risk – Low Risk

Low Risk means that this area has a chance of flooding of between 0.1% and 1% each year

Environment Agency

Flood map for planning

Your reference
2 School Lane

Location (easting/northing)
543207/325413

Scale
1:2500

Created
24 Jan 2025 11:34

- Selected area
- Flood zone 3
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Water storage area

0 20 40 60m

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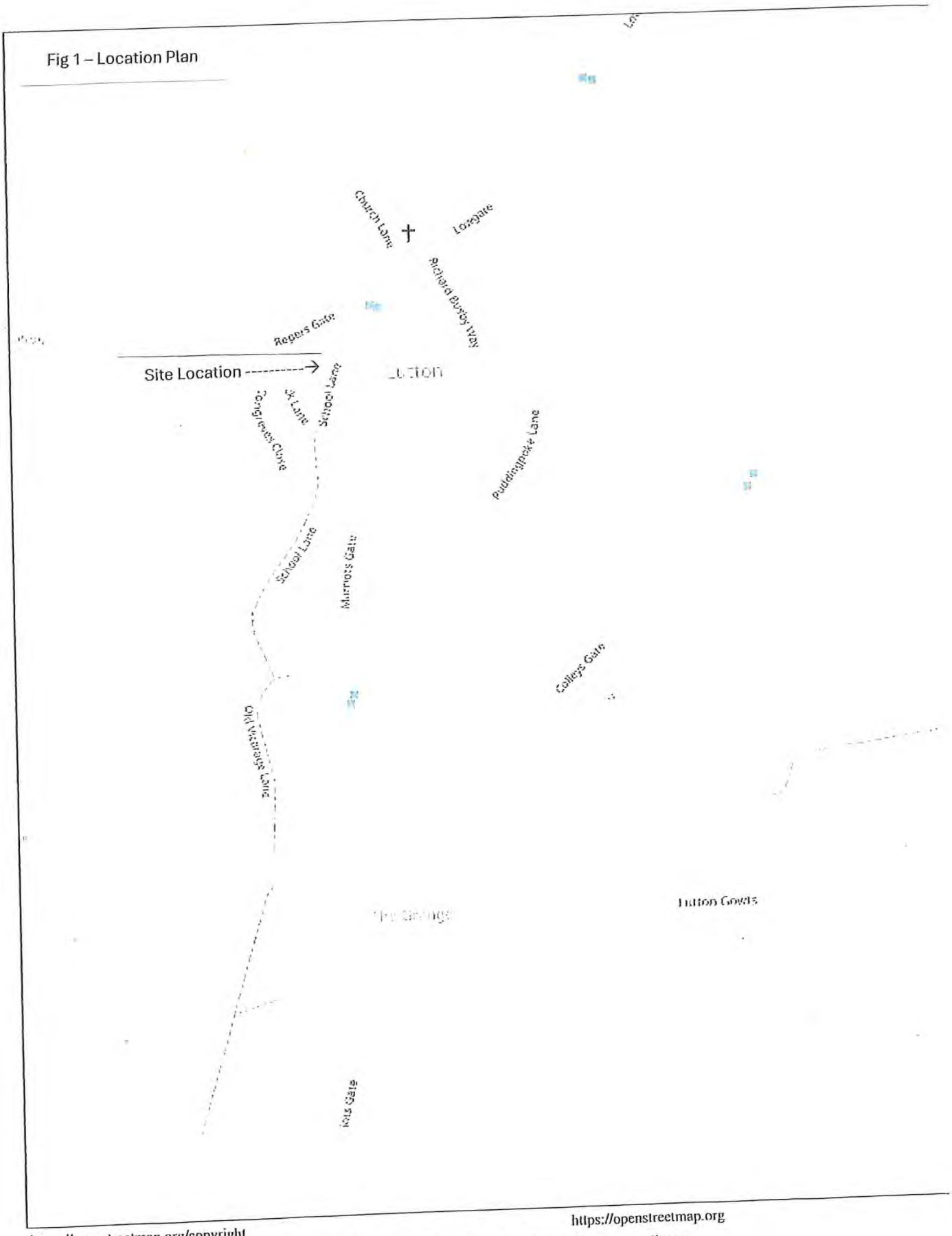
Fig 1 – Location Plan



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Surface Water Risk – Low Risk

Low Risk means that the area has a chance of flooding between 0.1% and 1% each year.

Reservoir Risk

Flooding from reservoirs is unlikely is this area

Groundwater Risk

Flooding from groundwater is unlikely in this area

3.0 Flood Risk Vulnerability

It is for the local planning authority, using the evidence provided and taking advice from the Environment Agency as appropriate, to consider wether an application passes the Sequential Test.

Large parts of the South Holland area that are near the river Nene are within flood zone 3. As such, the opportunities to develop at an alternative location with a lower flood risk are extremely limited.

The SFRA states that as it is necessary to use the refined flood risk information (hazard and depth maps) to assist with the application of the sequential test. The refined flood risk information contained within the SFRA demonstrates the site is not at risk during present day 1% Fluvial and 0.5% tidal event. The site therefore has a low probability of flooding and is considered to pass Sequential Test.

The Exemption test requires consideration of the wider sustainability benefits of a development and that the development would be safe and residual risks managed.

Section 5 of this Flood Risk Assessment describes the flood mitigation measures and the management of the residual risks, demonstrating that this development will be safe and not increase flood risk elsewhere. The development is considered to pass the Exception Test.

4.0 SITE SPECIFIC FLOOD RISK

4.1 Local Flood Assets

The South Holland IDB district is protected by the Wash tidal defences along the Lutton Marsh frontage with embankment levels at a minimum of +7.0m OD. The Wash tidal defences are 5.2km from the site. The river Nene tidal defences are 5.8km east of the site. These defences are the responsibility of the Environment Agency.

There is a long-term strategy for the maintenance of the Environment Agency defences which is reviewed and updated periodically.

There is an extensive local drainage network managed by South Holland IDB. There is and IDB Watercourse 60m North East of the site. The site and surrounding area are within the Lutton Leam catchment area.

The IDB seeks to maintain a general standard capable of providing flood protection to this district.

At present the maintenance standards provided by South Holland Drainage Board and the Environment Agency are generally very good.

4.2 Sources of Flooding

This Table sets out the sources of flooding.

Source of Flooding	Level of Risk
Drainage Network Flooding	The Risk assessed in section 4.3
Surface Water Flooding	Based upon the EA maps the risk is very low.
Fluvial Flooding	The risk is assessed in Section 4.3 and 4.5.
Tidal Flooding	The risk in section 4.3, 4.5 and 4.6
Reservoir Flooding	Based on the EA maps the site is not at risk of flooding from reservoirs.
Groundwater Flooding	There is no evidence to suggest the site is at risk of groundwater flooding.

4.3 Probability of Flooding

The probability of flooding associated with blockages in the South Holland IDB drainage system is low, due to the maintenance achieved and managed by the IDB.

Through the operation and maintenance of the pumping stations and the channel system the Board seek to maintain a general standard capable of providing flood protection to agricultural land and developed areas of 1 in 20 years and 1 in 100 years protectively. The risk associated with flood events that exceed the standard of protection is lowered due to South Holland IDB main drains incorporating freeboard. This free board provides storage during the exceedance events.

The site benefits from the River Nene and the Wash tidal defences that provide protection during a 0.5% annual probability (1 in 200 chance each year) tidal event and a 1& chance (1 in 100 chance each year) Fluvial event.

The flood risk from the Wash is further lowered by secondary line defences and various informal banks constructed during the reclamation of Lutton Marsh.

4.4 Historic Flooding

While preparing this Assessment, No evidence was discovered of the site being flooded.

4.5 Climate Change

Climate change is likely to impact the site through increased rainfull intensity and duration affecting the local drainage network and increased flood level in the river Nene.

The Tidal level during the 0.5% annual probability (1 in 200 chance each year) event inclusive of climate change to 2115 is estimated to be 7.2m AOD. The minimum defence level of the Wash and River Nene embankments is 7.0m AOD. During such event, wave and wind action is likely to cause overtopping. However the second line of defences with embankment levels of 6.0m AOD would provide adequate defences to reduce the probability of flood water reaching the site of the cabin.

In summary the existing systems and defences are appropriate for the safety from flooding for the design length of the proposed cabin. (i.e. 30 years)

4.6 Residual Risk

There is a residential risk of flooding at the site should a breach occur. The South East Lincolnshire SFRA includes maps demonstrating the residual peak depth in 2115. When climate change allowances are applied to the 1% annual probability (1 in 100 chance each year) Fluvial event and 0.5% annual probability (1 in 200 chance each year) tidal event the peak depth at the site from direct overtopping together with breach failure is between 0.25m and 0.5m.

5.0 Flood Risk Mitigation

5.1 Summary of Risks

The probability of this development flooding from localised drainage systems is LOW. Failure of Lutton Leam Tidal Sluice could lead to an increased risk of at the site.

The probability of the site flooding from any Environment Agency system is extremely LOW, less than 1% annual probability.

5.2 Mitigation Measures

The site / location of the proposed cabins risk of flooding has a LOW, ' actual risk ' of flooding.

During an event of, exceedance it is fully anticipated that sufficient time would be available to take precautionary measures to limit the potential impact of flooding.

Surface Water run off can be actively managed through the guttering and sustainable, water butt storage system of the cabin. The development will not affect any adjoining properties or increase the flood risk elsewhere.

6.0 CONCLUSIONS

As a result of the assessment, the following conclusions have been reached.

- The proposed development comprises of a single story Garden Cabin, in the rear garden of number 2 School Lane.
- The site is located within an internal drainage board catchment and through the operation and maintenance of the pumping stations and the channel system the Board seek to maintain a general standard capable to providing flood protection to agricultural land and development areas of 1 in 200 and 1 in 100 year respectively.
- The proposed development / siting of a Garden Cabin is in flood zone 3. The site benefits from the Wash and River Nene tidal defences that provide protection.
- The development passes the Sequential Test and Exception Test and is therefore suitable for the proposed location.