



## FLOOD RISK ASSESSMENT

**LOCATION:**

Land Adjacent High Street, Grimethorpe

**CLIENT:**

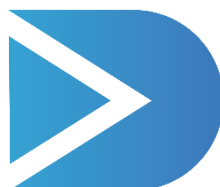
MG Architectural Designs

**DOCUMENT REF:**

23439-FRA-001

**DATE:**

August 2023



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**ENGINEERS LTD**  
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ENGINEERING

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Revision	Description	Date	Author	Checked
A	First Issue	August 2023	A Dyson	R Thacker
B	Amended to add topo survey	March 2024	A Dyson	R Thacker

## 1.0 INTRODUCTION

This Flood Risk Assessment (FRA) is compliant with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance. The FRA has been produced on behalf of MG Architectural Designs in respect of a planning application for the proposed residential development at Land Adjacent High Street, Grimethorpe

<b>Site Name</b>	Land Adjacent High Street, Grimethorpe
<b>Land Adjacent Tanglewood, Bridge Close, Airmyn</b>	Land Adjacent High Street, Grimethorpe S72 8BD
<b>NGR (approx.)</b>	440775 408915
<b>Application Site Area (ha)</b>	0.32ha
<b>Development Type</b>	Residential
<b>NPPF Vulnerability</b>	More
<b>EA Flood Zone</b>	Flood Zone 1 for development, Flood Zone 2 and 3 within red line
<b>EA Office</b>	Yorkshire
<b>Local Planning Authority</b>	Barnsley

**Table 1.1** - Site Summary

## 1.1 SOURCES OF DATA

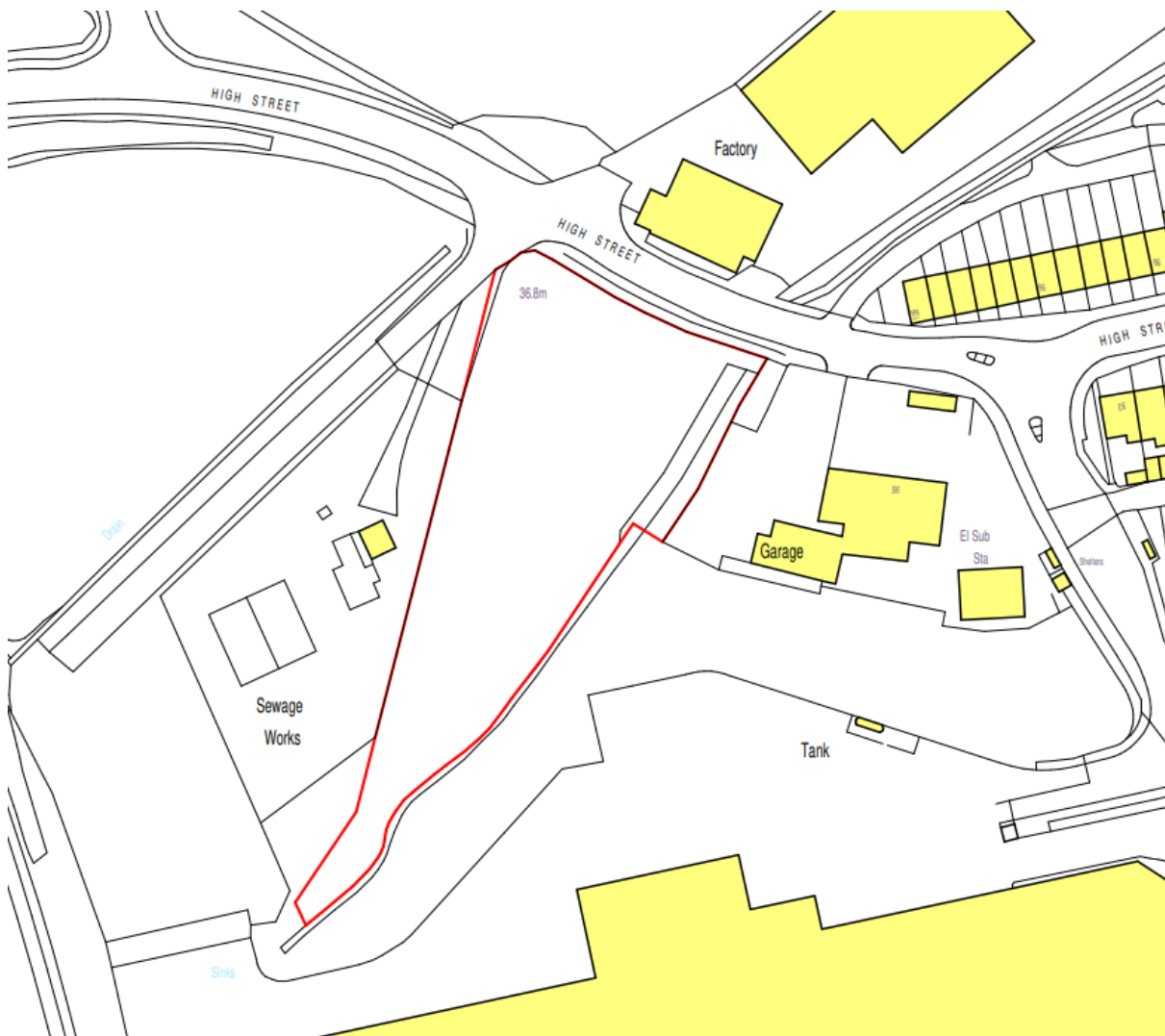
The report is based on the following information:

- Site Location Plan (Appendix A)
- Proposed Site Layout by (Appendix B)
- Environment Agency information
- South Yorkshire Strategic Flood Risk Assessment

## 1.2 EXISTING SITE

The site in question is located to the east of the town of Grimethorpe in South Yorkshire. The site is bounded to the north by High Street and to the east by a watercourse. To the west is a sewer treatment works.

The closest watercourse to site is approximately directly to the east boundary.



**Figure 1.1** - Site Location

### 1.3 PROPOSED DEVELOPMENT

The proposed development is set to consist of a new residential chalet bungalow

A site layout is contained in Appendix B.

### 1.4 FLOOD RISK PLANNING POLICY

#### **National Planning Policy Framework**

The NPPF sets out the Government's national policies on different aspects of land use planning in England in relation to flood risk. Planning Practice Guidance is also available online.

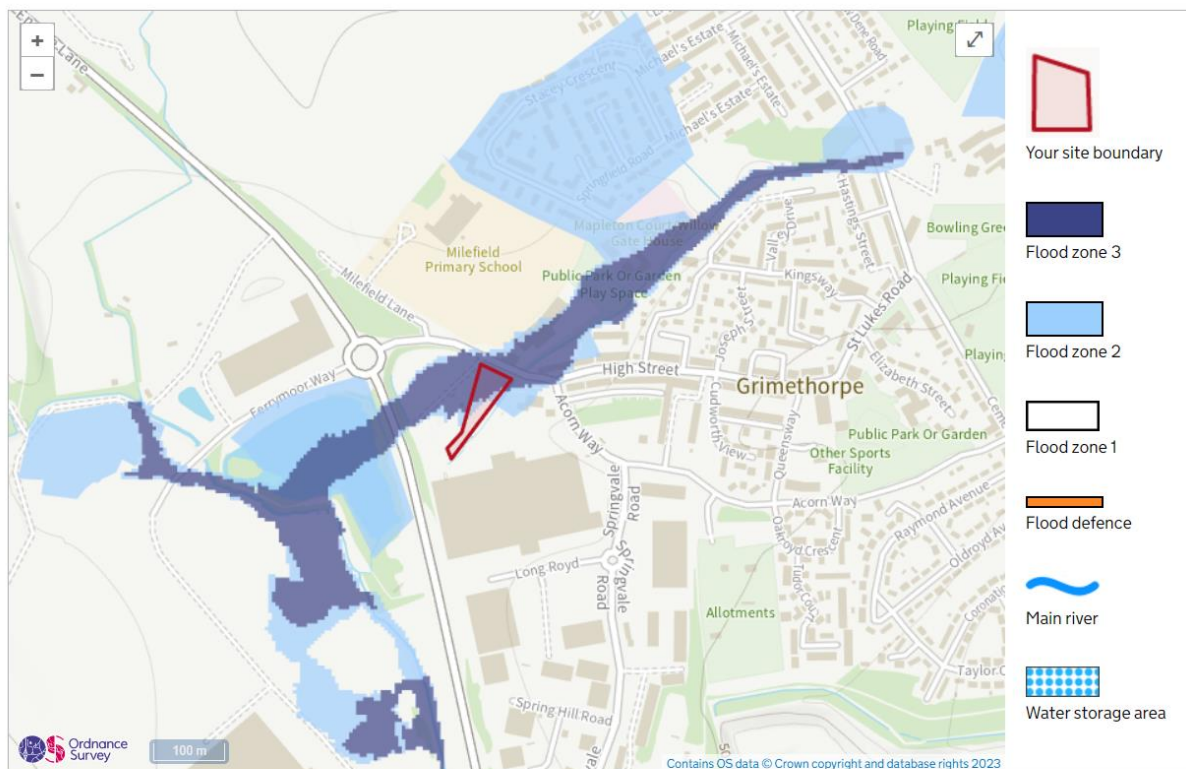
The Planning Practice Guidance sets out the vulnerability to flooding of different land uses. It encourages development to be located in areas of lower flood risk where possible and stresses the importance of preventing increases in flood risk off site to the wider catchment area.

The Planning Practice Guidance also states that alternative sources of flooding, other than fluvial (river flooding), should also be considered when preparing a Flood Risk Assessment.

This Flood Risk Assessment is written in accordance with the NPPF and the Planning Practice Guidance.

## **Flood Zones**

The Flood Zone Map for Planning has been prepared by the Environment Agency. This identifies areas potentially at risk of flooding from fluvial or tidal sources. An extract from the mapping is included as Figure 1.2.



► [What the flood map shows](#)

**Figure 1.1 - Environment Agency Flood Zone Mapping**

The site is shown to be to have the development plot is entirely within Flood Zone 1 (Low Probability), however some of the development boundary enters Flood Zone 2 (0.1-1% annual chance of flooding) and Flood Zone 3 (more than 1% chance of annual flooding). Flood Zone 1 is defined as land assessed as having less than a 0.1% annual probability of flooding from fluvial and tidal sources.

Table 2 of the Planning Practice Guidance classifies land use. Under these classifications the proposed residential development is considered to be 'More Vulnerable' to the potential impacts of flooding.

Table 3 of the Planning Practice Guidance identifies that any development is considered appropriate within Flood Zone 1.

Flood Risk Vulnerability Classification	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable
Flood Zone 1	✓	✓	✓	✓
Flood Zone 2	✓	✓	Exception test required	✓
Flood Zone 3a	Exception test required	✓	x	Exception test required
Flood Zone 3b	Exception test required	✓	x	x

## 1.5 OTHER RELEVANT POLICY AND GUIDANCE

### Strategic Flood Risk Assessment

The South Yorkshire Flood Risk Assessment (SFRA) was prepared to review flood risks on a much wider scale to assess the potential for new development within the study area. The SFRA was used as an evidence base for Local Development Frameworks for each Local Planning Authority.

The SFRA therefore aims to bring together all available flood risk information for a variety of sources to provide a robust assessment. The SFRA therefore is useful for this site-specific FRA by highlighting available data and instances of known flooding in the area. Although written under the guidance of Planning Policy Statement 25, the SFRA is still considered to include relevant information.

## 2.0 POTENTIAL SOURCES OF FLOOD RISK

The table below identifies the potential sources of flood risk to the site, and the impacts which the development could have in the wider catchment prior to mitigation. These are discussed in greater detail in the forthcoming section. The mitigation measures proposed to address flood risk issues and ensure the development is appropriate for its location are discussed within Section 3.0.

Flood Source	Potential Risk				Description
	High	Medium	Low	None	
Fluvial	X	X	X		The development unit is located in Flood Zone 1. However some of the red line area does encroach into Flood Zone 2 and 3.
Tidal				X	There are no tidal influences affecting the site.
Canals				X	None present.
Groundwater			X		Ground conditions are not conducive to fluctuating groundwater levels.
Reservoirs and waterbodies			X		The site is shown to fall inside of the catchment for reservoir and waterbodies flooding.
Sewers			X		The site in question is higher than the surrounding sewers therefore there is a very low risk.
Pluvial runoff	X				An area of the site is within an area of surface water flooding.
Effect of Development on Wider Catchment				X	The impermeable area of the site is not being altered.

**Table 2.1** - Pre-Mitigation Sources of Flood Risk

### 2.1 FLUVIAL FLOOD RISK

As previously mentioned, the site is shown to be within Flood Zone 1, although some red line does encroach into Flood Zone 2 and 3.

Mitigation measures to address the residual risk posed by the watercourses surrounding the site are discussed within Section 3.0 of this report.



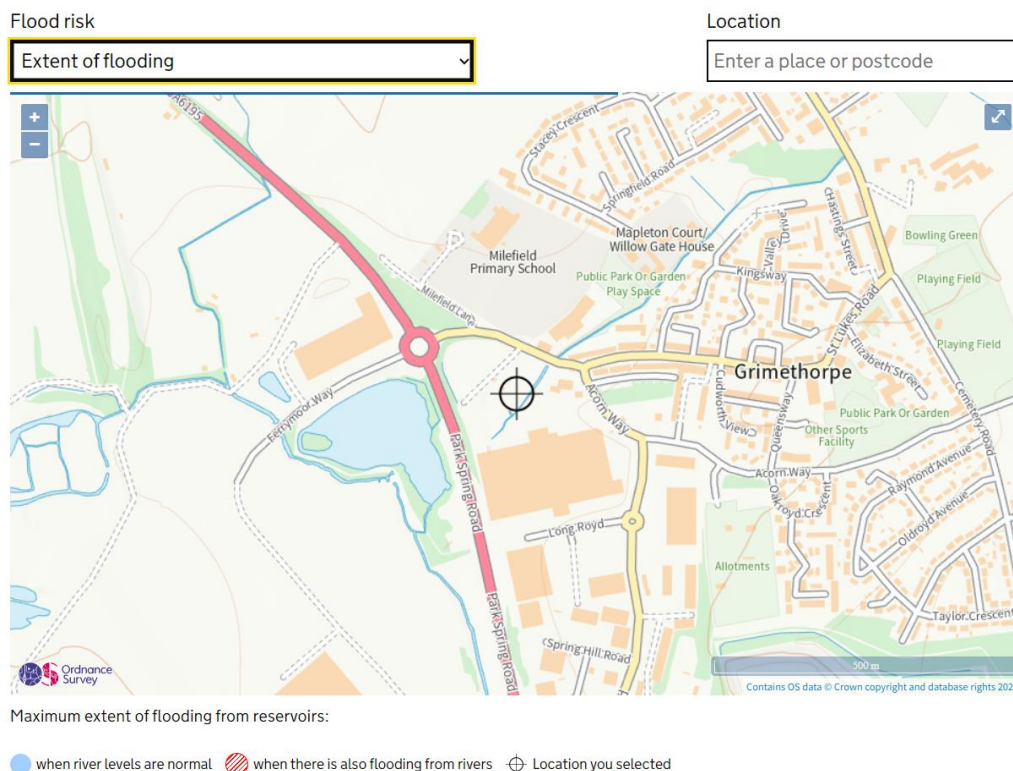
## 2.2 GROUNDWATER FLOOD RISK

Subject to completion of site investigation to confirm we would assume that natural ground water level is located well below the site surface and the nature of the strata means it is unlikely that there will be perched water above this level.

We therefore do not consider there is a risk of groundwater flooding affecting the development subject to final confirmation upon completion of suitable site investigation.

## 2.3 FLOOD RISK FROM RESERVOIRS & LARGE WATERBODIES

Reservoir failure flood risk mapping has been prepared by the Environment Agency, this shows the largest area that might be flooded if a reservoir were to fail and release the water it holds. The map displays a worst-case scenario and is only intended as a guide. An extract from the mapping is included as Figure 2.1.



**Figure 2.1** - Environment Agency Reservoir Failure Flood Risk Map

Mapping demonstrates the site is not within an area associated with flooding from large reservoirs.

As such, it is considered that there is no risk of flooding from sewers

## 2.4 FLOOD RISK FROM SEWERS

The site in question lies above any main roads which is potentially where any Yorkshire Water sewers will lie.

Therefore, the risk posed by this threat is considered negligible.



## 2.5 PLUVIAL FLOOD RISK

Risk of flooding from surface water mapping has been prepared by the Environment Agency, this shows the potential flooding which could occur when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. An extract from the mapping is included as Figure 2.2



**Figure 2.2** - Risk of Flooding from Surface Water Mapping

The mapping produced by the Environment Agency shows that there are areas of the site that are at risk of surface water flooding.

Therefore, the risk posed by this threat is considered high.

## 2.6 EFFECT OF DEVELOPMENT ON WIDER CATCHMENT

### 2.6.1 Development Drainage

The current site is considered to be Greenfield as such a strategic surface water drainage strategy prepared for wider development will ensure a sustainable approach to surface water management.

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### 3.0 FLOOD RISK MITIGATION

Section 2.0 has identified the sources of flooding which could potentially pose a risk to the site and the proposed development. This section of the FRA sets out the mitigation measures which are to be considered within the proposed development detail design to address and reduce the risk of flooding to within acceptable levels.

#### 3.1 SITE ARRANGEMENTS

##### 3.1.1 Sequential Arrangement

The Flood Zone mapping shows the development site to be located within flood zone 1, although some of the red line area does encroach onto Flood Zone 2 and 3.

A topographical survey is contained in Appendix D. This shows the site levels where the proposed development is located to be 36.90m AOD. The FFL of the unit will be set 600mm above this at 37.5m AOD. The development site is in Flood Zone 1 although some of the site is in Flood Zone 2 and 3.

EA flood level data have been requested which will allow assessment of site levels against flood levels.

The site is not at risk of flooding, however as the entire surrounding area is within Flood Zone 3 it would be sensible for residents to register for the EA flood warning line and also have a flood evacuation plan in place as contained in Appendix C.

##### 3.1.2 Finished Levels

Given the site's development being mainly located within Flood Zone 1, there are no specific requirements for finished floor levels with regard to flood risk. As is standard practice finished floor levels would be set 150mm above the existing ground level as a minimum and external areas set to fall away from the proposed houses.

The site area that encroaches into Flood Zone 2 and 3 will need to have the existing levels retained and not amended to ensure flood risk is not increased downstream.

### 4.0 CONCLUSIONS AND RECOMMENDATIONS

This Flood Risk Assessment (FRA) is compliant with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance. The FRA has been produced on behalf of MG Architectural Designs.

This report demonstrates that the proposed development is not at significant flood risk, and simple mitigation measures have been recommended to address any residual risks that may remain. The identified risks and mitigation measures are summarised within Table 4.1.

Flood Source	Proposed Mitigation Measure
Fluvial	Site is shown to be in Flood Zone 1.
Impact of the Development	Strategic surface water drainage strategy prepared for wider development will ensure a sustainable approach to surface water management.

**Table 4.1** - Summary of Flood Risk Assessment

In compliance with the requirements of National Planning Policy Framework, and subject to the mitigation measures proposed, the development could proceed without being subject to significant flood risk. Moreover, the development will not increase flood risk to the wider catchment area as a result of suitable management of surface water runoff discharging from the site.

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### 5.0 APPENDICES

Appendix A – Site Location Plan

Appendix B – Proposed Site Layout

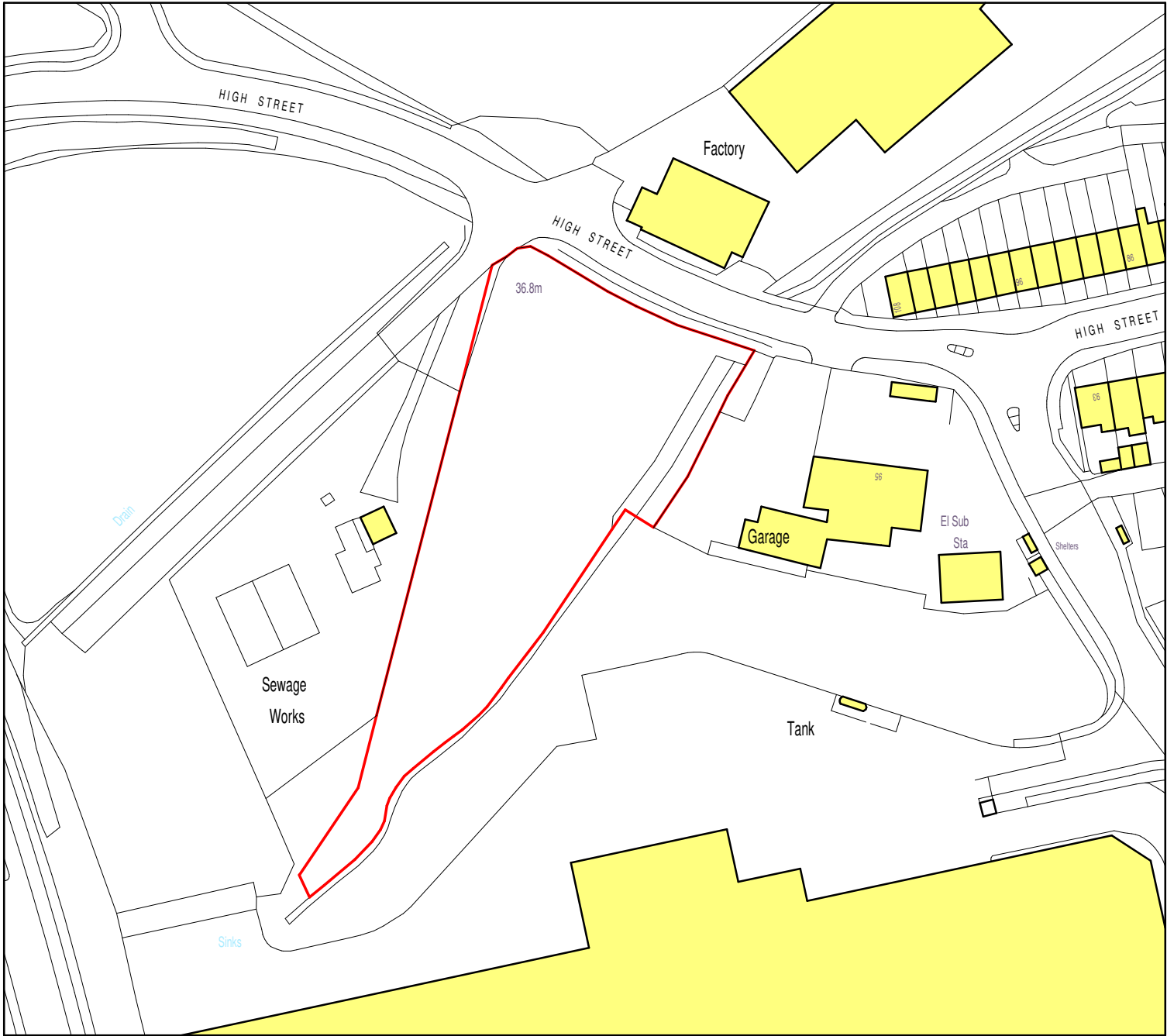
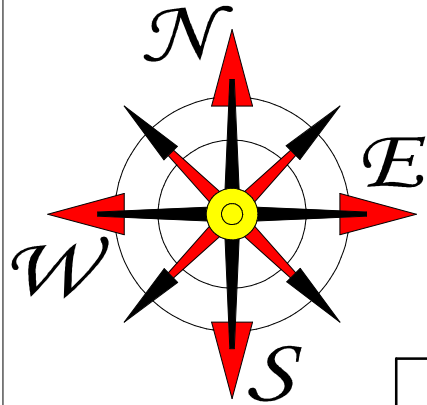
Appendix C – Flood Evacuation Plan

Appendix D – Topo Survey

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**Appendix A**

**Site Location Plan**



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CONSTRUCTION (DESIGN & MANAGEMENT) REGULATIONS 1994  
APPLICABLE TO ALL PROJECTS EXCEPT WORK TO A PERSONS OWN HOUSE, OTHER  
THAN THAT CARRIED OUT BY THE DEVELOPER.

THE CLIENT SHALL BE ADVISED THAT ALL PROJECTS LASTING FOR MORE THAN  
THIRTY DAYS OR INCLUDE MORE THAN FOUR PEOPLE ENGAGED ON THE CONSTRUCTION  
ON SITE AT ANY ONE TIME SHALL BE SUBJECT TO THE ABOVE REGULATIONS.

THE CLIENT SHALL TAKE ALL REASONABLE STEPS TO ENSURE THAT THE APPOINTED  
CONTRACTORS HAVE THE COMPETENCE AND ADEQUATE RESOURCES SUFFICIENT TO  
MANAGE THE CONSTRUCTION WORK AND COMPLY WITH THE ABOVE REGULATIONS.

IF THE PROJECT IS SUBJECT TO THE ABOVE REGULATIONS, THE CLIENT SHALL  
APPOINT A PLANNING SUPERVISOR AND ENSURE THAT NOTICE IS SERVED ON  
THE HEALTH & SAFETY EXECUTIVE AT TENDER ACCEPTANCE STAGE USING  
FORM 10.

SERVICES:-  
ELECTRIC'S ALL TO COMPLY WITH THE LATEST EDITION OF THE IEE REGULATIONS.  
QUANTITY AND QUALITY OF FITTINGS TO BE AGREED WITH THE CLIENT PRIOR TO  
COMMENCEMENT BY THE SUCCESSFUL CONTRACTOR. ANY ALTERATIONS TO THE  
MAINS TO BE CARRIED OUT WITH THE FULL CO-OPERATION OF THE LOCAL SERVICE  
SUPPLIER. GAS AND HEATING WORK TO GAS SERVICE FROM METER POSITION TO  
BE CARRIED OUT BY CORGI OR ACOPS REGISTERED HEATING ENGINEERS ONLY.

BUILDER TO CHECK AND TO CLARIFY ALL LEVELS, DIMENSIONS, DRAINAGE,  
CONSTRUCTION AND SPECIFICATION PRIOR TO ANY WORKS ON SITE AND TO BRING TO  
THE CLIENTS ATTENTION ANY VARIATIONS OR DEVIATIONS FOR WRITTEN CONFIRMATION  
BEFORE BEING CARRIED OUT ON SITE.

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IT IS THE RESPONSIBILITY OF THE OWNER/CLIENT TO SERVE A NOTICE ON THE  
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CHARGE FROM THE ODPM FREE LITERATURE, PO BOX 236, WEST YORKSHIRE,  
LS23 7NB. TELEPHONE 0870-1 20-7405 E-mail: odpm@twoten.press.net

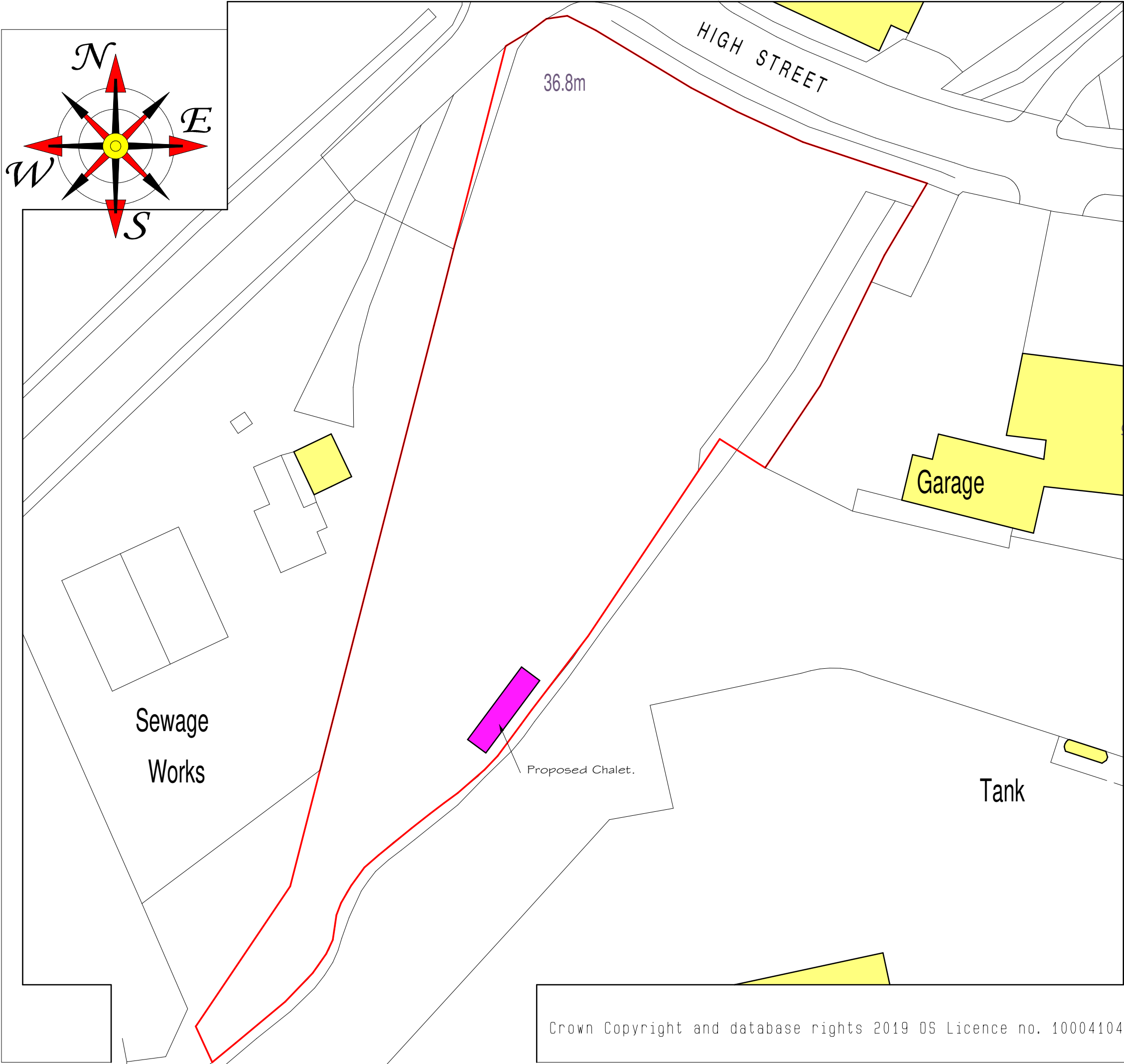
LOCAL AUTHORITY REF:	
CLIENT:	Mr Lee Nicholson.
SITE ADDRESS:	Land at: High Street. GRIMETHORPE. BARNSELEY. S South Yorkshire.
PROJECT:	Proposed Industrial Unit Development.
SCALE:	1 : 1250 @ A3
TITLE:	Location Plan.
DATE:	March 2020
Drawing Number 20-01 Ref: LEEN	

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**Appendix B**

**Proposed Site Layout**





MR LEE NICHOLSON.

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LS23 7NB. TELEPHONE 0870-1 20-7405 E-mail: odpm@twoten.press.net

LOCAL AUTHORITY REF:	
CLIENT:	Mr Lee Nicholson.
SITE ADDRESS:	Land at: High Street. GRIMETHORPE. BARNSELY. S South Yorkshire.
PROJECT:	Proposed Industrial Unit Development.
SCALE:	1 : 500 @ A3
TITLE:	Block Plan as Existing.
DATE:	March 2020
Drawing Number 20-03B Ref: LEEN	

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**Appendix C**

**Flood Evacuation Plan**

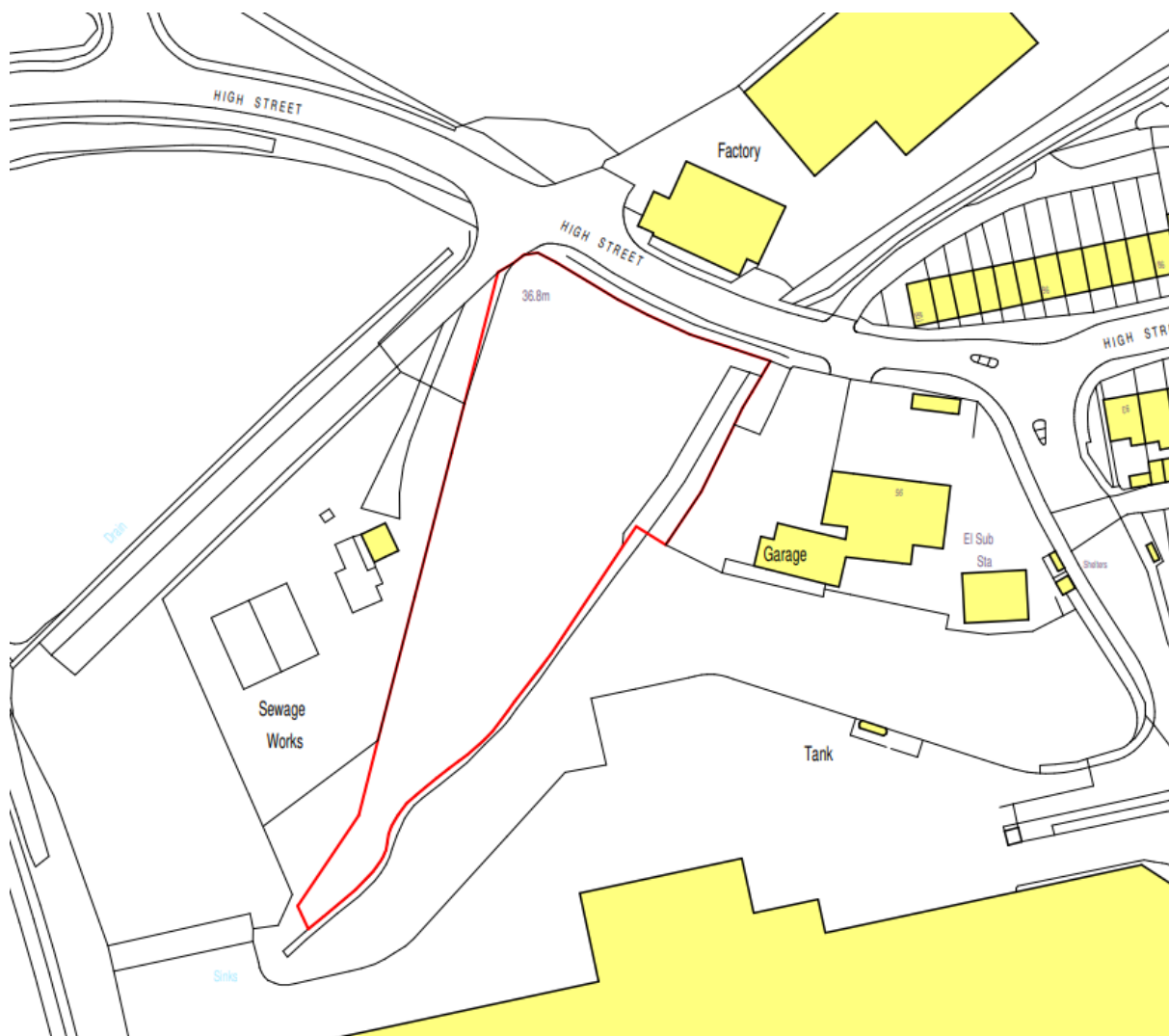
## FLOOD EVACUATION PLAN

### Land Adjacent Tanglewood, Bridge Close, Airmyn

#### Introduction

The objective of this plan is to raise awareness of the risk of flooding onsite to residents, to detail the Flood Warnings and estimated lead time available, and to detail how the Plan is triggered by who and when, and what actions are required by those people in the area.

The Plan describes the evacuation procedure and need for safe refuge. The location covered by this Plan is shown in red below:



#### Flood Risk

The location covered by this Plan is at risk from flooding from fluvial flooding, and is covered by the Environment Agency (EA) Flood Warning System.

The site lies specifically within Flood Zone 1 (low probability of flooding) on the Environment Agency Flood Map for Planning however the site is surrounded in its entirety by Flood Zone 3, therefore it is thought prudent that residents have an evacuation plan in place so as not to become isolated in a flood event.

It should be reiterated the development houses are entirely in Flood Zone 1 so at low risk of flooding.

### **Flood Warnings**

The EA operate a flood forecasting and warning service in areas at risk of flooding from rivers or the sea, which relies on direct measurements of rainfall, river levels, tide levels, in-house predictive models, rainfall radar data and information from the Met Office. This service operates 24 hours a day, 365 days a year.

If flooding is forecast, warnings are issued using a set of easily recognisable codes. A description of the codes is shown in Appendix 1.

### **Flood Register**

Floodline Warnings is a free service operated by the EA that provides flood warnings direct to you by phone, email or text message. Sign up for Flood Warnings by calling Floodline on 0345 988 1188 or online by following the link included in appendix 2.

The future occupiers will be responsible for activating this plan and will register with the EA Flood Warnings Service and should receive a warning through this system

### **Estimated Flood Warning Time**

For this location the estimated lead time provided by the EA is 2-3 days, however 1-2 hours lead time is guaranteed. A more accurate estimation will be provided when the warning is made.

### **Decision Making**

Once a Flood Warning has been received residents will need to decide what actions they or others now have to take.

If immediate flooding is forecast and the opportunity to safely evacuate is gone, pre-emptive flood protection tasks must be implemented (if time allows) and the order given for moving to the area of safe refuge, see below.

The decision regarding evacuation will be made by the future property owners on receipt of the flood warning notification from the EA.

## Response Actions / Considerations

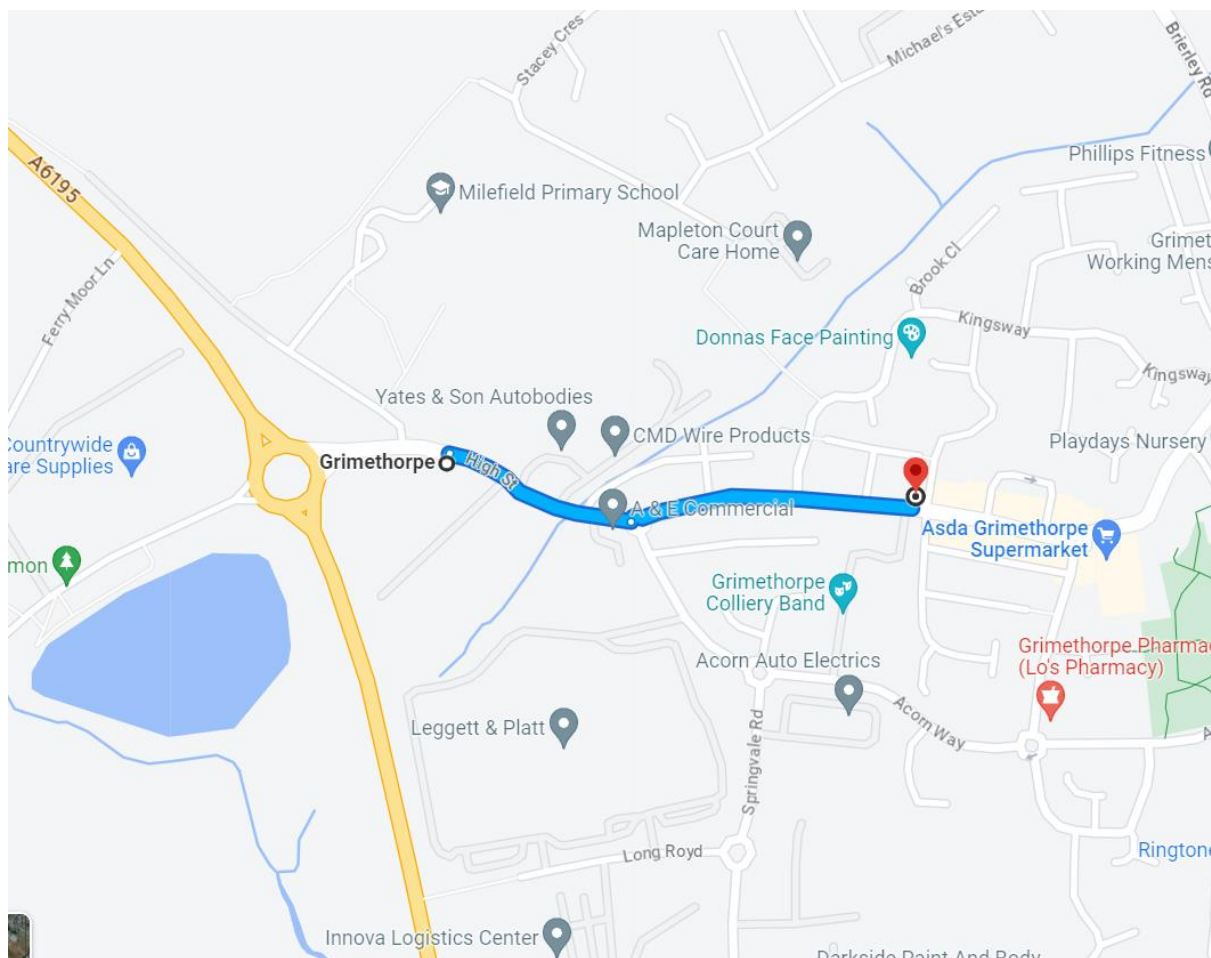
### Site Evacuation Procedures & Routes

It is anticipated that the EA's flood warning alerts will allow occupiers sufficient time to evacuate via the High Street, heading east towards the safe refuge of Grimethorpe.

In the unlikely event that flood waters block access to High Street then residents will remain in the site demise and houses, located in low risk flood zone and seek assistance from the emergency services if necessary. Alternatively, residents will await the flood waters to sufficiently subside before attempting to evacuate.

Given that the dwellings are independent residential units it is anticipated that occupiers will have some level of local knowledge, however a map has been included.

It will be the responsibility of the dwelling owner to ensure that every one is out of the house safely.



### Safe Refuge

The designs and proposed site layout is intended to locate all dwellings within Flood Zone 1 area, however the entire area outside the site boundary is surrounded by Flood Zone 3.

The units afford sufficient room to accommodate all residents, including the resources to sustain them for a prolonged period. Communication with emergency services, would be undertaken by means of mobile phones

### **Reoccupation of The Site**

There may well be environmental hazards, loss of utilities and other such issues, which may have to be rectified before people are allowed back to premises. However, the low flood risk design of the development layout will mitigate against potential damage. Temporary accommodation would need to be sought, this could be found in one of many hotels that are available in Garstang.

### **Training & Exercising**

All individuals who live in the dwellings will be made aware of this plan and briefed accordingly.

This Plan should form part of the Deeds of the land/property.




### **Document Control**

This Plan is owned, maintained, and updated by the property owners. All users are asked to keep the plan updated if changes in circumstances occur that may materially affect the plan in any way.

The plan will be reviewed at least every three years, as a result of lessons identified after an activation event or exercise, following changes ownership of the property or following any change to the flood risk or warning process that is used by the Environment Agency.



## Appendix 1 - Environment Agency Warning Codes

<b><u>Flood Alert</u></b> 	<b>Key Message:</b> Flooding is possible. Be prepared <b>Timing:</b> 2 hours to 2 days in advance of flooding <b>Actions:</b> Be prepared for flooding Prepare a flood kit of essential items Monitor local water levels and flood forecasts  <i>Flood Alerts are to warn people of the possibility of flooding and encourage them to be alert, stay vigilant and to make early preparations for flooding.</i>
<b><u>Flood Warning</u></b> 	<b>Key Message:</b> Flooding is expected. Immediate Action Required <b>Timing:</b> Half an hour to 1 day in advance of flooding <b>Actions:</b> Act now to protect your property Block doors with flood boards or sandbags and cover airbricks and other ventilation holes Move family, pets and valuables to a safe place Turn off gas, electricity and water supplies if safe to do so Keep a flood kit ready Move cars, pets, food, valuables and important documents to safety  <i>Flood Warnings are to warn people flooding is expected and encourage them to take immediate action to protect themselves and their property.</i>
<b><u>Severe Flood Warning</u></b> 	<b>Key Message:</b> Severe flooding. Danger to life <b>Timing:</b> When flooding poses a significant threat to life and different actions are required <b>Actions:</b> Stay in a safe place with a means of escape Be ready should you need to evacuate from your home Co-operate with the emergency services Call 999 if you are in immediate danger  <i>Severe Flood Warnings are to warn people of a significant risk to life or significant disruption to communities caused by widespread or prolonged flooding, and encourage them to take immediate action to protect themselves and follow the advice of the emergency services.</i>
<b><u>Warnings no longer in force</u></b>  (no icon)	<b>Key Message:</b> No further flooding is currently expected for your area <b>Timing:</b> When river or sea conditions begin to return to normal <b>Actions:</b> Be Careful. Flood water may still be around for several days and could be contaminated If you've been flooded, ring your insurance company as soon as possible  <i>Warnings are removed to inform people that the threat has now passed.</i>



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**Appendix D**

**Topo Survey**

