FLOOD RISK ASSESSMENT FOR A CHANGE OF USE AT STATION ROAD, TYDD GOTE

FINAL REPORT

ECL0305-2/PETER HUMPHREY ASSOCIATES LTD

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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 Ashmore Developments Ltd in respect of a Change of Use to convert a garage to one dwelling at Station Road, Tydd Gote.

A planning application for the proposed development is to be submitted by Peter Humphrey Associates Ltd.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is located at 41 Station Road, Tydd Gote, Wisbech, PE13 5QA. The National Grid Reference of the site is 54540/31798.

The location of the site is shown in Figure 1.

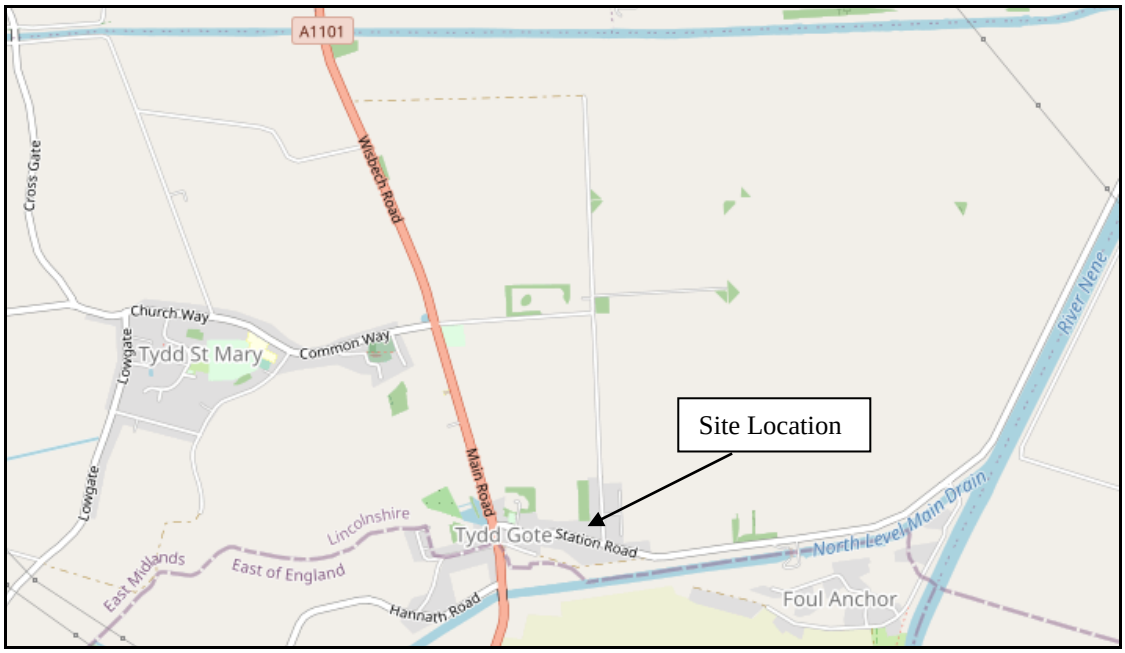


Figure 1 – Location Plan (© OpenStreetMap contributors)

2.2 Existing Site

The site is on the northern side of Station Road. The site comprises a garage and part of the garden of 41 Station Road. The area of development is approximately 0.28 hectares.

Environment Agency LIDAR information shows that ground levels within the site are typically between +3.6m OD and +4.0m OD. In the area of around the garage ground levels are typically +3.8m OD. The carriageway level of Station Road adjacent to the site is +4.4m 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 drainage system.

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

2.3 Proposed Development

The proposed development consists of the conversion of a garage to become one new dwelling. The dwelling will have two storeys. The Site Plan 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 site is located within Flood Zone 2, an area with a medium probability of flooding, of the Environment Agency Flood Maps for Planning as shown in Figure 2.

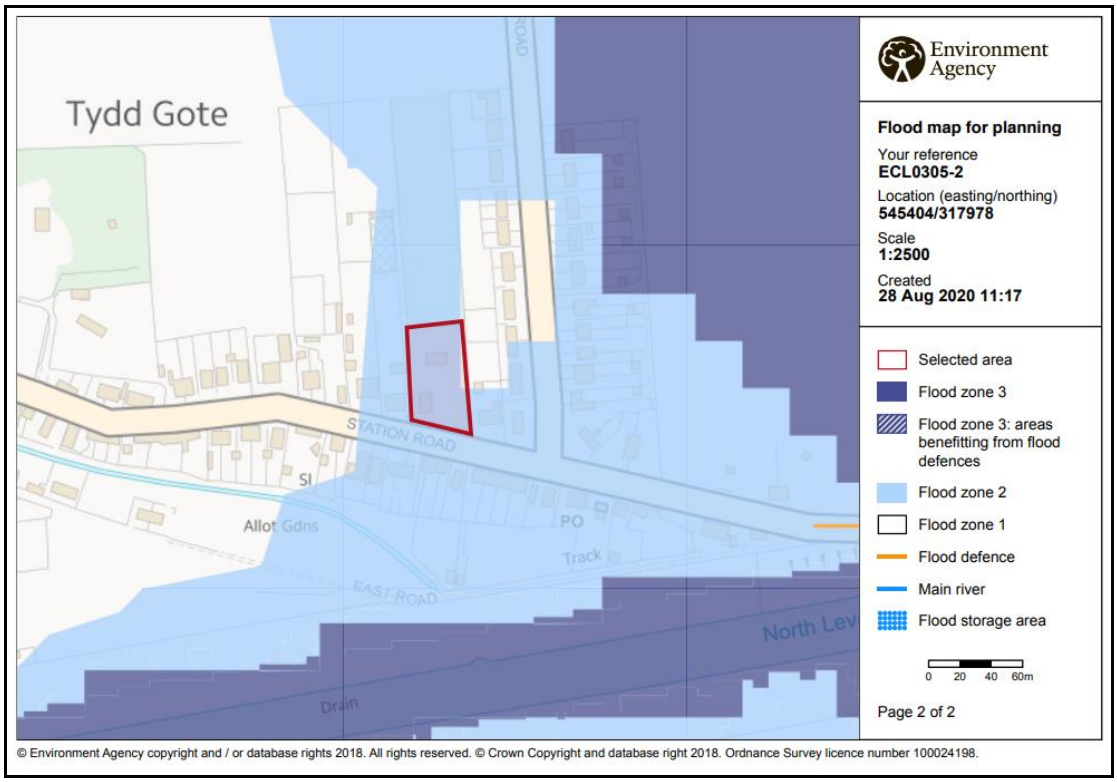


Figure 2 – Environment Agency Flood Map for Planning

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 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 of the 'Low Hazard' area	The site is outside of the 'Low Hazard' area
Residual Peak Depth Map for the 1% fluvial and 0.5% tidal	The site is outside of the area at risk of flooding	The site is outside of the area at risk of flooding

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, taking advice from the Environment Agency as appropriate, to consider 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 the risks to future users are mitigated.

In summary the Sequential Test does not need to be applied and the increase in risk associated with the Change of Use is mitigated.

4.0 SITE SPECIFIC FLOOD RISK

4.1 Local Flood Assets

The site is 1.2 km west of the tidal River Nene. The site is protected by the River Nene tidal defences between Wisbech and Sutton Bridge. The River Nene is 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 every 5 years.

There is an extensive local drainage network managed by South Holland IDB. The site and the surrounding land are within the Free Discharge catchment and drain to the South Holland Main Drain and discharge to the tidal River Nene at the Sutton Bridge Outfall Sluice. The site is approximately 1.8km south of the South Holland Main Drain.

To the south of Station Road, the land is within North Level IDB. This area drains to the North Level Main Drain which is approximately 150m south of the site.

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, North Level 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 Sutton Bridge Outfall Sluice; and
- overtopping and/or breaching of the tidal River Nene.

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 maximum level flood level in the North Level Main Drain is -1.65m OD and therefore the site is not at risk from this watercourse.

The site benefits from defences on the River Nene that provide protection during a 0.5% annual probability (1 in 200 chance each year) tidal event and a 1% annual probability (1 in 100 chance each year) fluvial 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 flood levels. The River Nene tidal defences have been designed to include an allowance for climate change. In summary the existing systems and defences are appropriate for the design life of the development (i.e. 100 years).

4.6 Residual Risk

The South East Lincolnshire SFRA includes maps demonstrate that the site is not at risk during a breach in 2116. An extract from this map is shown in Figure 3 below.

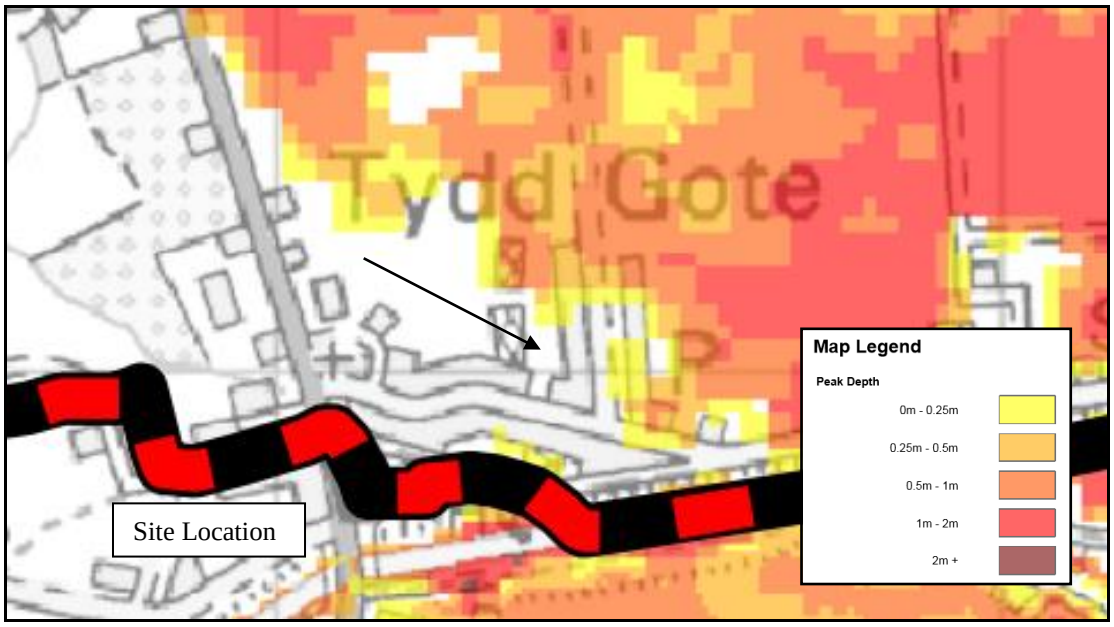


Figure 3 – SFRA 2116 Residual Peak Depth Map

5.0 FLOOD RISK MITIGATION

5.1 Summary of Risks

The probability of this development flooding from localised drainage systems is low. Failure of Sutton Bridge Outfall Sluice 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 1% annual probability (1 in 100 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.

The SFRA considers the residual risk associated with overtopping and a breach in the defences in 2116. The site is not at risk.

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

5.2 Mitigation Measures

The site has a low 'actual risk' of flooding. Based upon the information available during the preparation of this flood risk assessment, to mitigate against the remote risk of flooding it is recommended that the floor level of the dwelling is 0.3m above surrounding ground levels. Furthermore, it is recommended that there is 0.3m of flood resilient construction 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.

Should there be a failure of Sutton Bridge Outfall Sluice 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 utilising temporary pumping equipment.

It is recommended that surface water run-off is discharged to soakaways to BRE365 design requirements and therefore water from the site will not affect any adjoining properties or increase the flood risk elsewhere.

6.0 CONCLUSIONS AND RECOMMENDATIONS

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

- The proposed development comprises a Change of Use to convert a garage to a dwelling on Station Road, Tydd Gote.

- The proposed development is in a defended floodplain. It is in the floodplain of the tidal River Nene and protected during the 0.5% annual probability (1 in 200 chance each year) tidal event including climate change.

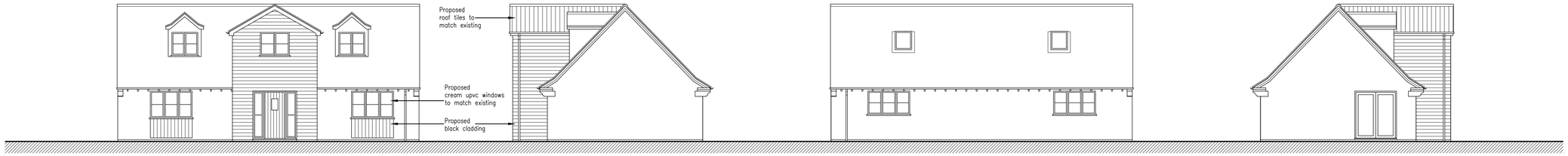
- The site is located within an Internal Drainage Board catchment with a minimum standard of drainage of 2% annual probability (1 in 50 chance each year) which accords with DEFRA guidelines for rural development. The risk of flooding is lowered further due to the South Holland IDB high priority watercourses 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 level is 0.3m above surrounding ground levels and there is 0.3m of flood resilient construction above finished floor level. Surface water run-off from the development should be discharged to soakaways to BRE365 design requirements so that adjoining land and properties are not affected.

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

ATTACHMENT 1

PLANNING DRAWING 1
(Dwg 6176/02/02B)

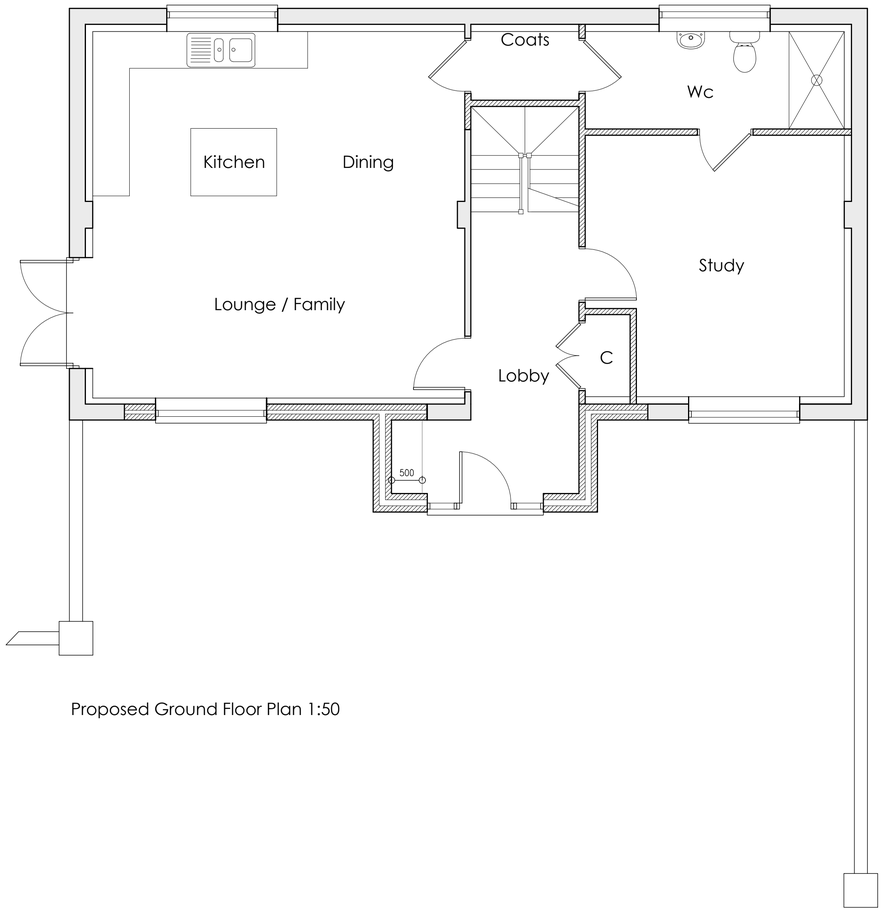


Proposed Front Elevation 1:100

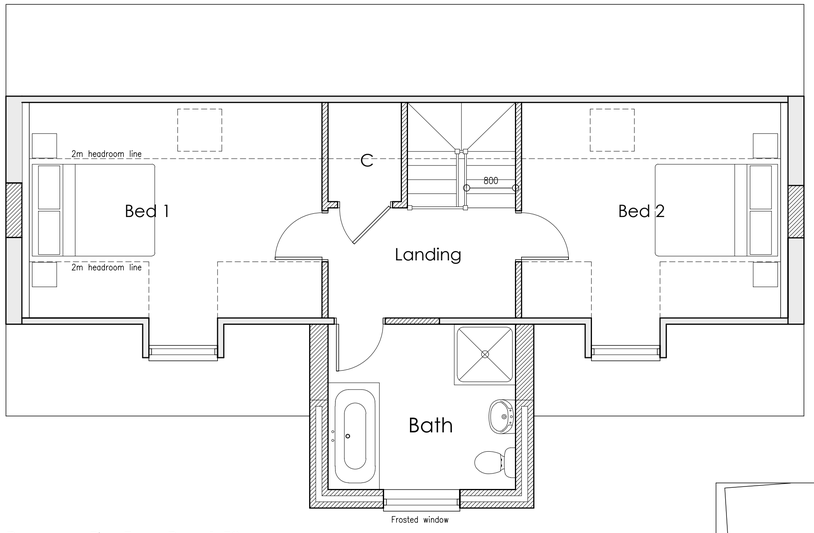
Proposed Side Elevation 1:100

Proposed Rear Elevation 1:100

Proposed Side Elevation 1:100



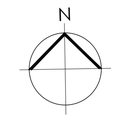
Proposed Ground Floor Plan 1:50

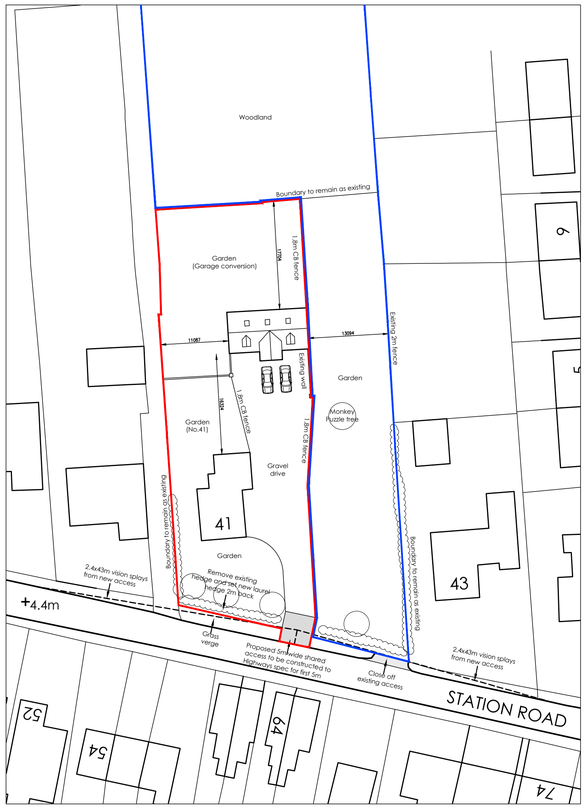


Proposed First Floor Plan 1:50



Location Plan 1:1250





Proposed Site Plan 1:500

Peter Humphrey Associates
ARCHITECTURAL DESIGN AND BUILDING

PROJECT
Proposed Garage Conversion to Dwelling
No.41
Station Road
Tydd Gote
PE13 5QA

DRAWING TITLE
PROPOSED

DATE June 20 SCALE AS SHOWN JOB No. 6176/02/02B

DO NOT SCALE FROM THIS DRAWING

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