FLOOD RISK ASSESSMENT
FOR COMMERCIAL DEVELOPMENT AT
FLEMING ROAD, ENTERPRISE WAY, PINCHBECK

FINAL REPORT

ECL1658/ G R MERCHANT LTD

DATE OCTOBER 2025

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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 G R Merchant Ltd in respect of a development that consists of a proposed covered loading building at Fleming Road, Enterprise Way, Pinchbeck.

An application for the proposed development is to be submitted by G R Merchant Ltd.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is located on land off Fleming Road, Enterprise Way, Pinchbeck, Spalding, PE11 3YR. The National Grid Reference of the site is 52525/32483.

The location of the site is shown in Figure 1.



Figure 1 – Location Plan (© OpenStreetMap contributors)

2.2 Existing Site

The site is an industrial premises located to the north east of Fleming Way. Within the site is an office, storage building and loading building. The remainder of the site consists of hardstanding that provides parking. This site is within an industrial estate to the south of Pinchbeck. The area of development is approximately 0.80 hectares.

Environment Agency LiDAR data shows that ground levels within the site are typically between +3.0m OD and +3.4m OD. The northern boundary and the south east of the site are the highest with ground levels falling towards the western boundary.

The site is in the Welland and Deepings Internal Drainage Board (IDB) District. Surface water at the site would discharge to the local drainage network and hence to the IDB drain system. The Pennygate Pup Drain, an IDB Main Drain, is located 400m west 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 consists of covered loading building on the eastern side of the site. Details of the proposed warehouse 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 provided in Figure 2. The site is located within Flood Zone 3, an area with a high probability of flooding.

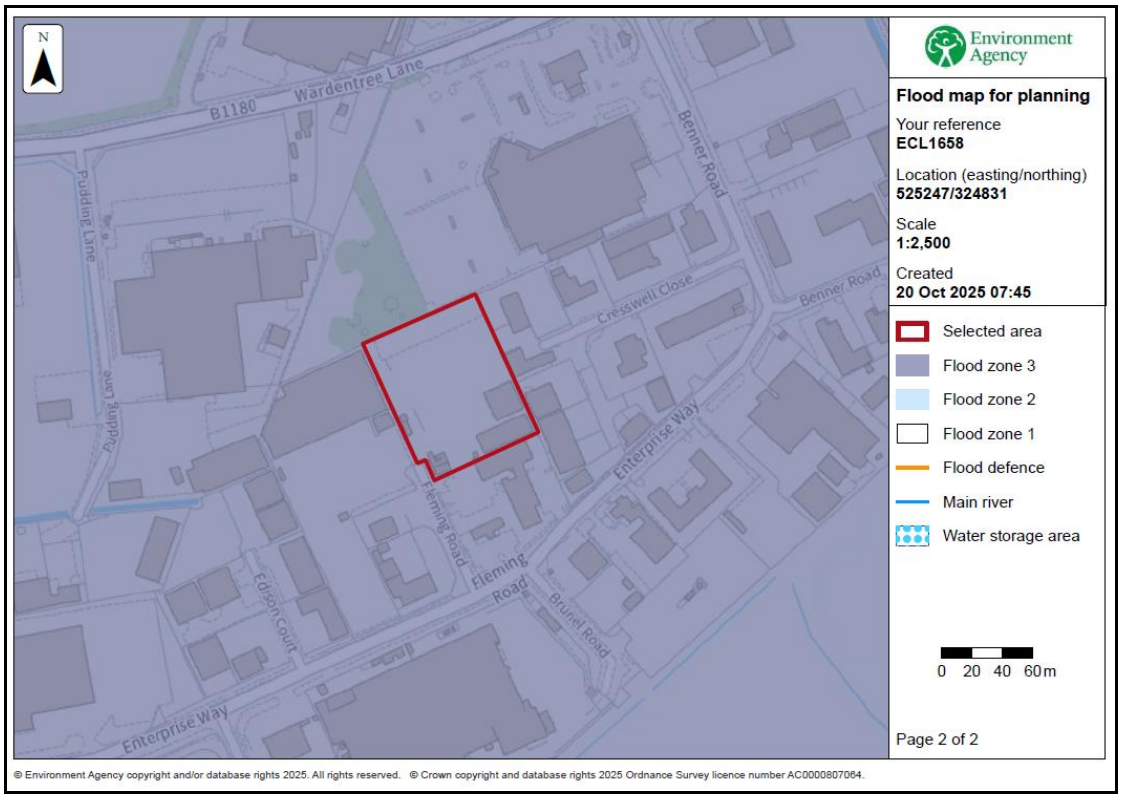


Figure 2 – Environment Agency Flood Map for Planning

The Environment Agency Long Term Flood Risk maps provide an indication of the risk from the primary sources of flooding. The details provided with these maps are summarised in Table 1. The depth of flooding identified is the maximum depth that occurs during a low chance (between 0.1% and 1% chance each year) event.

	Present Day		2050 Epoch	
	Chance of Flooding	**Depth (Low chance)**	**Chance of Flooding**	**Depth (Low chance)**
Rivers and the Sea	Part of the site has a low chance (between 0.1% and 1% chance each year)	No data available	No data available	No data available
Surface Water	An area in the centre of the site has a high chance (greater than 3.3% chance each year)	To 0.2m	An area in the centre of the site has a high chance (greater than 3.3% chance each year)	To 0.2m
Reservoir	Outside of the area at risk.			

Table 1 – Environment Agency Long Term Flood Risk Maps

Table 2 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 in the 'Danger for Most' area
Residual Peak Depth Map for the 1% fluvial and 0.5% tidal	The site is outside the area at risk	The peak flood depth is between 0.5m and 1.0m.

Table 2 – 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.

Large parts of the South Holland district close to the River Welland lie within Flood Zone 3. As such opportunities to undertake the development at an alternative site with a lower flood risk are limited. At this location it is not possible to position the development on higher ground within the proposed site.

The proposed development will form part of the business based at the site. It would not be practicable to undertake the development at an alternative location. The proposal is considered to pass the Sequential Test.

4.0 SITE SPECIFIC FLOOD RISK

4.1 Local Flood Assets

The site is approximately 800mm west of the River Welland downstream of Spalding. The River Welland tidal defences, which are downstream of the confluence of the Coronation Channel and River Welland, provide protection to Pinchbeck. The tidal 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 Welland and Deepings IDB. There is an IDB maintained watercourses, the Pennygate Pup Drain, 400m to the west of the site. The site and the surrounding land are within the Pinchbeck catchment and drain in a north westerly direction to Pinchbeck Marsh Pumping Station. Pinchbeck Marsh Pumping Station discharges to Vernatts Drain which flows into the River Welland at Surfleet.

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 3.

Source of Flooding	Level of Risk
Drainage Network Flooding	The risk is assessed in Section 4.3.
Surface Water Flooding	Based upon the EA maps the risk is high with depths to 0.2m.
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 3 – Sources of Flooding

Based upon the Environment Agency Long Term Flood Risk Maps the area of the site where the loading building will be located is not at risk of surface water flooding. As such surface water flooding has not been considered further in this assessment.

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.

The standard of drainage provided by Welland and Deepings 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 Welland and Deepings IDB main drains incorporating a freeboard. This provides storage during events greater than 2% annual probability (1 in 50 chance each year).

The River Welland tidal defences provide protection during the 0.5% annual probability (1 in 200 chance each year) tidal event including climate change.

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 Welland 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

There is a residual risk of flooding at the site should a tidal 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 is between 0.5m and 1.0m. An extract from the SFRA map is shown in Figure 3 below.

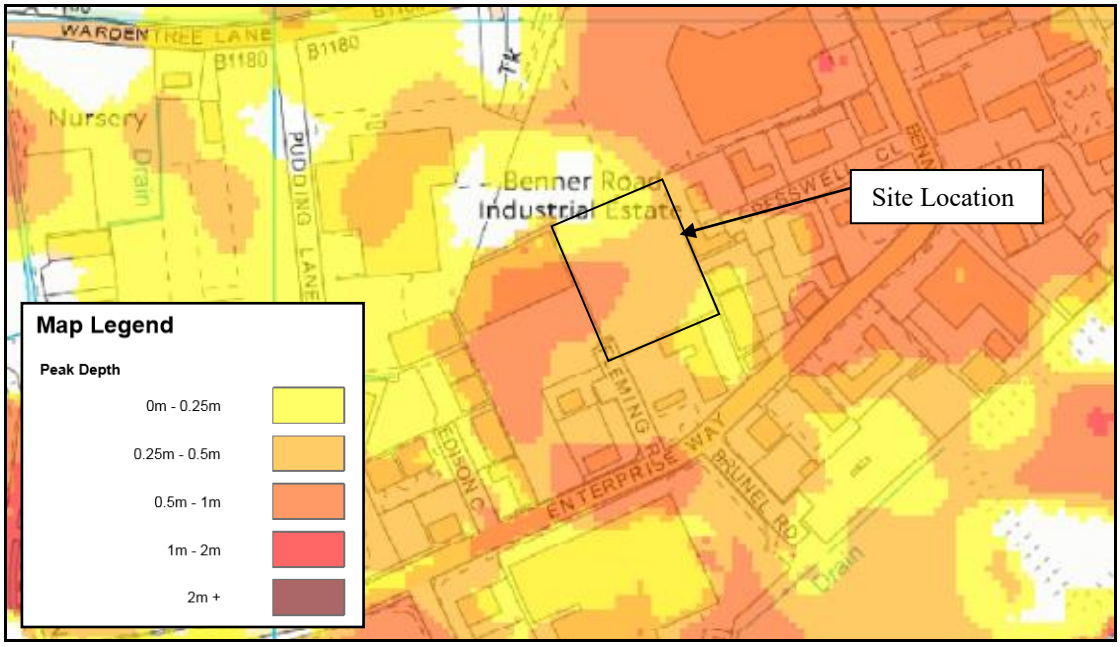


Figure 3 – SFRA 2116 Residual Peak Depth Map during the 1% fluvial and 0.5% tidal Annual Probability Event

5.0 FLOOD RISK MITIGATION

5.1 Summary of Risks

The probability of this development flooding from localised drainage systems is low. Failure of Pinchbeck Marsh 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 defence systems. 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. During the 0.5% annual probability (1 in 200 chance each year) plus climate change event the maximum flood depth is between 0.5m and 1.0m.

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

5.2 Mitigation Measures

The NPPF Planning Practice Guidance (PPG) on Flood Risk and Coastal Change provides direction regarding Making Development Safe from Flood Risk. Paragraphs 059 and 060 advise on flood resistance and flood resilience. It states that the first preference should be to avoid flood risk by raising it above the flood level. The proposed development is a loading bay and therefore this is not practical.

Considering the nature and scale of the risk it is recommended that:

- there is a water entry strategy allowing flood water to enter the warehouse and drain freely from it;
- the main electrical supply and switchboard are elevated above the flood level;
- the user of the site should register to receive flood warnings from the Environment Agency to reduce the vulnerability of people at the site; and
- the user of the site should identify the actions to be undertaken in the event of receiving a flood warning.

Should there be a failure of Pinchbeck 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.

6.0 CONCLUSIONS

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

- The proposed development consists of one new warehouse on land off Fleming Road, Enterprise Way, Pinchbeck.

- 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 benefits from tidal defences on the River Welland that provide protection 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 climate change.

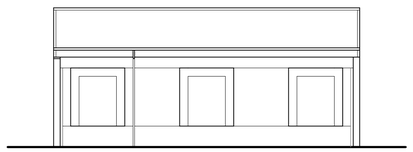
- There is a residual risk associated with a breach of the defences. It is recommended that flood resilience measures are adopted to manage the risk of a breach. These include a water entry strategy, reducing the vulnerability of people and safe access and egress.

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

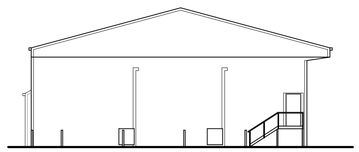
ATTACHMENT 1

FLOOR PLANS AND ELEVATIONS
(DWG 4432-25-01A)

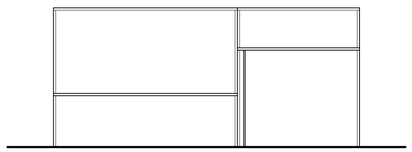
SITE PLAN PROPOSED
(DWG 4432-25-02A)



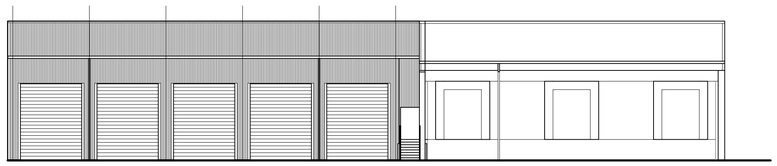
WEST ELEVATION - EXISTING 1:200



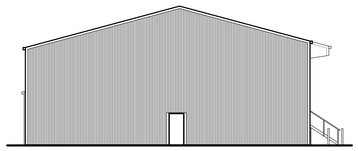
NORTH ELEVATION - EXISTING 1:200



EAST ELEVATION - EXISTING 1:200



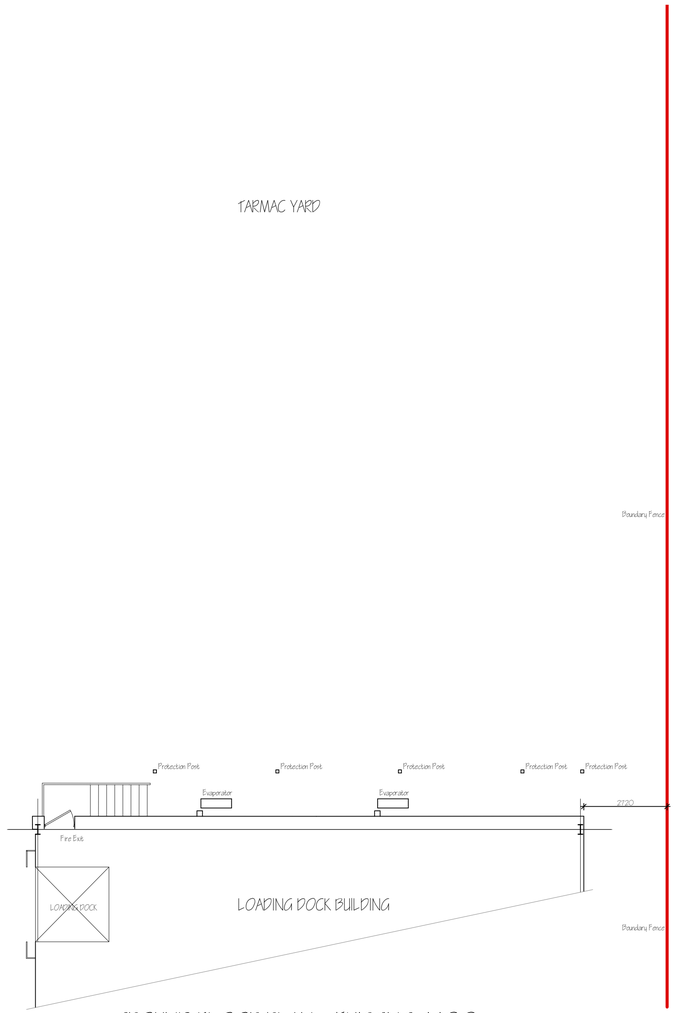
WEST ELEVATION - PROPOSED 1:200



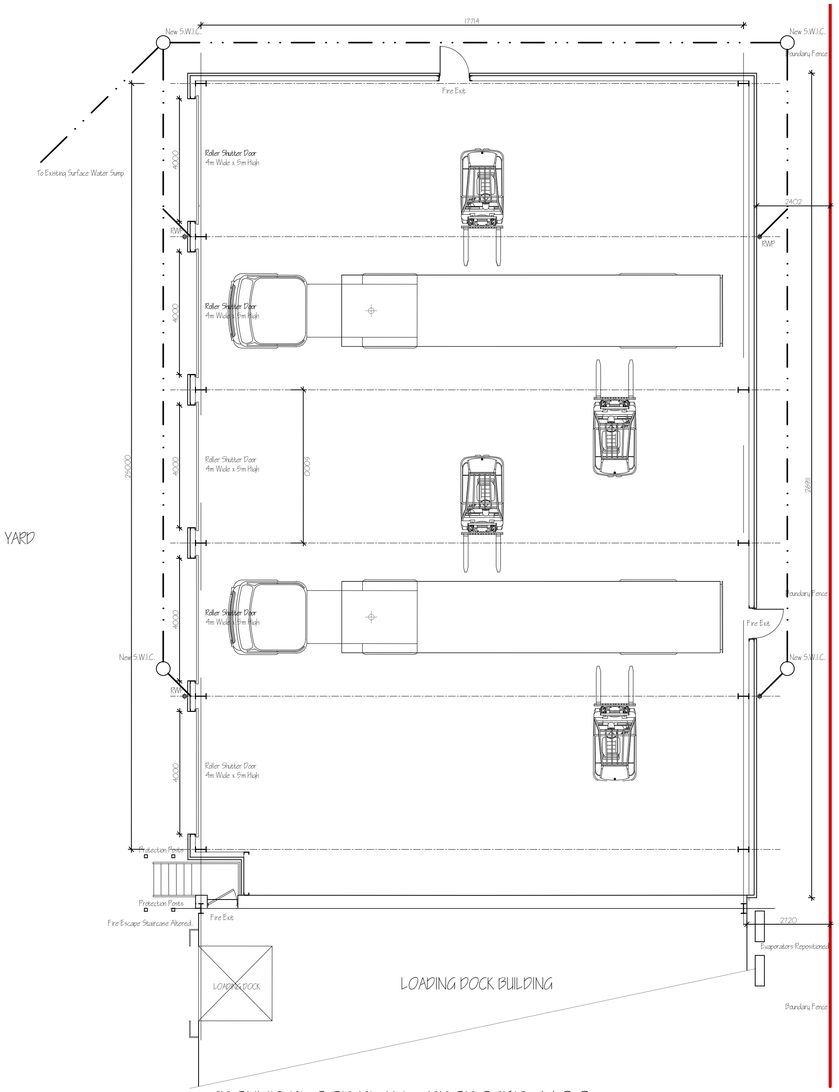
NORTH ELEVATION - PROPOSED 1:200



EAST ELEVATION - PROPOSED 1:200



GROUND FLOOR PLAN - EXISTING 1:100



GROUND FLOOR PLAN - PROPOSED 1:100

ref:	revision	date
A	CLIENT AMENDMENTS	OCT 2025

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Project

PROPOSED COVERED LOADING BUILDING
FLEMING ROAD
PINCHBECK
SPALDING, LINCS, PE11 3YR

Client

HILTON HOLDING LTD

Drawing

FLOOR PLANS - EXISTING & PROPOSED
ELEVATIONS - EXISTING & PROPOSED

Job Ref.	Drawing No.
4432-25	01A
Date	**Drawn**
SEPTEMBER 2025	SLB

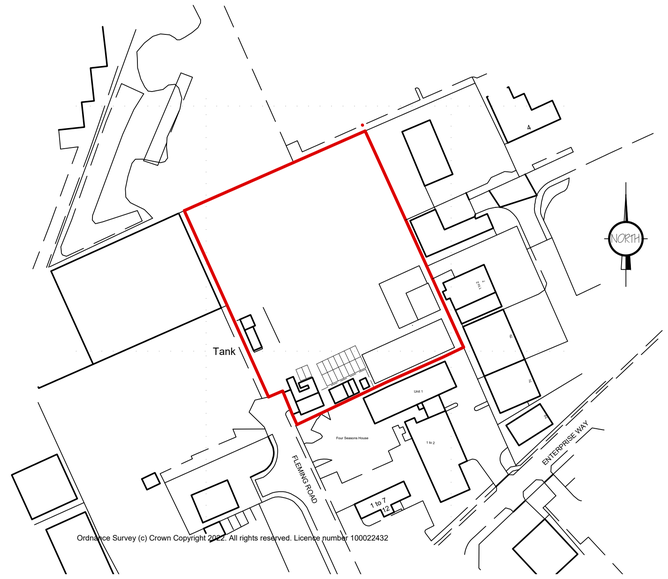
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LOCATION PLAN 1:2500



EXISTING SITE PLAN 1:500

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Project
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Client
HILTON HOLDING LTD

Drawing
SITE PLAN - EXISTING & PROPOSED
LOCATION PLAN

Job Ref.	Drawing No.
4432-25	02A
Date	**Drawn**
SEPTEMBER 2025	SLB

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