FLOOD RISK ASSESSMENT FOR A CHANGE OF USE AT SEAS END ROAD, SURFLEET

FINAL REPORT

ECL1850/GR MERCHANT 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 GR Merchant Ltd in respect of a development that consists of the change of use of agricultural land to commercial parking and planting at Seas End Road, Surfleet.

A planning application for the proposed development is to be submitted by GR Merchant Ltd.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is located at 82 Seas End Road, Surfleet, Spalding, PE11 4DQ. The National Grid Reference of the site is 52703/32881.

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 Seas End Road. The site comprises a commercial building and surrounding land and an area of agricultural land that is to the north. There are residential dwellings to the east and west of the site. The area of development is 0.08ha.

Environment Agency LIDAR data shows that the ground levels around the building are between +3.8m OD and +4.1m OD. The agricultural land that forms the northern part of the site is typically +3.4m OD. The carriageway level of Seas End Road adjacent to the site is +4.2m OD.

The site is in the Welland and Deepings Internal Drainage Board (IDB) District. Surface water at the site drains through a local network and hence to the IDB drain system. The nearest IDB maintained watercourse, Old Beach Drain East, is 350m north of the site.

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.

2.3 Proposed Development

The proposed development is the change of use of agricultural land to commercial parking and planting. Details of the proposed development are 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 Available Flood Risk Information

An extract from the Environment Agency Flood Map for Planning is shown in Figure 2. The site is located within Flood Zone 3, an area with a high probability of flooding.

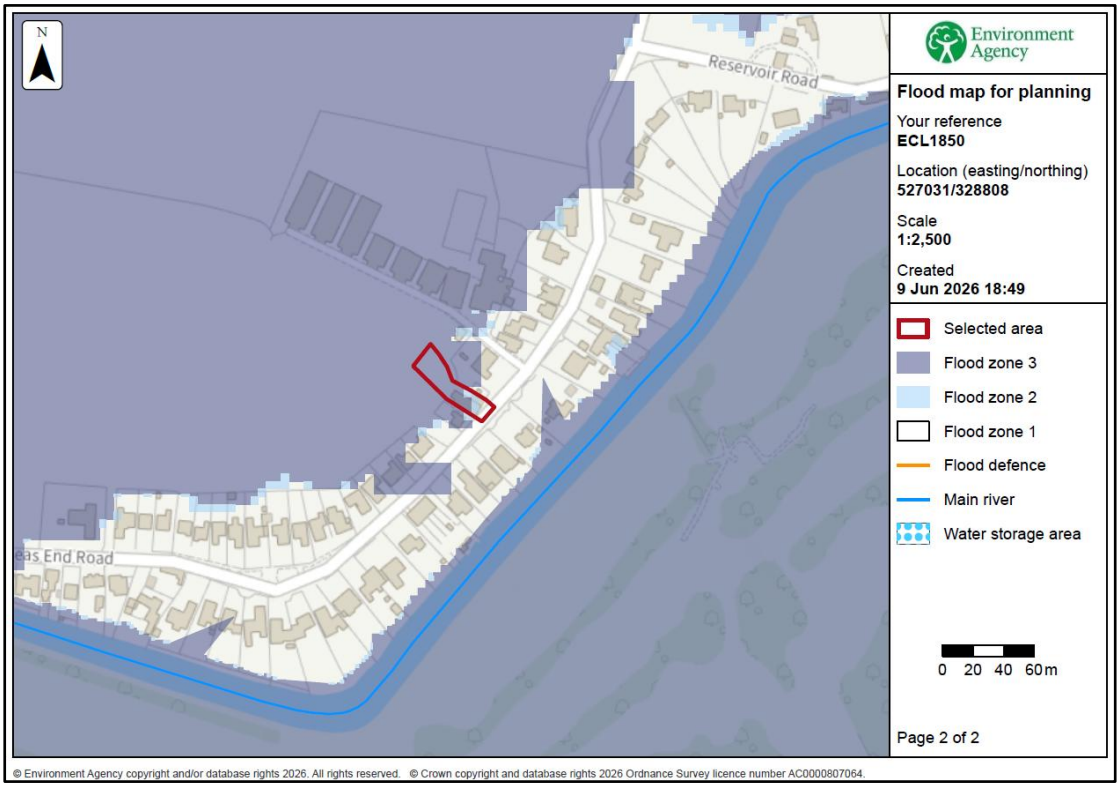


Figure 2 – Environment Agency Flood Map for Planning

The site is in Flood Zone 3 when climate change is considered.

The Flood Map for Planning shows that an area on the northern boundary of the site has a 1 in 30 annual likelihood of surface water flooding. During the event with a 1 in 100 annual likelihood flood depths within the site are up to 150mm. When climate change is considered flood depths within the site are up to 300mm.

The Environment Agency Long Term Flood Risk maps provide an indication of the risk from the primary sources of flooding. The map shows that the site is outside of the 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 in the 'Danger for Some' area	The site is in the 'Danger for Most' area
Residual Peak Depth Map for the 1% fluvial and 0.5% tidal event	The site is at risk of flooding with depths between 0.0m and 0.25m.	The site is at risk of flooding with depths between 0.5m and 1.0m.

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 general industry and is classified as 'Less 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 3 and the development is 'Less 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 River Glen is 50m south east of the site. The risk of flooding at the site is reduced by high ground on the northern bank of the River Glen. The River Glen is a Main River and 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 Welland and Deepings IDB. Old Beach Drain East, an IDB maintained watercourses, is 350m north of the site. The site and the surrounding land are within the Surfleet catchment and drain in a north easterly direction to Surfleet Marsh Pumping Station which discharges to the River Welland.

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 Welland and Deepings IDB and the Environment Agency are generally good.

4.2 Sources of Flooding

A summary of the sources of flooding is provided in Table 2.

Source of Flooding	Level of Risk
Drainage Network Flooding	The risk is assessed in Section 4.3.
Surface Water Flooding	During the 1% annual probability event with climate change the flood depths are up to 0.3m.
Fluvial Flooding	The risk is assessed in Section 4.3 and 4.5.
Tidal Flooding	The risk is assessed in Section 4.3 and 4.5.
Reservoir Flooding	Based upon the EA maps the site is not at risk of reservoir flooding.
Groundwater Flooding	There is no evidence to suggest the site is at risk of groundwater flooding.

Table 2 – Sources of Flooding

4.3 Probability of Flooding

The probability of flooding associated with blockages in the Welland and Deepings IDB drainage system is low due to the maintenance standards 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 to providing flood protection to agricultural land and developed areas of 1 in 20 years and 1 in 100 years, respectively. The risk associated with flood events that exceed the standard of protection provided is lowered due to the Welland & Deeping IDB main drains incorporating freeboard. This freeboard provides storage during the exceedance events.

The modelled flood extents (with defences) taken from the Welland Catchment Strategic 2016 Model show that the site is not at risk during the present day 1% annual probability (1 in 100 chance each year) fluvial event.

The River Welland tidal defences provide protection during the 0.5% annual probability (1 in 200 chance each year) tidal event. The 0.5% annual probability (1 in 200 chance each year) water level at Fossdyke Bridge is +5.99m OD.

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 modelled flood extents (with defences) taken from the Welland Catchment Strategic 2016 Model show that the site is not at risk during the 1% annual probability (1 in 100 chance each year) fluvial event including 20% climate change.

The River Welland tidal defences provide protection during the 0.5% annual probability (1 in 200 chance each year) event inclusive of the effects of 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

There is a residual risk of flooding at the site should a breach occur. The South East Lincolnshire SFRA includes maps demonstrating the impact of a breach in 2116. 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 peak depth is between 0.5m and 1.0m. An extract from this map is shown in Figure 3 below.

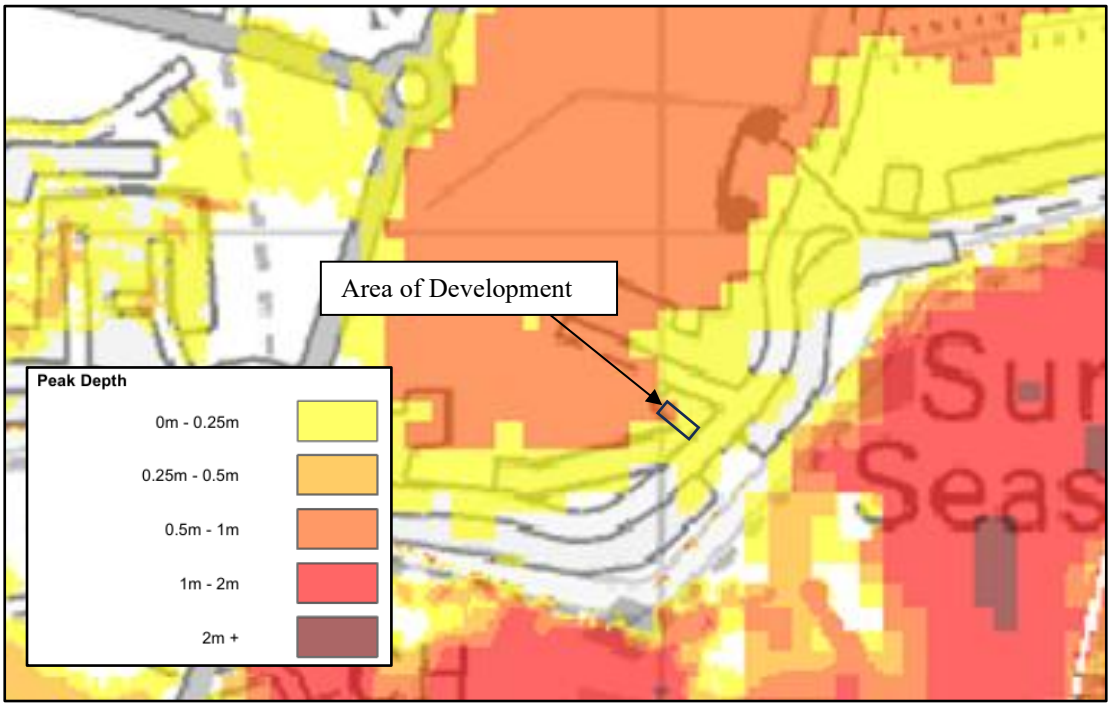


Figure 3 – SFRA 2116 Residual Peak Depth Map

5.0 FLOOD RISK MITIGATION

5.1 Summary of Risks

The probability of this development flooding from localised drainage systems is low. Failure of Surfleet Marsh Pumping Station could lead to an increased level of risk within the IDB Catchment.

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 2115. The maximum flood depth within the site is between 0.5m and 1.0m.

The development increases the impermeable area and therefore has the potential to increase the rate of runoff from the site.

5.2 Mitigation Measures

The site has a low 'actual risk' of flooding. Considering the development is the change of use to commercial parking there are no specific mitigation measures proposed associated with the design.

The developer should ensure that the user of the site is sufficiently aware of the risk of flooding, and the standard of the existing defences. The Environment Agency operates a flood warning system for properties at risk of flooding to enable householders to protect life or take actions to manage the effect of flooding on property. Floodline Warnings Service is a national system run by the Environment Agency for broadcasting flooding warnings. The user of the site should register to receive flood warnings.

Should there be a failure of Surfleet Marsh Pumping Station and conditions were such to put properties and land at risk of flooding, the IDB 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 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 is the change of use of agricultural land to commercial parking and planting at 82 Seas End Road, Surfleet.

- 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 developed areas of 1 in 20 and 1 in 100 years, respectively.

- The proposed development is in Flood Zone 3. The proposed development is protected during the 1% annual probability (1 in 100 chance each year) fluvial event and the 0.5% annual probability (1 in 200 chance each year) tidal event including allowances for climate change.

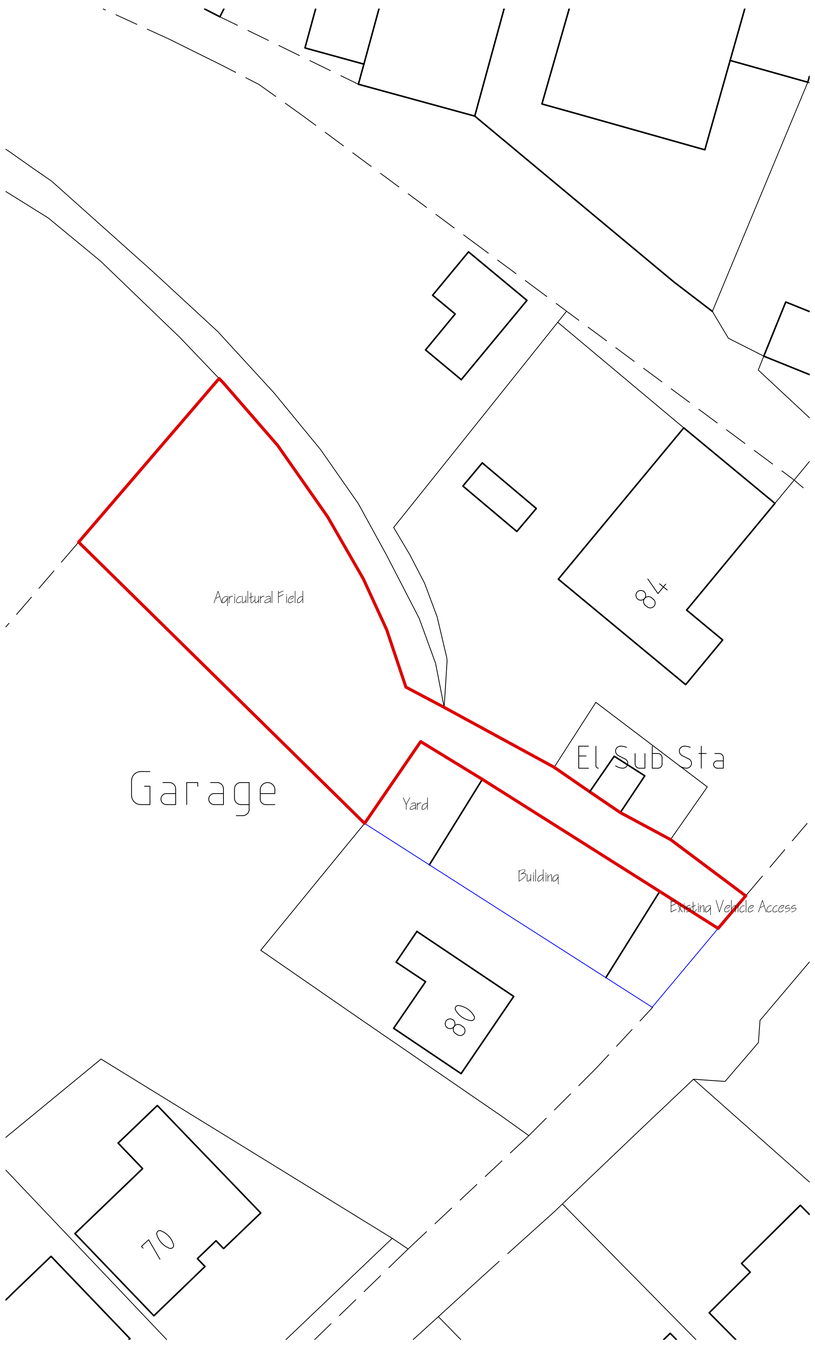
- There is a residual risk associated with a breach of the defences. During the design life of the development, including an allowance for climate change, the peak flood depth is between 0.5m and 1.0m.

- There are no specific recommendations associated with the commercial parking area to reduce the risk of flooding to the development.

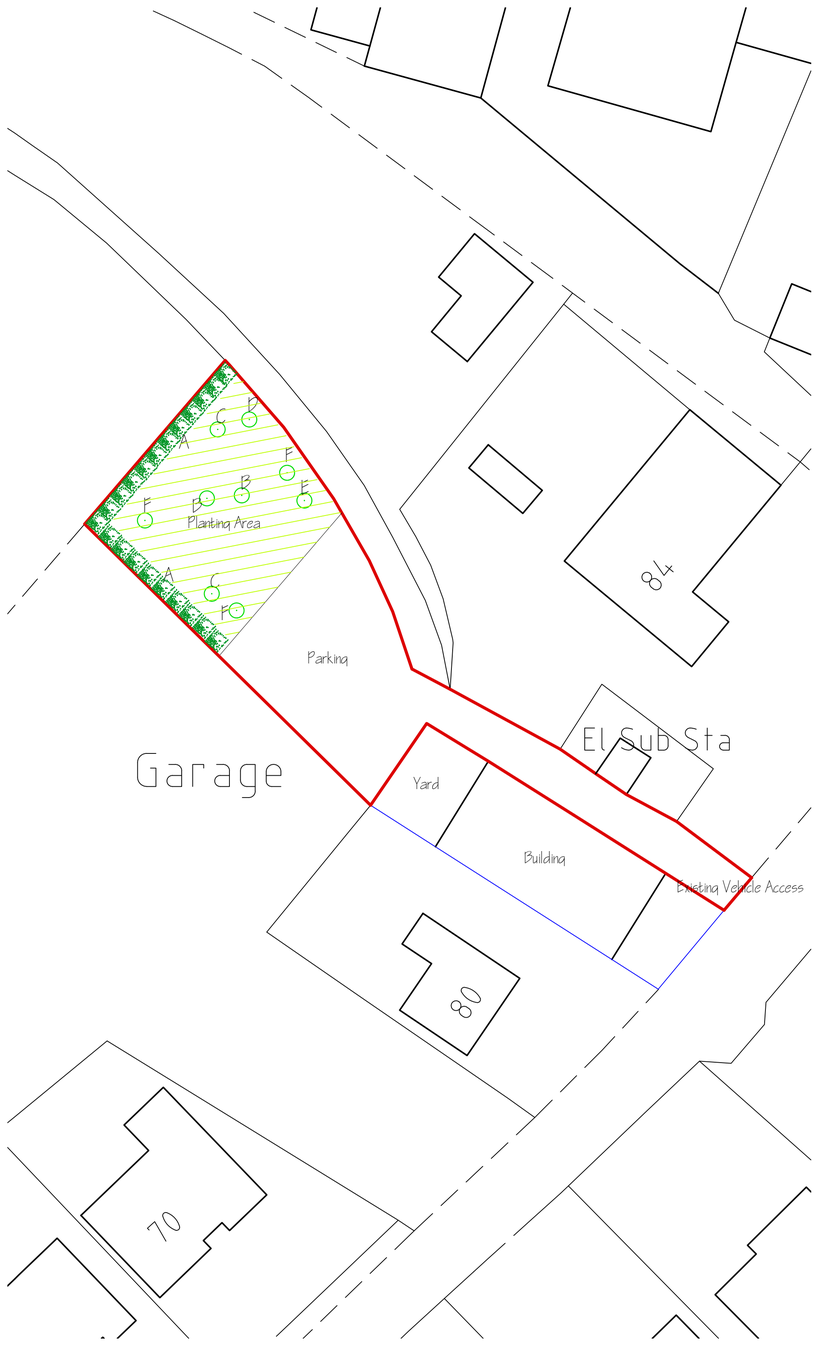
- The development passes the Sequential Test and is therefore suitable for the proposed location.

ATTACHMENT 1

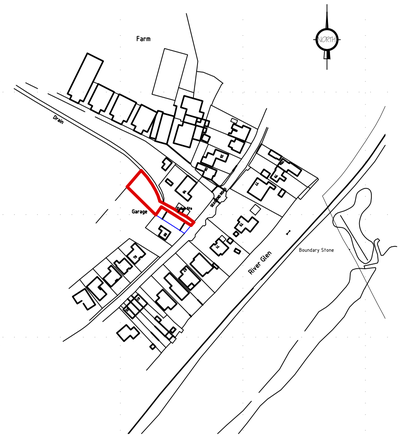
SITE & LOCATION PLAN
(DWG 4496-26 01A)



EXISTING SITE PLAN 1:250



PROPOSED SITE PLAN 1:250



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LOCATION PLAN 1:2500

LANDSCAPING, TREE PLANTING & FENCING SCHEME.

A - MIXED HEDGE -
(a2) Common Hawthorn (Crataegus Monogyna)
(b) Hazel (Corylus avellana)
(c) Dogwood (Cornus Florida)
(d) Field Maple (Acer Campestre)
(e) Holly (Ilex Aquifolium)
(f) Guelder Rose (Viburnum Opulus)
(g) Privet (Ligustrum Ovalifolium)

B - BLACKTHORN (PRUNUS SPINOSA) FEATHERED - 1.0m to 1.2m WITH A TERMINAL SHOOT AND LATERAL SHOOTS

C - SILVER BIRCH (BETULA PENDULA) FEATHERED - 1.0m to 1.2m WITH A TERMINAL SHOOT AND LATERAL SHOOTS

D - CRAB APPLE (MALUS SYLVESTRIS) FEATHERED - 1.0m to 1.2m WITH A TERMINAL SHOOT AND LATERAL SHOOTS

E - WILD CHERRY (PRUNUS AVIUM) FEATHERED - 1.0m to 1.2m WITH A TERMINAL SHOOT AND LATERAL SHOOTS

F - ROWAN (SORBUS) FEATHERED - 1.0m to 1.2m WITH A TERMINAL SHOOT AND LATERAL SHOOTS

FLOWERING LAWNS - Seeded EL - 1 Mix From Emorsgate Seeds

All planting to be in accordance with BS 4428:1989 and amendment No. 1 (1991)
All trees to be planted with minimum 0.04m plastic mulch mat and to be staked, tied and labeled.
1/3 Tar & bag of peat free tree and shrub planting compost to be incorporated into backfill for each tree hole.
All trees, shrubs and hedges shall be maintained by the owner or owners of the land in which they are situated for a period of five years beginning with the date of completion of the scheme and during that period all losses shall be made good as and when necessary.

ref:	revision	date
A	RED LINE CHANGED	JUNE '2026

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Project
CHANGE OF USE FOR COMMERCIAL PARKING & PLANT
82 SEAS END ROAD
SURFLEET
SPALDING, LINCS. PE11 4DQ

Client
MR P HARPER

Drawing
SITE & LOCATION PLANS

Job Ref.	Drawing No.
4496-26	01A
Date	**Drawn**
MAY 2026	SLD

Scales
AS STATED

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