FLOOD RISK ASSESSMENT
FOR CHANGE OF USE AT
HOME FARM, MILL GATE, WHAPLODE

FINAL REPORT

ECL0645/STATUS DESIGN

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1.0 INTRODUCTION

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

In areas at risk of flooding or for sites of 1 hectare or more, developers are required to undertake a site-specific Flood Risk Assessment to accompany an application for planning permission. This Flood Risk Assessment has been produced on behalf of Status Design in respect of a development that consists of a change of use of a garage to form one residential dwelling at Home Farm, Mill Gate, Whaplode.

A planning application for the proposed development is to be submitted by Status Design.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is located on land at Home farm, Mill Gate, Whaplode, Spalding, PE12 6RY. The National Grid Reference of the site is 53249/32098.

The location of the site is shown in Figure 1.



Figure 1 – Location Plan (© OpenStreetMap contributors)

2.2 Existing Site

The site is on the western side of Mill Gate. The site is within the curtilage of Home Farm, a residential property. The site consists of a two-storey building that is a garage and games room, the surrounding land, and access to Mill Gate. The site area is approximately 0.08 hectares.

Environment Agency LiDAR data shows that ground levels within the site range between +2.7m OD and +3.0m OD. The carriageway level of Mill Gate is at +2.9m OD. The agricultural land to the west of the site is generally at a level lower than +2.6m OD.

The site is in the South Holland Internal Drainage Board (IDB) District. Surface water at the site would naturally drain through soakaway and hence to the IDB drain system. There is an IDB Ordinary Watercourse 120m north of the site and an IDB High Priority Watercourse on the eastern side of Mill Gate.

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

2.3 Proposed Development

The proposed development consists of the change of use of a garage and games room to form one residential dwelling. The dwelling will have 2 storeys. The proposed site layout is provided in Attachment 1.

2.4 Local Development Documents

The South East Lincolnshire Local Plan 2011 – 2036, adopted in March 2019, is the Local Plan for the district. Policy 4: Approach to Flood Risk states the requirements for flood risk reduction.

The South East Lincolnshire Level 1 and Level 2 Strategic Flood Risk Assessment (SFRA) was prepared in June 2017.

The Joint Lincolnshire Flood Risk and Drainage Management Strategy has been prepared by Lincolnshire County Council as the Lead Local Flood Authority. The purpose of the Strategy is to increase the safety of people across Lincolnshire by reducing the number of people at risk of flooding, increasing the resilience of local communities, and reducing the impact of flooding.

2.5 Flood Zones

The western boundary of the site is located within Flood Zone 2, an area with a medium probability of flooding, on the Environment Agency Flood Maps for Planning. As shown in Figure 2 the remainder of the site is in Flood Zone 1.

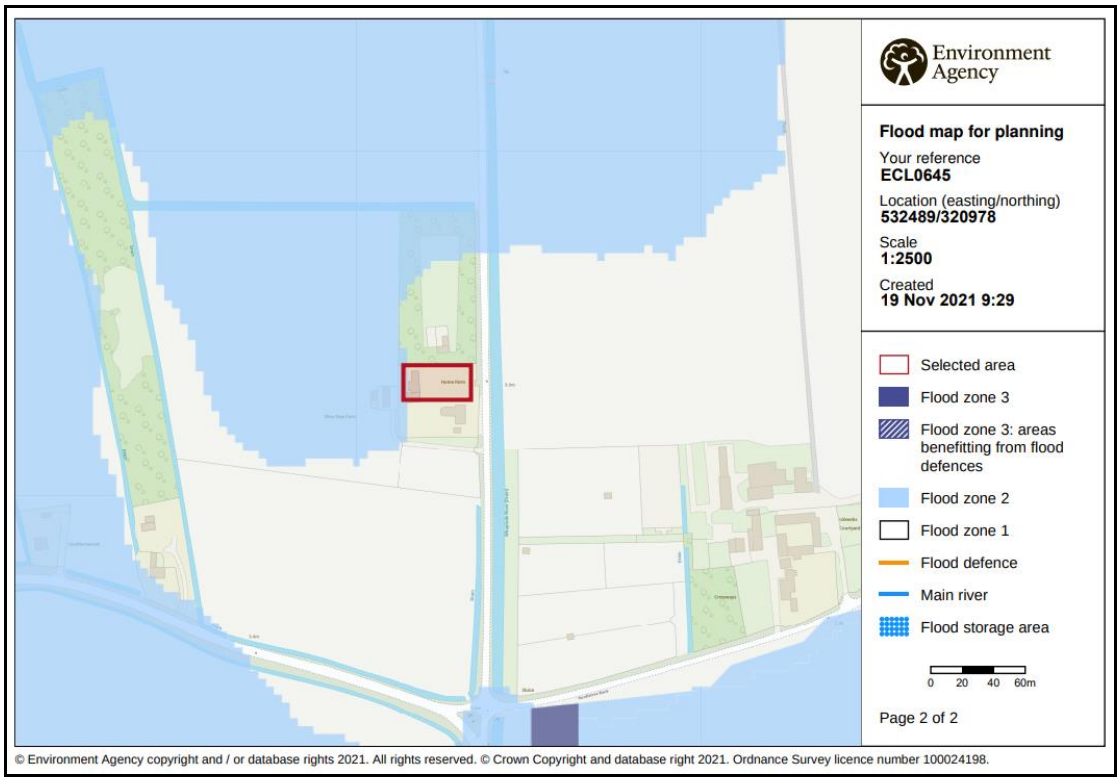


Figure 2 – Environment Agency Flood Map for Planning

The Environment Agency Long Term Flood Risk maps show that:

- the site has a low risk of flooding from rivers or the sea (annual probability between 0.1% and 1%);
- the site has a very low risk of surface water flooding (annual probability of less than 0.1%); and
- the site is not within an area at risk of reservoir flooding.

Table 1 shows the level of risk at the site within the South East Lincolnshire SFRA.

SFRA Map	Present Day	2116
Residual Flood Hazard Map for the 1% fluvial and 0.5% tidal event	The site is outside the 'Low Hazard' area	The site is outside the 'Low Hazard' area
Residual Peak Depth Map for the 1% fluvial and 0.5% tidal	The site is outside the area at risk	The site is outside the area at risk

Table 1 – Flood Risk within SFRA Maps

3.0 FLOOD RISK VULNERABILITY

3.1 The Sequential and Exception Test

The NPPF requires the application of a Sequential Test to ensure that new development is in areas with the lowest probability of flooding.

The Exception Test is a method to demonstrate and help ensure that flood risk to people and property will be managed, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available.

3.2 Vulnerability Classification

Table 2 of the PPG Flood Risk and Coastal Change categorises different types of uses and development according to their vulnerability to flood risk. The proposed development is covered by the description of buildings used for dwellings and is classified as 'More Vulnerable'.

Table 3 of the PPG Flood Risk and Coastal Change sets out Flood Risk Vulnerability and flood zone 'compatibility'. The site is in Flood Zone 2 and the development is 'More Vulnerable' therefore it is not necessary to complete the Exception Test.

PPG Flood Risk and Coastal Change defines that the lifetime of the development in terms of flood risk and coastal change is 100 years.

3.3 Application of the Sequential Test

It is for the Local Planning Authority, using the evidence provided and taking advice from the Environment Agency as appropriate, to consider whether an application passes the Sequential Test.

Paragraph 033 of planning practice guidance (PPG) on Flood Risk and Coastal Change states that 'The Sequential Test does not need to be applied for applications for Change of Use (except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site)'.

Paragraph 048 of the PPG states that 'A Change of Use may involve an increase in flood risk if the vulnerability classification of the development is changed. In such cases, the applicant will need to show in their flood risk assessment that future users of the development will not be placed in danger from flood hazards throughout its lifetime.' The mitigation measures proposed in Section 5.2 of this flood risk assessment are such that risks to future users are mitigated.

4.0 SITE SPECIFIC FLOOD RISK

4.1 Local Flood Assets

The development site is within the South Holland Internal Drainage Board which is protected by the River Welland tidal defences between Spalding and Fossdyke. The defences are 4.4 km north west of the site and minimum embankment levels of +7.0m OD.

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 an IDB High Priority Watercourse on the eastern side of Mill Gate adjacent to the site. The site and surrounding land are within the Little Holland catchment and drains to the Little South Holland Drain which discharges to the South Holland Main Drain at the Little Holland Pumping Station. The South Holland Main Drain discharges to the tidal River Nene at the Sutton Bridge Tidal Sluice.

During the operation and maintenance of its pumping stations, associated structures, and channel systems, the IDB seeks to maintain a general standard capable of providing flood protection to its district. A routine maintenance programme is in place to ensure that the Boards assets are commensurate with the standard of protection that is sought.

Current maintenance standards of the South Holland Internal Drainage Board and the Environment Agency are generally good.

4.2 Sources of Flooding

The potential sources of flooding that have been identified during this assessment are:

- local blockages to the South Holland IDB drainage system;
- an event in the local drainage network greater that exceeds the standard of protection;
- failure of Little Holland Pumping Station;
- overtopping and/or breaching of the tidal River Welland.

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 standards achieved and managed by the IDB.

The standard of drainage provided by South Holland IDB is assessed at 2% annual probability (1 in 50 chance each year), compatible with the Department of the Environment, Food and Rural Affairs (DEFRA) target level of service for rural drainage

and flood defence works. The risk associated with flooding due to events greater than 2% annual probability (1 in 50 chance each year) is lowered due to the South Holland IDB high priority watercourses incorporating a freeboard. This provides storage during events greater than 2% annual probability (1 in 50 chance each year).

The site is within an area benefitting from defences. The River Welland tidal defences provide protection during a 0.5% annual probability (1 in 200 chance each year) event.

4.4 Historic Flooding

During the preparation of 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 rainfall intensity and duration affecting the local drainage network and increased tide levels.

The flood level in the River Welland at Fossdyke during the 0.5% annual probability (1 in 200 chance each year) event inclusive of climate change to 2069 is estimated to be 6.41m AOD. The minimum defence level of the River Welland embankments is 7.0m AOD.

In summary the site is not at risk for the design life of the development (i.e., 100 years).

4.6 Residual Risk

The South East Lincolnshire SFRA includes maps demonstrating the impact of climate change in 2116. The Residual Peak Depth maps within the SFRA indicate the maximum flood depths associated with a breach of the tidal defences. These show that when the climate change allowances are applied to the combination of a 1% annual probability (1 in 100 chance each year) fluvial event and a 0.5% annual probability (1 in 200 chance each year) tidal event the site is not at risk.

5.0 FLOOD RISK MITIGATION

5.1 Summary of Risks

The probability of this development flooding from localised drainage systems is low. Failure of Little Holland Pumping Station could lead to an increased level of risk at the site.

The probability of the site flooding from any Environment Agency system is less than 0.5% annual probability (1 in 200 chance each year) because of the standards of the existing flood defences. Over time there will be a gradual increase in risk to the site due to climate change. During the design life of the development, it is not anticipated that the site would flood from overtopping of the defences.

The SFRA considers the residual risk associated with a breach in the defences in 2116. The maps show that the site is not at risk.

Any increase in impermeable area associated with the change of use will be minimal so there is no potential that flood risk will be increased elsewhere due to surface water.

5.2 Mitigation Measures

Based upon the information available during the preparation of this flood risk assessment, it is recommended that the floor level of the dwelling is 0.3m above site levels and there is flood resilient construction to a height 0.3m above finished floor level.

The developer should ensure that the eventual occupier of the dwelling is sufficiently aware of the risk of flooding, and the standard of the existing defences. The Environment Agency provides a Flood Warning Service which includes Flood Warning Codes and uses direct warning methods where the risks and impacts of flooding are high.

In addition to direct and indirect flood warnings, the Environment Agency operates a 24 hour a day Floodline Service providing advice and information on flooding. The occupier of the dwelling should register with the Floodline Direct Warnings Service to receive any future flood warnings.

During an extreme event it is anticipated that sufficient time would be available to take precautionary actions to limit the potential impact of flooding.

Should there be a failure of Little Holland Pumping Station and conditions were such to put properties and land at risk of flooding, the Internal Drainage Board would take emergency action to maintain the drainage level of service by using temporary pumping equipment.

It is recommended that surface water run-off is managed so that stormwater from the site 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 consists of the change of use of a garage and games room to form one 2 storey residential dwelling at Home Farm, Mill Gate, Whaplode.

- Part of the proposed development is in Flood Zone 2. The development is protected by defences during 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 including an allowance for climate change. The site is not at risk during a breach of the tidal defences.

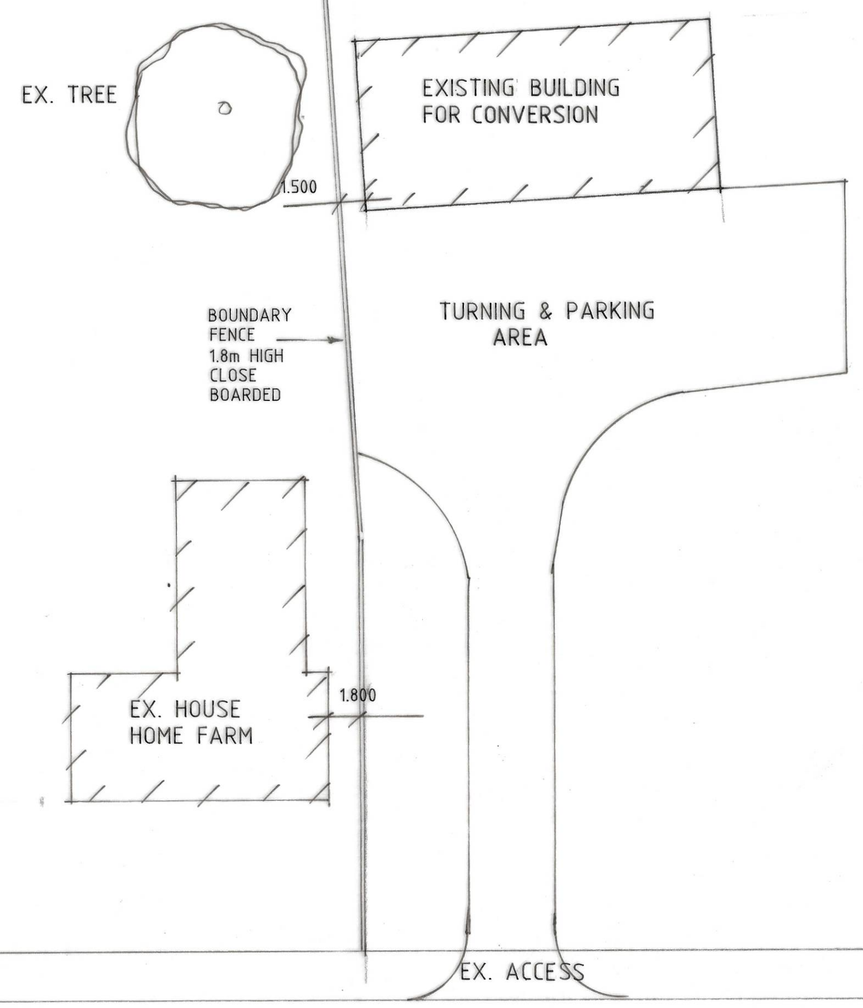
- The site is located within an Internal Drainage Board catchment with a minimum standard of drainage of 2% annual probability (1 in 50 chance each year) which accords with DEFRA guidelines for rural development. The risk of flooding is lowered further due to the South Holland IDB high priority watercourses incorporating a significant freeboard. This provides storage during events greater than 2% annual probability (1 in 50 chance each year).

- It is recommended that the finished floor levels are 0.3m above site levels and there is 0.3m of flood resilient construction above finished floor level.

- The development passes the Sequential Test and is therefore suitable for the proposed location.

ATTACHMENT 1

SITE PLAN
(Dwg SD21-040/1)



General Notes

Do not scale from this drawing.

This drawing is copyright and may not be altered, traced, copied, photographed or used for any purpose other that that for which it is issued without written permission from Messrs Status Design.

The General Contractor is to check all dimensions on site and report discrepancies to the Architect.

All details shown on this drawing are based upon typical site conditions related to the area. No responsibility can be accepted for abnormal conditions unless reported to the Architects so that design amendments may be considered. Site soil surveys are recommended in respect of foundations to establish specific site conditions before foundation work is undertaken.

Please note this drawing is not a conveyance drawing.

Proposed on-site soakaways to be maintained by the owner for the life duration of the property.

This drawing is limited in the amount of information contained and does not purport to contain a full specification of the works. It is solely for the purpose of obtaining Planning and Building Regulations approvals. This drawing must not be used as a contract document alone. The works will not be supervised or inspected by Status Design unless specifically contracted to do so. It is the client or their agent's responsibility to control workmanship, substitution of materials, adherence to specification, variations to contract, etc.

All materials to be new unless stated otherwise and all components and materials, etc. to be used, fitted and installed, etc. in strict accordance with manufacturers' instructions and relevant Code of Practise. Materials should conform to appropriate British Standard specification or BBA Certificate or European Code equivalent.

The Employer/Client shall ensure that the selected contractor is conversant with and adopts all measures necessary to achieve compliance with Health and Safety Legislation for Building Sites and Work Places. The Employer/Client is advised that should the works need to comply with the Construction Design and Management Regulations 2015 (CDM) and Health and Safety at Work, etc., Act 1974 (HSW Act) an independent Planning Supervisor will be required whom should be supplied with a set of all relevant drawings, etc.

The works shall comprise of all that shown on the drawings and information, etc. Works that may not specifically be shown but may be reasonably inferred as necessary to carry out the works shall be deemed to be included.

These notes relate to this drawing and all associated drawings.

It is the property/landowner's responsibility to be aware of the Party Wall, etc Act 1996 when building or carrying out alterations in close proximity to adjoining neighbour's boundaries

THIS DRG TO BE READ IN CONJUNCTION WITH
SD21-040/2, SD21-040/3

Status
DESIGN
CONSULTANTS IN ARCHITECTURE & PLANNING

PROPOSED CONVERSION OF GARAGE/GAMES ROOM TO DWELLING AT HOME FARM, MILLGATE, WHAPLODE FOR

MR. V. MUSTAFA.

SITE PLAN

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