

**Flood Risk Assessment
August 2025**

EAS

**Highover Farm
Highover Way
Hitchin
Hertfordshire
SG4 0RQ**

Gill Hudson Homes Ltd

Document History

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The content of this report is based on information available as of August 2025, the validity of the statements made may therefore vary over time as planning guidance / policies and the evidence base change.

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1 Introduction

- 1.1 EAS has been commissioned to provide a Flood Risk Assessment (FRA) to inform a planning application for Highover Farm, Highover Way, Hitchin, Hertfordshire, SG4 0RQ (hereafter referred to as 'the site').
- 1.2 At present the site comprises of existing agricultural buildings, such as barns, with an existing dirt track which connects the agricultural buildings to the main highway. The proposal includes 14 residential units, 2 of which are new builds. The site location plan is included in **Appendix A** and the proposed development plans are in **Appendix B**.
- 1.3 The EA Flood Map for Planning shows the site is located in Flood Zone 1. Flood Zone 1 is defined as having less than 0.1% (1 in 1000) annual probability of river or tidal flooding.
- 1.4 The site is shown to be partially at low to high risk of surface water flooding.
- 1.5 This FRA details the flood risks from all sources and outlines mitigation measures where suitable.
- 1.6 The contents of this FRA are based on the advice set out in the National Planning Policy Framework (NPPF) last updated December 2024, Annex 3: Flood risk vulnerability classification, also from the NPPF and PPG 'Guidance for Flood Risk and Coastal Change', updated in August 2022.
- 1.7 A SuDS Assessment is being provided by others.
- 1.8 This document includes the following sections:
 - Section 2 – describes any relevant local and national planning policy;
 - Section 3 – provides a site description and background information;
 - Section 4 – reviews any potential sources of flooding;
 - Section 5 – identifies suitable mitigation measures to address the flood risks; and
 - Section 6 – summarises and concludes the report.

2 Policy Context

Introduction

2.1 This section sets out the policy context. This report is based on the advice set out in the National Planning Policy Framework (NPPF) last updated December 2024 and the Planning Practice Guidance (PPG) updated in August 2022.

2.2 Paragraph 181 of the NPPF discusses the use for site-specific flood-risk assessments and what the assessment should demonstrate:

“When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;

b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;

c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;

d) any residual risk can be safely managed; and

e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.”

2.3 Paragraph 181 footnote 63 of the NPPF states:

“A site-specific flood risk assessment should be provided for all developments in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.”

2.4 The flood zones are defined as:

- Flood Zone 1 - less than a 0.1% (1 in 1000) annual probability of river or tidal flooding.
- Flood Zone 2 - between a 0.1% and 1% (1 in 1000 and 1 in 100) annual probability of river flooding; or between a 0.1% and 0.5% (1 in 1000 and 1 in 200) annual probability of flooding from tidal sources.

- Flood Zone 3a- This zone comprises land assessed as having a 1% (1 in 100) or greater annual probability of river flooding; and for tidal flooding at least a 0.5% (1 in 200) annual probability of flooding from tidal sources.
 - Flood Zone 3b - This zone comprises land where water has to flow or be stored in times of flood. This classification is usually classified as land which had a 3.33% (1 in 30) annual probability of flooding.
- 2.5 Paragraph 170 discusses the suitability of development location, particularly with regards to future risks induced by climate change:
- “Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere”.*
- 2.6 The site is shown to be at low risk of a fluvial (river) flood event being located within Flood Zone 1 on the Flood Map for Planning. Flood Zone 1 is defined as having less than 0.1% (1 in 1000) annual probability of river flooding.
- 2.7 The EA Flood Map has been enclosed in **Appendix C**.

Local Policy

North Herts Local Plan 2011-2031

- 2.8 The North Herts Local Plan was adopted in November 2022. Relevant policies are included below for reference.
- 2.9 As of January 2024, an update to the local plan is underway, and would cover development for the district for up to 2045.
- 2.10 Policy NE7: Reducing Flood Risk

Planning permission for development proposals will be granted provided that (as applicable):

- a) *Development is located outside of medium and high-risk flood areas (flood zone 2 and 3) and other areas affected by other sources of flooding where possible;*
- b) *Where (a) is not possible, application of the sequential and exception tests is demonstrated where development is proposed in areas of flood risk using the Strategic Flood Risk Assessment (SFRA) and Environment Agency flood maps;*
- c) *A FRA has been prepared in accordance with national guidance that considers the lifetime of the development, climate change impacts and safe access and egress; North Hertfordshire Local Plan 2011-2031 159*
- d) *It will be located, designed and laid out to ensure the risk of flooding is reduced whilst not increasing flood risk elsewhere;*

- e) *The impact of any residual flood risk will be minimised through flood resistant, resilient design and construction;*
- f) *Any flood protection and mitigation measures necessary will not cause harm to nature conservation, heritage assets, and/ or landscape and recreation and, where possible, will have a positive impact in these respects; and*
- g) *Overland flow routes and functional floodplain areas are protected from all development other than that which is “water compatible” and this must be designed and constructed to remain operational and safe for users during flood events, resulting in no net loss of flood plain storage and not impeding water flows or increasing flood risk elsewhere.*

North Hertfordshire District Council Strategic Flood Risk Assessment 2008 (Updated in Sept 2016)

- 2.11 The North Hertfordshire SFRA was updated in 2016 as a result of improved accuracy of mapping information following the 2008 document.
- 2.12 The site has not been specifically detailed to have experienced historic fluvial flooding or sewer flooding.

Hertfordshire Interactive Flood Risk Management Viewer

- 2.13 Hertfordshire provides an interactive mapping website which displays the difference sources of flood risk across Hertfordshire County. The result of this mapping in relation to the proposed site is outlined below.
- 2.14 The interactive map can be viewed here:
<https://webmaps.hertfordshire.gov.uk/waterman/index.htm>.
- 2.15 The mapping confirms the site is located in Flood Zone 1.
- 2.16 There are no Hertfordshire County Council recorded incidents of flooding at the site. There is a recorded incident of flooding approximately 500m west of the site, however no further details have been provided.
- 2.17 The nearest Main River to the site is the River Purwell, approximately 470m to the south.
- 2.18 The site is not located within a ‘Surface Water Management Plan Hotspot’.
- 2.19 The site remains outside the 30yr, 100yr and 1000yr modelled surface water flood extents. This flood mapping is likely to have been replaced by the more recent national surface water flood modelling as set out in Section 4.
- 2.20 The site is located within an area considered to be $\geq 25\%$ - $<50\%$ susceptible to groundwater flooding.

3 Existing Site Assessment

Site Description

- 3.1 EAS have been commissioned to provide an FRA to inform planning application for Highover Farm, Highover Way, Hitchin, Hertfordshire, SG4 0RQ.
- 3.2 The site is currently comprises of existing agricultural buildings, such as barns, with an existing dirt track which connects the agricultural buildings to the main highway. The proposal includes 14 residential units, 2 of which are new builds. The remaining 12 units are barn conversions.
- 3.3 The site is bound by residential properties to the southeast (along Armour Rise), Highover Way to the southwest, and open fields to the north and east.

Local Watercourses

- 3.4 The River Purwell, an EA Main River, is located approximately 470m south of the site.

Site Levels

- 3.5 A topographical survey has been undertaken and is contained in **Appendix D**.
- 3.6 The site is relatively flat, falling slightly in a southwestern direction. Levels along the northeastern boundary range from 77.72mAOD in the east to 76.64mAOD in the north. Levels along the southwestern boundary range from 73.90mAOD in the south to 72.96mAOD in the west.
- 3.7 A dry pond is noted on the topographical survey to the North East of the site boundary.

Geology

- 3.8 With reference to the British Geological Survey online mapping (www.bgs.ac.uk), the site is located within an area with a bedrock of Holywell Nodular Chalk Formation and New Pit Chalk Formation (undifferentiated).
- 3.9 The site has superficial deposits of Lowestoft Formation - Diamicton
- 3.10 There is a borehole record within the site (Ref: TL13SE16). Boulder clay was observed to depth of 8ft (2.4m) BGL, overlaying sand and gravel, observed to a depth of 16ft (2.4m) BGL. Groundwater has not been recorded.
- 3.11 The DEFRA Magic Map shows the site is located beyond the extents of Source Protection Zone III.
- 3.12 The DEFRA Magic Map shows the site is located within a principal bedrock aquifer designation zone and is located within a Secondary (undifferentiated) aquifer designation zone for superficial drift.

- 3.13 The DEFRA Magic Map shows the site is located in a medium-high groundwater vulnerability area, with soluble rock risk.

Sewers and Existing Drainage

- 3.14 An adopted foul sewer and surface water sewer run along Armour Rise, with the surface sewer extending along Highover Way, finishing metres in front of the site's proposed access route (MH 7651). Anglian Water sewer records are enclosed in **Appendix E**.
- 3.15 The topographical survey in **Appendix D** shows a number of existing manholes and gulleys serving the site. Therefore, it is assumed the site is served by a private drainage system.

4 Potential Source of Flooding

Fluvial

- 4.1 The Flood Map for Planning was updated in March 2025. A copy of the Environment Agency's Flood Map for Planning is enclosed in **Appendix C**.
- 4.2 The site is located entirely in Flood Zone 1. Flood Zone 1 is defined as having less than 0.1% (1 in 1000) annual probability of river or tidal flooding.
- 4.3 The risk of flooding from fluvial sources is considered to be low.

Surface Water

- 4.4 Surface water flooding refers to flooding caused when the intensity of rainfall, particularly in urban areas, can create runoff which temporarily overwhelms the capacity of the local drainage systems or does not infiltrate into the ground. The water ponds on the ground and flows towards low-lying land. This source of flood risk is also known as 'pluvial'.
- 4.5 The Long-Term Flood Map and the risk of flooding from surface water (RoFSW) data was updated in January 2025.
- 4.6 The RoFSW products are an assessment of where surface water flooding may 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. It includes information about flooding extents and depths. Risk is displayed as one of three likelihood categories:
 - High - greater than or equal to 3.3% (1 in 30) chance of flooding in any year
 - Medium – Less than 3.3% (1 in 30) but greater than or equal to 1% (1 in 100) chance of flooding in any given year
 - Low – Less than 1% (1 in 100) but greater than or equal to 0.1% (1 in 1000) chance of flooding in any given year
- 4.7 As well as present day risk of flooding from surface water, climate change scenarios have been produced to indicate the predicted impacts of climate change on future flood risk. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5. A near-term epoch (2040 – 2060 "2050s" epoch) and central allowances are being used initially.
- 4.8 For the purpose of this flood risk assessment, the RoFSW the Climate Change 1 2040-2060 (2050s Epoch) data set has been used.
- 4.9 **Appendix F** shows the mapped RoFSW layers, which show a risk of surface water flooding.

4.10 **Appendix G** shows the mapped RoFSW layers, overlaid with the site. The following results at each depth of flooding have been identified:

- SK01 illustrates the risk of flooding from any depth at any depth. The site is shown to partially be at low to high risk, in the area following the site access route.
- SK02 illustrates the risk of flooding at depths exceeding 200mm, up to 300mm. The site is shown to partially be at low to medium risk, in the area following the site access route.
- SK03 illustrates the risk of flooding at depths exceeding 300mm, up to 600mm. The site is shown to marginally be at low risk, in a small section following the site access route.

4.11 Units 1-3, 13 and 14, and the cycle store are shown to be at risk of surface water flooding.

- Unit 1 is partially at low risk with depths up to 200mm. It is not at risk in a design flood event (medium risk).
- Unit 2 is at medium-high risk of depths up to 200mm and at low risk of depths up to 300mm.
- Unit 3 is partially at low risk of depths up to 300mm. It is not at risk in a design flood event (medium risk).
- Units 13 and 14 are at low risk with depths up to 300mm. They are not at risk in a design flood event (medium risk).
- The cycle store is at low risk with depths up to 600mm.

4.12 Mitigation measures in section 5 of this report provide a surface water management strategy to protect these units from surface water flooding.

Artificial

4.13 The EA long term risk maps also display the risk from reservoirs. The site is shown to be outside the reservoir flood risk extent; therefore, the risk of reservoir flooding is considered low.

Groundwater

4.14 The site is located in a soluble rock risk, medium-high groundwater vulnerability area, with $\geq 25\%$ - $< 50\%$ susceptibility.

4.15 Groundwater was not observed at the borehole record within the site (Ref: TL13SE16). It is assumed that water levels at this location are below 16ft (4.88m).

4.16 The development is not proposed to include any basements, therefore the risk of flooding from groundwater is considered to be low.

Sewer

- 4.17 Anglian Water sewer records are enclosed in **Appendix E**.
- 4.18 There are no adopted sewers within the site.
- 4.19 The Historic Sewer Flooding Record found in the North Hertfordshire District Council SFRA 2008 shows there are no recorded incidents for the site or in the surrounding area. The nearest reported sewer flood is in Cooks Way, approximately 700m southwest of the site.
- 4.20 The site is considered to be at low risk of sewer flooding.

5 Flood Mitigation Measures

- 5.1 The proposal includes 14 residential units, 2 of which are new builds. This increases the Flood Risk Vulnerability Classification from less to more vulnerable.
- 5.2 The site has been shown to be in Flood Zone 1.
- 5.3 The main flood risk to the site appears to be from the risk of surface water flooding, up to depths of 600mm, shown in **Appendix G**.
- 5.4 The site is also shown to be $\geq 25\%$ - $<50\%$ susceptible to groundwater emergence.

Finished Floor Levels

- 5.5 The RoFSW medium risk scenario is considered to be the design flood. The medium risk scenario is showed to flood up to 300mm within the site. The site levels in this area of flood risk are shown to by up to 73.05mAOD. Applying 300mm to this level provides a maximum flood level of 73.35mAOD in the design flood. In the low risk scenario, the flood depths are up to 600mm giving a maximum flood level of 73.65mAOD.
- 5.6 As 12 of the 14 proposed residential units are barn conversions, the Preliminary Finished Floor Levels (FFL) have provided and cannot be raised.
- 5.7 Units 1, 13 and 14 are proposed to have FFLs of 73.55mAOD, sitting 200mm above the design flood level of 73.35mAOD.
- 5.8 Unit 2 is proposed to have an FFL of 73.45mAOD, sitting 100mm above the design flood.
- 5.9 Unit 3 and the cycle store are proposed to have an FFL of 73.35mAOD which is inline with the design flood.
- 5.10 A Water Exclusion Strategy is proposed for units at risk of surface water flooding which will reduce the risk to the properties also in a low risk scenario. Further flood mitigation measures can be considered and are outlined below.
- 5.11 If flood levels have already reached levels in which it is not possible to safely exit the building to a safe area, residents should seek safe refuge within their properties and will have safe refuge on the first floor.
- 5.12 Ground floor bedrooms are proposed. Therefore, to ensure the safety of the residents from a flooding whilst they are sleeping, it is also proposed to intercept surface water flows entering the site and managing them.
- 5.13 The surface water drainage strategy being undertaken by others will reduce the risk of surface water flooding in the hardstanding parking areas.

- 5.14 Emergency vehicles would still be able to access the site in a low-risk scenario.

Water Exclusion Strategy

- 5.15 With reference to the publication by DEFRA entitled 'Improving the Flood Performance of New Buildings', flood depths over 300mm can adopt a 'Water Exclusion Strategy', where water entry to the building is minimised whilst not compromising structural integrity. Build quality and good workmanship are critical to this strategy.
- 5.16 Paragraph 6.4.1 of the DEFRA document states:
- "When applying a "water exclusion strategy" (i.e. minimising water ingress through ground floor slabs), for predicted water depths above the floor of greater than 0.3m, it is important to carry out structural checks assuming a flood depth of 1m minimum above the slab, even in areas where the design flood water depth is lower. Usual safety factors must be applied in all such calculations (floors and walls)".*
- 5.17 A suitably qualified structural engineer is recommended to review this FRA and the DEFRA publication and ensure the building can safely withstand the proposed water exclusion strategy without causing structural damage to the existing buildings.
- 5.18 Flood doors or deployable barriers form part of this strategy and should be introduced at all external thresholds, including the entrances to both the residential units and the cycle.
- 5.19 It is also anticipated that the glazing would also be built to be watertight, preventing water entering the building.
- 5.20 Deployable flood barriers are proposed to be fitted at the front and rear entrances to the residential units. The barriers would be put in place in the event that surface water was observed to start pooling in the local area, or a flood/weather warning being received. An example can be seen in Figure 5.1.



5.21

Figure 5.1: Double door width Flood Barrier. Source:
<https://www.floodprotectionsolutions.co.uk/products/aluminium-nautilus-flood-barrier/>.

Flood Resistant Construction

5.22 There are many flood resilient/resistant construction methods available as set out in the DEFRA document and some examples are provided below:

- Floor insulation of a closed cell type Insulation boards or foam.
- Floor and internal wall types of either water resistant or easily replaceable materials.
- Raise or cover air vents/bricks.
- Durable fittings/fixtures should be used that are not significantly affected by flood water and can be easily cleaned.
- Electrical appliances, gas oven etc. should be placed on plinths as high as practicable above the floor while still complying with building regulations, to ensure they are above the flood level.
- Pipework: Closed cell insulation should be used for pipes.
- Drainage services: non-return valves are recommended in the drainage system to prevent back-flow.
- Water, electricity and gas meters: should be located above predicted flood level.
- Electrical services: electrical sockets should be installed above flood level.
- Electric ring mains should be installed at first floor level with drops to ground floor sockets and switches.
- Heating systems: boiler units and ancillary devices should be installed above predicted flood level.
- Communications wiring: wiring for telephone, TV, Internet and other services should be protected by suitable insulation agreed with relevant service.

Water Interception Strategy

- 5.23 To ensure the safety of residents whilst sleeping, it is proposed to intercept surface water flows entering the site. LIDAR contours have been obtained to determine the catchment flowing towards the site. This is shown in the Flood Management drawing in **Appendix H**. This shows an area of 0.409ha is flowing towards the site from the north east.
- 5.24 A series of filter drains with a 225mm diameter pipe in a 0.55m gravel filled trench are proposed to intercept this runoff. These will then direct flows to the existing dry pond within the site. This dry pond has been confirmed to not be connected to any other drainage network.

- 5.25 Infiltration testing has been undertaken on site. The testing is included in **Appendix I**. Shallow infiltration testing was undertaken by Ground Science Solutions, dated 05/08/2025. Three test locations showed that infiltration rates were so high, the testing pits could not be filled sufficiently to obtain a measurable rate. To reach the suitable infiltration strata, the pit nearest the proposed infiltration location was dug to a depth of 2.65mbgl. It is estimated that the infiltration medium adjacent to the dry pond would be approx. 2.5mbgl.
- 5.26 Further borehole testing undertaken by Ground Science Solutions indicated rates of 5.9×10^{-3} m/s and 1.03×10^{-3} m/s at two different borehole locations. As such, the interception drainage has been modelled utilising an infiltration rate of 1×10^{-3} m/s.
- 5.27 As the existing dry pond is approx. 1m deep, to reach the infiltration strata, a gravel trench, 5m long x 1m wide x 1.5m deep is proposed, which will allow for infiltration through the base.
- 5.28 This strategy has been modelled and shows that in all storm scenarios up to a 1 in 100 year + 40%CC storm event, there is more than sufficient capacity to intercept and infiltrate surface water runoff entering the site. The model calculations are contained in **Appendix J**.
- 5.29 It is assumed any surface water generated by hardstanding within the site will be managed by a SuDS drainage strategy.
- 5.30 This surface water interception, along with the flood defences and the proposed FFLs will mitigate the risk of surface water entering the residences.

MET Office Weather Warnings

- 5.31 Although warnings cannot be given for surface water flooding, such an event is likely to correspond with prolonged and/or heavy rainfall. It is therefore recommended that all residents sign up to receive MET office weather warnings: <https://www.metoffice.gov.uk/about-us/news-and-media/media-centre/subscribe-to-email-alerts>.

Access and Egress

- 5.32 A safe access and egress route located outside the modelled surface water flood extent is shown in Figure 5.2.

Flood Evacuation



5.33

Figure 5.2: Flood evacuation route (Google Satellite and DEFRA Surface Water Mapping at any depth).

Flood Plan

- 5.34 It is proposed that a Flood Plan for the residents be a condition of a planning permission. The Flood Plan should include a summary of the flood risks and make recommendations for flood warning and evacuation measures.

6 Conclusions

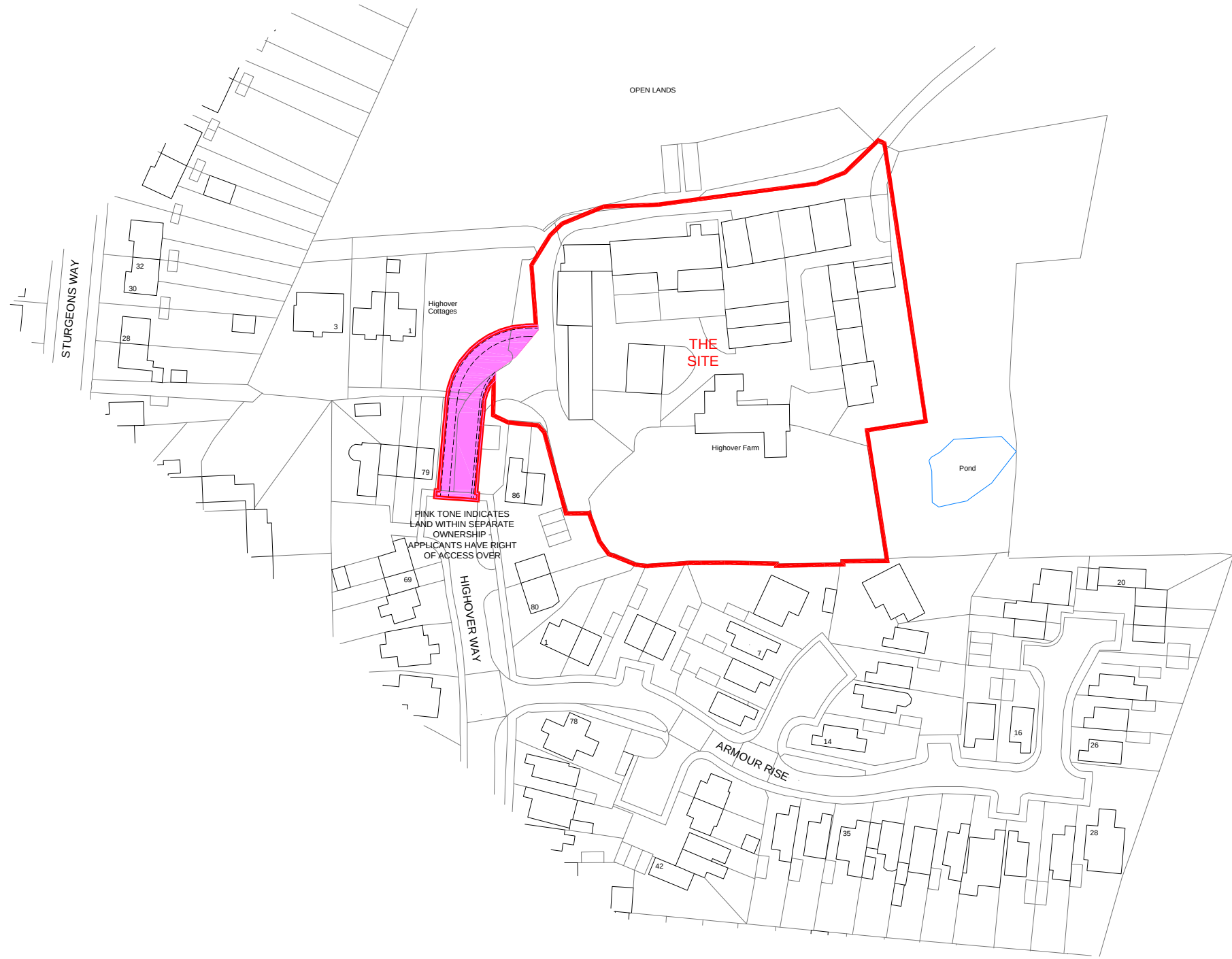
- 6.1 This Flood Risk Assessment (FRA) report has been prepared to support a planning application for Highover Farm, Highover Way, Hitchin, Hertfordshire, SG4 0RQ. The proposal includes 14 residential units, 2 of which are new builds.
- 6.2 The site is located within Flood Zone 1. Flood Zone 1 is defined as having a less than 0.1% (1 in 1000) annual probability of river flooding.
- 6.3 The site is shown to be partially at low risk of surface water flooding up to depths of 600mm, in a small section following the access route.
- 6.4 The proposal includes a change in land use, increasing the Flood Risk Vulnerability Classification from less to more vulnerable.
- 6.5 The RoFSW medium risk scenario is considered to be the design flood. The medium risk scenario is showed to flood up to 300mm. The site levels in this area are shown to be up to 73.05mAOD. Applying 300mm to this level provides a maximum flood level of 73.35mAOD in the design flood. In the low risk scenario, the flood depths are up to 600mm giving a maximum flood level of 73.65mAOD.
- 6.6 Units 1, 2, 13 and 14 all sit above the design flood level of 73.35mAOD.
- 6.7 Units 3 and the cycle store are proposed to have a FFL of 73.35mAOD which is inline with the design flood.
- 6.8 Although warnings cannot be given for surface water flooding, such an event is likely to correspond with prolonged and/or heavy rainfall. It is therefore recommended that all residents sign up to receive MET office weather warnings.
- 6.9 A Water Exclusion Strategy is proposed for units at risk of surface water flooding which will reduce the risk to the properties also in a low risk scenario. Flood doors or deployable barriers form part of this strategy and should be introduced at all external thresholds, including the entrances to both the residential units and the cycle.
- 6.10 Deployable flood barriers are proposed to be fitted at the front and rear entrances to the residential units. The barriers would be put in place in the event that surface water was observed to start pooling in the local area, or a flood/weather warning being received.
- 6.11 As ground floor sleeping is proposed, surface water flows from off site are to be intercepted by a series of filter drains with a 225mm diameter pipe in a 0.55m gravel filled trench. These will direct runoff to an existing dry pond. A gravel filled trench 5m long x 1m wide x 1.5m deep at the base of the dry pond, will convey this runoff to the infiltration strata. This system has sufficient capacity to manage all runoff up to and including a 1 in 100 year + 40%CC storm event.

- 6.12 A safe access and egress route has been modelled and provided. Yet, it is recommended that all residents sign up to flood warnings, and in the case of a warning, evacuate prior to the onset of flooding.
- 6.13 In conclusion, all sources of flooding have been considered within this Flood Risk Assessment and mitigation measures have been proposed commensurate to the level or risk.

Appendices

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Appendix: A - Location Plan



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0 10 20
SCALE - METRES

RED LINE SITE AREA:
0.82 Ha (2.03 Ac)

GREEN LINE AREA:
0.75 Ha (1.87Ac)

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PLANNING APPLICATION AREA

PLANNING
APPLICATION



PROJECT PROPOSED DEVELOPMENT.	SCALE 1:1250@A3.	James A. Keaney Associates Architecture • Architectural Technology • Project Management 49, Upper Mount Street, Dublin 2, Ireland, D02 FR83. 307, Sharpenhoe Road, Streatley, Bedfordshire, England, LU3 3PP. - Telephone: + 353 (0) .1.661 6537 - Irl Mobile: + 353 (0) .86.824 0952 - UK Mobile: + 44 (0) .7902. 068429 - Email: james@jaka-architecture.com - Web: www.jaka-architecture.com
LOCATION HIGHOVER FARM, HIGHOVER WAY, HITCHIN, HERTS, SG4 0RQ.	DRAWN J.A.KEANEY.	
CLIENT GILL HUDSON HOMES LTD.	DATE APRIL 2025.	
TITLE LOCATION PLAN – 1:1250.	PURPOSE PLANNING.	
		DRAWING NUMBER 2208.PL.01

Appendix: B – Proposed Site Plan

SCHEDULE OF UNITS

UNIT NUMBER	NUMBER OF FLOORS & BEDROOMS	SQUARE METERS APPROX	SQUARE FEET APPROX
UNIT 1	1.5 / 2 BED	86.24	928.00
UNIT 2	1.5 / 3 BED	181.57	1954.00
UNIT 3	1.5 / 4 BED	239.97	2486.00
UNIT 4	1.5 / 4 BED	222.54	2395.00
UNIT 5	1.5 / 3 BED	140.36	1510.00
UNIT 6	1.5 / 2 BED	95.84	1031.00
UNIT 7	1.5 / 2 BED	94.78	1020.00
UNIT 8	1.5 / 2 BED	93.40	1005.00
UNIT 9	1 / 3 BED	123.43	1328.00
UNIT 10	1 / 3 BED	144.84	1559.00
UNIT 11	2 / 4 BED	188.53	2029.00
UNIT 12	2 / 4 BED	190.64	2052.00
UNIT 13	1 / 2 BED	80.83	870.00
UNIT 14	2 / 3 BED	108.93	1172.00
15 CYCLE	1	43.86	472.00
16 REFUSE/CAR PORT	1	68.56	737.00
TOTAL		2095.32	22548.00

DRAWING INDICATING EXISTING MEASURED SURVEY PLAN INFORMATION

- C. 06.08.25 AMENDED IN ACCORDANCE WITH FURTHER NORTH HERTS COUNCIL COMMUNICATIONS.
B. 29.07.25 AMENDED IN ACCORDANCE WITH FURTHER NORTH HERTS COUNCIL COMMENTS.
A. 17.07.25 AMENDED IN ACCORDANCE WITH NORTH HERTS COUNCIL COMMENTS.

PROJECT	SCALE	James A. Keaney Associates Architecture • Architectural Technology • Project Management	
PROPOSED DEVELOPMENT.	1:500@A2.		
LOCATION	DRAWN	49 Upper Mount Street, Dublin 2, Ireland, D02 FFR3.	
HIGHOVER FARM, HIGHOVER WAY, HITCHIN, HERTS. SG4 0HQ.	J.A.KEANEY.	307, Sharncliffe Road, Streatham, Bedfordshire, England, LU3 3PP.	
CLIENT	DATE	Telephone: + 353 (0) 1 661 6537 • Jit Mobile: + 353 (0) 86 824 8932 • UK Mobile: + 44 (0) 7 7902 086459 • Email: james@jake-architecture.com • Web: www.jake-architecture.com	
GILL HUDSON HOWES LTD.	APRIL 2025.		
TITLE	PURPOSE	DRAWING NUMBER	
PROPOSED BLOCK – MASTER PLAN.	PLANNING.	2208.PL.02C	



PLANNING APPLICATION

Appendix: C – EA Flood Map for Planning

Flood map for planning

Your reference
Unspecified

Location (easting/northing)
519930/230919

Created
8 August 2025 11:45

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following**:

- bigger than 1 hectare (ha)
- in an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2025 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference

Unspecified

Location (easting/northing)

519930/230919

Scale

1:2,500

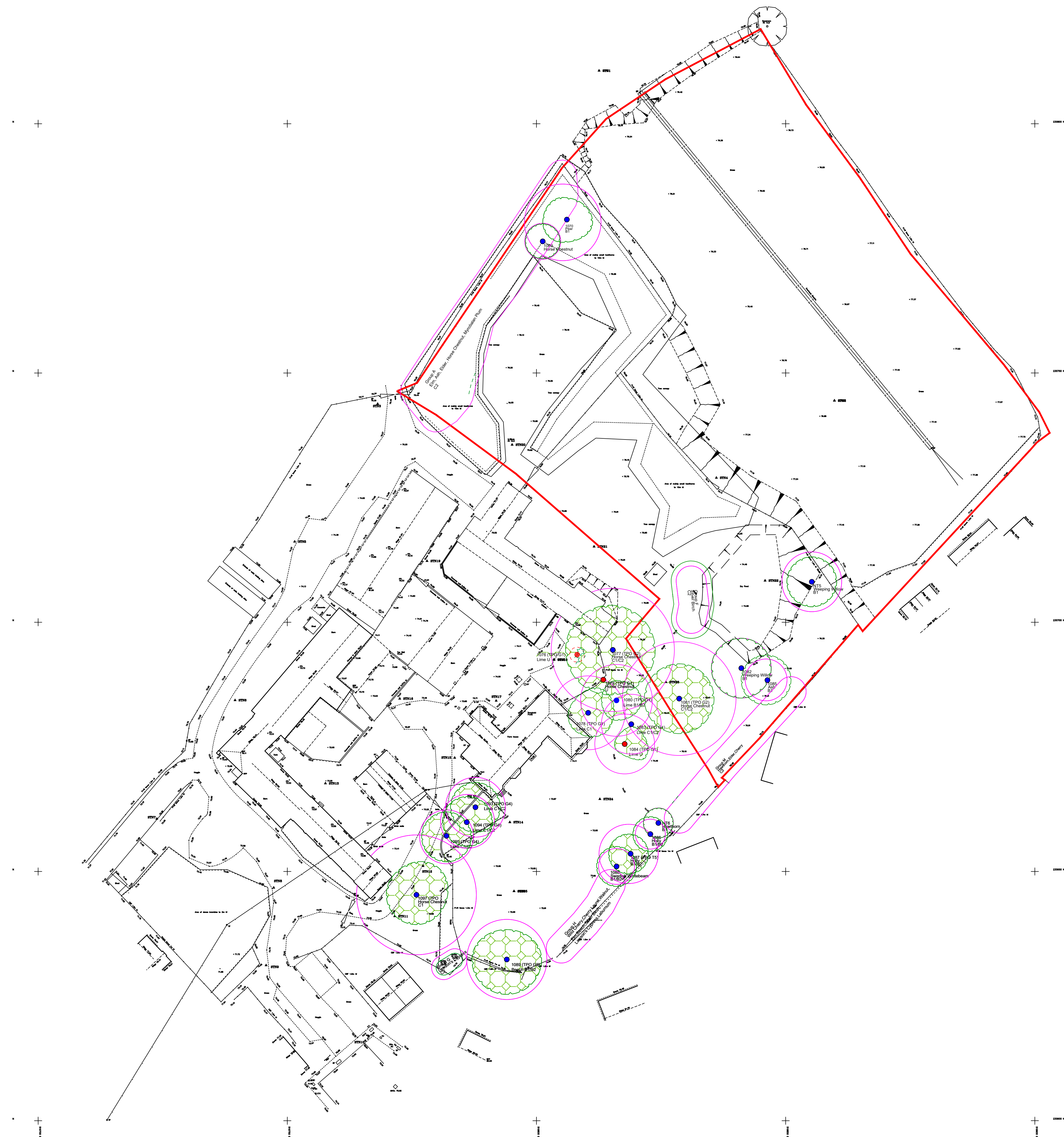
Created

8 Aug 2025 11:45

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area


0 20 40 60m

Appendix: D – Topographical Survey



Client:	David Gill
---------	------------

Project:
Highover Farm

Drawing:

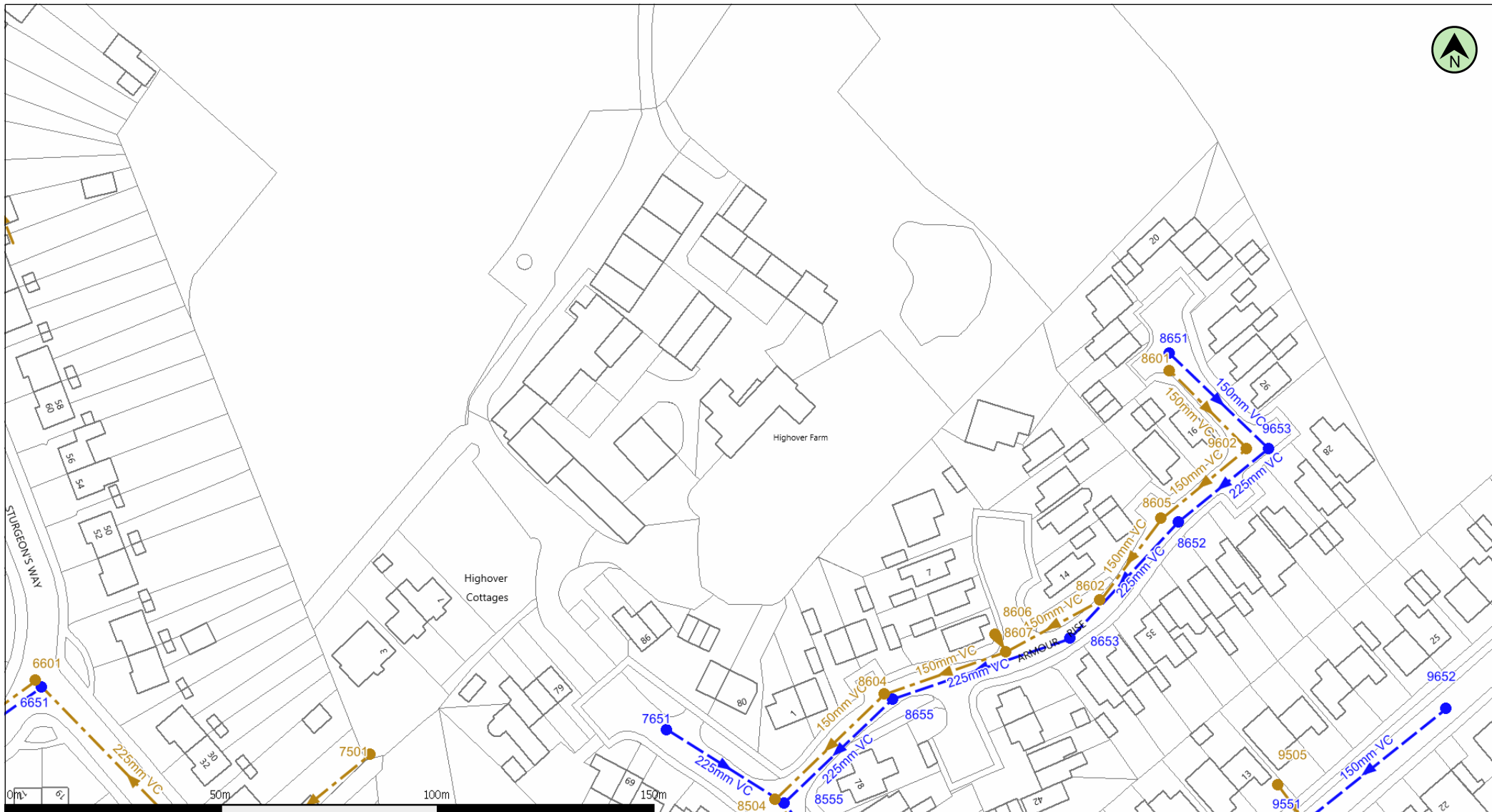
Land For Transfer



	Drawn by: JG
--	-----------------

Date:
06/08/24

Appendix: E – Anglian Water Sewer Mapping



(c) Crown copyright and database rights 2025 Ordnance Survey AC0000813445 Date: 29/07/25 Scale: 1:1250 Map Centre: 519796,230676 Data updated: 01/07/25 Our Ref: 1836800 - 1 Wastewater Plan A4 Powered by digdat

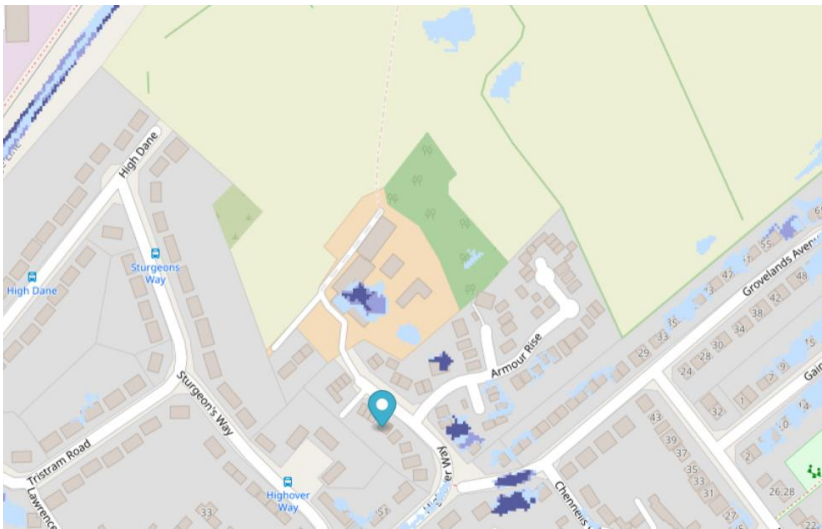
This plan is provided by Anglian Water pursuant to its obligations under the Water Industry Act 1991 sections 198 or 199. It must be used in conjunction with any search results attached. The information on this plan is based on data currently recorded but position must be regarded as approximate. Service pipes, private sewers and drains are generally not shown. Users of this map are strongly advised to commission their own survey of the area shown on the plan before carrying out any works. The actual position of all apparatus MUST be established by trial holes. No liability whatsoever, including liability for negligence, is accepted by Anglian Water for any error or inaccuracy or omission, including the failure to accurately record, or record at all, the location of any water main, discharge pipe, sewer or disposal main or any item of apparatus. This information is valid for the date printed. This plan is produced by Anglian Water Services Limited (c) Crown copyright and database rights 2025 Ordnance Survey AC0000813445. This map is to be used for the purposes of viewing the location of Anglian Water plant only. Any other uses of the map data or further copies is not permitted. This notice is not intended to exclude or restrict liability for death or personal injury resulting from negligence.

Foul Sewer	--- --	Outfall*	⊕	Sewage Treatment Works	□
Surface Sewer	---		⊕	Public Pumping Station	●
Combined Sewer	---		⊕	Decommissioned Pumping Station	●
Final Effluent	---	Inlet*			
Rising Main*	---				
Private Sewer*	---				
Decommissioned Sewer*	---	Manhole*			

*(Colour denotes effluent type)

ben.shaw@eastp.co.uk	
Highover Farm	

Appendix: F – Surface Water Flood Risk Maps



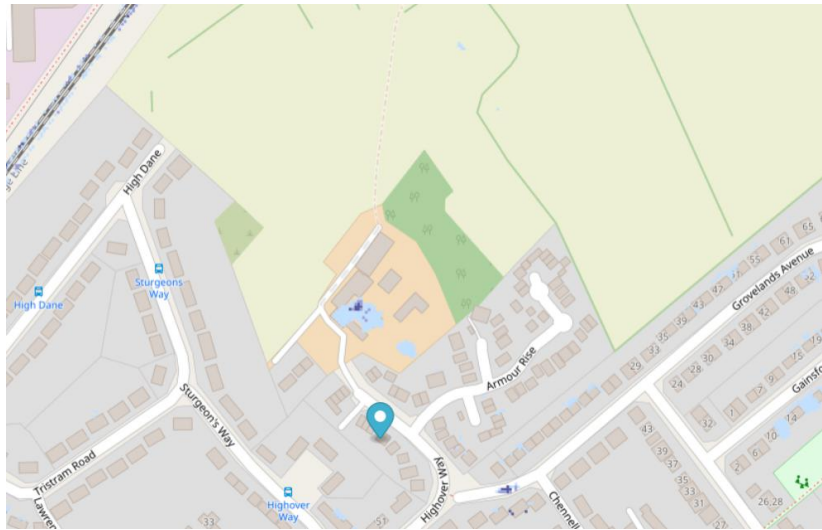
Extract From The EA Risk of Flooding from Surface Water – Climate Change
Flood Risk at all depths

Source: <https://environment.data.gov.uk/>

Key:

- High
- Medium
- Low

1



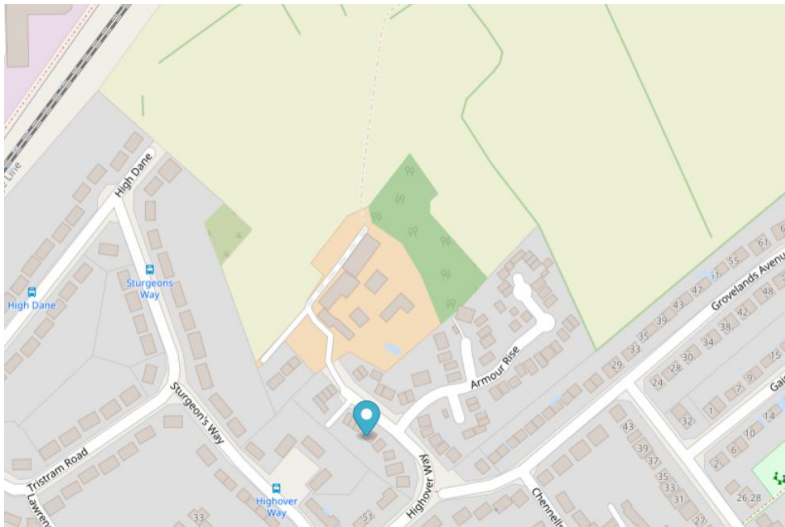
Extract From The EA Risk of Flooding from Surface Water – Climate Change
Flood Risk For Flood Depths Exceeding 200mm

Source: <https://environment.data.gov.uk/>

Key:

- High
- Medium
- Low

2

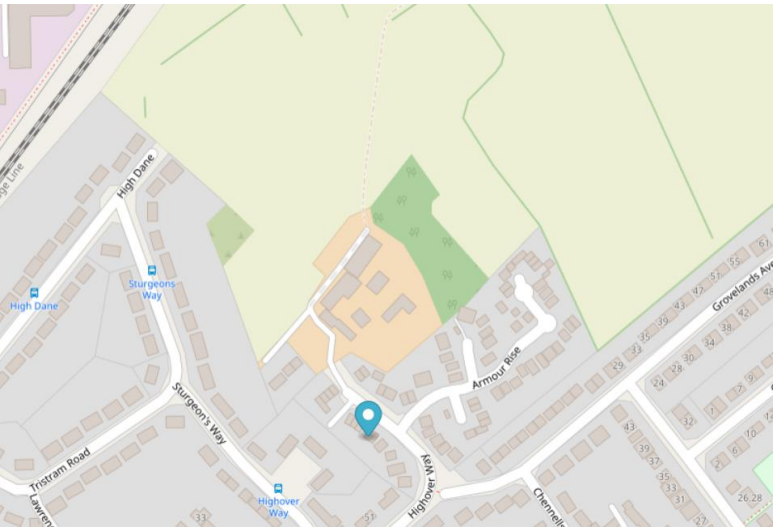


Extract From The EA Risk of Flooding from Surface Water – Climate Change
Flood Risk For Flood Depths Exceeding 300mm
Source: <https://environment.data.gov.uk/>

Key:

- High
- Medium
- Low

3



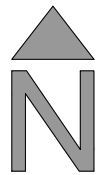
Extract From The EA Risk of Flooding from Surface Water – Climate Change
Flood Risk For Flood Depths Exceeding 600mm
Source: <https://environment.data.gov.uk/>

Key:

- High
- Medium
- Low

4

Appendix: G – Surface Water Flood Risk Site Maps



KEY

SURFACE WATER FLOOD LIKELIHOOD
CATEGORY:

- LOW (less than 1% AEP*, greater or equal to 0.1% AEP*)
- MEDIUM (less than 3.3% AEP*, greater or equal to 1% AEP*)
- HIGH (greater or equal to 3.3% AEP*)

* AEP = ANNUAL EXCEEDANCE PROBABILITY

REV	DATE	BY	DESCRIPTION	CHK	APD
-----	------	----	-------------	-----	-----

DRAWING STATUS:
FOR PLANNING

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1st Floor Millers House, Roydon Road,
Stanstead Abbots, Hertfordshire, SG12 8HN
Tel: 01920 871777
www.eastp.co.uk

CLIENT:

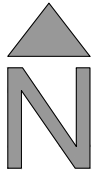
ARCHITECT:

PROJECT:
HIGHOVER FARM, HIGHOVER WAY,
HITCHIN, SG4 0RQ

TITLE:
RISK OF SURFACE WATER FLOODING,
INCLUSIVE OF CLIMATE CHANGE (2050s),
AT DEPTHS UP TO 200mm

SCALE @ A2: 1:500	DESIGN-DRAWN: HB	DATE: 08.08.25
----------------------	---------------------	-------------------

PROJECT No: 6138	DRAWING No: SK01
---------------------	---------------------



KEY

SURFACE WATER FLOOD LIKELIHOOD
CATEGORY:

- LOW (less than 1% AEP*, greater or equal to 0.1% AEP*)
- MEDIUM (less than 3.3% AEP*, greater or equal to 1% AEP*)
- HIGH (greater or equal to 3.3% AEP*)

* AEP = ANNUAL EXCEEDANCE PROBABILITY

REV	DATE	BY	DESCRIPTION	CHK	APD
-----	------	----	-------------	-----	-----

DRAWING STATUS:
FOR PLANNING

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1st Floor Millers House, Roydon Road,
Stanstead Abbots, Hertfordshire, SG12 8HN
Tel: 01920 871777
www.eastp.co.uk

CLIENT:

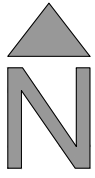
ARCHITECT:

PROJECT:
**HIGHOVER FARM, HIGHOVER WAY,
HITCHIN, SG4 0RQ**

TITLE:
**RISK OF SURFACE WATER FLOODING,
INCLUSIVE OF CLIMATE CHANGE (2050s),
AT DEPTHS UP TO 300mm**

SCALE @ A2: 1:500	DESIGN-DRAWN: HB	DATE: 08.08.25
----------------------	---------------------	-------------------

PROJECT No: 6138	DRAWING No: SK02
----------------------------	----------------------------



KEY

- SURFACE WATER FLOOD LIKELIHOOD CATEGORY:
- LOW (less than 1% AEP*, greater or equal to 0.1% AEP*)
 - MEDIUM (less than 3.3% AEP*, greater or equal to 1% AEP*)
 - HIGH (greater or equal to 3.3% AEP*)

* AEP = ANNUAL EXCEEDANCE PROBABILITY

REV	DATE	BY	DESCRIPTION	CHK	APD
-----	------	----	-------------	-----	-----

DRAWING STATUS:	FOR PLANNING
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1st Floor Millers House, Roydon Road,
Stanstead Abbots, Hertfordshire, SG12 8HN
Tel: 01920 871777
www.eastp.co.uk

CLIENT:

ARCHITECT:

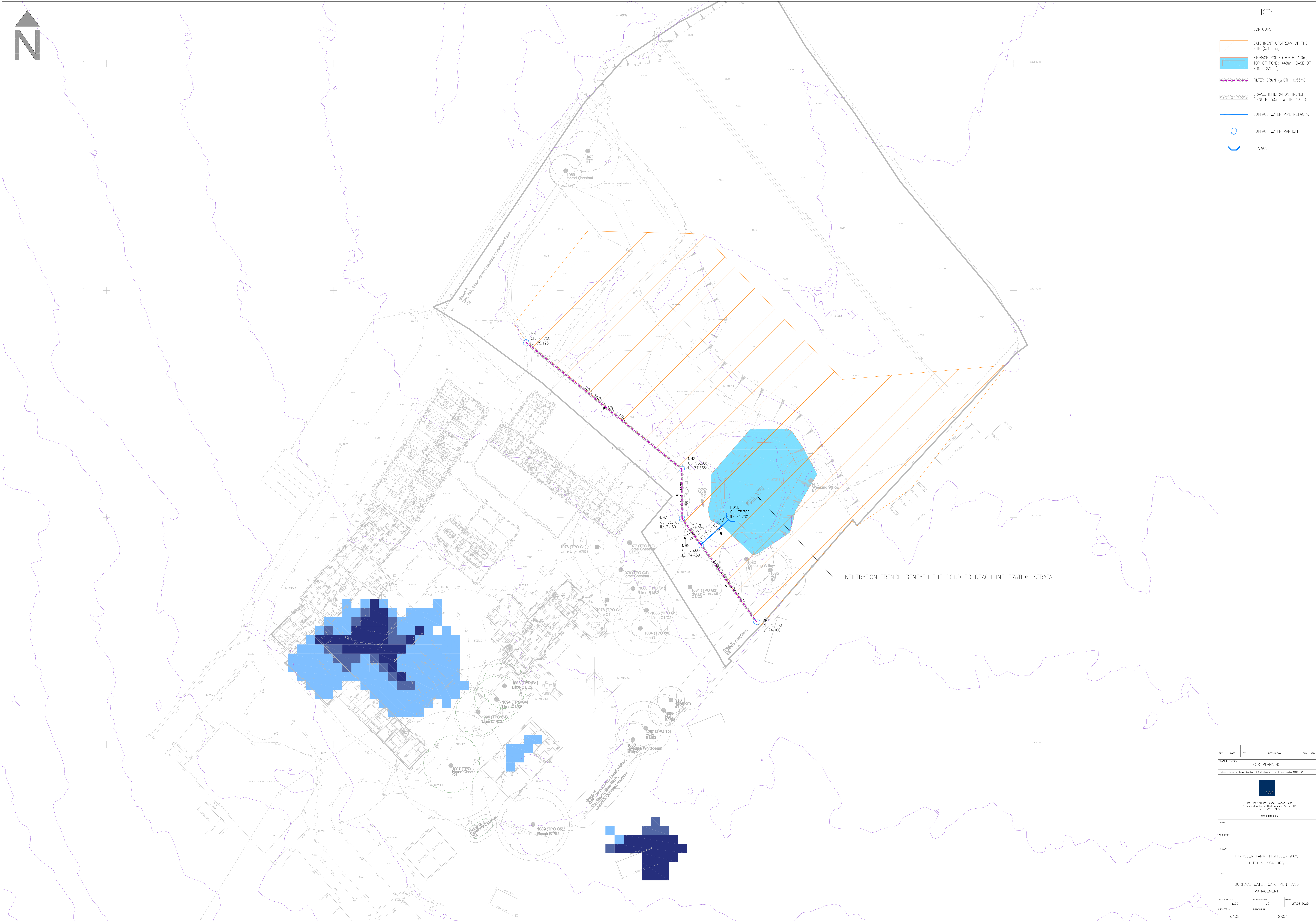
PROJECT:
HIGHOVER FARM, HIGHOVER WAY,
HITCHIN, SG4 0RQ

TITLE:
RISK OF SURFACE WATER FLOODING,
INCLUSIVE OF CLIMATE CHANGE (2050s),
AT DEPTHS UP TO 600mm

SCALE @ A2: 1:500	DESIGN-DRAWN: HB	DATE: 08.08.25
----------------------	---------------------	-------------------

PROJECT No: 6138	DRAWING No: SK03
---------------------	---------------------

Appendix: H – Surface Water Flood Management Strategy drawing



Appendix: I – Infiltration testing



GROUND SCIENCE SOLUTIONS

78 BECKENHAM ROAD
BECKENHAM BR3 4RH

05/08/2025
GILL-HUDSON HOMES LTD
FIELDEN HOUSE
Gravenhurst Road
Silsoe
Beds MK45 4QS
05/08/2025

RE: SOAKAWAYS AT HIGHOVER FARM

Gentlemen,

On the 5th of August 2025 three machine (with added manual input) dur soakaway pits were excavated at the above site. These have been labelled S1 to S3 the locations are shown on the attached plan.

WS1 was excavated in the lowest part of the site in south eastern corner close to the position of borehole WS1. The initial object was to get to the same level as the borehole; however, this pit was dug a little lower to fully expose a sandy gravel (hoggin like in appearance).

S2 was excavated in the north eastern part of the site at a higher elevation and required a deeper hole to expose the sandy gravel.

S3 was excavated in the north west of the site again at a higher elevation than S1.

Pit details are as follows:

Pit No.	Width m	Length m	Depth m	NEAREST LEVEL
S1	0.6	1.1	1.5	72.8
S2	0.6	2.0	2.65	76.1
S3	0.6	2.0	2.90	79.4

A large water bowser/tank was lift into place by a forklift; this allowed a large volume of water to be discharged rapidly into the pits.



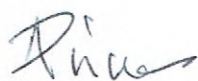
Each pit was dry at the start of the tests. At each location it proved impossible to fill the pit more than approximately 200 mm as the outflow was faster than the water input.

The reason that the Diamicton is classed as a secondary aquifer is probably due to the extensive sand and sandy gravels lenses/beds that allow the flow of groundwater.

It would appear that provided the soakaway has access to this stratum it will be acceptable.

If we can provide any further information please contact us.

Best regards



Albert Prince

GROUND SCIENCE SOLUTIONS

albertprince@groundscience solutions.com

Tel. 07773 421306



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PROJECT	PROPOSED DEVELOPMENT.	SCALE	James A. Keaney Associates Architecture • Architectural Technology • Project Management
LOCATION	HIGHOVER FARM, HIGHOVER WAY, HITCHIN, HERTS, SG4 0RQ.	1:1250@A3.	40, Upper Mount Street, Dublin 2, Ireland, D02 F863. 307, Sharpamos Road, Strassay, Bedfordshire, England, LU3 9PP.
CLIENT	GILL HUDSON HOMES LTD.	DRAWN J.A. KEANEY.	• Telephone: +353 (0) 1 861 6537 • M Mobile: +353 (0) 88 224 0852 • UK Mobile: +44 (0) 7562 089423 • Email: james@jake-architecture.com • Web: www.jake-architecture.com
TITLE	LOCATION PLAN - 1:1250.	DUE APRIL 2025.	DRAWING NUMBER 2208.PL.01



LOCATION OF SOAKAWAY TESTS

Appendix: J – Surface Water Flood Management Strategy calculations

EAS Transport Planning Ltd	EAS Transport Planning Ltd		File: Flood management.pfd		Page 1
	1st Floor Millers House		Network: Storm Network		
	Roydon Road		Heidi Brown		
	Stanstead Abbots		27/08/2025		

Design Settings					
Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00		
Return Period (years)	100	Connection Type	Level Soffits		
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200		
CV	1.000	Preferred Cover Depth (m)	0.600		
Time of Entry (mins)	5.00	Include Intermediate Ground	✓		
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓		
Maximum Rainfall (mm/hr)	50.0				

Simulation Settings					
Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	1440	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	0.0		

Storm Durations											
15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	40	0	0

Node 5_OUT Depth/Area Storage Structure						
Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	74.700	
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)		
Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	
0.000	239.0	239.0	1.000	448.0	457.8	

Node 5_OUT Depth/Area Storage Structure								
Base Inf Coefficient (m/hr)	3.60000	Safety Factor	2.0	Invert Level (m)	73.200			
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Time to half empty (mins)	10			
Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	5.0	5.0	1.500	5.0	16.9	1.501	0.0	16.9

Node 2 Link Surround Storage Structure					
Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Link	1.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	74.865	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	0	Diameter (mm)	550

Node 3 Link Surround Storage Structure					
Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Link	1.001
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	74.801	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	0	Diameter (mm)	550

Flow+ v15.0 Copyright © 1988-2025 Causeway Technologies Ltd



Node 5 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Link	1.002
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	74.759	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	0	Diameter (mm)	550

Node 5 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Link	2.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	74.776	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	0	Diameter (mm)	550

**Results for 2 year Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	1	112	75.133	0.008	0.1	0.0096	0.0000	OK
30 minute winter	2	84	74.877	0.012	0.2	0.0188	0.0000	OK
600 minute winter	3	330	74.813	0.012	0.2	0.0186	0.0000	OK
30 minute winter	4	91	74.909	0.009	0.1	0.0100	0.0000	OK
60 minute winter	5	111	74.773	0.014	0.3	0.0241	0.0000	OK
60 minute summer	5_OUT	111	73.206	-1.504	0.3	0.0090	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
60 minute summer	1	1.000	2	0.1	0.167	0.003	0.0274
30 minute winter	2	1.001	3	0.2	0.282	0.005	0.0083
600 minute winter	3	1.002	5	0.2	0.254	0.005	0.0063
30 minute winter	4	2.000	5	0.1	0.246	0.003	0.0086
60 minute winter	5	1.003	5_OUT	0.3	0.308	0.008	0.0080
60 minute summer	5_OUT	Infiltration		0.3			

**Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute summer	1	140	75.139	0.014	0.3	0.0159	0.0000	OK
120 minute summer	2	140	74.885	0.020	0.6	0.0373	0.0000	OK
120 minute summer	3	142	74.820	0.019	0.6	0.0364	0.0000	OK
120 minute summer	4	138	74.914	0.014	0.3	0.0161	0.0000	OK
120 minute summer	5	144	74.783	0.024	0.9	0.0497	0.0000	OK
120 minute summer	5_OUT	140	73.218	-1.492	0.9	0.0270	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
120 minute summer	1	1.000	2	0.3	0.228	0.008	0.0592
120 minute summer	2	1.001	3	0.6	0.365	0.015	0.0179
120 minute summer	3	1.002	5	0.6	0.315	0.015	0.0135
120 minute summer	4	2.000	5	0.3	0.307	0.008	0.0205
120 minute summer	5	1.003	5_OUT	0.9	0.414	0.023	0.0179
120 minute summer	5_OUT	Infiltration		0.9			

**Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute summer	1	172	75.143	0.018	0.5	0.0200	0.0000	OK
120 minute summer	2	140	74.890	0.025	1.0	0.0525	0.0000	OK
180 minute summer	3	172	74.826	0.025	1.0	0.0509	0.0000	OK
180 minute summer	4	164	74.918	0.018	0.5	0.0202	0.0000	OK
180 minute summer	5	176	74.789	0.030	1.5	0.0751	0.0000	OK
180 minute summer	5_OUT	168	73.230	-1.480	1.5	0.0450	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
180 minute summer	1	1.000	2	0.5	0.263	0.013	0.0849
120 minute summer	2	1.001	3	1.0	0.424	0.025	0.0257
180 minute summer	3	1.002	5	1.0	0.366	0.025	0.0194
180 minute summer	4	2.000	5	0.5	0.350	0.013	0.0300
180 minute summer	5	1.003	5_OUT	1.5	0.482	0.038	0.0257
180 minute summer	5_OUT	Infiltration		1.5			

**Results for 100 year Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute summer	1	134	75.141	0.016	0.4	0.0181	0.0000	OK
120 minute summer	2	136	74.887	0.022	0.8	0.0450	0.0000	OK
120 minute summer	3	138	74.823	0.022	0.8	0.0438	0.0000	OK
120 minute summer	4	132	74.916	0.016	0.4	0.0183	0.0000	OK
120 minute summer	5	140	74.786	0.027	1.2	0.0624	0.0000	OK
120 minute summer	5_OUT	138	73.224	-1.486	1.2	0.0360	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
120 minute summer	1	1.000	2	0.4	0.248	0.010	0.0725
120 minute summer	2	1.001	3	0.8	0.397	0.020	0.0220
120 minute summer	3	1.002	5	0.8	0.344	0.020	0.0166
120 minute summer	4	2.000	5	0.4	0.333	0.010	0.0253
120 minute summer	5	1.003	5_OUT	1.2	0.451	0.030	0.0220
120 minute summer	5_OUT	Infiltration		1.2			

**Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute summer	1	138	75.146	0.021	0.7	0.0234	0.0000	OK
180 minute summer	2	172	74.894	0.029	1.4	0.0661	0.0000	OK
120 minute summer	3	140	74.830	0.029	1.4	0.0644	0.0000	OK
180 minute summer	4	164	74.921	0.021	0.7	0.0236	0.0000	OK
180 minute summer	5	172	74.794	0.035	2.1	0.1001	0.0000	OK
180 minute summer	5_OUT	172	73.242	-1.468	2.1	0.0630	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
120 minute summer	1	1.000	2	0.7	0.293	0.018	0.1074
180 minute summer	2	1.001	3	1.4	0.467	0.035	0.0327
120 minute summer	3	1.002	5	1.4	0.405	0.035	0.0246
180 minute summer	4	2.000	5	0.7	0.384	0.018	0.0383
180 minute summer	5	1.003	5_OUT	2.1	0.532	0.053	0.0325
180 minute summer	5_OUT	Infiltration		2.1			