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Level 2 Strategic Flood Risk Assessment - Site SHELAA/142 & R10

Newington Industrial Estate, Newington, ME9 7NU

Final

Prepared for
Swale Borough Council

Date
October 2026

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1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for site SHELAA/142 & R10. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Swale Borough Council Level 1 SFRA and read the Swale Borough Council Level 2 SFRA main report and is therefore familiar with the terminology used in this report.

1.1 Site details

- Location: Newington Industrial Estate, Newington, ME9 7NU
- Site area: 7.26ha
- Existing site use: Greenfield
- Proposed site use: Employment
- Proposed use flood risk vulnerability classification: Less Vulnerable

The site is situated in Newington and comprises three parcels of land to the west, east and south of Newington Industrial Estate. The site is bounded by the A2 (London Road) to the north, a garden centre to the west and greenfield land to the east and south.

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. The majority of the site is relatively low lying (between 23.9mAOD in the northeast to 29.0mAOD in the south). There are small areas of higher ground up to 30.3mAOD in the central and southeastern areas of the eastern parcel and along the eastern boundary levels increase steeply by up to 5.5m. In the southern parcel, levels reach up to 30.6mAOD.

Along the north of the site, London Road is situated at a higher elevation. Further north, a railway line runs parallel to London Road on an embankment. The railway crosses Breach Road via a bridge approximately 265m to the northwest of the site and crosses an access track via another bridge approximately 100m to the north.

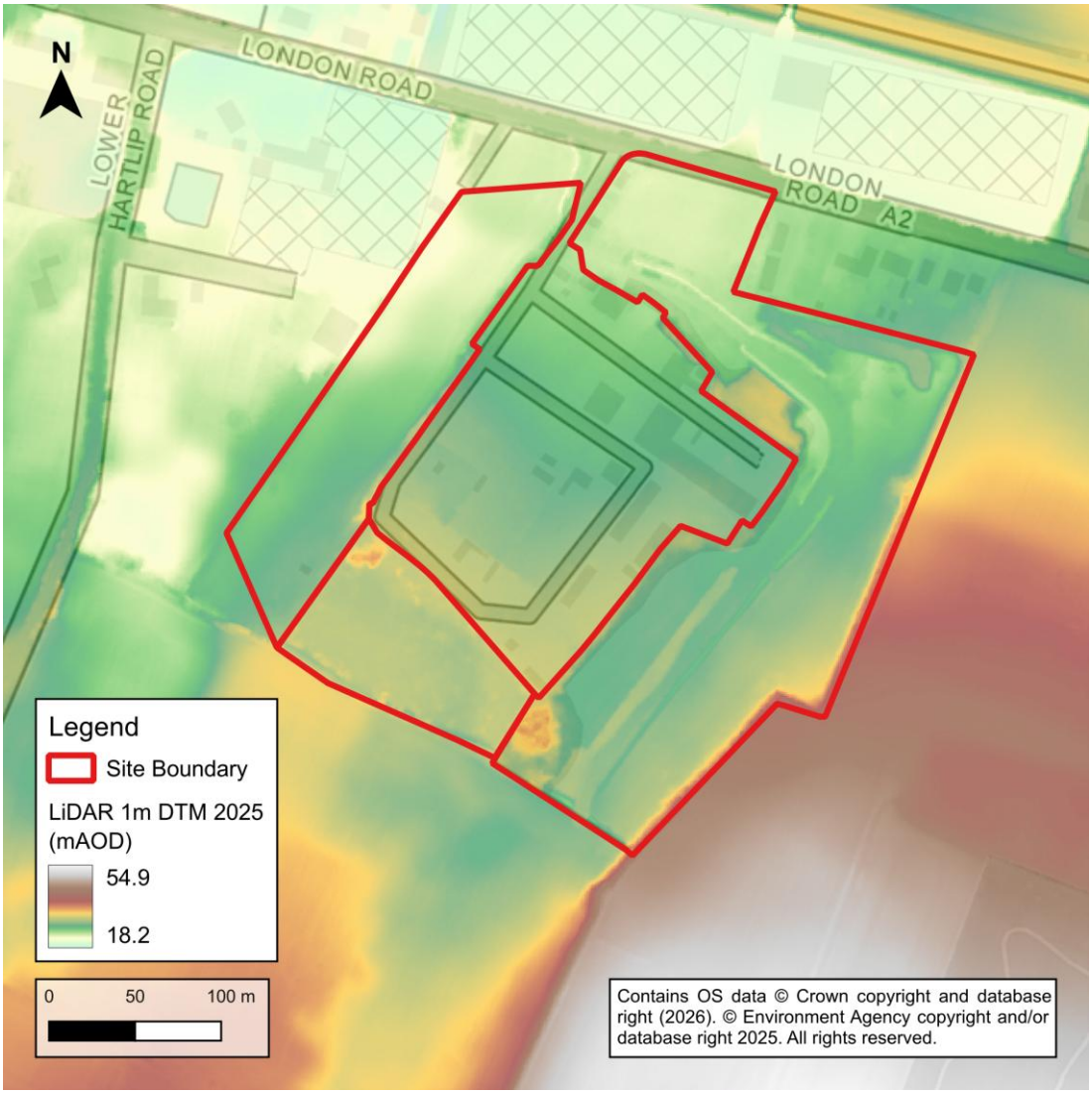


Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Thanet Formation consisting of sand, silt and clay
- Superficial - Head consisting of gravel, sand, silt and clay

Soils at the site consist of:

- Freely draining slightly acid loamy soils

The potential influence of the site's geology and soil conditions on drainage is discussed in Section 7.

2 Sources of flood risk

2.1 Existing drainage features

There is a drainage ditch which runs along the southwestern boundary of the site.

The topography data also suggests that there may be a small unmapped watercourse which runs through the eastern parcel of the site.

There is no specific fluvial modelling available for the drainage ditch however this and a flow path associated with the lower topography are represented in the surface water flood risk modelling.

2.2 Flood Zones

2.2.1 Available data

The Environment Agency's Flood Map for Planning (FMfP) has been used within this assessment to determine Flood Zones 2 and 3a. Flood Zones 2 and 3a do not consider defences.

Flood Zone 3b in this area has been defined using the Environment Agency's River and Sea 3.3% AEP defended flood risk extents – present day dataset. The mapping in this location is based on generalised modelling.

2.2.2 Description of risk to the site

The site is shown to be entirely within Flood Zone 1.

Table 2-1: Existing fluvial and tidal flood risk based on Environment Agency FMfP

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
100	0	0	0

2.3 Fluvial present day defended risk

2.3.1 Available data

The drainage ditch and possible un-mapped watercourse have not been mapped in a detailed fluvial model. The Environment Agency's Flood Map for Planning – Surface Water Spatial Planning map has been used to inform the fluvial risk from the drainage ditches within this site summary sheet. Please see Section 2.5 for more information.

As part of the site-specific FRA, investigations will need to be undertaken to confirm the presence of fluvial features and connectivity. Detailed fluvial modelling of the drainage ditches may be required as part of a flood risk assessment to accurately represent the fluvial flood risk at the site.

2.4 Tidal present day defended risk

2.4.1 Available data

The North Kent Coast modelling study (2024) has been used to understand the tidal flood risk.

2.4.2 Description of risk to the site

According to the North Kent Coast model, the site is not predicted to flood during the present day defended 3.3% AEP (1 in 30-year), 0.5% AEP (1 in 200-year) or the 0.1% AEP (1 in 1000-year) events.

2.5 Surface water present day risk

2.5.1 Available data

The Environment Agency's Flood Map for Planning – Surface Water Spatial Planning map has been used within this assessment to inform the extent and depth of surface water flood risk. Velocity and hazard data is not currently available from the Environment Agency for this dataset.

2.5.2 Description of risk to the site

During the 3.3% AEP (1 in 30-year), 1% AEP (1 in 100-year) and 0.1% AEP (1 in 1000-year) events, there is a surface water flow path flowing through the eastern parcel of the site from the south to the northern boundary. This flow path appears to originate in an area of higher topography, south of the site. The northwestern area of the western parcel of the site is also at risk during all AEP events, with a second surface water flow path originating southwest of the site. There is also pooling predicted in the southern parcel and a flow path along the southern boundary. The areas of highest risk are in topographic low points, in the northeastern, north and northwestern parts of the site.

Table 2-2: Existing surface water flood risk based on the Flood Map for Planning – Surface Water Spatial Planning map

Event	<0.1% AEP (1 in 1000-year) (%)	0.1% AEP (1 in 1000-year) (%)	1% AEP (1 in 100-year) (%)	3.3% AEP (1 in 30-year) (%)
Percentage of site at risk* (%)	60	40	28	22
Maximum depth (m)	N/A	1.2-2.3	0.9-1.2	0.9-1.2

** The percentage of surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g., 1% AEP (1 in 100-year) includes the 3.3% AEP (1 in 30-year) percentage). The <0.1% AEP event shows the area of the site not predicted to be impacted by surface water flooding.*

2.6 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenarios from the Environment Agency reservoir flood maps.

2.7 Groundwater

The JBA Groundwater Emergence Map shows that groundwater levels are between 0.025m and 0.5m below the ground surface for 12% of the site area (in the northwest), therefore, the site is at low to moderate risk of groundwater flooding during the 1% AEP groundwater event.

Based on the Surface Water mapping and topography of the site it is likely that any groundwater that emerges will flow west, out of the site.

This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific Flood Risk Assessment (FRA) stage.

2.8 Sewer

Southern Water has confirmed there may be limited network capacity near the site and phasing of development may be needed alongside network reinforcement prior to occupation of the total number of dwellings indicated. Southern Water should be consulted to confirm requirements.

2.9 Flood history

The Kent County Council historic data was provided as point data with an easting and northing. Due to the protection of data, the eastings and northings were plotted on GIS and the number of incidents recorded within a 0.85km^2 area was calculated.

Kent County Council's records indicate that the site lies across three reporting areas, two containing seven recorded flood incidents and one containing twelve recorded flood incidents.

According to Southern Water's Sewer Incident Report Form (SIRF), there have been 28 sewer flood incidents in the ME9 7 postcode area since 2015.

3 Climate change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of fluvial, tidal and surface water flooding.

Climate change allowances are determined by the management catchment in which the site is located. The site lies within the Medway Management Catchment. Please see Section 6 of the Swale Borough Council Level 2 SFRA main report for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and escape must also address the potential increase in severity and frequency of flooding.

3.1 Flood Zones plus climate change

3.1.1 Available data

The Environment Agency's Flood Map for Planning (FMfP) plus climate change has been used within this assessment. This shows the combined extent of Flood Zones 2 and 3 using the following climate change allowances:

- 'Central' allowance for the 2080s epoch (2070-2125) for risk of flooding from rivers
- 'Upper End' allowance for risk of flooding from the sea, accounting for cumulative sea level rise to 2125.

3.1.2 Description of risk to the site

The site is not impacted by flooding within the Flood Zones plus climate change dataset.

3.2 Fluvial

The drainage ditch and possible un-mapped watercourse have not been modelled. The Environment Agency's Flood Map for Planning – Surface Water Spatial Planning map has been used to inform the fluvial risk from the drainage ditches within this site summary sheet. Please see Section 3.4 for more information.

As part of the site-specific FRA, investigations will need to be undertaken to confirm the presence of fluvial features and connectivity. Detailed fluvial modelling of the drainage ditches may be required as part of a flood risk assessment to accurately represent the fluvial flood risk at the site.

3.3 Tidal

3.3.1 Available data

The North Kent Coast modelling study (2024) has been used to understand the tidal flood risk within the Local Plan area. The mapping provides information for present day and for the Upper End climate change event for the years 2100 and 2125. Only the 2100 event has been assessed in this site summary sheet due to the likely lifetime of development (75-years) for employment sites.

3.3.2 Description of risk to the site

The site is not impacted by tidal flooding within the North Kent Coast model in the defended 3.3% AEP (1 in 30-year), 0.5% AEP (1 in 200-year) or 0.1% AEP (1 in 1000-year) events.

3.4 Surface water

3.4.1 Available data

The Environment Agency's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3% AEP (1 in 30-year), 1% AEP (1 in 100-year), and 0.1% AEP (1 in 1000-year) events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

It should be noted that the Environment Agency's Upper End allowance for the 2050s epoch for the 1% AEP (1 in 100-year) event in the Medway Management Catchment is greater than the 2070s epoch for the 1% AEP (1 in 100-year) event so the climate change uplift may be slightly underestimated.

3.4.2 Description of risk to the site

The extent of surface water flooding in the 0.1% AEP (1 in 1000-year) plus climate change event and 1% AEP (1 in 100-year) plus climate change event is predicted to increase slightly compared to the present-day events, particularly in the northern part of the site. Furthermore, the 0.1% AEP (1 in 1000-year) plus climate change extents also increase slightly in the western and southern parcels of the site. The maximum flood depth in the 1% AEP (1 in 100-year) event is between 0.9m and 1.2m. The maximum flood depth in the 1% AEP (1 in 100-year) plus climate change event is up to 0.9m within the western and southern parcels and up to 2.3m in the eastern parcel

Table 3-1: Comparison of surface water flood risk to the site between the 1% AEP present day and 1% AEP climate change events

Event	1% AEP	1% AEP plus climate change
Percentage of site at risk (%)	28	37
Maximum depth (m)	0.9 - 1.2	1.2 - 2.3

4 Flood risk management infrastructure

4.1 Defences

The Environment Agency AIMS (Asset Information Management System) dataset shows that the site is not protected by any formal flood defences.

4.2 MEAS Hold the Line Benefit Area

The Medway Estuary and Swale flood and coastal risk management Strategy (MEAS) sets out the Environment Agency's plan to sustainably manage the coastline and tidal defences in the Medway estuary and Swale area. It aims to protect people, properties, designated habitat and agricultural land over the next 100 years.

The site is not within a MEAS Hold the Line Benefit Area.

4.3 Residual risk

Overtopping of the drainage ditch in the southwest would put the site at risk of flooding.

The railway embankment to the north of the site includes a series of bridges that allow flood water to pass underneath. Approximately 265m northwest of the site Breach Lane passes through the railway embankment under a bridge and approximately 100m north of the site there is another tunnel passing through the embankment. In the event of a blockage to the bridges, flood water could back up and cause increased flooding to the site.

5 Coastal Change Management Area

The site is not within a Coastal Change Management Area (CCMA). The implications of the CCMA can be found within Appendix J of the Level 1 SFRA.

6 Emergency planning

6.1 Flood warnings and alerts

The site is not located in an Environment Agency Flood Warning or Flood Alert Area.

6.2 Access and escape

Safe access and escape will need to be demonstrated in the 1% AEP (1 in 100-year) plus climate change surface water flooding event. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

6.2.1 Current and potential access to the site

Current access to the site can be achieved via the A2 to the north of the site and via the access roads off the A2.

6.2.2 Fluvial

There is flood free access and escape via the A2 and access roads off the A2 during all fluvial flood events.

6.2.3 Tidal

There is flood free access and escape via the A2 and access roads off the A2 during all tidal flood events.

6.2.4 Surface water

During the 1% AEP (1 in 100-year) surface water climate change event, flooding is predicted with depths up to 0.60m at the access point to the eastern parcel via the A2 and to the west along the A2 which may inhibit safe access and escape. Access and escape to the western parcel via the roads off the A2 from the east along the A2 may have safe access and escape as flood depths are predicted to remain below 0.30m.

6.3 Dry islands

A dry island is a parcel of land that is elevated above surrounding areas at risk of flooding and is not at risk of flooding itself.

The site is not located on a dry island.

7 Requirements for drainage control and impact mitigation

7.1 Assessment of possible SuDS constraints

- The site is not considered to be susceptible to groundwater flooding, due to the nature of the local geological conditions. This should be confirmed through additional site investigation work.
- BGS data indicates that the underlying geology is Thanet Formation, comprising clay, silt and sand and therefore permeability is likely to be low. Any proposed use of infiltration should be supported by infiltration testing. Off-site discharge may be required to discharge surface water runoff from the site. This would need to be in accordance with the SuDS hierarchy.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- The topography generally slopes from southwest to northeast which will accelerate surface water runoff, increase erosion risks, and limit the space available for gravity-fed infiltration features like basins.
- The site is not located within a historic landfill site.

7.2 Recommended approach to SuDS design

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the Environment Agency) at an early stage to understand possible constraints.
- Any watercourses that flow through the site should be integrated into the site drainage strategy as blue-green infrastructure.
- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.
- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access.

- Surface water discharge rates should not exceed the existing greenfield runoff rates for the site for the 50% AEP (1 in-2 year) and 1% AEP (1 in-100) year storm events. Opportunities to further reduce discharge rates should be considered and agreed with the LLFA. It may be possible to reduce site runoff by maximising the permeable surfaces on site using a combination of permeable surfacing and soft landscaping techniques.
- If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity of the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the Lead Local Flood Authority alongside confirmation with the asset owner of the available capacity.

8 NPPF and planning implications

8.1 Exception Test requirements

The Local Planning Authority has confirmed that the Sequential Test has been carried out in line with national guidelines. The Sequential Test needs to be passed before the Exception Test is applied.

Annex 3 of the NPPF classifies commercial development as "Less vulnerable".

The Exception Test is not required for this site because it is within Flood Zone 1. However, consideration needs to be given to the high surface water flood risk to ensure that development remains safe and flood risk is not increased elsewhere.

8.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site is:

- within Flood Zone 1 with a site area of 1 hectare or more
- within Flood Zone 1 and the flood map for planning shows it is at risk of flooding from surface water, now or in future

All sources of flooding should be considered as part of a site-specific FRA.

Consultation with the Local Authority, Lead Local Flood Authority, Southern Water, and the Environment Agency should be undertaken at an early stage.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Swale Borough Council Local Plan Policies.

The development should be designed with mitigation measures in place where required as outlined in Section 8.3.

8.3 Guidance for site design and making development safe

- A sequential approach to the location of development within the site should be undertaken. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding.
- Where development cannot avoid areas at risk of flooding, then flood resilience and resistance measures e.g. raising of floor levels, including property flood resistance and resilience measures. should be implemented, where appropriate. These measures should be assessed to make sure that flooding is not increased either on or off the site.
- Detailed surface water modelling will be required to assess the flood risk and mitigation approach. This should also consider the residual risk of blockage from the railway bridges north of the site

- No underground development such as car parks should be permitted in the western parcel due to groundwater flood risk.
- The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff volumes from the development are not increased by development. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as possible to pre-development greenfield rates, with areas of surface water ponding retained as open space and SuDS or water compatible/essential infrastructure uses only.
- Developers should consider utilising the un-mapped watercourse within the site as a green corridor or conveyance SuDS incorporated into the Sustainable Drainage Strategy.
- Opportunities to further reduce discharge rates should be considered and agreed with the LLFA. It may be possible to reduce site runoff by maximising the permeable surfaces on site using a combination of permeable surfacing and soft landscaping techniques. Areas of surface water ponding should be used as open space and SuDS or water compatible/essential infrastructure uses only.
- A Flood Response Plan will be required. Arrangements for safe access and escape will need to be provided for the 1% AEP surface water event, with an appropriate allowance for climate change, considering depth, velocity, and hazard. Design and access arrangements will need to incorporate mitigation measures, to ensure development and occupants are safe.
- Provisions for safe access and escape should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

9 Conclusions

According to the FMfP, the site is not impacted by fluvial flooding. There is no fluvial modelling available to assess present day fluvial defended risk at the site.

According to the FMfP and North Kent Coast model, the site is not impacted by tidal flooding.

In terms of surface water flood risk, during the 3.3% (1 in 30-year), 1% AEP (1 in 100-year) event and 0.1% AEP (1 in 1000-year) events, there is a surface water flow path flowing through the eastern parcel of the site from the south to the northern boundary. The western and southern parcels of land are also at risk during all three events. The areas of highest risk are in topographic low points, in the northeastern part of the site.

Kent County Council's records indicate that the site lies across three reporting areas, two containing seven recorded flood incidents and one containing twelve recorded flood incidents.

There have been 28 sewer flood incidents in the ME9 7 postcode area since 2015according to Southern Water's SIRF dataset.

The following points should be considered in development of this site:

- A site-specific Flood Risk Assessment with detailed surface water modelling of the flow paths and drainage ditch within the site will be required to demonstrate that commercial development can be safely accommodated on the site for its lifetime. This should include consideration of surface water flooding, as well as residual risk from blockage of the railway bridges north of the site. The FRA should demonstrate that development will not increase flood risk on or off site and should incorporate an appropriate allowance for climate change.
- Development should be steered outside the areas of surface water flood risk on site. Where development cannot avoid areas at risk of flooding, then flood resilience and resistance measures e.g. raising of floor levels, including property flood resistance and resilience measures. should be implemented, where appropriate. These measures should be assessed to make sure that flooding is not increased either on or off the site.
- The drainage ditches have not been modelled and therefore, a site-specific flood risk assessment with site-specific modelling may be required to represent accurate fluvial flood risk to the site.
- SuDS (such as infiltration techniques, bioretention and conveyance features such as swales) should be incorporated throughout the site to manage runoff, provide climate change resilience and deliver wider water quality, biodiversity and amenity benefits.
- A Flood Response Plan will be required. Arrangements for safe access and escape will need to be provided for the 1% AEP (1 in 100-year) surface water with an appropriate allowance for climate change, considering depth, velocity,

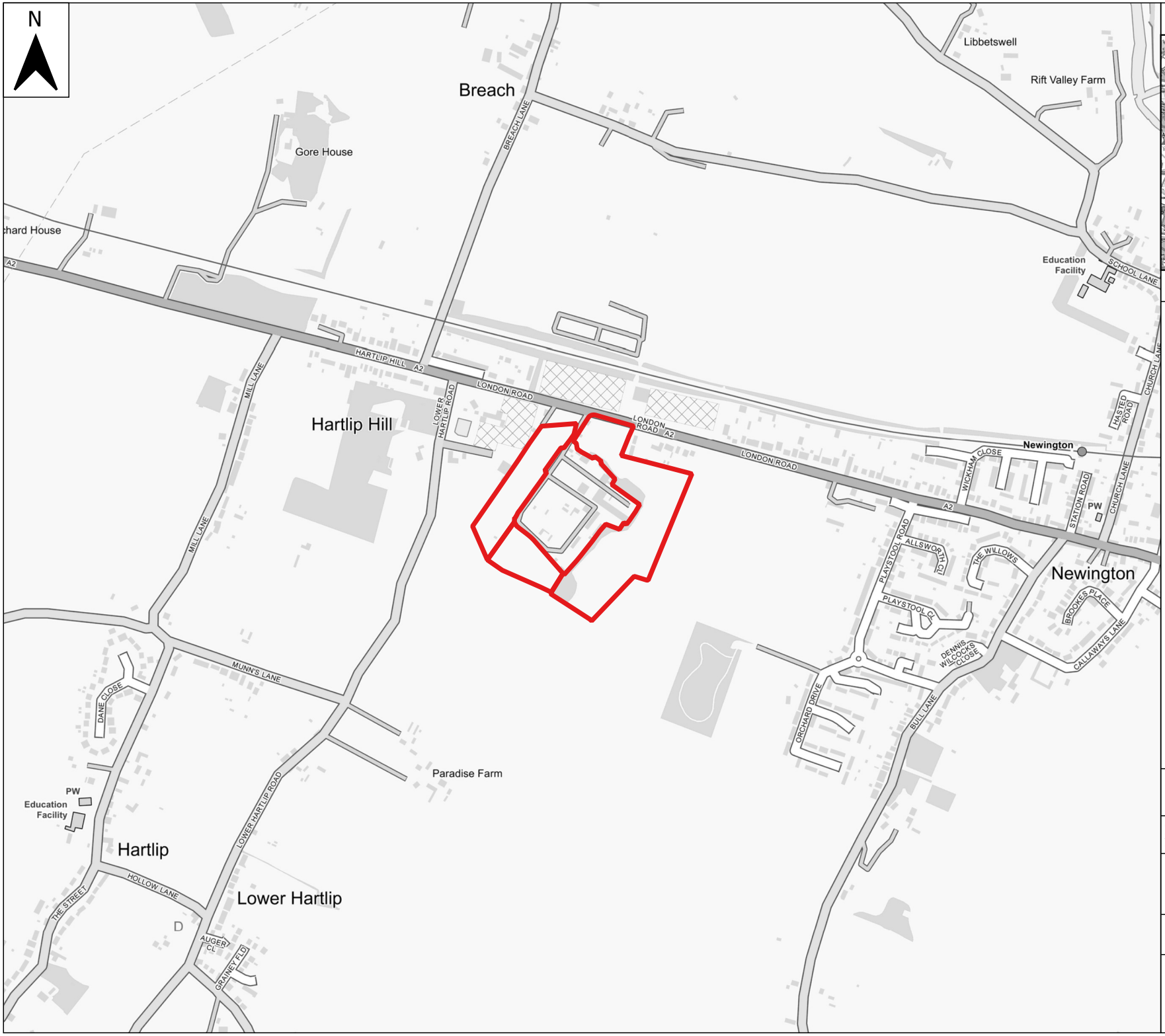
and hazard. Design and access arrangements will need to incorporate measures, so development and occupants are safe.

- No underground development such as car parks should be permitted in the western parcel due to groundwater flood risk.

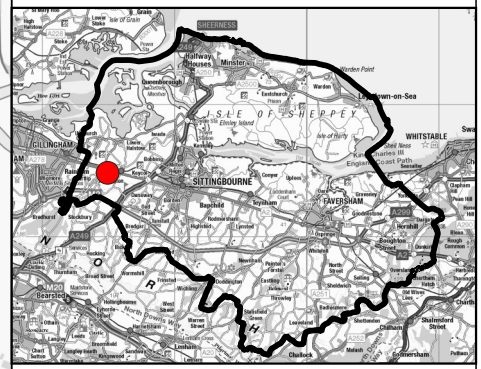
A Sources of information

- National Planning Policy Framework (NPPF)
  https://www.gov.uk/guidance/national-planning-policy-framework
- Planning Practice Guidance (PPG), Flood Risk and Coastal Change
  https://www.gov.uk/guidance/flood-risk-and-coastal-change
- Swale Borough Local Plan
  https://services.swale.gov.uk/media/files/localplan/adoptedlocalplanfinalwebversion.pdf
- Swale Borough Council Sequential and Exception Tests for Planning Applications
  https://swale.gov.uk/planning-and-regeneration/local-plans/local-plan-review-evidence/flood-risk#h2
- Swale Borough Council Level 1 SFRA
- https://swale.gov.uk/planning-and-regeneration/local-plans/local-plan-review-evidence/flood-risk#h2
- Kent County Council Local Flood Risk Management Strategy
  https://www.kent.gov.uk/__data/assets/pdf_file/0016/205621/Local-Flood-Risk-Management-Strategy-2024-2034.pdf
- Flood risk assessments: applying for planning permission
  https://www.gov.uk/guidance/flood-risk-assessments-applying-for-planning-permission
- Kent County Council's Drainage and Planning Policy Statement
  https://www.kent.gov.uk/about-the-council/strategies-and-policies/service-specific-policies/economic-regeneration-and-planning-policies/planning-policies/flooding-drainage-and-water-management-policies-and-guidance
- Defra's National standards for sustainable drainage systems (SuDS)
  https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds
- Flood Map for Planning - Flood Zones dataset
  https://environment.data.gov.uk/dataset/04532375-a198-476e-985e-0579a0a11b47
- Flood Map for Planning - Flood Zones plus Climate Change
  https://environment.data.gov.uk/dataset/59065c43-257e-4867-8798-fd2366156a6b
- British Geological Survey (BGS) Geology Viewer
  https://geologyviewer.bgs.ac.uk/
- Flood Warning sign up
  https://www.gov.uk/sign-up-for-flood-warnings

B Flood Risk Mapping



Location Plan



Legend

- Swale Borough Outline
- Site boundary

Watercourses

- Statutory Main Rivers
- Ordinary watercourses
- North Kent Marshes Water Level Management Board Watercourses
- North Kent Marshes Water Level Management Board

0 200 400 m

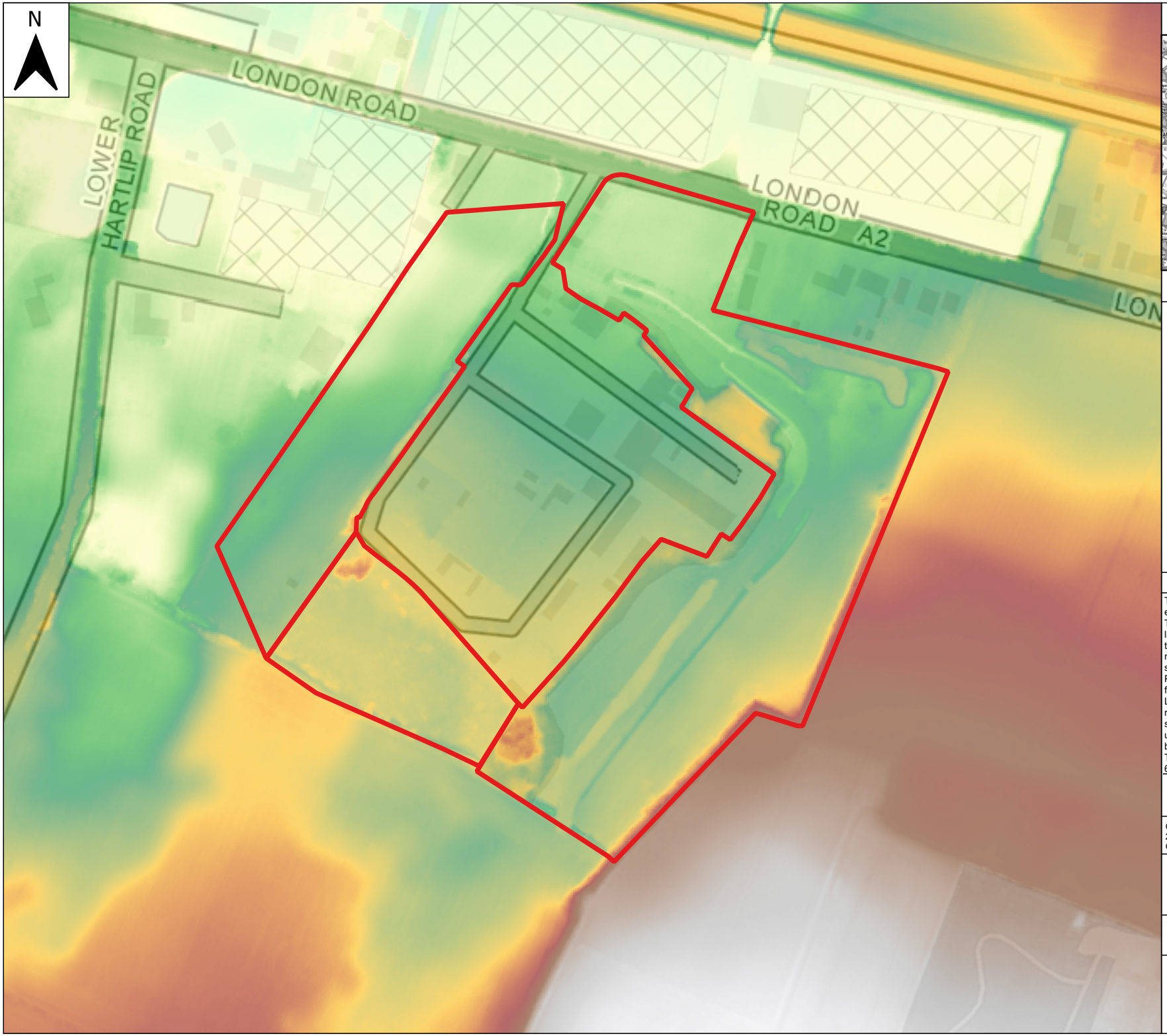
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SWALE BOROUGH COUNCIL
LEVEL 2 SFRA:
WATERCOURSES - SHELAA-142 & R10

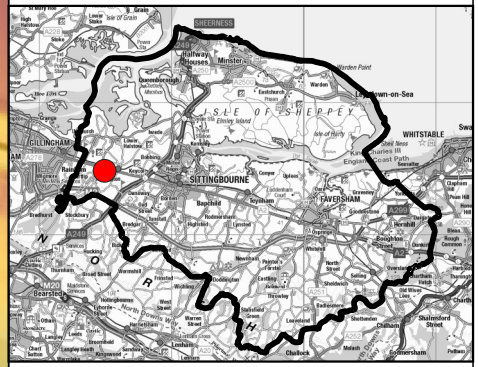
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JBA consulting

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Location Plan



Legend

Swale Borough Outline

Site boundary

Topography

LIDAR 1m DTM 2025 (mAOD)

39.23

21.55

Notes

The LIDAR Composite DTM (Digital Terrain Model) is a raster elevation model covering ~99% of England at 1m spatial resolution. The DTM (Digital Terrain Model) is produced from the last or only laser pulse returned to the sensor. We remove surface objects from the Digital Surface Model (DSM), using bespoke algorithms and manual editing of the data, to produce a terrain model of just the surface.

Produced by the Environment Agency in 2022, the DTM is derived from a combination of the EA's Time Stamped archive and National LIDAR Programme surveys, which have been merged and re-sampled to give the best possible coverage. Where repeat surveys have been undertaken the newest, best resolution data is used. Where data was resampled a bilinear interpolation was used before being merged.

The 2025 LIDAR Composite contains surveys undertaken between 6th June 2000 and 1st August 2025.

0 80 160 m

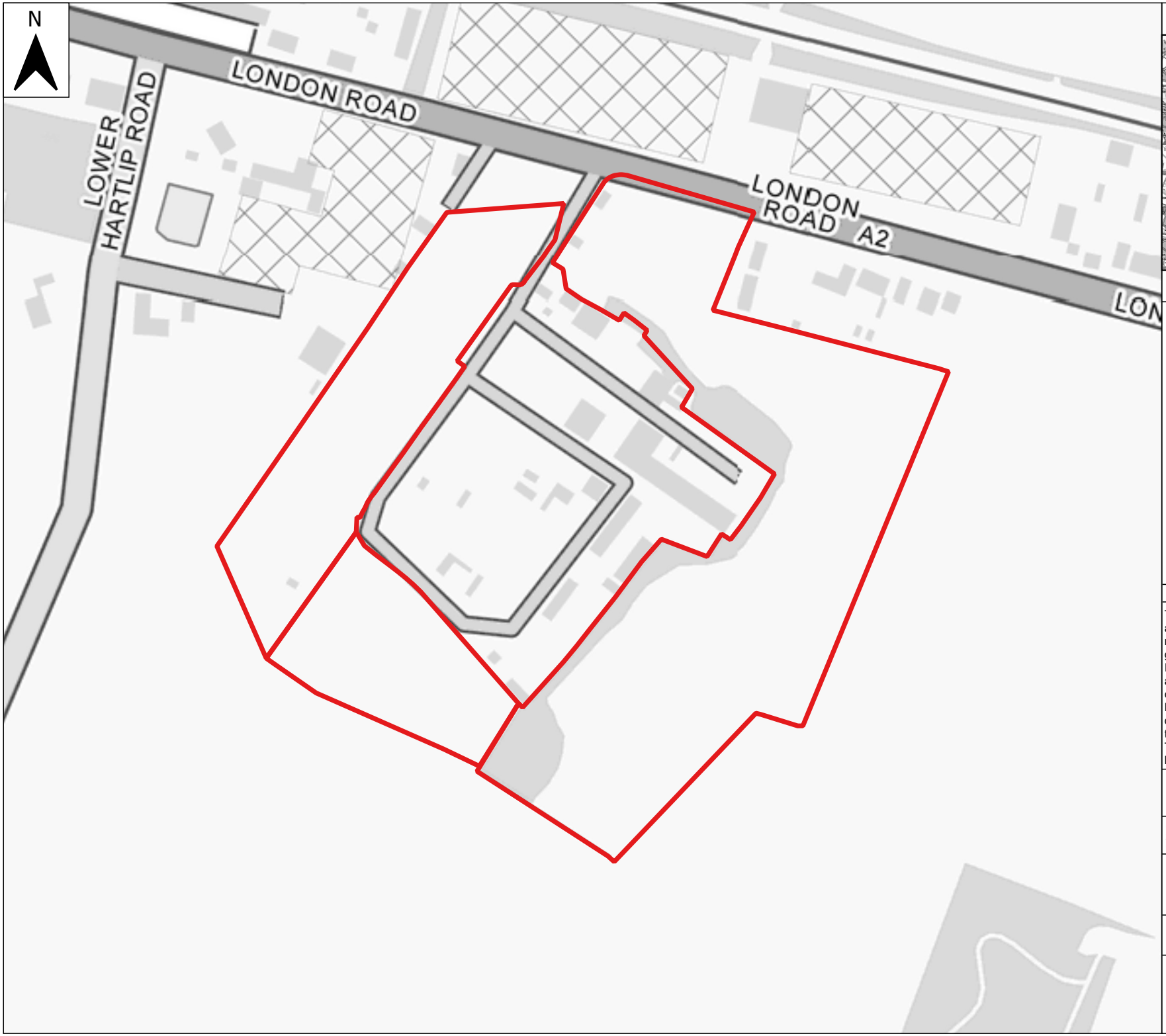
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LEVEL 2 SFRA:
TOPOGRAPHY - SHELAA-142 & R10

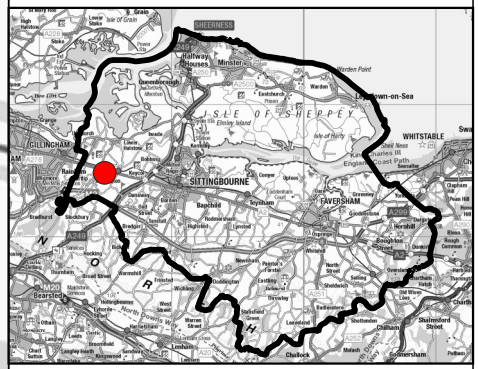
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Making Swale a better place



Location Plan



Legend

- Swale Borough Outline
- Site Boundary

Environment Agency recorded flood outlines

- Main Rivers
- Sea

Notes

The Historic Flood Map shows the recorded flood outlines available from the Environment Agency. The dataset records historical flooding from rivers, the sea, groundwater and surface water.

It is possible that the pattern of flooding has changed and area would now flood or not flood under different circumstances.

Please note that not all historical records may be shown on this map, and that it is therefore advised you contact the Environment Agency for updated information.

The map does not include recorded incidents of flooding held by Kent County Council or Southern Water.

0 80 160 m

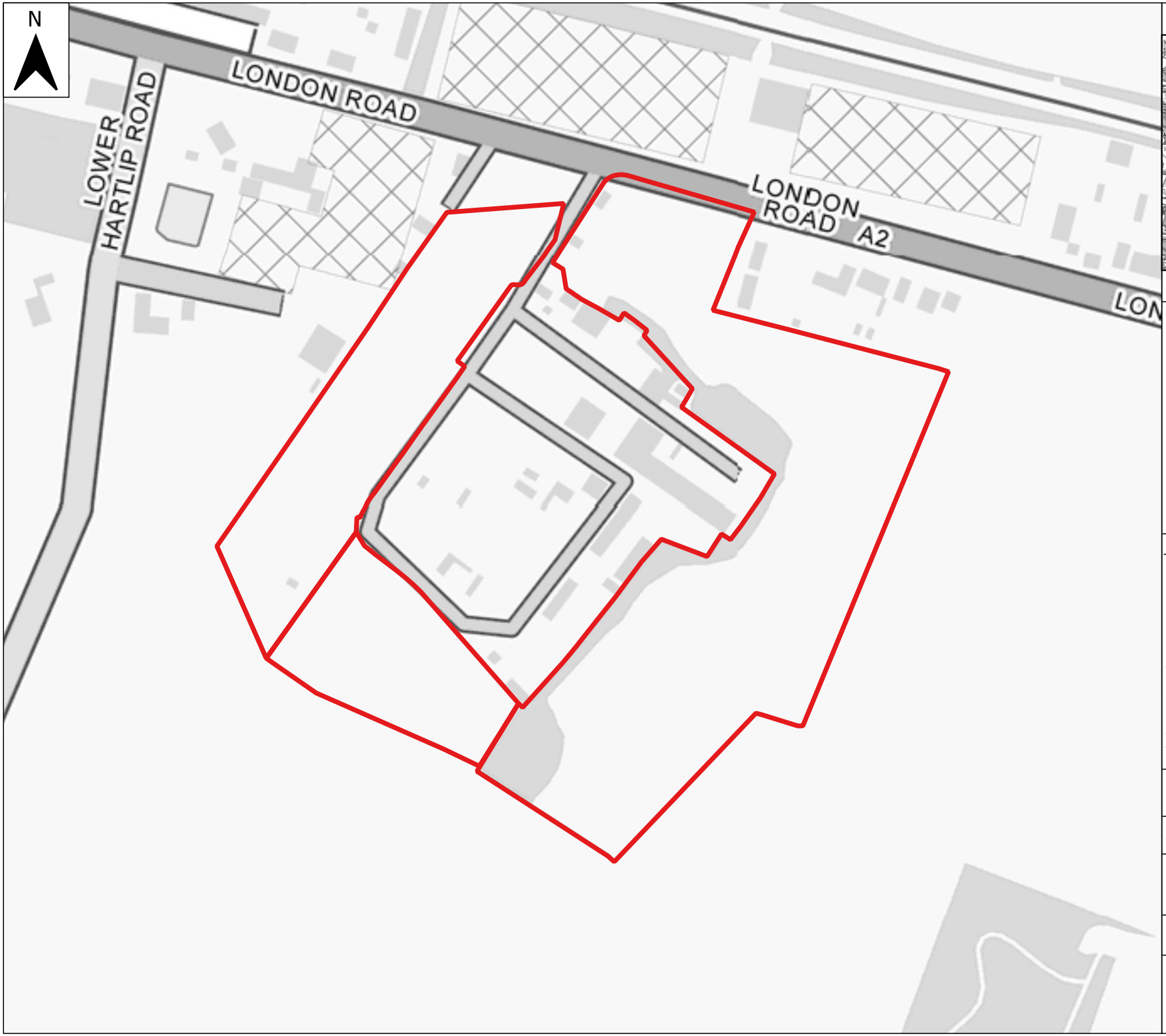
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LEVEL 2 SFRA:
HISTORIC FLOODING - SHELAA-142 & R10

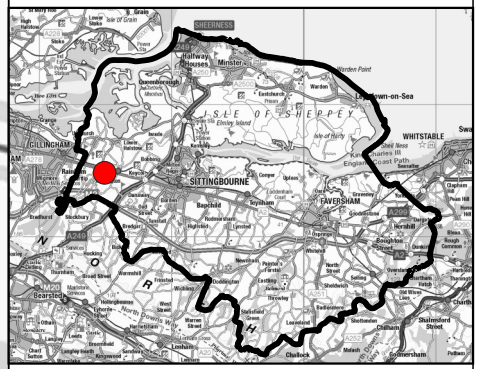
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Location Plan



Legend

- Swale Borough Outline
- Site boundary

Flood Zone

- Flood Zone 2
- Flood Zone 3
- Flood Zone 3b
- Generalised modelling used for Flood Zone 3b

Notes

Flood Zone 1: Land assessed as having a less than 0.1% AEP of river or sea flooding.
Flood Zone 2: Land assessed as having a 0.1% - 1% AEP (1 in 1000-year and 1 in 100-year) of river flooding or a 0.1% - 0.5% AEP (1 in 1000-year and 1 in 200-year) of flooding from the sea.
Flood Zone 3a: Land assessed as having a greater than a 1% AEP (1 in 100-year) of river flooding or a greater than 0.5% AEP (1 in 200-year) of flooding from the sea.
Flood Zone 3b: Land where water has to flow or be stored in times of flood (functional floodplain). The SFRA identifies this Flood Zone as land which floods with an annual probability of 3.3% AEP (1 in 30-year) where detailed modelling exists. Where the 3.3% AEP (1 in 30-year) ouputs are not available, Flood Zone 3a is used as a surrogate as a precautionary approach. If a proposed development is in Flood Zone 3, further analysis should be undertaken in a detailed site specific FRA to define and confirm the extent of Flood Zone 3b.

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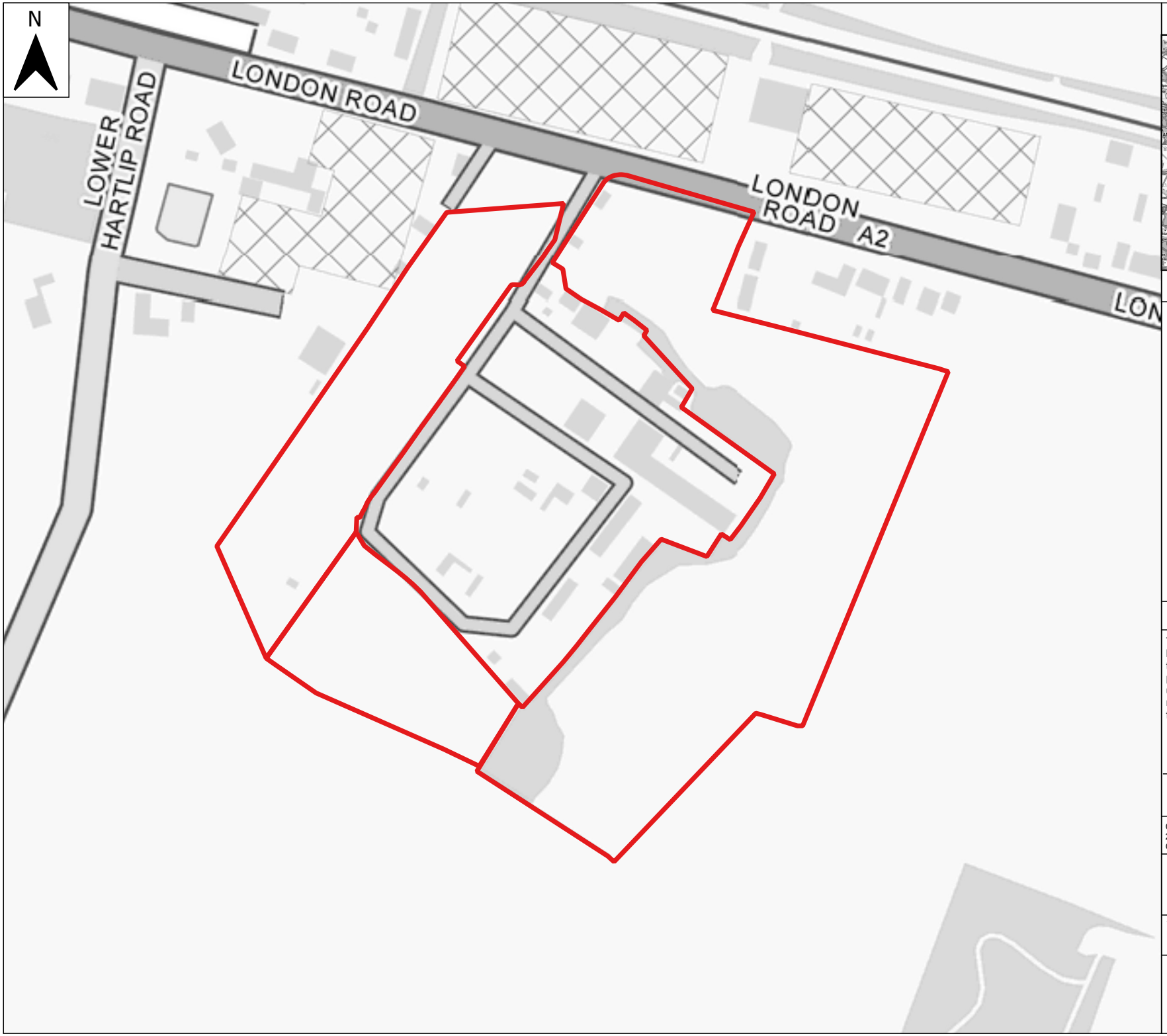
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LEVEL 2 SFRA:
PRESENT DAY FLOOD RISK FROM RIVERS AND SEA (FLOOD ZONES) - SHELAA-142 & R10

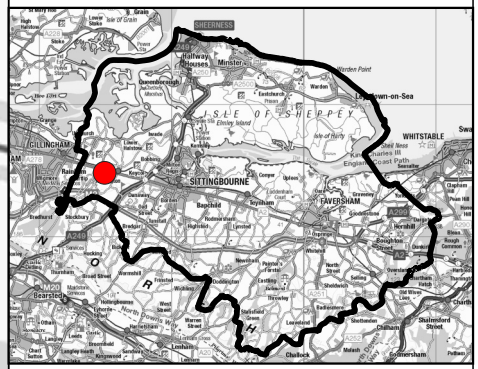
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Location Plan



Legend

- Swale Borough Outline
- Site Boundary
- 1% AEP (1 in 100-year) and 0.1% AEP (1 in 1000-year) undefended extents under the 2125 year climate change scenario

Notes

The Flood Zone plus Climate Change mapping was produced by combining the Flood Zone 2 and Flood Zone 3 extents with the relevant climate change allowances to illustrate the potential future flood risk to the area. This represents an undefended scenario, meaning that existing flood defences are not considered in the modelling. For further information on this flood extent dataset, please refer to the guidance available on;

https://flood-map-for-planning.service.gov.uk/how-to-use-

0 80 160 m

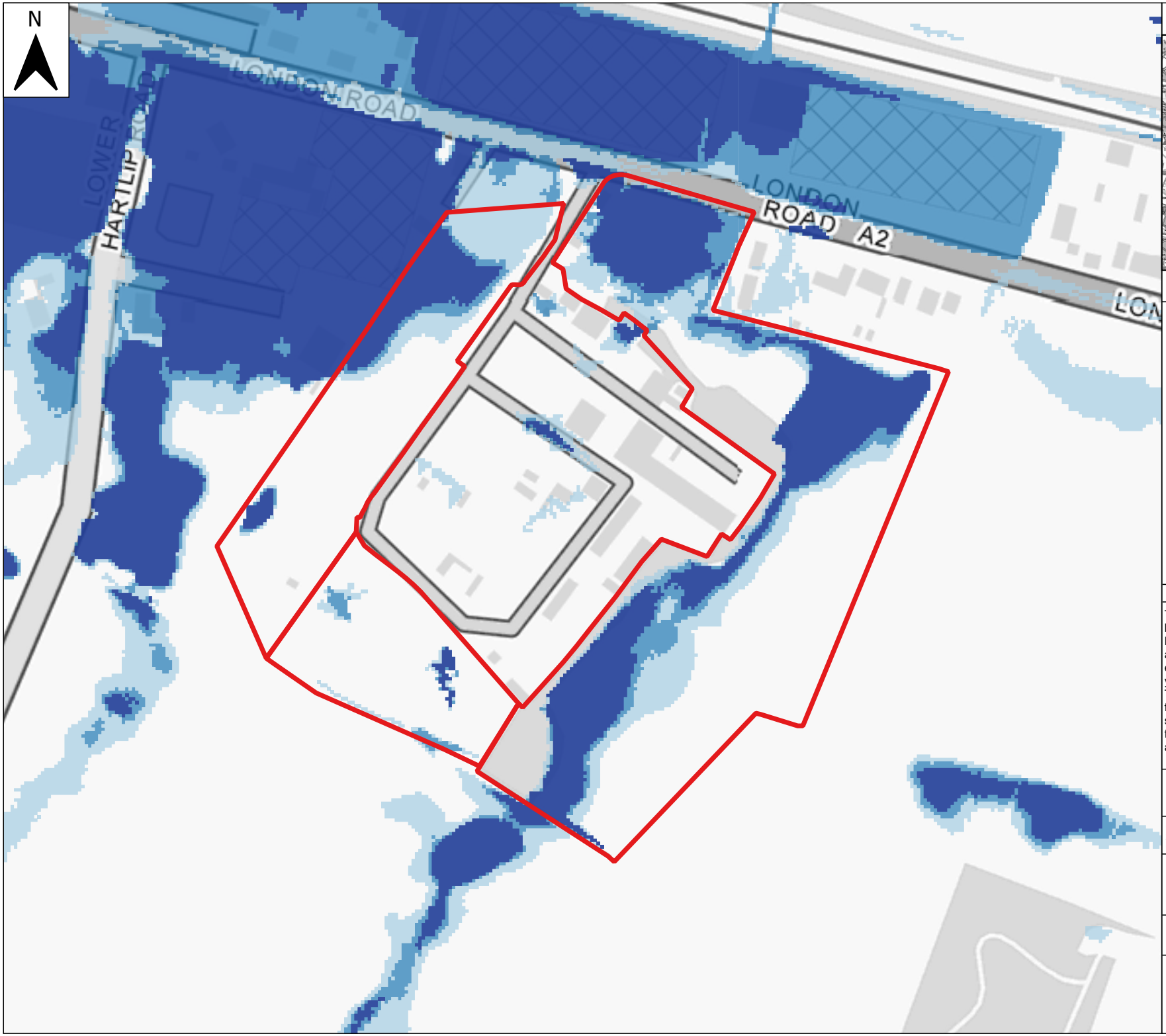
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LEVEL 2 SFRA:
FUTURE FLOOD RISK FROM RIVERS AND SEA - FLOOD MAP FOR PLANNING- SHELAA-142 & R10

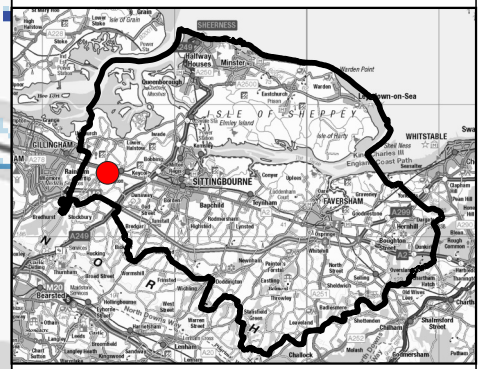
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Making Swale a better place



Location Plan



Legend

- Swale Borough Outline
- Site boundary

FMfP - Surface Water Spatial Planning Extents

- 3.3% (1 in 30-year)
- 1% (1 in 100-year)
- 0.1% (1 in 1000-year)

Notes

The Flood Map for Planning Service includes several layers of information. This includes Surface Water Spatial Planning Extents. These datasets show the extent of land at risk of flooding from surface water to a defined annual exceedance probability (AEP) or chance of flooding each year.

These datasets are designed to only give an indication of flood risk to an area of land and are not suitable for showing whether an individual property is at risk of flooding. This is because we cannot know all the details about each property.

0 80 160 m

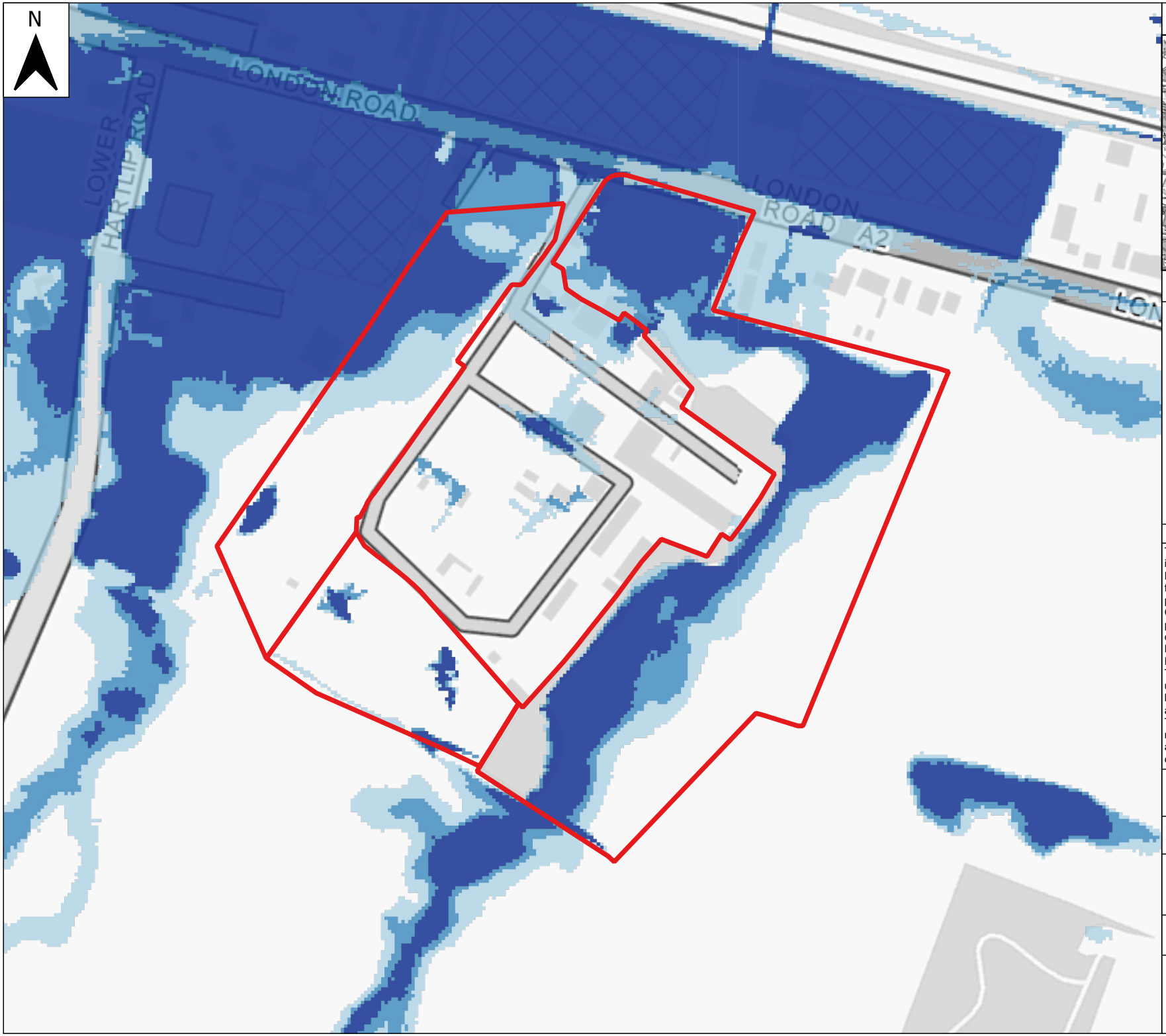
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SWALE BOROUGH COUNCIL
LEVEL 2 SFRA:
SURFACE WATER FLOODING - SHELAA-142 & R10

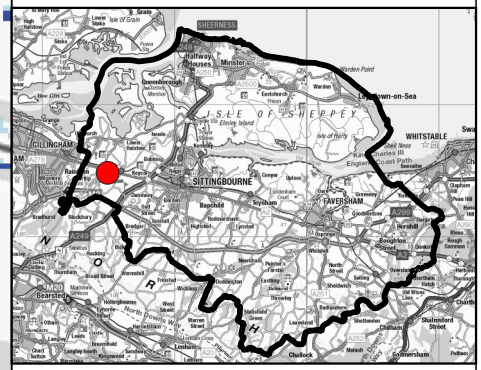
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Location Plan



Legend

- Swale Borough Outline
- Site boundary

FMfP - Surface Water Spatial Planning Extents plus climate change

- 3.3% (1 in 30-year) plus CC
- 1% (1 in 100-year) plus CC
- 0.1% (1 in 1000-year) plus CC

Notes

The Flood Map for Planning Service includes several layers of information. This includes Surface Water Spatial Planning Extents. These datasets show the extent of land at risk of flooding from surface water to a defined annual exceedance probability (AEP) or chance of flooding each year.
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.
The 'Upper End' for the 2070s epoch (2061-2125) has been used for the climate change scenarios. We have chosen long-term epochs appropriate to support long-term planning and development decisions.
These datasets are designed to only give an indication of flood risk to an area of land and are not suitable for showing whether an individual property is at risk of flooding. This is because we cannot know all the details about each property.

0 80 160 m

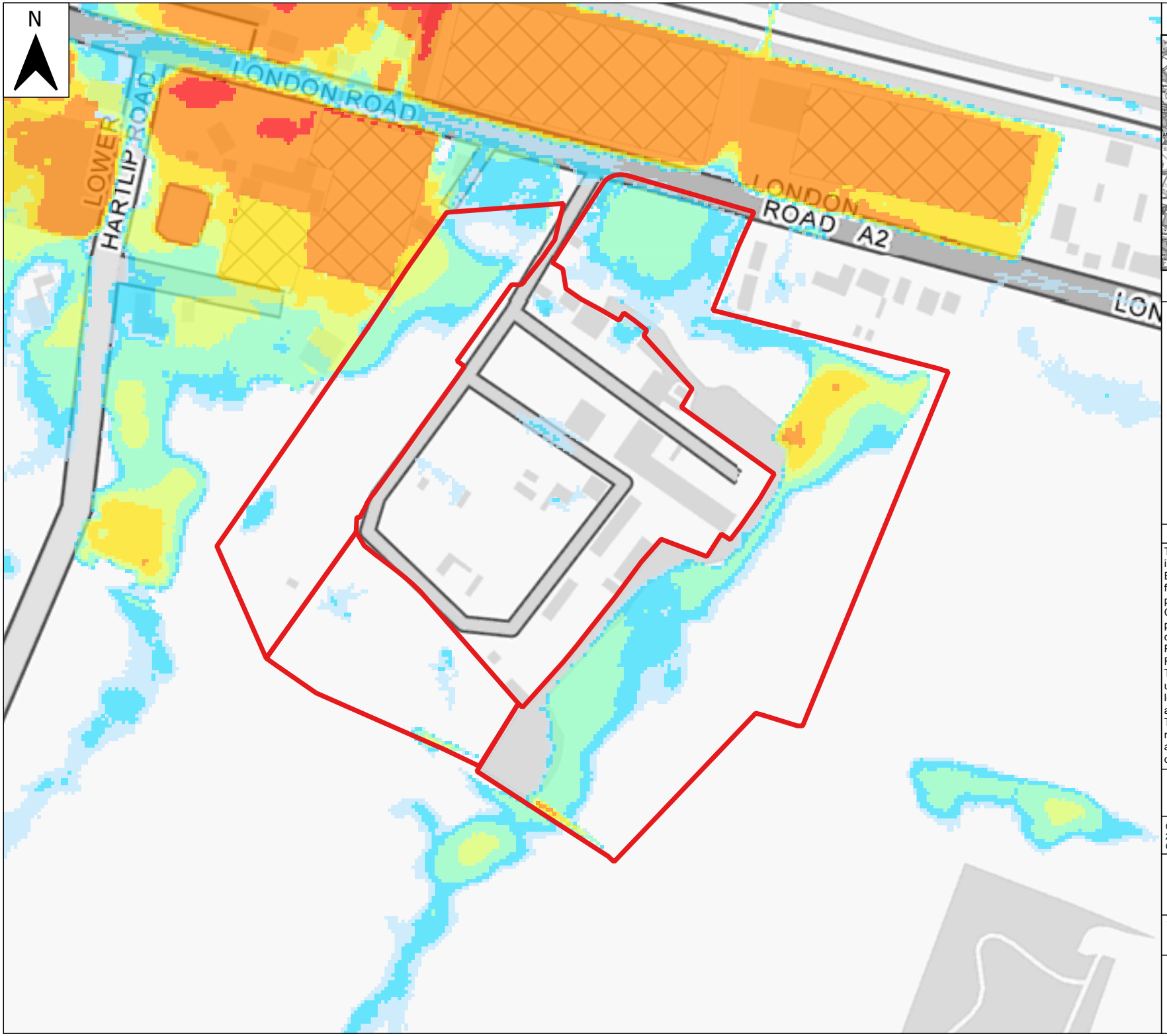
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LEVEL 2 SFRA:
SURFACE WATER FLOODING PLUS CLIMATE CHANGE - SHELAA-142 & R10

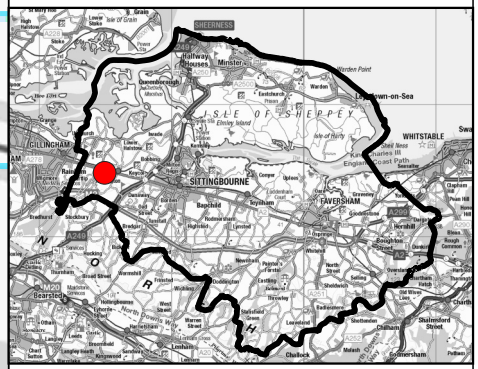
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Location Plan



Legend

- Swale Borough Outline
- Site boundary

FMfP Surface Water Spatial Planning Depths
1% AEP (1 in 100-year) plus climate change

- <150mm
- 150-300mm
- 300-600mm
- 600-900mm
- 900-1200mm
- 1200-2300mm
- >2300mm

Notes

The Flood Map for Planning Service includes several layers of information. This includes Surface Water Spatial Planning Extents. These datasets show the extent of land at risk of flooding from surface water to a defined annual exceedance probability (AEP) or chance of flooding each year.
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.
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0 80 160 m

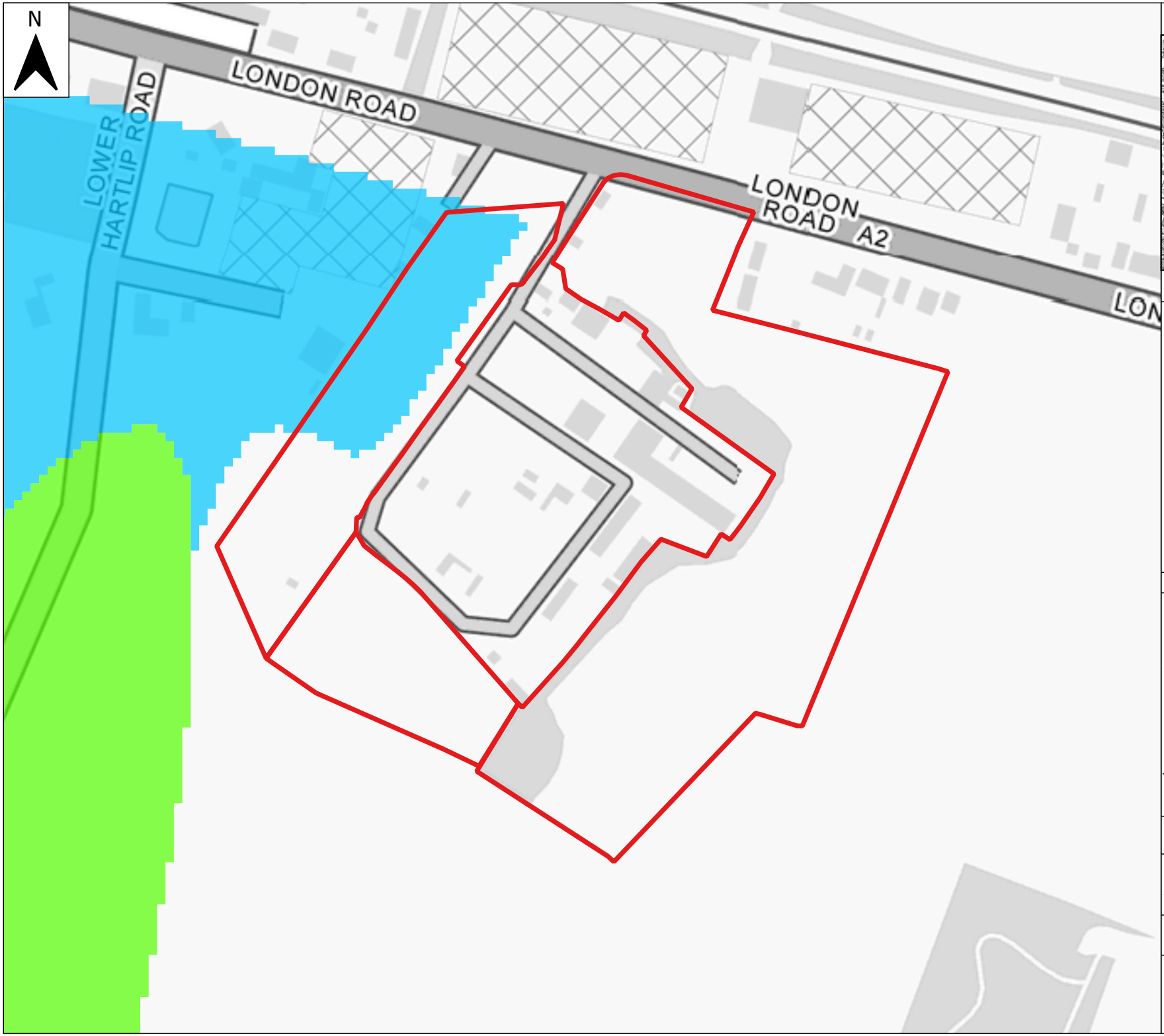
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SURFACE WATER FLOODING PLUS CLIMATE CHANGE DEPTHS - SHELAA-142 & R10

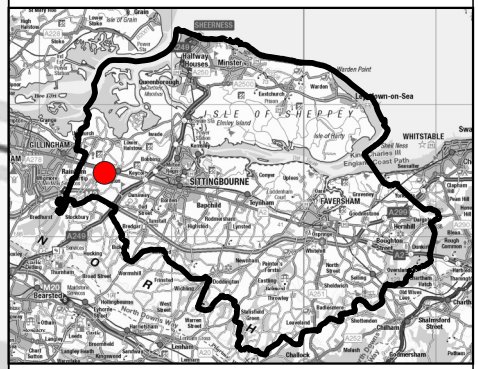
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Location Plan



Legend

- Swale Borough Outline
- Site boundary

JBA Groundwater Flood Map Depths

- Groundwater levels are either at or very near (within 0.025m of) the ground surface.
- Groundwater levels are between 0.025m and 0.5m below the ground surface.
- Groundwater levels are between 0.5m and 5m below the ground surface.
- Groundwater levels are at least 5m below the ground surface.
- Low risk.

Notes

The modelled groundwater levels are not predictions of typical groundwater levels, rather they are flood levels. The 5m resolution JBA Groundwater Flood Map categorises the head difference (m) between the predicted groundwater levels and the surface level into five feature classes based on the 100-year flood model outputs.

It should be noted that the JBA Groundwater Flood Map is suitable for general broad-scale assessment of the groundwater flood hazard in an area, but is not explicitly designed for the assessment of flood hazard at the scale of a single property.

0 80 160 m

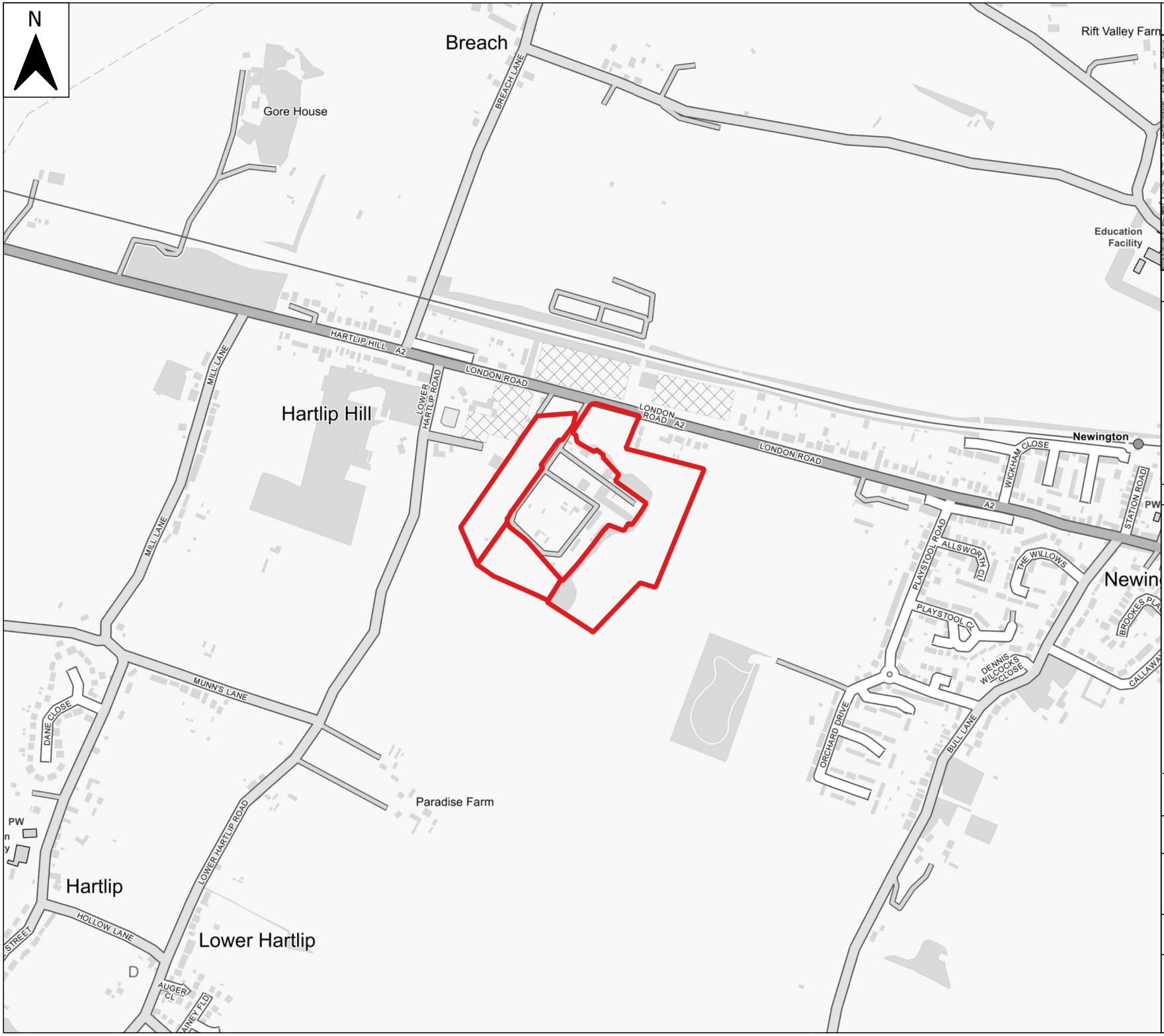
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LEVEL 2 SFRA:
JBA GROUNDWATER FLOOD MAP - SHELAA-142 & R10

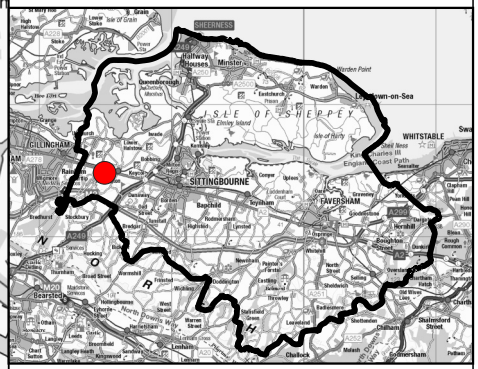
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Location Plan



Legend

- Swale Borough Outline
- Site boundary

Environment Agency Reservoir Flood Extents

- Dry Day
- Wet Day

Notes

The risk of inundation due to reservoir breach or failure of reservoirs within the area has been mapped using the outlines available from the Risk of Flooding from Reservoir dataset, made available by the Environment Agency.
The Environment Agency dataset includes areas of sea flooding.

0 200 400 m

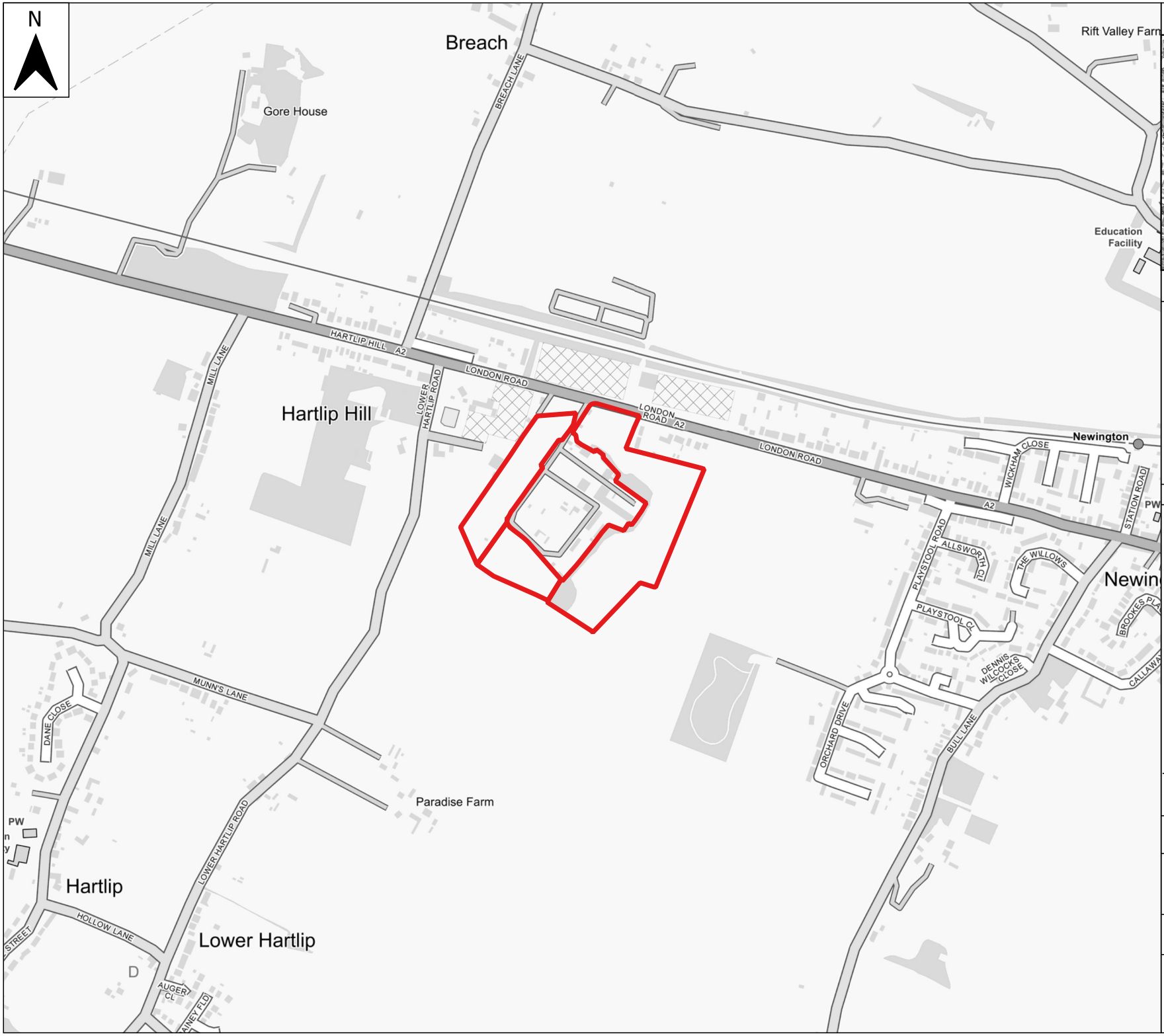
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LEVEL 2 SFRA:
RISK OF FLOODING FROM RESERVOIRS - SHELAA-142 & R10

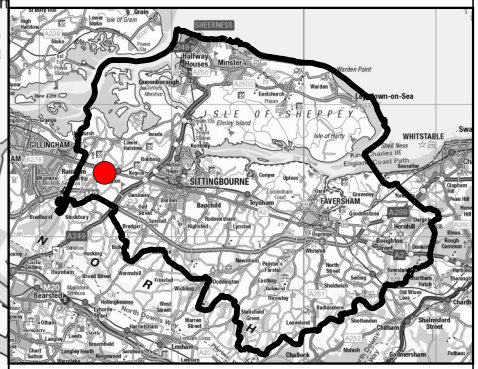
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Location Plan



Legend

- Swale Borough Outline
- Site boundary

Environment Agency Flood Warning and Alerts

- Flood Alert Area
- Flood Warning Area

Notes

Flood Alerts are used by the Environment Agency to warn people of the possibility of flooding and encourage them to be alert, stay vigilant and make early preparations. Flood Alerts are issued earlier than a flood warning to give notice of the possibility of flooding but before the Environment Agency are fully confident that flooding in Flood Warning Areas is expected.

Flood Warnings warn people of expected flooding and encourage them to take action to protect themselves and their property.

0 200 400 m

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SWALE BOROUGH COUNCIL
LEVEL 2 SFRA:
ENVIRONMENT AGENCY FLOOD WARNINGS AND ALERTS - SHELAA-142 & R10

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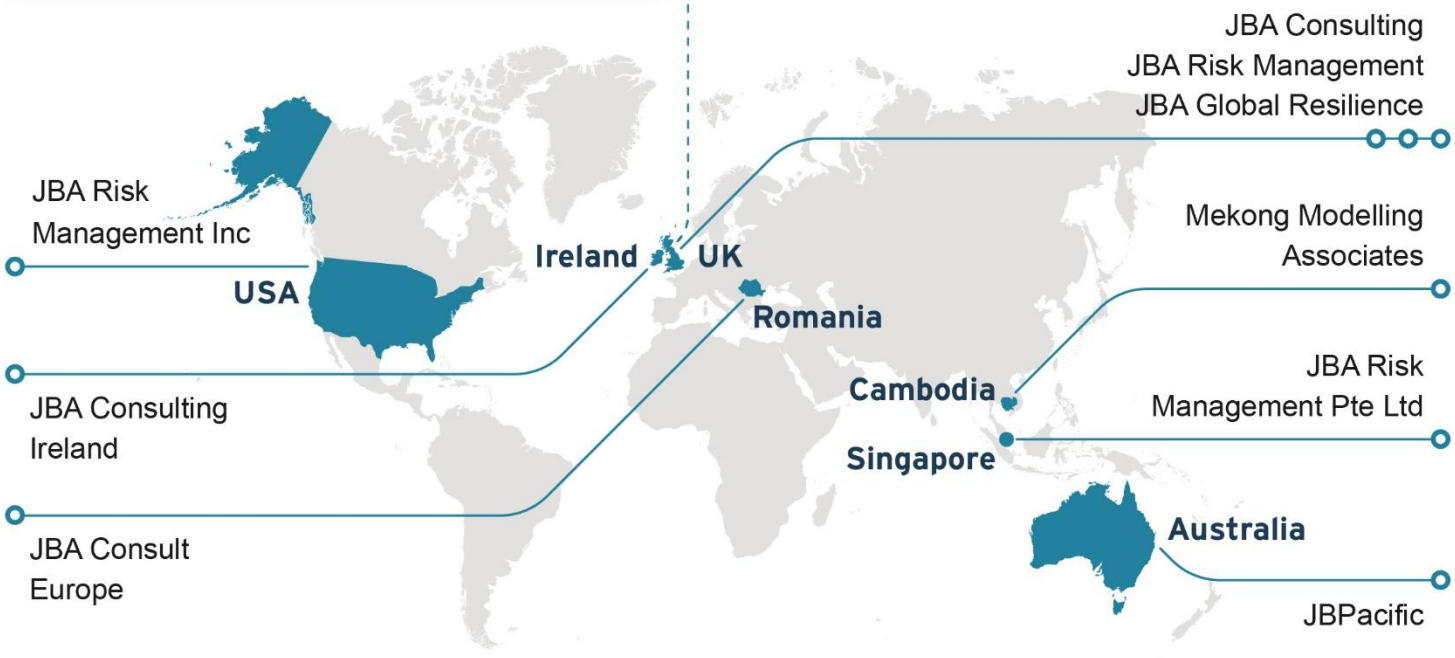
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