FLOOD RISK ASSESSMENT

PROPOSED RESIDENTIAL DEVELOPMENT
SPALDING ROAD,
PINCHBECK,
SPALDING.
PE22 0QL

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INTRODUCTION

The Government has placed increasing priority on the need to take full account of the risk associated with flooding at all stages of the planning and development process. This seeks to reduce the future damage to property and the risk to life from incidents of flooding. Their expectations relating to flooding are contained in the National Planning Policy Framework March 2012, (NPPF), which identifies how the issue of flooding is dealt with in the drafting of planning policy and the consideration of planning applications by avoiding inappropriate development in areas at risk from flooding and to direct development away from areas at highest risk.

The NPPF provides that development in areas at risk of flooding should be avoided and seeks to direct development away from areas at highest risk. There is a sequential, risk-based approach to the location of development avoiding where possible, flood risk to people and property managing any residual risk, and taking account of the impacts of climate change.

The Environment Agency's flood maps show areas that are at risk, from fluvial and tidal flooding. These maps show the limits of the flood plain of the area which could be affected by flood events, over topping or breaching of flood defences. They are based on the approximate extent of floods with a 1% annual probability of exceedance (1 in 100-year flood) for rivers and 0.5% annual probability of exceedance (1 in 200-year flood) for coastal areas under present expectations or the highest known flood. However, they do not consider of the presence of defences or the likelihood that flood return intervals will be reduced by climate change.

This Flood Risk Assessment and Drainage Statement has been prepared in support of a planning application and considers the risk of flooding from fluvial and tidal sources in accordance with National Planning Policy Framework (NPPF). It also considers the risks of localised flooding due to inadequate Foul and Surface Water Sewers, Failure of Reservoirs, Water Main pipe bursts, Sewer Blockages, Pump Failures or High Ground Water Table etc.

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APPLICATION SITE

The site is located off Spalding Road, Pinchbeck, Spalding, Lincolnshire PE11 3SJ within the administrative area of South Holland District Council. The National Grid Reference for the middle of the site is TF23770 25099 with a site area 0.483Ha or thereabouts. **Plan 1**

The current planning application is for the erection of 5 No detached dwellings with access. The previous use of the site and buildings were for general B2 industrial use. **Plan 2**

The Site would be classed as Non-Major Development applying the National Planning Policy Guidance (NPPG) as the site is to be developed for less than 10 dwellings.

The National Planning Policy Framework Technical Guidance NPPF defines three levels of flood risk depending upon the annual probability of fluvial flooding occurring.
Zone 1 – Low Probability (<0.1%)
Zone 2 – Medium Probability (0.1 – 1.0%
Zone 3 – High Probability (>1.0%)

The proposed development site is shown to be within Flood Zone 3a 'High Probability' as detailed on the Environment Agency's Flood Zone Maps without defences, and as defined in Table 1 of National Planning Policy Framework NPPF. **Map 1**

Table 1: Flood Zones Definition

Flood Zone 3 – High Probability
Definition This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year. **Appropriate uses** The water-compatible and less vulnerable uses of land (Table 2) are appropriate in this zone. The highly vulnerable uses should not be permitted in this zone. The more vulnerable uses and essential infrastructure should only be permitted in this zone if the Exception Test is passed. Essential infrastructure permitted in this zone should be designed and constructed to remain operational and safe for users in times of flood. **Flood Risk Assessment requirements** All development proposals in this zone should be accompanied by a Flood Risk Assessment. **Policy aims** In this zone, developers and Local Authorities should seek opportunities to: • Reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of sustainable drainage systems; • Relocate existing development to land in zones with a lower probability of flooding; and • Create space for flooding to occur by restoring functional floodplain and flood flow pathways and by identifying, allocating and safeguarding open space for flood storage.

Applying the Flood Risk Vulnerability Classification in Table 2 of NPPF, the proposed residential use for the site is classified as "More Vulnerable," Table 2 of NPPF states that such uses are permitted in this zone. subject to the

Exception Test.

Table 2: Flood Risk Vulnerability Classification

More Vulnerable
• Hospitals. • Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. • Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels. • Non–residential uses for health services, nurseries and educational establishments. • Landfill and sites used for waste management facilities for hazardous waste. • Sites used for holiday or short-let caravans and camping, subject to a specific warning and Evacuation Plan.

From the topographical survey, the site is irregular in shape and reasonably level averaging 3.10m ODN with levels on the northern boundary boundary being 2.90mODN and on the southern boundary 3.40mODN and the road level on Spalding Road at the site entrance is 3.65mODN. **Plan 3**

It is proposed that the lowest ground floor level of the dwellings be raised 500mm above the existing average ground level to a minimum level of 3.60mODN.

This proposed level is the same as that by the planning approval for the proposed 169 properties to the north of the site, granted planning approval on 25 May 2016 ref no H14-0156-14

DRAINAGE AUTHORITIES

Environment Agency

The Environment Agency has permissive powers for reducing the risk of flooding from designated main rivers and from the sea.

The following potential sources of flooding affecting the development site have been identified as:

- From the River Welland (Tidal)
- River Glen Fluvial
- Welland & Deepings Internal Drainage Board system.

The flood zone maps indicate that the area would be flooded without flood defences. The Flood Map indicates the area at risk of flooding, **assuming no flood defences exist**, for a flood event with a 0.5% chance of occurring in any year for flooding from the sea, or a 1% chance of occurring for fluvial (river) flooding. It also shows the extent of the Extreme Flood Outline which represents the extent of a flood event with a 0.1% chance of occurring in any year, or the highest recorded historic extent if greater.

The Flood Map only indicates the extent and likelihood of flooding from rivers or the sea. It should also be

remembered that flooding may occur from other sources such as surface water sewers, road drainage, etc. These maps show that the site of the proposed development is within the extreme flood outline. The maps indicate that the area would be flooded without flood defences, which are in place along the river/ coastal edge (with an annual probability of more than 0.5% i.e. return frequency of less than 1 in 200 years for tidal flooding or more than 1.33% return frequency of less than 1 in 100 years for fluvial flooding). **Map 1**

The risk of flooding from Rivers and Sea shows that the site is at a Low risk of flooding. Low means that each year this area has a chance of flooding less than 1 in 1000 (0.1%). This considers the effect of any flood defences that may be in this area. Flood defences reduce, but do not completely stop the chance of flooding as they can be overtopped or fail. **Map 2**

The predicted 1 in 200-year peak tide at Marsh Road is 5.98mODN (Lincolnshire & Northamptonshire Area Tidal Model 2006).

The flood banks for the Tidal River Welland lie approximately 1.5km from the site, constitute the first line of defence against any tidal flooding. In this area, these consist of earth banks, within in a relatively sheltered environment.

Breach Analysis to the Tidal Defences

From Lincolnshire & Northamptonshire Area, Tidal Modal Analysis (June 2006) **Map 3**)

Peak tide levels Present Day (2006) at Marsh Road 0.5% (1 in 200) = 5.98mODN

Peak tide levels (2115) at Marsh Road, 0.5% (1 in 200) = 5.98mODN plus climate change of 1143mm = 6.12mODN

Taking the precautionary approach, the Hazard Rating following a breach which in Flood Risk Assessment (FD 2320) Guidance for New Development Phase 2 R& D Technical Report these are classified as low <0.75, moderate 0.75-1.25, significant 1.25-2.50 and extreme >2.50 based upon an empirical measure of velocity and depth.

Flood Hazard value	Degree of flood hazard	Description	Indicative depth range
< 0.75	Low	Caution 'Flood zone with shallow flowing water or deep standing water'	Up to 0.25 m
0.75 – 1.25	Moderate	Danger for some (i.e. children) 'Danger: flood zone with deep or fast flowing water'	Up to 0.5 m
1.25 – 2.0	Severe	Danger for most 'Danger: flood zone with deep fast flowing water'	0.5 m to 3 m
> 2.0	Extreme	Danger for all 'Extreme danger: flood zone with deep fast flowing water'	0.5 m to over 3 m

HR = d x (v + 0.5) +DF

Where V = Flood flow velocity (m/sec)

D = Flood depth (m)

DF = A debris factor included to represent the greater damage, or risk of injury to people, that can occur if debris is swept along with the water. = 0.5 for depths <0.25 or 1.0 for depths

Flood depth (m)	All areas (rural and urban)
≤ 0.25	0.5
> 0.25	1

For the degree of Flood Hazard to be classified as low HR must be <0.75.

The maps contained in the 2016 Update of South Holland Strategic Flood Risk Assessment have been used for this assessment, as these maps contain the tidal flooding information mapping from the latest Environment Agency Tidal Hazard mapping. Where the mapping for an area contains both fluvial and tidal components, the more severe of the two has been presented.

With climate change the Residual Flood Hazard – Spalding (2116), 0.1% event probability Map the shows that the site for the development is within an area dominated by a fluvial event. The northern part of the site is within a hazard area of between 0.75 – 1.25 (Danger for Some) depth of flow 0.25 - 0.5m and the southern part within a hazard rating area of Less than 0.75 (Low Hazard) depth of flow 0 – 0. 25m**. Map 4**

With climate change the Residual peak depth Extent of Fluvial & Tidal Domination District year 2115 1% Fluvial/0.5% Tidal Event Probability Map and the Residual Peak Depth Extent of Fluvial & Tidal Domination – Spalding (2116) shows that the site for the development is within an area dominated by a fluvial event. The northern part of the site is within a hazard area of between 0.75 – 1.25 (Danger for Some) depth of flow 0.25 - 0.5m and the southern part within a hazard rating area of Less than 0.75 (Low Hazard) depth of flow 0 – 0.25m. **Maps 5 & 6**

The Environment Agency recommends for any proposal that single storey developments that include ground floor sleeping accommodation should be informed by the flood depths. Any proposals that do not include ground floor sleeping can be informed by the flood depths arising from the 0.5% breach scenario.

For areas where the flood depths are 0.25 – 0.5m the finished floor level should be 500mm above the existing ground level.

The ground floor levels for the 5 No two storey dwellings will be set at a minimum of 3.60mODN which is 500mm above the existing average ground level within the maximum depth area of the site.

South Holland District Council

In order to inform the process of risk assessment and site selection the District Council commissioned Consultants in 2010 to prepare a Strategic Flood Risk Assessment which has recently been replaced by the. 2016 Update of South Holland Strategic Flood Risk Assessment

The whole of the tidal flooding information has been replaced by the mapping from the latest Environment Agency

Tidal Hazard mapping. Where the mapping for an area contains both fluvial and tidal components, the more severe of the two has been presented.

These maps from the 2016 Update of South Holland Strategic Flood Risk Assessment have been used for this Flood Risk Assessment.

Welland & Deepings Internal Drainage Board

The proposed development site is located within the catchment area of Welland & Deepings Internal Drainage Board. The Board is responsible to operate and maintain the arterial fluvial system.

The Board's nearest watercourse is the Pennygate Pup Drain located some 250m to the north east of the site. The 1:100-year level in the Pennygate Pup Drain is approximately 1.80m ODN currently and 2.40m ODN in 2100. (This assumes climate change and development) This drain connects to the Blue Gowt Drain which flows to the Pinchbeck Marsh Pumping Stations which pump water into the Blue Gowt Outfall Drain. This watercourse gravitates into the River Glen just upstream of Surfleet Reservoir. Flooding from this source has been discounted due to the proposed floor levels being set at 3.50mODN.

Extract from Welland and Deepings IDB Drainage Map

The Board do not have any record of any flooding in this area associated with the Board's system.

<u>SURFACE WATER FLOODING</u>

The site is not shown on the Surface Water flood maps to be affected by surface water flooding. Very low risk

means that each year this area has a chance of flooding of less than 1 in 1000 (0.1%). Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. **Map 5**

SEQUENTIAL APPROACH

When applying the sequential approach for flood risk in accordance NPPF he site would fall into Zone 3a (High Probability) as the site is shown to be within the tidal flood plain as shown on the Environment Agency's Flood Map without defences in place.

The Environment Agency categorise land into one of three Flood Zones.

- Flood Zone 1 is land outside the 0.1% floodplain (with a chance of flooding of less than 0.1% chance in any given year);

- Flood Zone 2 is land that falls between the 1 in 100-year extent and the 1 in 1000-year extent (a chance of flooding between 1% and 0.1% in any given year);

- Flood Zone 3a is land which falls within the 1 in 100-year flood extent (has a 1%chance of a flood occurring in any given year).

Applying the Flood Risk Vulnerability Classification in Table 2 of NPPF, the proposed development for residential use is classified as, "More Vulnerable" with Table 1 of NPPF stating that such uses are appropriate in this zone subject to the Exception Test. (as summarised in Table 3 NPPF).

TABLE 3: Flood risk vulnerability and flood zones 'compatibility'

Flood risk vulnerability classification		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood Zone	Flood Zone 1	✓	✓	✓	✓	✓
	Flood Zone 2	✓	✓	Exception Test required	✓	✓
	Flood Zone 3a	Exception Test required	✓	✗	Exception Test required	✓
	Flood Zone 3b Functional Floodplain	Exception Test required	✓	✗	✗	✗

CLIMATE CHANGE

Global warming is now recognised that it is likely to affect the frequency and severity of extreme events as both tidal and fluvial flooding. The Climate change allowances in the NPPF Guidance was updated on the 19th February 2016.

The site is located within the Anglian River Basin, for sites within Flood Zone 3 and for “More Vulnerable” land uses the Higher Central and Central river flow allowances figures in Table 1 should be used.

Table 1 Peak river flow allowances by river basin district (1961 to 1990 baseline)				
River basin District	Allowance category	Total potential change anticipated for ‘2020s’ (2015 to2039)	Total potential change anticipated for ‘2050s’ (2040 to2069)	Total potential change anticipated for ‘2080s’ (2070 to2115)
Anglian	Upper End	25%	35%	65%
	Higher central	15%	20%	35%
	Central	10%	15%	25%

The effect of global warming on peak rainfall allowances is given in Table 2

Table 2 Peak rainfall intensity allowance in small and urban catchments (1961 to1990 baseline)			
Applies across all of England	Total potential change anticipated for 2010 to 2039	Total potential change anticipated for 2040 to 2059	Total potential change anticipated for 2060 to 2115
Upper End	10%	20%	40%
Central	5%	10%	20%

The annual sea rise due to climate change is given in NPPF and the recommended contingency allowances are stated in Table 3.

Table 3 Peak sea level allowance for each epoch in (mm) per year with cumulative sea level rise for each epoch in brackets (use 1990 baseline)					
Area of England) (Use River Basin maps	1990 to 2025	2026 to 2050	2051 to 2080	2081 to 2115	Cumulative Rise 1990 to 2115 (m)
East, Midlands, London, South East	4 (140mm)	8.5 (212.5mm)	12 (360mm)	15 (525mm)	1.24m

The site lies within the Anglian River Basin District Peak River flows should be adjusted to reflect climate change. It must also be assumed, to provide a worst-case scenario, that flood defences have been raised during this period to cater for the rise in sea level.

With the site being shown on the SFRA Maps to be within an area domination from a fluvial event the site will be at a level not to be affected from tidal flooding.

DRAINAGE STATEMENT

This drainage statement, for the site, is a preliminary overview and will be subject to the detailed design being undertaken when planning permission and final layout has been determined.

Surface Water Drainage

The rainwater from the roof of the dwellings will be connected into soakaways designed in accordance with BSE Digest 363. A water butt of at least 120L internal capacity shall be installed to intercept rainwater draining from the roof of each of the buildings, to reduce the risk of flooding and demand for water by recycling and to increase the level of sustainability of the development.
The access road, driveways and parking areas will be constructed using permeable materials.

Foul Water Drainage

New foul water drains will be provided to serve the development and to be connected into the Anglian Water sewer serving the area. A Section 106 of the Water Industry Act 1991, (as amended by the Water Act 2003) will be required for the connection into the sewer.

As there is a positive drainage system to cater for the run off from the development, the development proposal will not have adverse impact on the wider catchment elsewhere. Losses of floodplain storage volume would also be negligible, when compared to the storage that is available across the surrounding area. It is therefore concluded that the development proposal would result in no detrimental third-party flood risk impacts and no mitigation measures are required

FLOOD PROTECTION

Any impact of damage to the properties can be foreseen and mitigated against by relatively simple design and construction techniques. There are two forms of flood protection works: -

- **Flood-resistance or proofing works**: - these try to reduce the amount of water entering a building.
- **Flood-resilient works: -** these reduce the amount of damage caused by water entering the building.

The proposed property will have the following resilient measures incorporated in the construction in accordance with “Improving the flood performance of new buildings” CLG (2007).

- The lowest ground floor level for the properties is to be raised 500m above existing average ground level of 3.10mODN, with a lowest level being 3.60mODN.

- Arrange for all service circuits at ground floor level to be routed at first floor level and where practical socket outlets, boilers etc. to be a minimum of 0.5m above the raised ground floor level.

- As this site is in an area that can receive flood alerts from the Environment Agency Floodline Warning Direct system. It is recommended that the property Owner contact the Environment Agency’s Floodline on **0845 988 1188** to register the property to receive warnings of flooding by telephone, mobile, fax, SMS text, email or pager. The Environment Agency aim to issue a ‘severe flood warning’ approximately 2 hours before existing defences are overtopped.

CONCLUSIONS

- The site does have the benefit of protection from tidal/fluvial flooding by the existing flood defences which are properly maintained to a 1 in 200-year & 1 in 100-years, respectively, standard of protection.

- The South Holland SFRA Maps show that with climate change the Residual peak depth Extent of Fluvial & Tidal Domination District year 2115 1% Fluvial/0.5% Tidal Event Probability Map and the Residual Peak Depth Extent of Fluvial & Tidal Domination – Spalding (2116) shows that the site for the development is within an area dominated by a fluvial event. The northern part of the site is within a hazard area of between 0.75 – 1.25 (Danger for Some) depth of flow 0.25 - 0.5m and the southern part within a hazard rating area of Less than 0.75 (Low Hazard) depth of flow 0 – 0.25m.

- The proposed residential use falls within the "More Vulnerable" uses of land as defined in Table 2 NPPF for Flood Risk Vulnerability Classification and the proposed development for agricultural use is appropriate in Flood Zone 3a, subject to the sequential test.

- The lowest ground floor level for the properties is to be raised 500m above existing average ground level of 3.10mODN, with a lowest level being 3.60mODN.

- The risk of flooding from Rivers and Sea map shows that the site is at low risk of flooding. Low means that each year, this area has a chance of flooding of between 1 in 1000 (0.1%) and 1 in 100 (1%). This considers the effect of any flood defences that may be in this area.

- Flooding from other sources is unlikely to affect the site.

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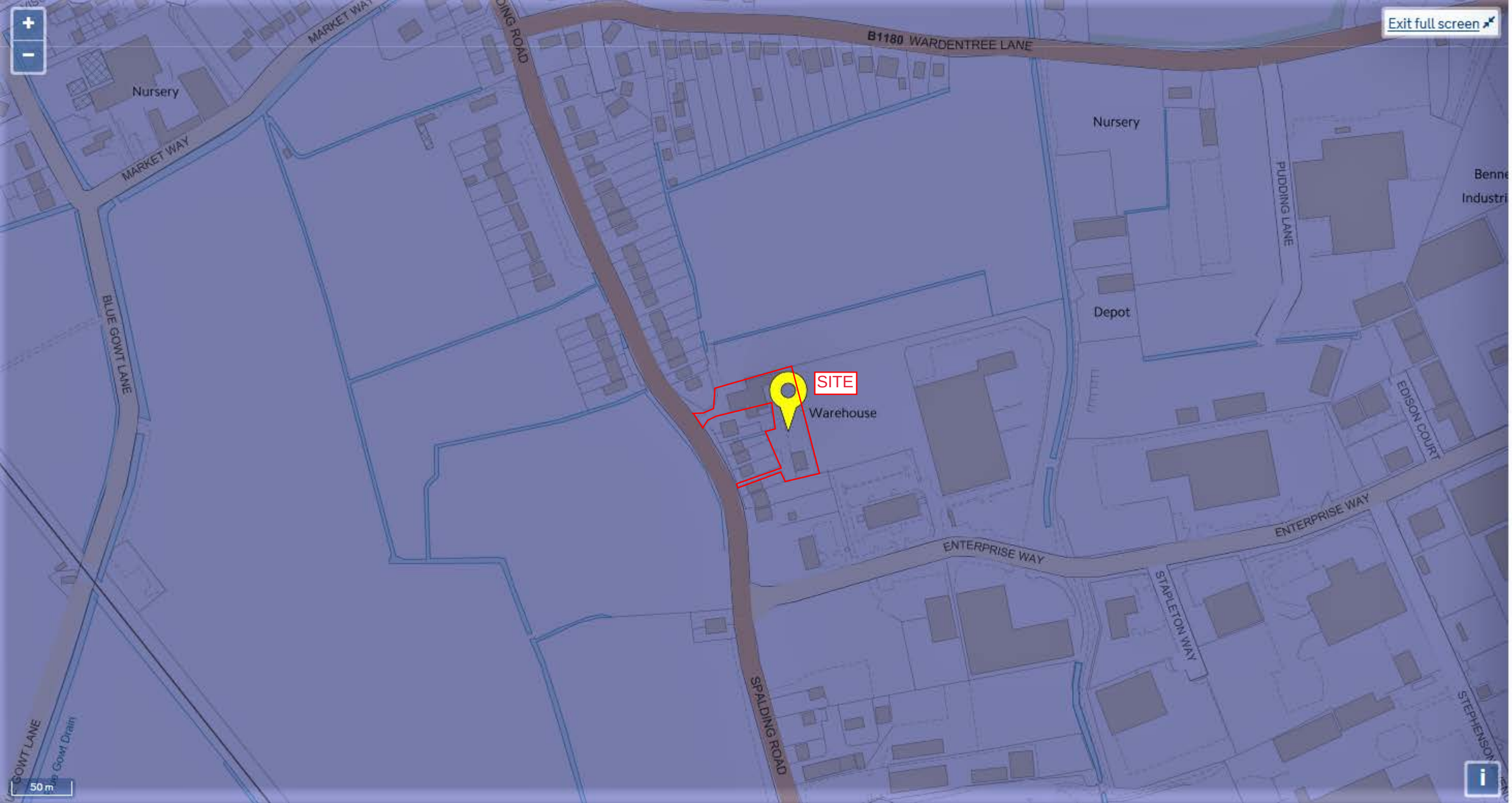
APPENDICES

Map 1	Environment Agency Flood Map.
Map 2	Flooding from Rivers & Sea Map
Map 3	Tidal Model Analysis 2006 Map and Levels
Map 4	Residual Flood Hazard Map – Spalding (2115), 0.1% event probability
Map 5	Residual Peak Depth Map – Spalding (2115) 1% fluvial/0.5% tidal event probability
Map 6	Residual Peak Depth Extent of Fluvial & Tidal Domination – Spalding (2115)
Map 7	Surface Water Flood Map
Plan 1	Site Location Plan
Plan 2	Proposed Buildings Layout Plan
Plan 3	Topographical Survey



Development location

Flood zone 3

Areas benefiting from flood defences

Flood zone 2

Flood zone 1

Flood defence

Main river

Flood storage area

Map 1

Basic view Detailed view

Location Pinchbeck

Flood risk from rivers or the sea

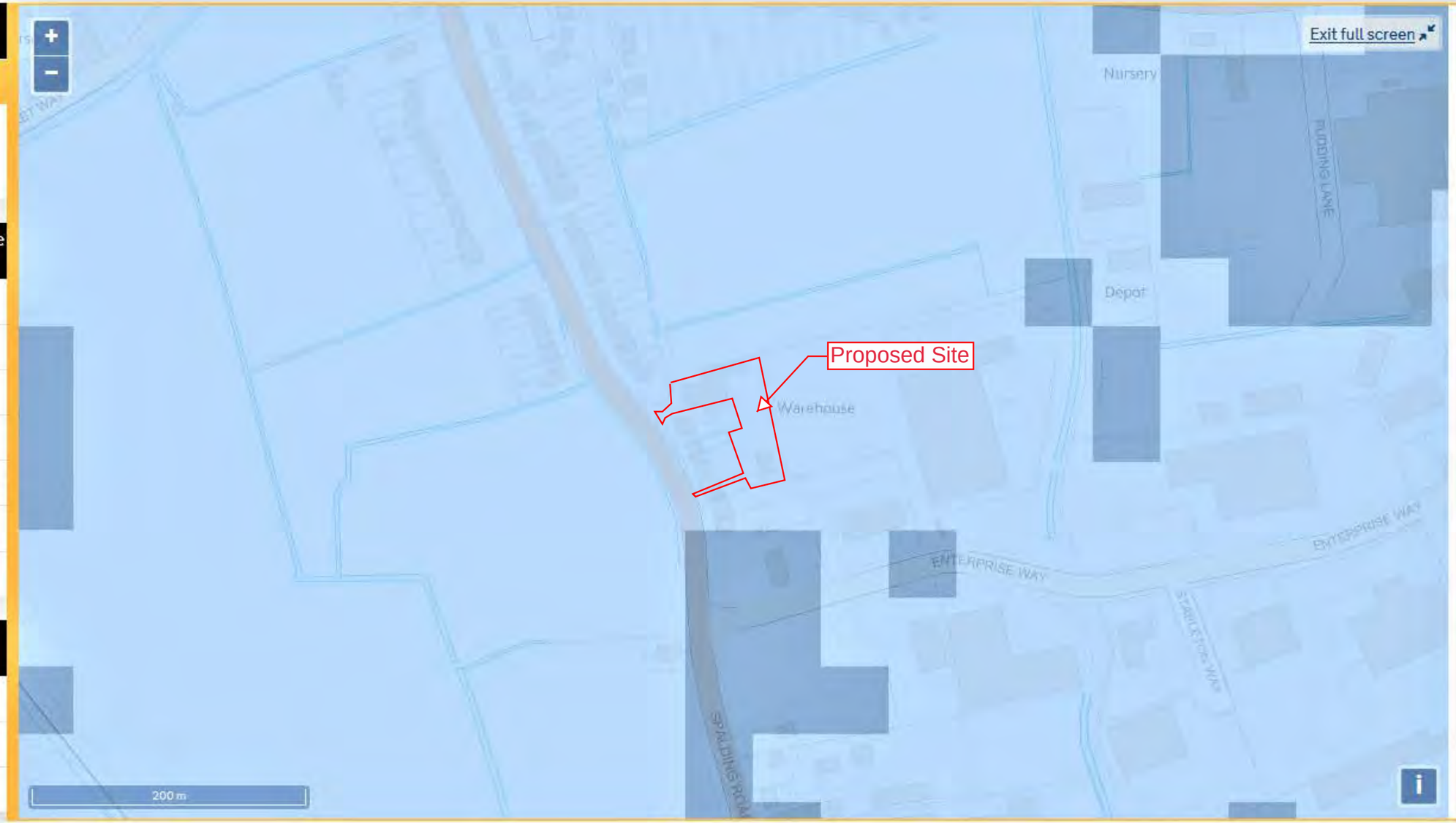
- Extent of flooding
- Depth and flow estimates at monitoring stations

Flood risk from surface water

- Extent of flooding
- High risk: depth
- High risk: velocity
- Medium risk: depth
- Medium risk: velocity
- Low risk: depth
- Low risk: velocity

Flood risk from reservoirs

- Extent of flooding
- Flood depth
- Flood speed



Flood risk

- High
- Medium
- Low
- Very low
- Location you selected

Map 2

Tidal Level Location Map
Lincolnshire & Northamptonshire Area

Environment Agency

Map 3

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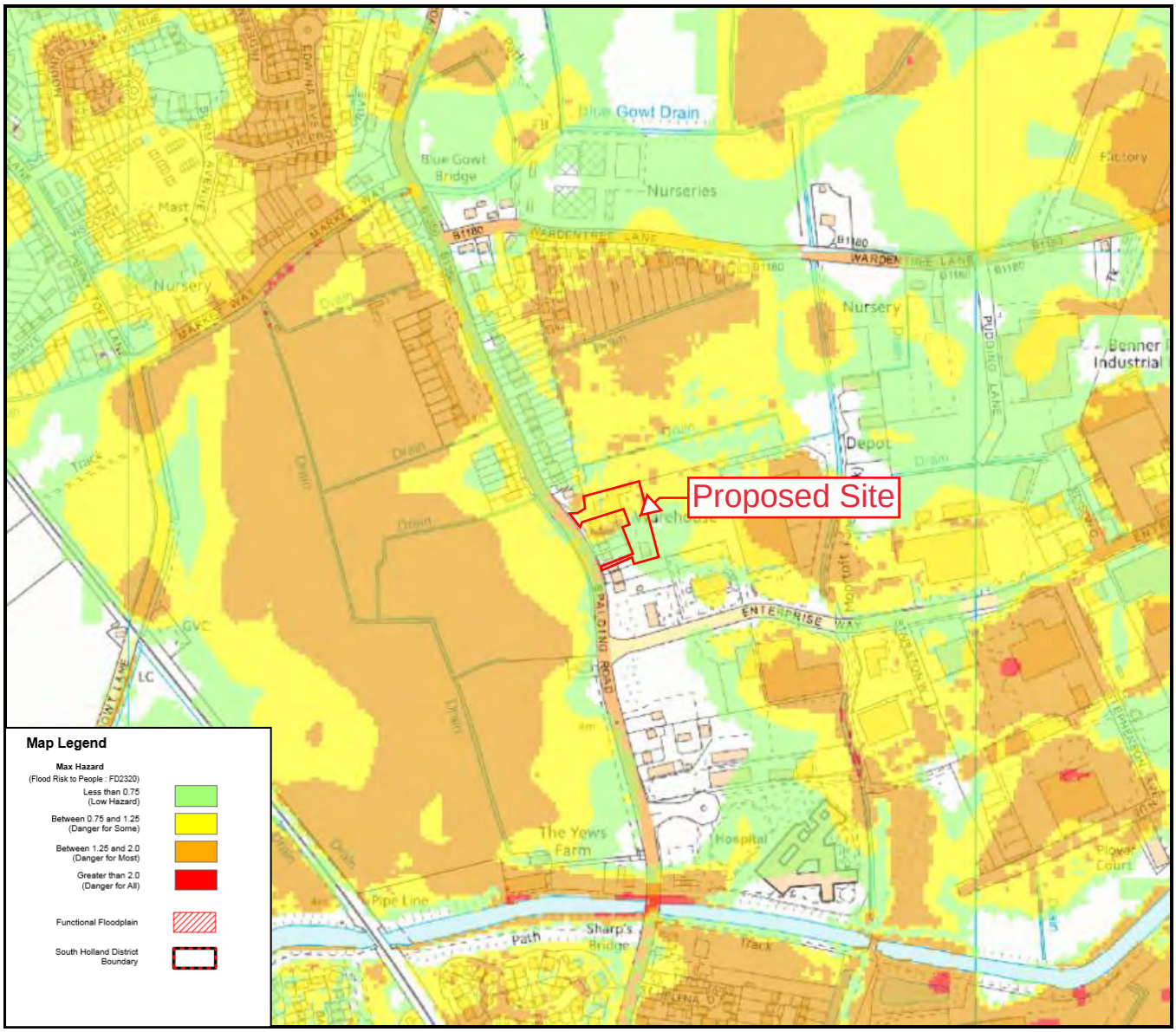
Tidal Water Levels for the South Humber, East Coast and The Wash

The table below shows still water levels for locations, from the above location map, around the South Humber Estuary, East Coast and The Wash. It is important to note the following:

- The base date for the data is 2014 for the South Humber and 2006 for the East Coast and The Wash.
- The data are still water levels. Depending on the use of the data it may be necessary to consider wave heights and / or joint probability analysis of water level and other variables.
- The water level quoted is the 'Best Estimate' water level. Depending on the use of the data it may be necessary to carry out sensitivity testing. Upper and Lower 95% confidence bandings are available upon request.
- Levels for other annual chance scenarios are available if required.

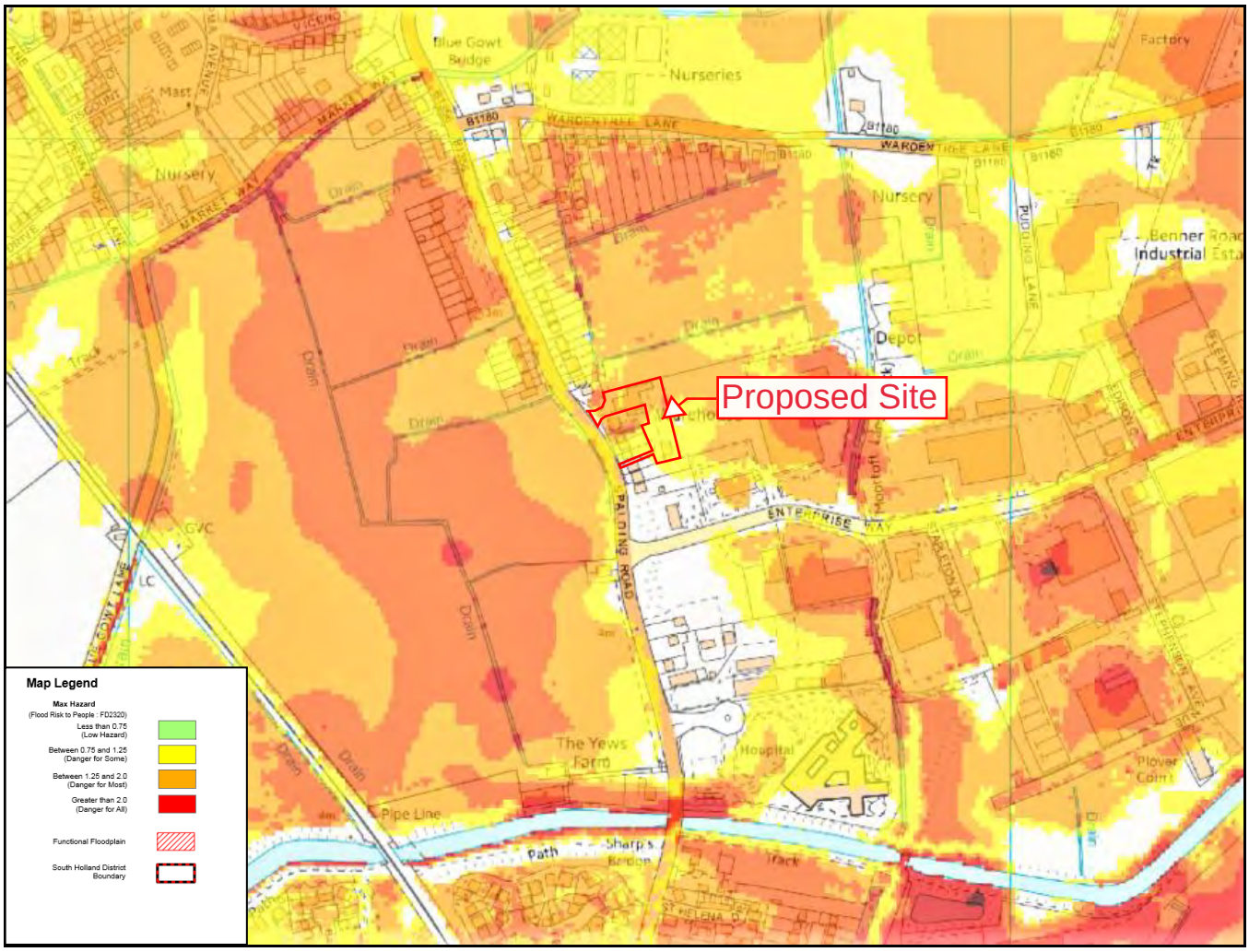
Ref	Location	Easting	Northing	Annual Chance (1 in x) of Tide Level metres ODN					
				1	10	50	100	200	1000
HUMBER									
H030	Tetney	535420	403180	3.94	4.29	4.56	4.69	4.82	5.15
H050	Buck Beck	532700	406580	4.03	4.36	4.62	4.74	4.87	5.18
H060	Grimsby	527878	411346	4.10	4.43	4.70	4.82	4.95	5.27
H080	Haborough Marsh	520790	415740	4.26	4.61	4.88	5.01	5.14	5.47
H090	Immingham	519141	417449	4.26	4.61	4.88	5.01	5.14	5.47
H100	South Killingholme	518700	417120	4.41	4.77	5.05	5.18	5.32	5.66
H130	North Killingholme	516530	420000	4.51	4.87	5.15	5.28	5.42	5.77
H150	East Halton	514450	422870	4.59	4.96	5.25	5.39	5.53	5.89
H170	Goxhill	511970	425440	4.67	5.04	5.34	5.47	5.61	5.95
H200	New Holland	508020	424330	4.87	5.26	5.55	5.68	5.81	6.12
H210	Barrow Haven	506380	422620	4.92	5.31	5.60	5.73	5.86	6.17
H220	Ferriby	497550	421150	5.04	5.42	5.67	5.77	5.86	6.04
H230	Winterton	493420	422830	5.14	5.51	5.74	5.83	5.90	6.02
H250	Blacktoft	484247	424190	5.25	5.62	5.83	5.90	5.96	6.04
H270	Goole	474857	422960	5.46	5.85	6.07	6.15	6.21	6.29
East Coast									
~	Great Eau	545500	393800	3.80	4.19	4.46	4.57	4.69	4.96
~	Boygrift	553300	379800	3.84	4.24	4.53	4.65	4.77	5.05
~	Burgh Sluice	555190	358620	4.26	4.45	4.76	4.90	5.03	5.34
Wash									
~	Hobhole	536610	339940	4.82	5.30	5.64	5.78	5.93	6.27
~	Lawyers Sluice	540750	334550	4.84	5.32	5.66	5.80	5.95	6.29
~	West Lighthouse	549150	325750	4.88	5.37	5.71	5.86	6.01	6.35
~	Grand Sluice	532400	344500	4.88	5.33	5.65	5.78	5.93	~
~	Fosdyke Bridge	531700	332200	4.91	5.38	5.71	5.85	5.99	~
~	Marsh Road	526000	324000	5.04	5.44	5.73	5.85	5.98	~
~	Wisbech	546100	310000	4.83	5.25	5.53	5.66	5.78	~
~	Dog In Doublet	527300	299300	3.67	4.00	4.22	4.32	4.42	~

Residual Flood Hazard Map – Spalding (2115), 0.1% event probability



Map 4

Residual Peak Depth Map – Spalding (2115) 1% fluvial/0.5% tidal event probability



Map 5

Residual Peak Depth Extent of Fluvial & Tidal Domination – Spalding (2115)

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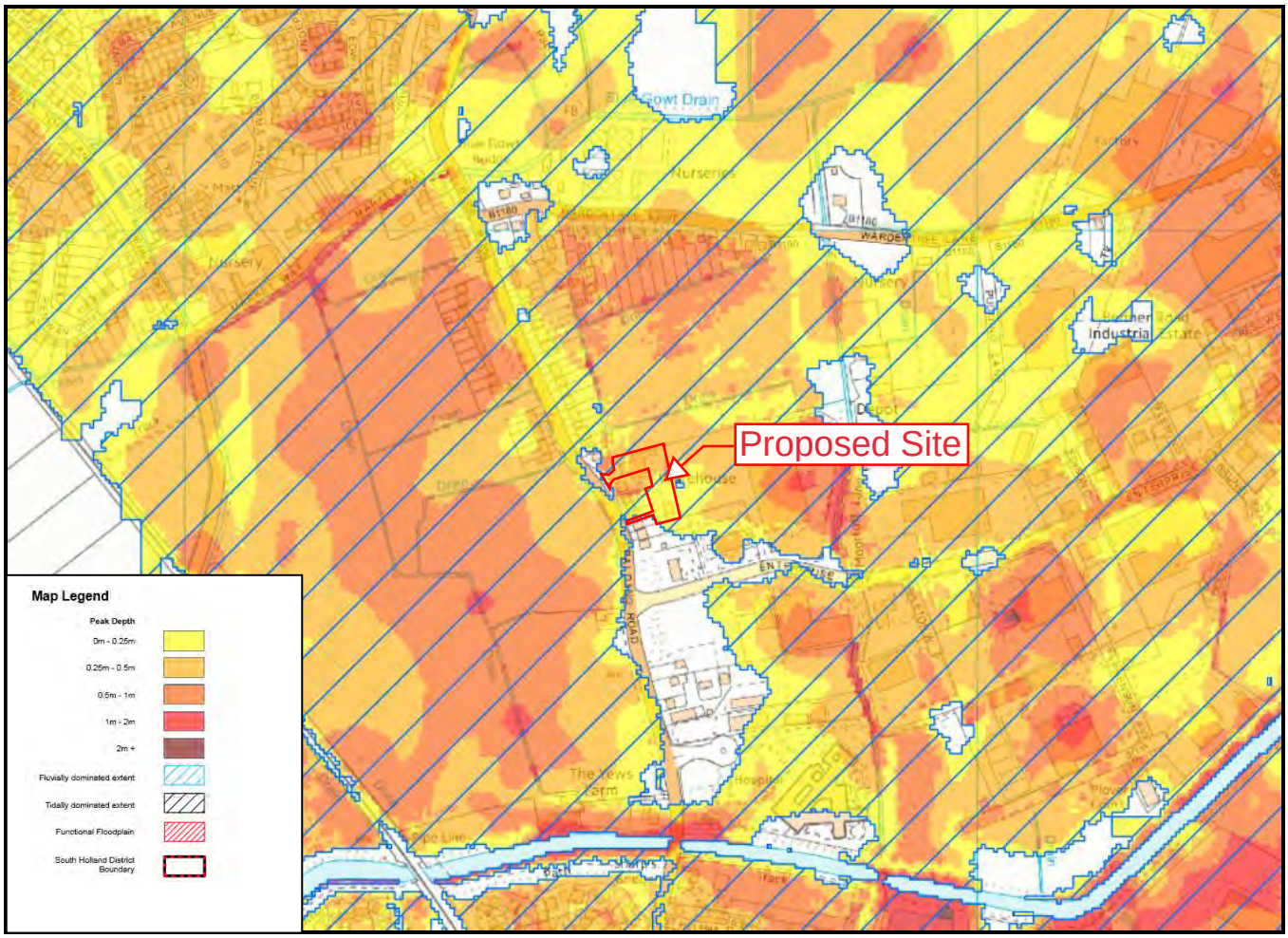


Map 6

Basic view Detailed view

Location Pinchbeck

Flood risk from rivers or the sea

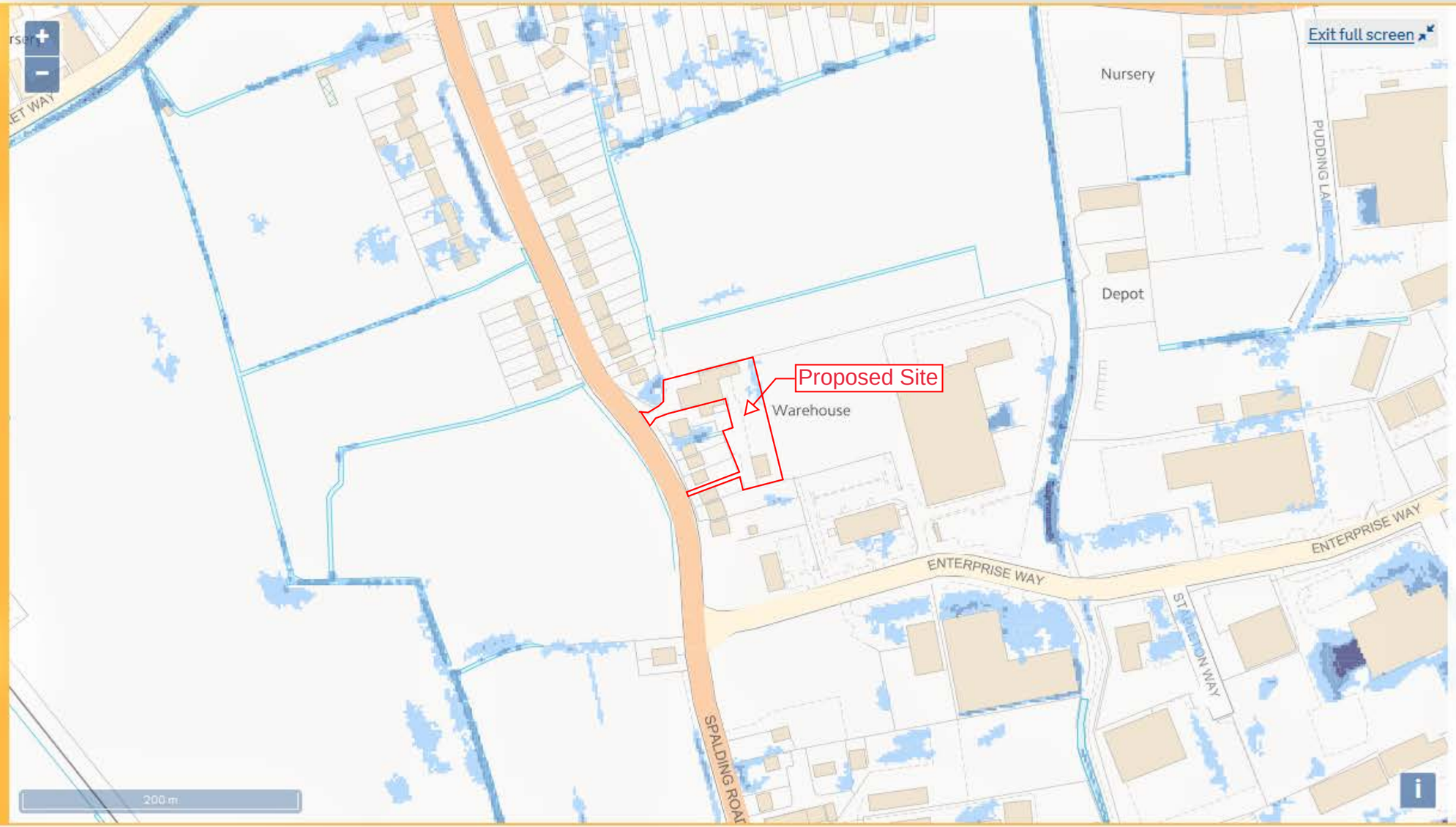
- Extent of flooding
- Depth and flow estimates at monitoring stations

Flood risk from surface water

- Extent of flooding
- High risk: depth
- High risk: velocity
- Medium risk: depth
- Medium risk: velocity
- Low risk: depth
- Low risk: velocity

Flood risk from reservoirs

- Extent of flooding
- Flood depth
- Flood speed



Low risk scenario

Flood depth (millimetres)

Over 900mm

300 to 900mm

Below 300mm

Location you selected

Map 7

Notes

Ordnance Survey Map
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Location Plan

0 10 20 30 40 50m

Rev	By	Notes	Date

rdc
Robert Doughty Consultancy
© 32 High Street, Helpringham
Sleaford, Lincolnshire NG34 ORA
Tel: 01529 421646
Fax: 01529 421358
Email: admin@rdc-landplan.co.uk
Web: www.rdc-landplan.co.uk

Client Fen Properties Ltd		
Project Land off Spalding Road, Pinchbeck		
Drawing title Location Plan		
Drawing No 928-1_PL_LP01	Rev A	Drawn GMG
Scale 1:1250 @A4	Date 09.02.17	Checked -

Plan 1

Notes

Measurements
All measurements should be checked against on site conditions and any discrepancies should be brought to the attention of the Robert Doughty Consultancy.

Ordnance Survey Map
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CDM 2015
This drawing is for illustrative purposes and/or obtaining the relevant planning permission only. It should not be used for construction and accordingly, risk identification under the Construction (Design & Management) Regulations 2015 has not been undertaken.

Rev	By	Notes	Date
B	WW	Red line revised	12.09.17
A	WW	Plan coloured	18.08.17

rdc
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Client
Fen Properties Ltd

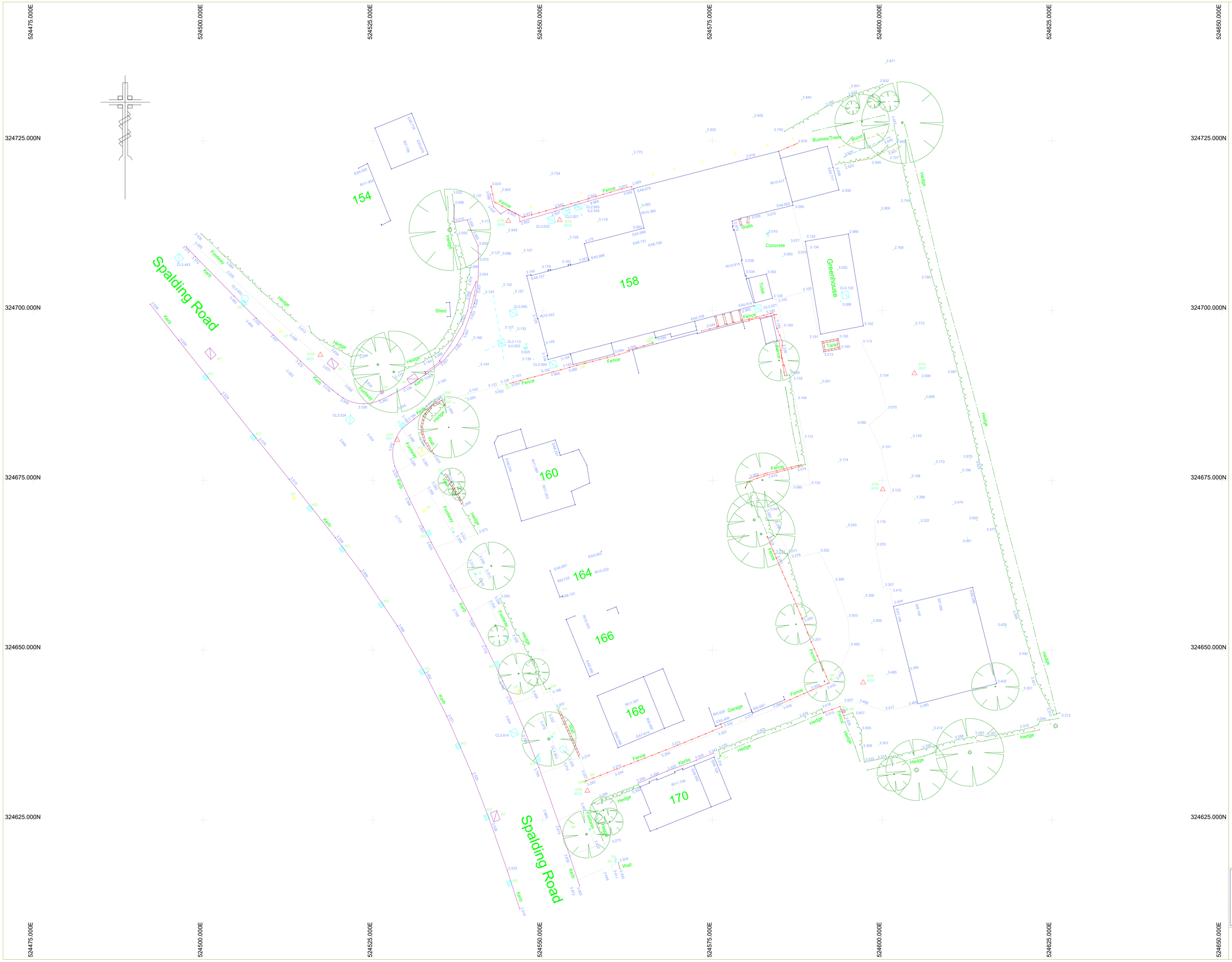
Project
Land off Spalding Road, Pinchbeck

Drawing title
Site Plan

Drawing No	Rev	Drawn
928-1_PL_SP02	B	WW

Scale	Date	Checked
1:500 @ A3	09.02.17	LMS

Plan 2



KEY:

- BUILDING
- FENCE
- HEDGE
- OVERHEAD ELECTRIC
- UNDERGROUND ELECTRIC
- BANK EDGE
- STORM DRAINAGE
- FOUL DRAINAGE
- TELECOM LINE
- GAS LINE
- CHANNEL
- WALL
- CABLE TV
- WATER MAIN
- IL INVERT LEVEL
- CL COVER LEVEL
- WL WATER LEVEL
- SPOT LEVEL
- TREE
- BOREHOLE
- CONTROL STATION
- BENCHMARK
- BATTER SYMBOL
- GP GATE POST
- POST
- B BOLLARD
- SP SIGN POST
- MANHOLE
- G GULLY
- KO KERB OFFLET
- SV STOP VALVE
- WM WATER METER
- FH FIRE HYDRANT
- MP MARKER POST
- GA GAS VALVE
- EL ELECTRIC BOX
- EP ELECTRIC POLE
- TP TELEPHONE POLE
- BT BRITISH TELECOM
- LP LAMP POST

NOTES:

1. Survey plotted to OS National Grid.
2. All levels related to OS Datum.

Initial Survey Date:	10 JUN 2009

CONTROL STATIONS

Stn:	Eastings:	Northings:	Height:
9000	524544.938	324713.201	2.932
9001	524528.586	324680.953	3.286
9002	524517.277	324693.470	3.636
9003	524556.581	324629.268	3.331
9004	524552.501	324713.327	3.033
9005	524597.206	324645.223	3.507
9006	524600.073	324673.658	3.144
9007	524604.753	324690.758	2.990
9008	524575.430	324541.331	3.878

Rev:	Amendments:	Date:

Client:
FEN PROPERTIES LTD.

Project Title:
158 SPALDING ROAD
PINCHBECK
LINCOLNSHIRE

Drawing Title:
OGL SURVEY

Scale: 1:250	Date: 13 JUN 2009
Drawing No: AS1567/1	Rev:
C.A.D. Title: RDCPINCH	Edit Title:
Drawn By: D.J.SMITH	

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