

Flood Risk Assessment for Planning

September 2026

Prepared for:

Green Park Reading No.1 LLP

Location:

500 South Oak Way

Shinfield

Wokingham

RG2 6AD

Our reference:

98131-MapleTree-SouthOakWay



Document Issue Record

Project Details	
Project:	Flood Risk Assessment for Planning
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Application:	Installation of an entrance canopy following demolition of the existing entrance canopy.
Location:	500 South Oak Way, Shinfield, Wokingham, RG2 6AD
Our reference:	98131-MapleTree-SouthOakWay
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1. Key Facts

Flood Risk Posed:

- The site is located within Flood Zone 2 (Medium Probability), which means it is defined as land having a less than 1:100 annual probability of river or sea flooding.
- The nearest watercourse to the site is Foudry Brook located 128 meters west of the site.
- According to data provided from Kennet (Tyle Mill to Thames Confluence) 2018, the site is shown to be outside all of the modelled 1:30 year, 1:70 year, 1:100 year, 1:100 year +25% CC and 1:1000 year extents.
- No Flood Storage Areas are identified in close proximity to the site according to available Environment Agency mapping.
- According to the EA, there are no formal raised flood defences owned or operated by the EA protecting the site. There is natural high ground on either side of Foudry Brook which would act to reduce flooding for smaller flood events.
- The EA Surface Water Spatial Planning Extents mapping indicates that the site is not affected by surface water flooding during the 1:30 year (3.3% AEP), 1:100 year (1% AEP) and 1:1000 year (0.1% AEP) events under present day and climate change conditions.
- The 2023 Wokingham Borough Council Level 1 SFRA does not identify any recorded incidents of sewer flooding within the site's postcode area based on the Thames Water sewer flooding records presented within the SFRA.
- The 2023 Wokingham Borough Council Level 1 SFRA indicates that the site lies within an area where groundwater levels are between 0.5m and 5m below ground level.
- No information has been provided to suggest that the site itself has previously been affected by flooding from groundwater, sewer surcharge or reservoirs.
- The EA hold records of historical flooding having affected the site and the surrounding area during June 1971 from the main river, attributed to the exceedance of the channel capacity.

Flood Risk Mitigation:

- The proposed development comprises the addition of a new canopy to the existing front entrance of the office building.
- The proposed development is less than 250m² and therefore fits within the EA's Standing Advice for non-domestic extensions.
- No internal changes to the existing building are proposed as part of the proposal.
- There will be no increase to the built footprint of the site.
- The site will remain classified as "less vulnerable" post-development.
- Given the minor nature of the proposed development, there will be no unacceptable loss of fluvial floodplain storage.
- The development is not expected to materially increase surface water runoff or flood risk elsewhere, subject to the existing drainage and surface-water flow paths being maintained.
- The applicant will register with the Environment Agency Floodline Alert/Warnings Direct service.

Assuming accordance with these flood risk management measures, Unda Consulting Limited consider the proposed application to be suitable in flood risk terms.

2. Introduction

- 2.1. Unda Consulting Limited have been appointed by Green Park Reading No.1 LLP (hereinafter referred to as “the applicant”) to undertake a Flood Risk Assessment for the proposed development at 500 South Oak Way, Shinfield, Wokingham, RG2 6AD (hereinafter referred to as “the site”). The purpose of the study is to support a planning application for the proposed development.
- 2.2. This report presents our findings based on the readily available information and data relating to the site and surrounding drainage area.
- 2.3. The site appears to be located within Flood Zone 2 as defined by the Environment Agency (EA) on their Flood Map for Planning. Under the National Planning Policy Framework (NPPF), a FRA is required for all development or changes of use proposed:
 - In Flood Zones 2 or 3 or see flood map for planning;
 - Within Flood Zone 3b;
 - Within Flood Zone 1 with a site area of 1 hectare or more;
 - Within ‘Flood Zones plus Climate Change’, showing it is at increased risk of flooding from rivers or sea in future - see flood map for planning;
 - With Flood Zone 1 and the flood map for planning shows it is at risk of flooding from surface water;
 - In areas with critical drainage problems;
 - Within Flood Zone 1 where the LPA’s strategic flood risk assessment (SFRA) shows it will be at increased risk of flooding during its lifetime;
 - That increases the vulnerability classification and may be subject to sources of flooding other than rivers or sea.
- 2.4. Given that the proposed development is located within Flood Zone 2 (Medium Risk of flooding from rivers or the sea), an FRA is required.
- 2.5. The assessment should demonstrate to the Local Planning Authority (LPA) and EA how flood risk will be managed now and over the development’s lifetime, taking climate change into account, and with regard to the vulnerability of its potential users.
 - Whether the proposed development is likely to be affected by current or future flooding from any source;
 - Whether it will increase flood risk elsewhere;
 - Whether the measures proposed to deal with these effects and risks are appropriate.

3. Existing Site

- 3.1. The site comprises of a four-storey office building with a canopy.
- 3.2. The surrounding area is characterised by commercial buildings.
- 3.3. Existing plans are provided in the report Appendix.



Figure 1: Aerial imagery of site and surrounding area (Source: Google Earth)

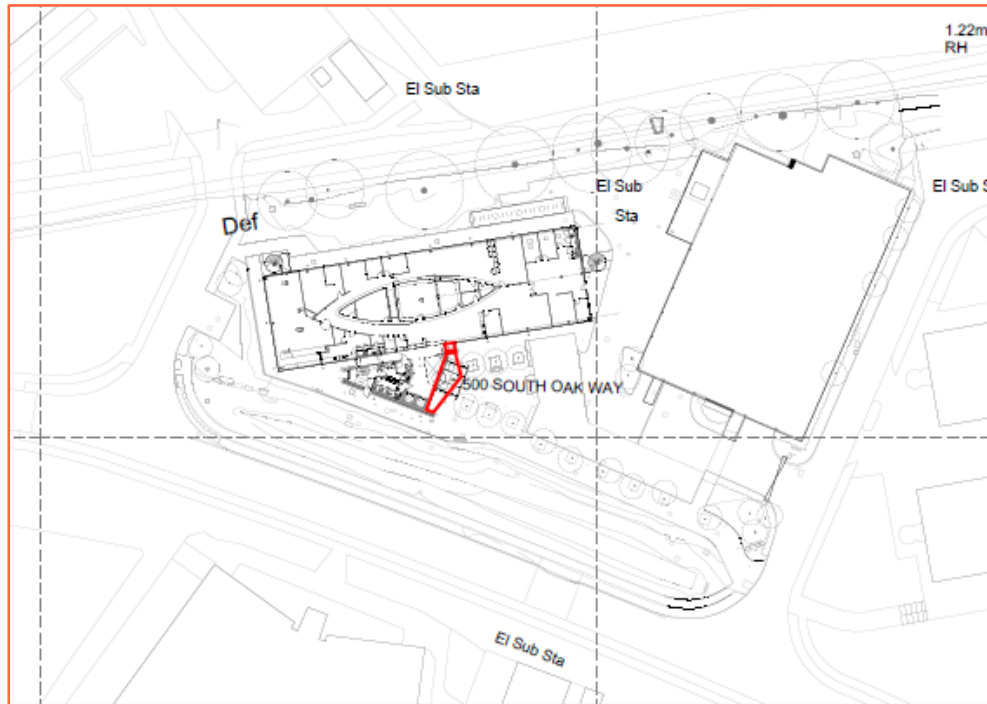


Figure 2: Site location plan (Source: Applicant)

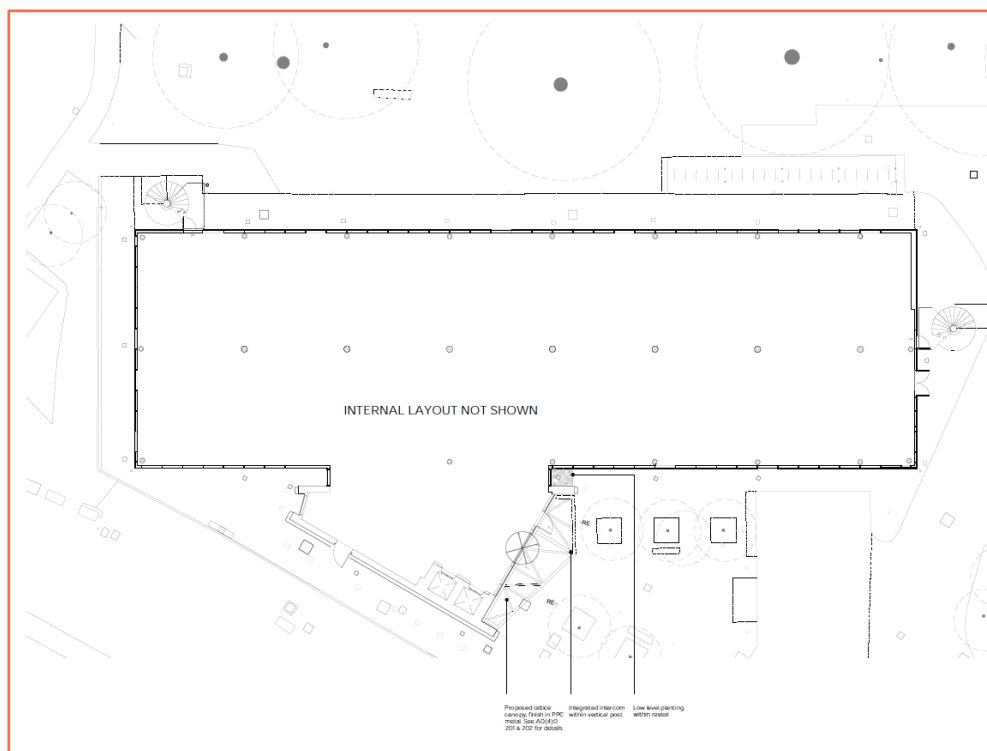


Figure 3: Existing ground floor plan (Source: Applicant)

Site Topography:

- 3.4. Environment Agency LiDAR has been used to assess the topography across the site and wider area. Light Detection and Ranging (LiDAR) is an airborne mapping technique, which uses a laser to measure the distance between the aircraft and the ground surface. Up to 100,000 measurements per second are made of the ground, allowing highly detailed terrain models to be generated at high spatial resolutions. The EA's LiDAR data archive contains digital elevation data derived from surveys carried out by the EA's specialist remote sensing team. Accurate elevation data is available for over 70% of England. The LiDAR technique records an elevation accurate to +/-5cm to 15cm with spatial resolutions ranging from 25cm to 2 metres. This dataset is derived from a combination of the full dataset which has been merged and re-sampled to give the best possible coverage. The dataset can be supplied as a Digital Surface Model (DSM) produced from the signal returned to the LiDAR (which includes heights of objects, such as vehicles, buildings and vegetation, as well as the terrain surface) or as a Digital Terrain Model (DTM) produced by removing objects from the Digital Surface Model. 1.0m horizontal resolution DTM LiDAR data has been used for the purposes of this study.
- 3.5. LiDAR remotely sensed digital elevation data suggests that the ground topography on site ranges from approximately 39.55mAOD to 39.70mAOD.

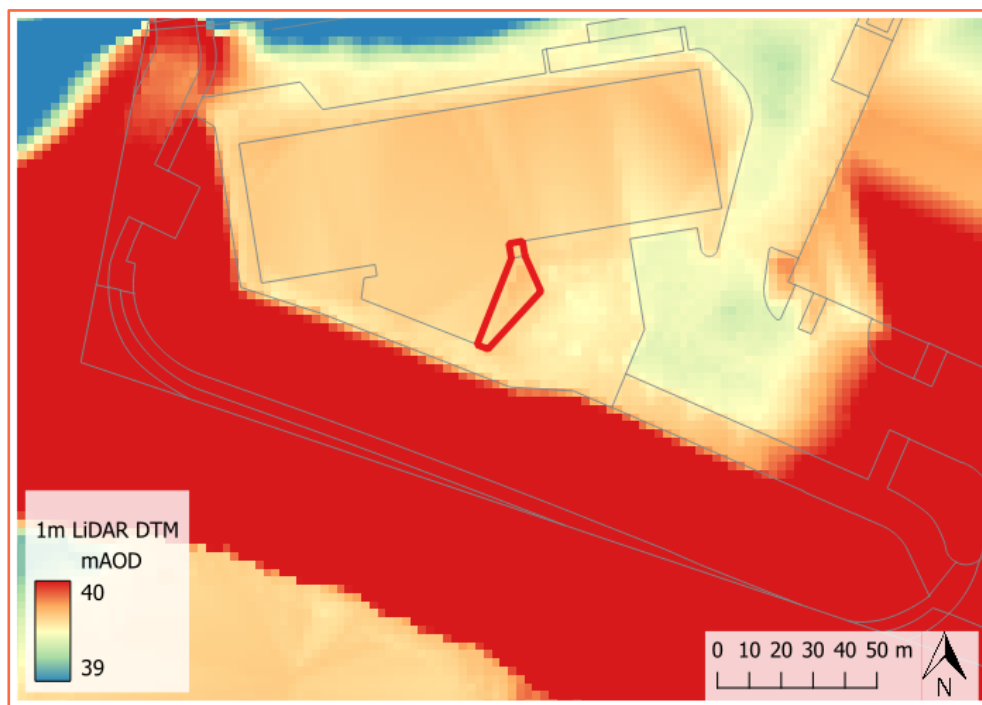


Figure 4: 1m LiDAR DTM (Source: EA, OS)

Existing Ground Conditions:

- 3.6. The 1:50,000 BGS map shows that the bedrock underlying the site is London Clay Formation – clay, silt and sand
- 3.7. The BGS mapping shows superficial deposits of River Terrace, 2-sand and gravel.
- 3.8. The soil type taken from the UKSO Soil Map Viewer, shows the site to be located upon relatively deep soils of river terrace sand/gravel with a soil texture of sandy loam.

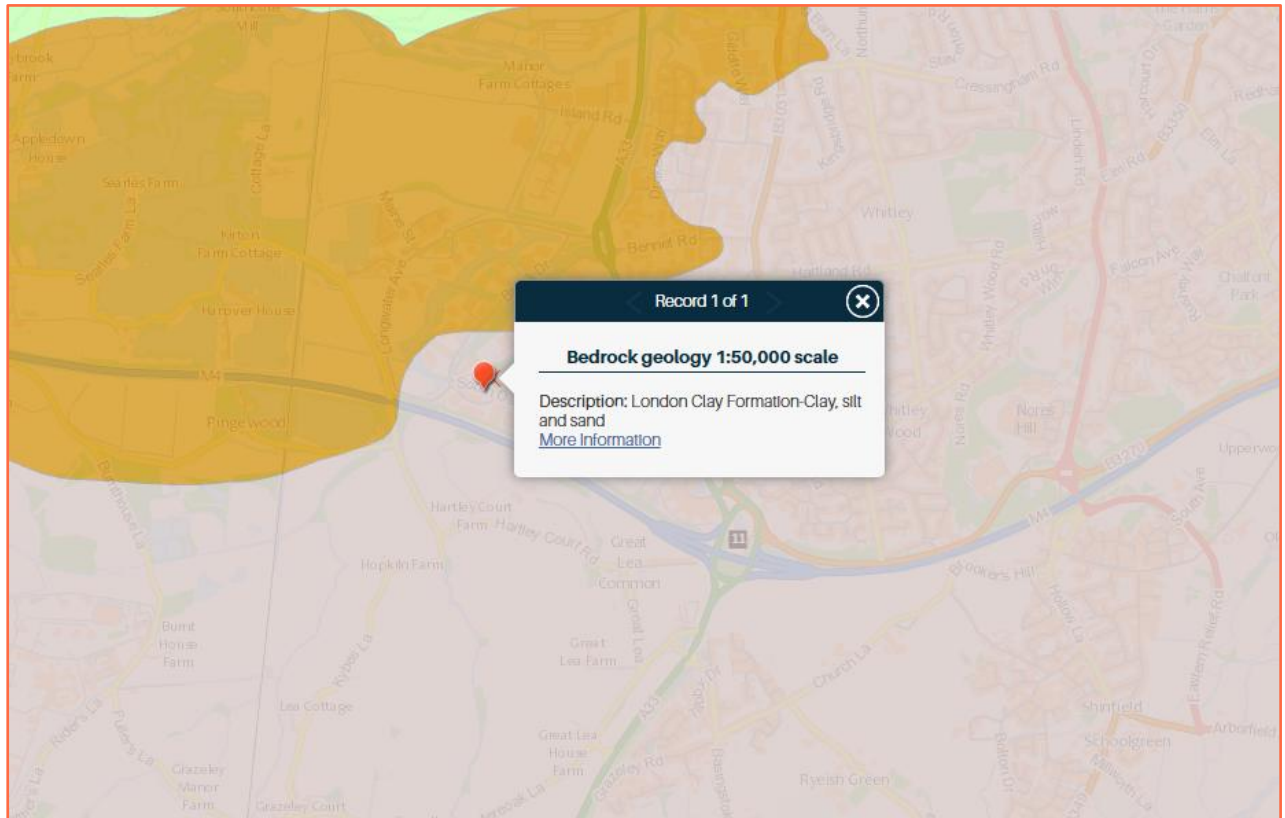


Figure 5: BGS Bedrock Geology (Source: BGS)

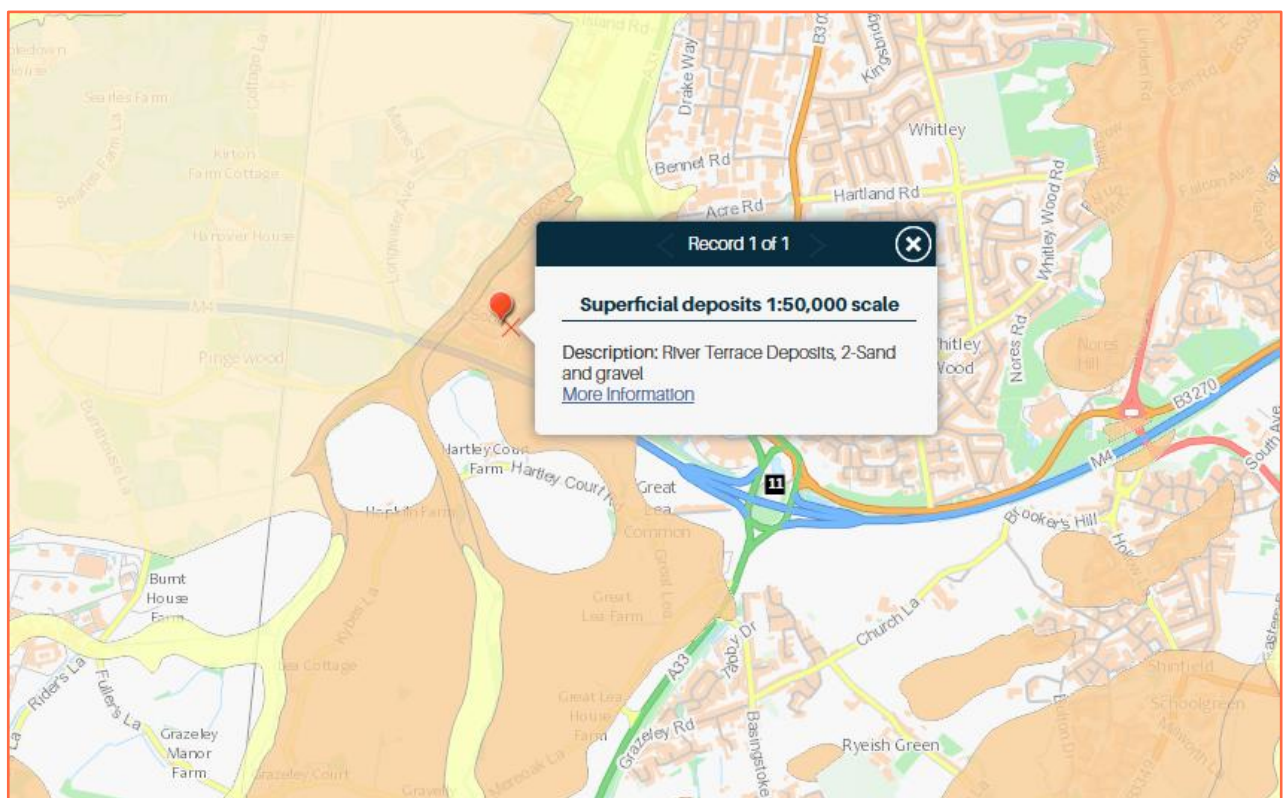


Figure 6: BGS superficial deposits (Source: BGS)

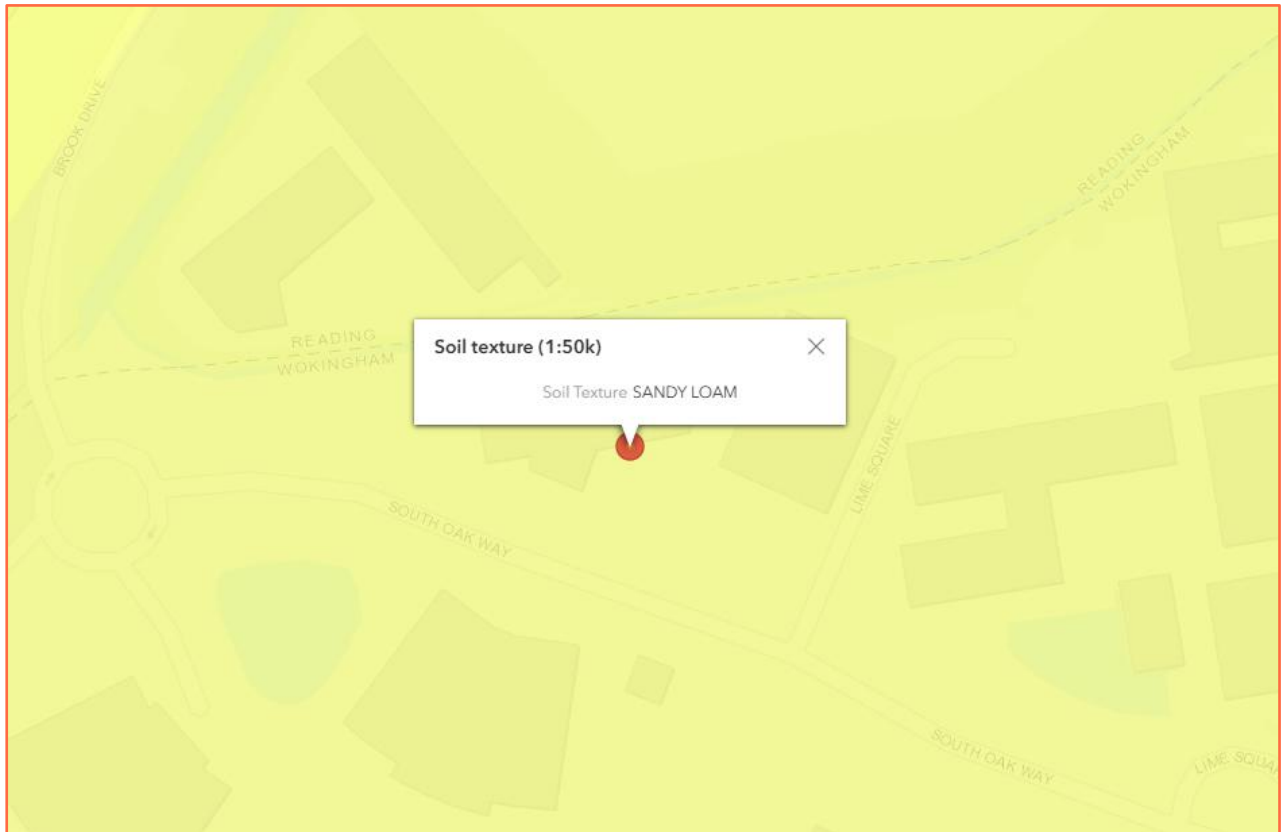


Figure 7: Soil map (Source: UK Soils, BGS)

Nearby Watercourses / Drainage Features:

- 3.9. The nearest watercourse to the site is Foudry Brook located 128 meters West of the site.

4. Development Proposal

- 4.1. The proposed application is for the demolition and redesign of the outdoor entrance canopy.
- 4.2. There will be no increase to the built footprint or vulnerability classification.
- 4.3. No internal changes to the existing building are proposed as part of the proposal.
- 4.4. The new canopy will not result in a change of flood level.
- 4.5. Proposed plans are provided in the report Appendix.

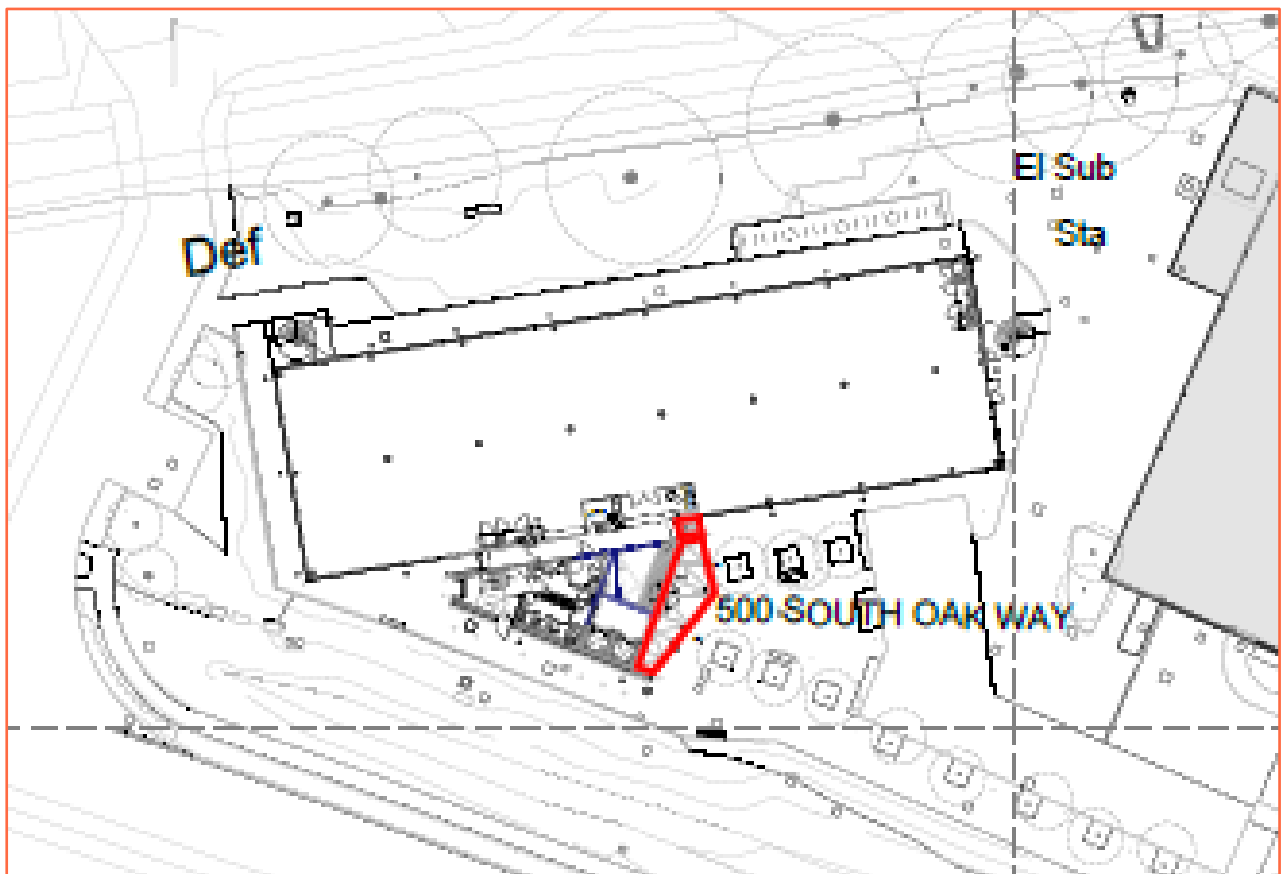


Figure 8: Proposed site/development plan (Source: Applicant)

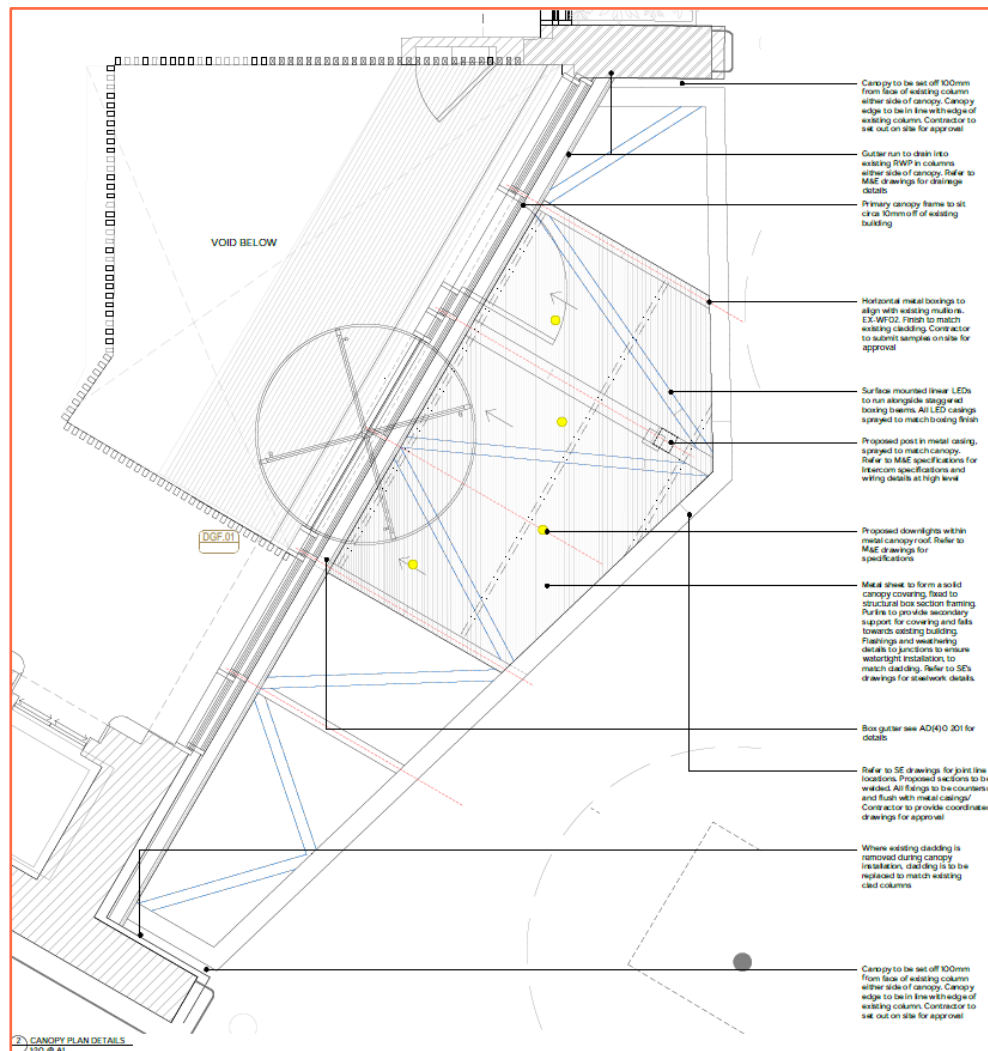


Figure 9: Proposed Canopy Plan (Source: Applicant)



Figure 10: Render of canopy (Source: Applicant)

5. Flood Risk Assessment

EA Flood Zones:

- 5.1. Within planning, Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency's Flood Map for Planning (Rivers and Sea), available on the Environment Agency's website.

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 0.1% annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map for Planning – all land outside Zones 2, 3a and 3b)
Zone 2 Medium Probability	Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1% or greater annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: - land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or - land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Table 1: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

- 5.2. The Flood Zones are created using local flood model outputs, recorded flood outlines and national flood model information. These are combined to generate extents of land at flood risk, with the aim of using the best available flood risk information in any one location. The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding.

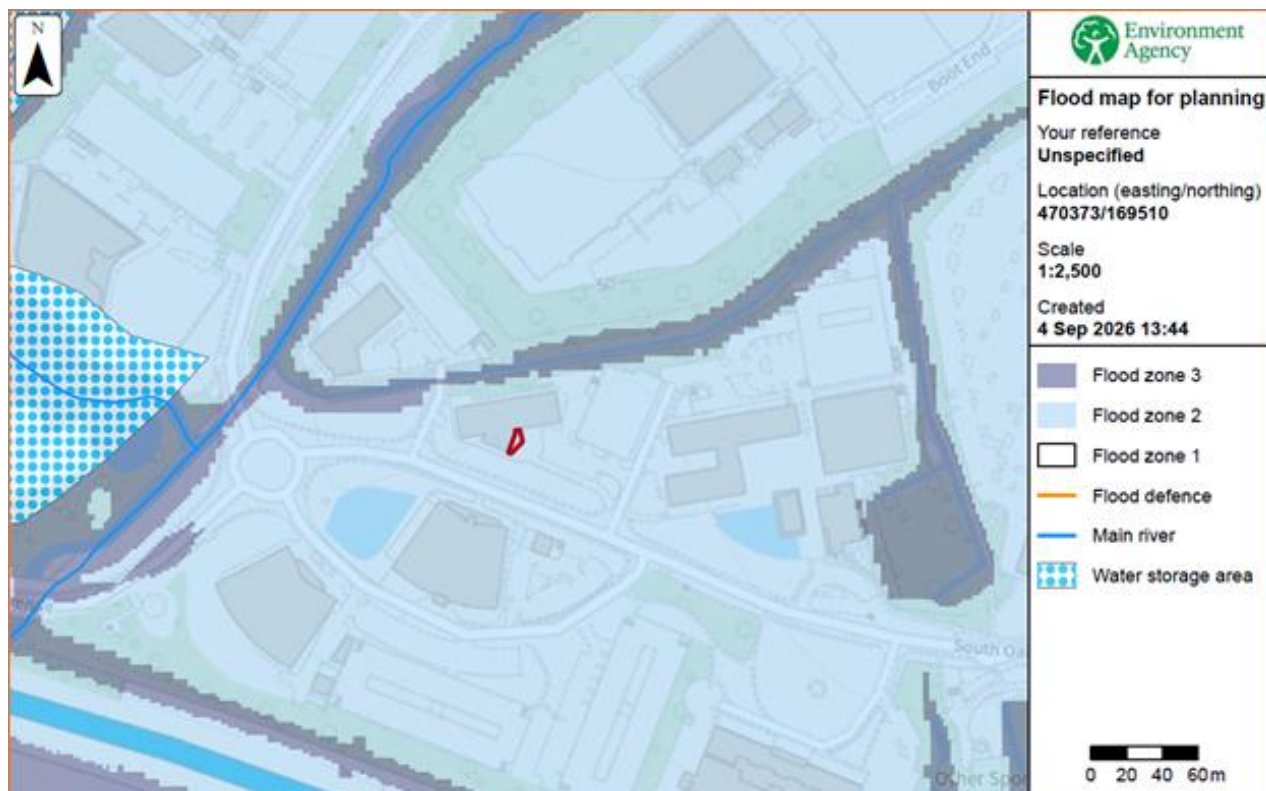


Figure 11: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

- 5.3. The site is located within Flood Zone 2 (Medium Probability), defined as land having between a 1:100 and 1:1000 annual probability of river flooding; or Land having between a 1:200 and 1:1000 annual probability of sea flooding.

EA Flood Zones plus Climate Change:

- 5.4. The Flood Zones plus climate change dataset shows how the combined extent of Flood Zones 2 and 3 could increase with climate change over the next century, ignoring the benefits of any existing flood defences. The EA have assumed no changes to flood defences or land-use that could occur in future. The effects of climate change on flood risk which may be seen in the future could be different to those currently considered.
- 5.5. 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.
- 5.6. The datasets shown on Flood Map for Planning are aimed at supporting planners and developers to make long-term decisions about the location and design of development and the use of land. Such decisions need to account for the full anticipated lifetime of the development being planned.
- 5.7. The EA have therefore chosen:
- The 'Central' allowance for the 2080s epoch (2070-2125) for risk of flooding from rivers
 - The 'Upper End' allowance for risk of flooding from the sea, accounting for cumulative sea level rise to 2125
- 5.8. The Flood Zones plus climate change dataset is created using local flood model outputs, recorded flood outlines and national flood model information, and by adding climate change scenarios from local and national modelling, using the maximum extents from:
- Rivers and sea with defences 3.3%, 1%/0.5% and 0.1% AEPs
 - Rivers and sea without defences 1%/0.5% and 0.1% AEPs
- 5.9. The extents are merged to create a single outline.
- 5.10. The site is shown to be within the EA Flood Zones plus climate change (2070 to 2125) extent.

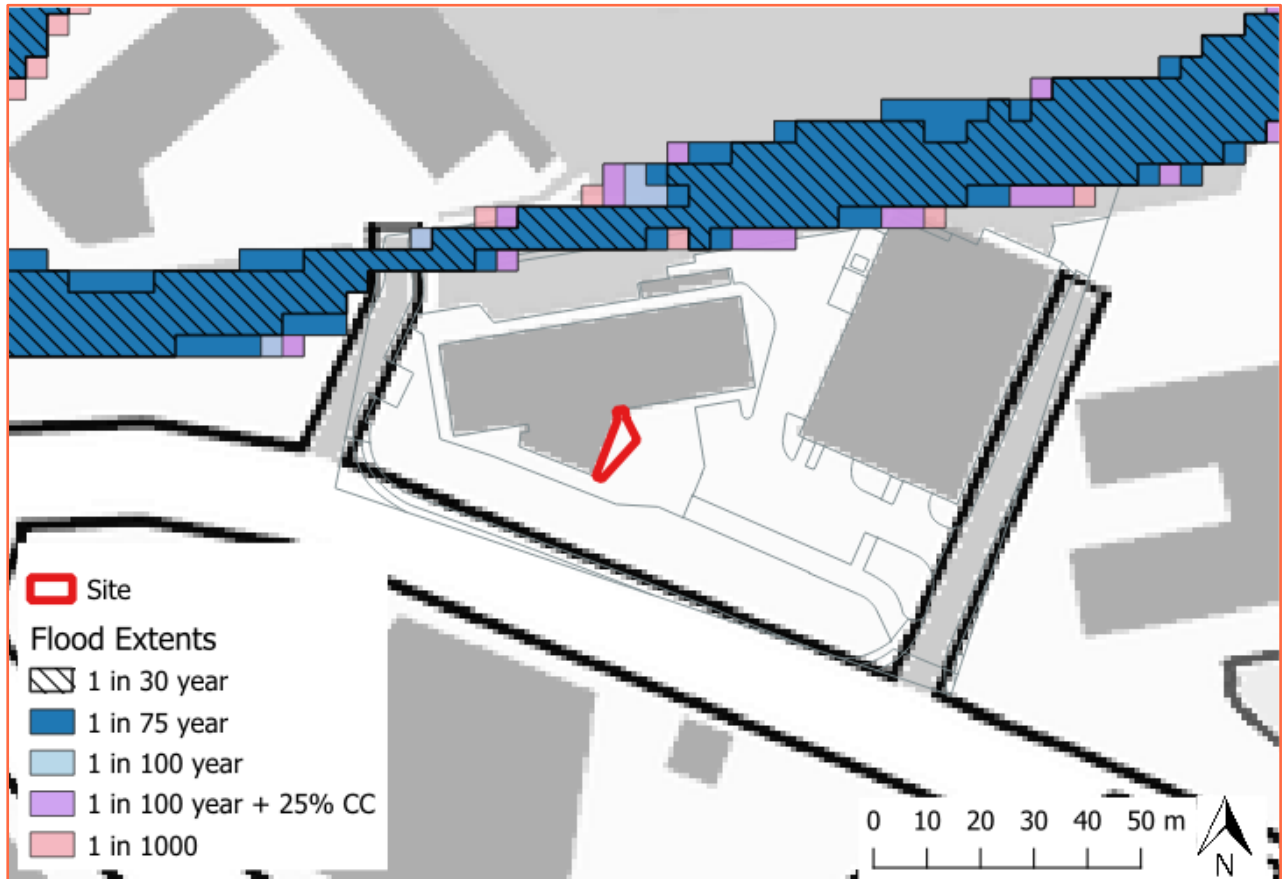
Fluvial:

- 5.11. The site is situated entirely in Flood Zone 2 (Medium Probability), defined as land having a less than 1:100 year probability of river or sea flooding.
- 5.12. The nearest watercourse to the site is Foudry Brook located 128 meters away from the site.

Detailed Flood Modelling:

- 5.13. Modelled flood levels and extents have been requested from the Environment Agency.
- 5.14. The information provided was taken from the Kennet (Tyle Mill to Thames Confluence) 2018.
- 5.15. Modelled flood extents have been provided for a variety of return periods.
- 5.16. The development is classified as "less vulnerable" and is located within flood zone 2. The Flood Risk Assessments: climate change allowances guidance states that for "less vulnerable" development in Flood Zone 2, the central allowance should be used. The site falls within the Kennet catchment, where the central allowance is a 21% increase in flows.

- 5.17. The data provided by the EA includes climate change allowances of 15%, 25%, 35%, 70%. The most appropriate allowance in this case would be the 20% allowance.
- 5.18. The site is shown to be outside all of the modelled 1:30 year, 1:70 year, 1:100 year, 1:100 year +25% CC and 1:1000 year extents.



Flood Storage Areas:

- 5.19. Flood Storage Areas are areas that act as a balancing reservoir, storage basin or balancing pond. Their purpose is to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel. It may also delay the timing of a flood peak so that its volume is discharged over a longer time interval. Flood storage areas do not completely remove the chance of flooding and can be overtopped or fail in extreme weather conditions.
- 5.20. According to EA data, there are no Flood Storage Areas located in close proximity to the site.

Flood Defences:

- 5.21. Flood defences are typically raised structures that alter natural flow patterns and prevent floodwater from entering property in times of flooding. They are generally categorised as either 'formal' or 'informal' defences. A 'formal' flood defence is a structure that was built specifically for the purpose of flood defence, and is maintained by its respective owner, which could be the EA, Local Authority, or an individual. An 'informal' flood defence is a structure that has not been specifically built to retain floodwater, and is not maintained for this specific purpose, but may afford some protection against flooding.
- 5.22. Asset inspections are undertaken on average every six months, although some critical assets are assessed on a more regular basis. It is possible that adjacent assets are inspected on different dates, which may result in two assets of a similar state of repair having different condition ratings. It is unclear when both assets were last inspected.

- 5.23. Condition ratings of assets may also be affected by the time of year the surveys are conducted, as vegetation may obscure the asset in the summer months, or accessibility may be an issue during winter months. These factors would not usually affect the recorded condition rating of an asset unless the asset is on a borderline between two ratings.
- 5.24. According to the EA, there are no formal raised flood defences owned or operated by the EA protecting the site. There is natural high ground on either side of Foudry Brook which would act to reduce flooding for smaller flood events.

Residual Risk (breach or overtopping of flood defences):

- 5.25. Breaching of flood defences can cause rapid inundation of areas behind flood defences as flow in the river channel discharges through the breach. A breach can occur with little or no warning, although they are much more likely to occur with extreme river levels or tides when the stresses on flood defences are highest. Flood water flowing through a breach will normally discharge at a high velocity, rapidly filling up the areas behind the defences, resulting in significant damage to buildings and a high risk of loss of life. Breaches are most likely to occur in soft defences such as earth embankments although poorly maintained hard defences can also be a potential source of breach.
- 5.26. Overtopping of flood defences occurs when water levels exceed the protection level of raised flood defences. The worst case occurs when the fluvial or tidal levels exceed the defence level as this can lead to prolonged flooding. Less severe overtopping can occur when flood levels are below defence levels, but wave action causes cyclic overtopping, with intermittent discharge over the crest level of the defence. Flood defences are commonly designed with a freeboard to provide protection against overtopping from waves. The risk from overtopping due to exceedance of the flood defence level is much more significant than the risk posed by wave overtopping. Exceedance of the flood defence level can lead to prolonged and rapid flooding with properties immediately behind the defences at highest risk.
- 5.27. The site is not shown to be defended by formal flood defences.

Tidal Flooding:

- 5.28. Due to the site topography and distance to the nearest coast/tidal watercourse, the risk of tidal flooding is considered to be very low.

Pluvial (Surface Water):

- 5.29. Pluvial (surface water) flooding occurs 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.
- 5.30. The mapping below shows the Environment Agency Surface Water Spatial Planning dataset. The Environment Agency advise that the dataset is designed to provide an indication of flood risk from surface water to an area of land and is not suitable for determining whether an individual property is at risk of flooding. The mapping is intended to support planning assessments and inform planning decisions and may indicate where further investigation is required.
- 5.31. As of May 2026, the Surface Water Spatial Planning datasets provide an assessment of the extent and depths of flooding that may occur from surface water during a range of modelled rainfall events.
- 5.32. The datasets show the total extent of an area at risk of flooding from surface water and the extent of areas at risk of flooding from surface water to defined depth bands for different scenarios.
- 5.33. The mapping shows the risk of flooding from surface water, for annual exceedance probabilities (AEP) expressed as a return period. These are produced for both the present day risk of flooding from surface water, and climate change scenarios have been produced to indicate the predicted impacts of climate change on future flood risk.

- 5.34. These datasets show the risk of flooding from surface water for the following annual exceedance probability (AEP) scenarios:
- 1 in 30 year annual probability event (3.3% AEP).
 - 1 in 100 year annual probability event (1% AEP).
 - 1 in 1000 year annual probability event (0.1% AEP).
- 5.35. The EA climate change surface water mapping is based upon the UK Climate Projections 2018 (UKCP18) and utilises the Representative Concentration Pathway (RCP) 8.5 emissions scenario. The updated mapping incorporates climate change allowances to represent the predicted impacts of climate change on surface water flood risk over the period 2061 to 2125. The 'Upper end' (based on the 95th percentile) for the 2070s epoch (2061-2125) has been used for the climate change scenarios.
- 5.36. The EA Surface Water Spatial Planning Extents mapping indicates that the site is not affected by surface water flooding during the 1:30 year (3.3% AEP), 1:100 year (1% AEP) and 1:1000 year (0.1% AEP) events under present day conditions.
- 5.37. The EA Surface Water Spatial Planning Extents mapping indicates that the site is not affected by surface water flooding during the 1:30 year (3.3% AEP), 1:100 year (1% AEP) and 1:1000 year (0.1% AEP) climate change event (2061 to 2125).

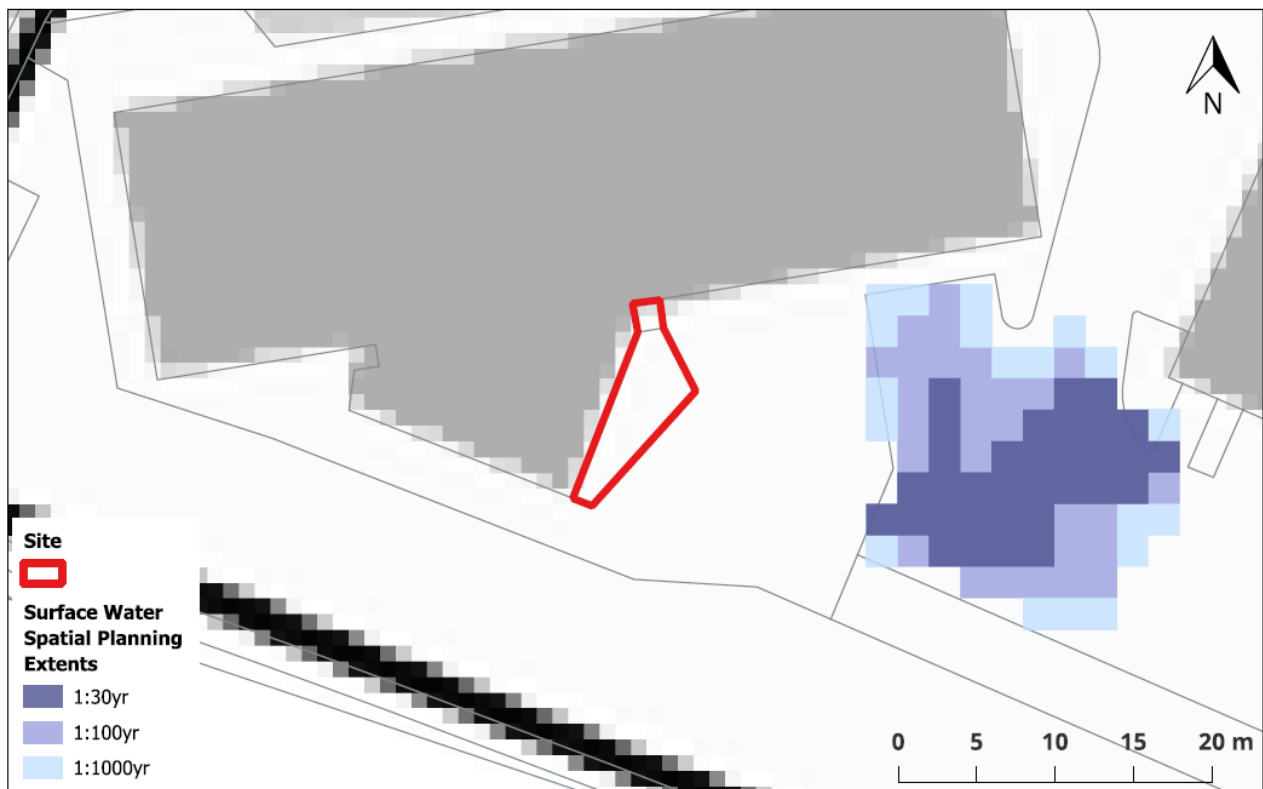


Figure 13: Environment Agency Surface Water Spatial Planning Extents – present day (Source: EA, OS)

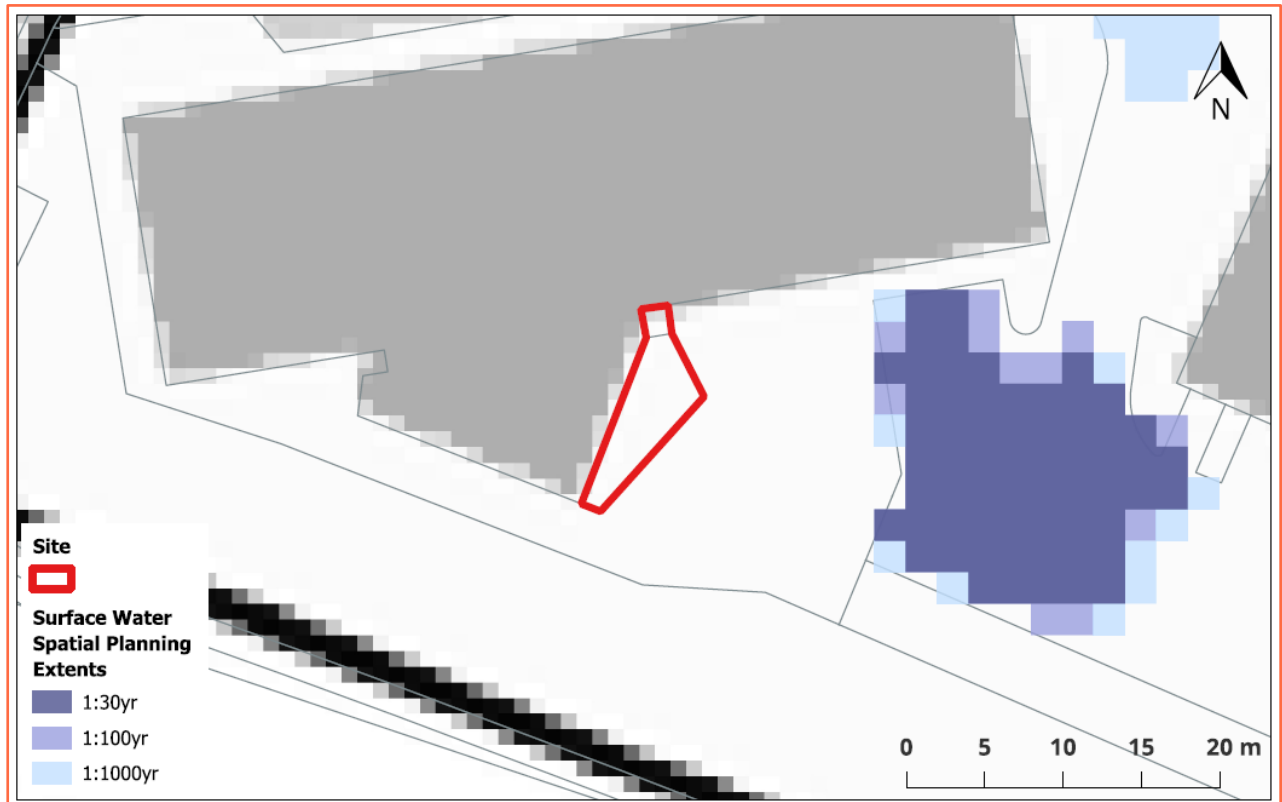


Figure 14: Environment Agency Surface Water Spatial Planning Extents – climate change (Source: EA, OS)

Critical Drainage Areas:

- 5.38. A Critical Drainage Area (CDA) is an area that has critical drainage problems and which has been notified to the local planning authority as such by the Environment Agency in line with the National Planning Policy Framework (NPPF). In these locations, there is a need for surface water to be managed to a higher standard than normal to ensure any new development will contribute to a reduction in flooding risks in line with NPPF. These higher standards are determined by the Environment Agency.
- 5.39. According to the 2023 Wokingham Borough Council Level 1 SFRA, the site is not located within a Critical Drainage Area.

Groundwater:

- 5.40. Groundwater flooding occurs as a result of water rising up from the underlying rocks or from water flowing from abnormal springs. This tends to occur after much longer periods of sustained high rainfall. Higher rainfall means more water will infiltrate into the ground and cause the water table to rise above normal levels. Groundwater tends to flow from areas where the ground level is high, to areas where the ground level is low. In low-lying areas the water table is usually at shallower depths anyway, but during very wet periods, with all the additional groundwater flowing towards these areas, the water table can rise up to the surface causing groundwater flooding.
- 5.41. Groundwater flooding is most likely to occur in low-lying areas underlain by permeable rocks (aquifers). These may be extensive, regional aquifers, such as chalk or sandstone, or may be localised sands or river gravels in valley bottoms underlain by less permeable rocks. Groundwater flooding takes longer to dissipate because groundwater moves much more slowly than surface water and will take time to flow away underground.
- 5.42. The 2023 Wokingham Borough Council Level 1 SFRA indicated that the site lies within an area where groundwater levels are between 0.5m and 5m below ground level.
- 5.43. EA mapping indicates that the site is not located within a groundwater flood alert area.

- 5.44. No information has been provided to suggest that the site has flooded historically due to groundwater.

Sewer:

- 5.45. Sewer flooding occurs when the sewer network cannot cope with the volume of water that is entering it. It is often experienced during times of heavy rainfall when large amounts of surface water overwhelm the sewer network causing flooding. Temporary problems such as blockages, siltation, collapses and equipment or operational failures can also result in sewer flooding.
- 5.46. All Water Companies have a statutory obligation to maintain a register of properties/areas which have reported records of flooding from the public sewerage system, and this is shown on the DG5 Flood Register. This includes records of flooding from foul sewers, combined sewers and surface water sewers which are deemed to be public and therefore maintained by the Water Company. The DG5 register records of flood incidents resulting in both internal property flooding and external flooding incidents. Once a property is identified on the DG5 register, water companies can typically put funding in place to address the issues and hence enable the property to be removed from the register. It should be noted that flooding from land drainage, highway drainage, rivers/watercourses and private sewers is not recorded within the register.
- 5.47. The 2023 Wokingham Borough Council Level 1 SFRA does not identify any recorded incidents of sewer flooding within the site's postcode area based on the Thames Water sewer flooding records presented within the SFRA.
- 5.48. No further information has been presented to suggest that the site is susceptible to sewer flooding.

Other Sources:

- 5.49. Reservoirs with an impounded volume in excess of 25,000 cubic metres (measured above natural ground level) are governed by the Reservoirs Act and are listed on a register held by the Environment Agency. The site is located outside of the maximum inundation extent on the EA Reservoir Inundation Map. The EA also advise on their website that reservoir flooding is extremely unlikely. There has been no loss of life in the UK from reservoir flooding since 1925. All major reservoirs have to be inspected by specialist dam and reservoir engineers. In accordance with the Reservoirs Act 1975 in England, these inspections are monitored and enforced by the EA themselves. The risk to the site from reservoir flooding is therefore minimal and is far lower than that relating to the potential for fluvial / tidal flooding to occur. The Environment Agency Reservoir Flood Map illustrated below, illustrates the largest area that might be flooded if the storage area were to fail and release the water it is designed to hold during a flood event.
- 5.50. Records of flooding from reservoirs and canals are erratic as there is no requirement for the Environment Agency to provide information on historic flooding from canals and raised reservoirs on plans. In particular, the NPPF does not require flood risk from canals and raised reservoirs to be shown on the Environment Agency flood zones.
- 5.51. Overflows from canals can be common as they are often fed by land drainage, and often do not have controlled overflow spillways. Occasionally, major bank breaches also occur, leading to rapid and deep flooding of adjacent land.
- 5.52. No information has been provided to suggest that the site is susceptible to flooding from other sources.

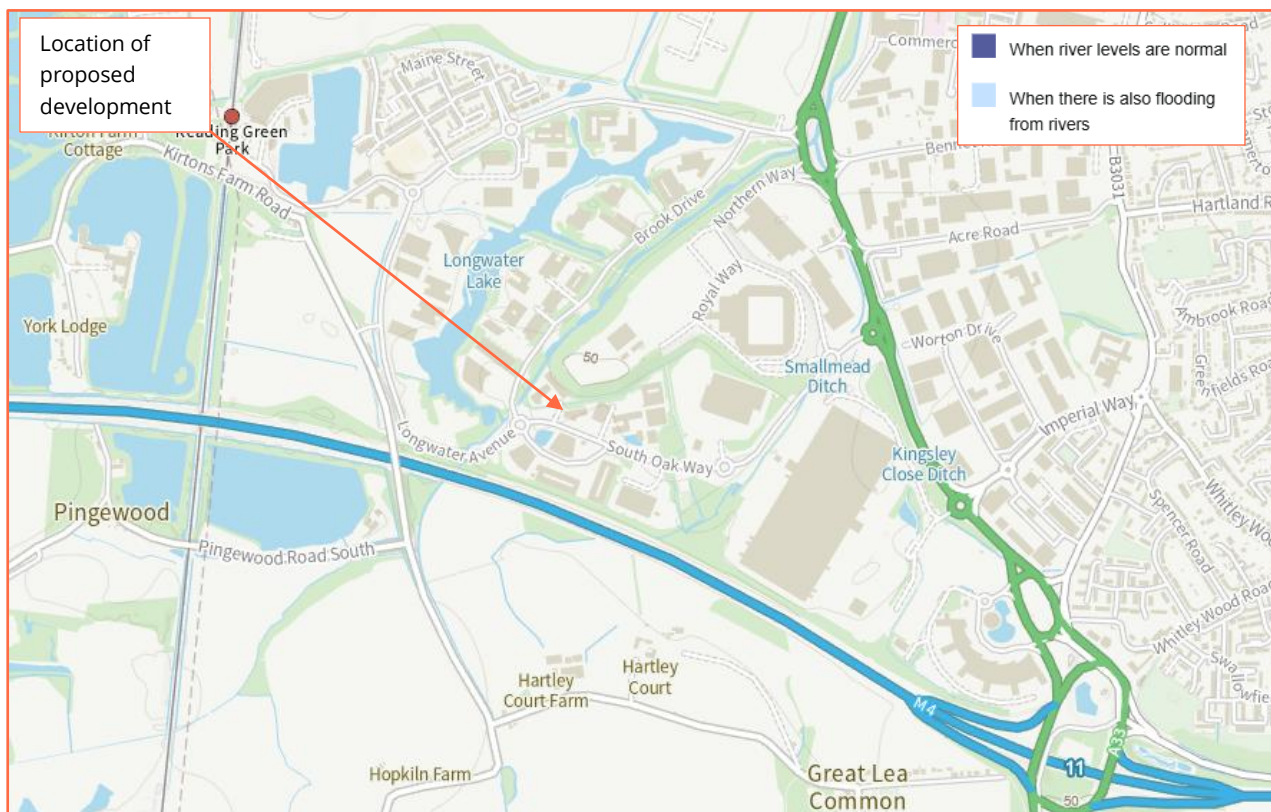


Figure 15: Extract from Environment Agency Reservoir Flood Map (Source: EA)

Historical Flood Events:

- 5.53. The EA hold records of historic flood events from rivers and the sea. The EA map flooding to land, not individual properties. Their historic flood event record outlines are an indication of the geographical extent of an observed flood event. Their historic flood event outlines do not give any indication of flood levels for individual properties. They also do not imply that any property within the outline has flooded internally.
- 5.54. The EA hold records of historical flooding having affected the site and the surrounding area during June 1971 from the main river, attributed to the exceedance of the channel capacity.
- 5.55. The EA advises that the absence of a recorded flood outline does not necessarily mean that flooding has never occurred at the site, as historic records are not comprehensive. They advise that further enquires locally are made with specific reference to flooding at the location.

6. Flood Risk Management

Vulnerability to Flooding:

- 6.1. The National Planning Policy Framework (NPPF) classifies different land uses according to their vulnerability to flooding. The Flood Risk Vulnerability Classification is set out in Annex F, Table 2 of the NPPF, a copy of which is provided in the report Appendix.
- 6.2. The existing site usage is classified as “less vulnerable” (offices).
- 6.3. Post development the site will remain “less vulnerable” (offices) as the proposed application is for the addition of a canopy to the existing front entrance. The existing office use will remain unchanged.
- 6.4. Accordingly, the flood risk vulnerability classification of the site will remain unchanged post-development.

EA Standing Advice for Minor Extensions:

- 6.5. EA Standing Advice guidance is for domestic extensions and non-domestic extensions where the additional footprint created by the development does not exceed 250m². It should not be applied if an additional dwelling is being created, e.g. a self-contained annexe or additional commercial unit.
- 6.6. The proposed development comprises the addition of a canopy to the existing front entrance of the office building which is less than 250m².
- 6.7. The proposed development therefore fits within the EA's Standing Advice for non-domestic extensions

Safe Escape:

- 6.8. The Flood Risk and Coastal Change Planning Practice Guidance (PPG) states that access considerations should include the voluntary and free movement of people during a design flood, as well as the potential for evacuation before a more extreme flood, considering the effects of climate change for the lifetime of the development. Emergency access and escape plans are needed if any part of a development is below the estimated design flood level, which connects the site to an area away from current or future flood risk.
- 6.9. Site users will follow the Flood Warning and Evacuation Plan detailed in the following section.

Flood Warning:

- 6.10. The EA is responsible for issuing flood warnings. Flood warnings are issued to the emergency services and local authorities. Both private individuals and organisations can sign-up to receive warnings via phone, text or email. This system of receiving warnings is currently voluntary.
- 6.11. Advice regarding severe flood warnings will generally be given during weather forecasts on local radio and TV. In the case of extreme events, warnings can also be disseminated via door to door visits by the police or locally appointed flood wardens.
- 6.12. The EA issue flood warnings/alerts to specific areas when flooding is expected. The site lies within the Foudry Brook from Stratfield Mortimer to Green Park.

Flood Warning	Flood Alert	Flood Warning	Severe Flood Warning
			
What it means?	Flooding is possible. Be prepared.	Flooding is expected. Immediate action required.	Severe flooding. Danger to life.
When it's used?	Two hours to two days in advance of flooding.	Half an hour to one day in advance of flooding.	When flooding poses a significant threat to life.
What to do?	Be prepared to act on your flood plan. Prepare a flood kit of essential items. Monitor local water levels and the flood forecast on our website.	Move family, pets and valuables to a safe place. Turn off gas, electricity and water supplies if safe to do so. Put flood protection equipment in place.	Stay in a safe place with a means of escape. Be ready should you need to evacuate from your home. Co-operate with the emergency services. Call 999 if you are in immediate danger.

Table 2: EA Flood Warning Service

Flood Plan:

- 6.13. It is recommended that the applicant and future owners, occupiers and Landlords of the property prepare a flood plan to protect life and property during a flood event:

Action	
Before a flood	- Prepare and keep a list of all your important contacts to hand or save them on your mobile phone. - Think about what items you can move now and what you would want to move to safety during a flood. - Know how to turn off electricity and water supplies to the site. - Prepare a flood kit of essential items and keep it handy. It can include copies of important documents, a torch, a battery-powered or wind-up radio, blankets and warm clothing, waterproofs, rubber gloves and a first aid kit including all essential medication.
During a flood	- Activate the evacuation plan and evacuate the site. - Remove cars from the site if there is sufficient warning and the water levels are not rising rapidly. - Switch off water and electricity for the site. - Tune into your local radio station on a battery or wind-up radio. - Listen to the advice of the emergency service and evacuate if told to do so. - Avoid walking or driving through flood water. Six inches of fast-flowing water can knock over an adult and two feet of water can move a car.
After a flood	- If you have flooded, contact your insurance company as soon as possible. - Take photographs and videos of your damaged property as a record for your insurance company. - If you don't have insurance, contact your local authority for information on grants and charities that may help you. - Flood water can contain sewage, chemicals and animal waste. Always wear waterproof outerwear, including gloves, wellington boots and a face mask. - Have your electrics and water checked by qualified engineers before switching them back on.

Table 3: Flood plan

Commercial in Confidence

Off Site Impacts:

Fluvial Floodplain Storage:

- 6.14. The NPPF requires that where development is proposed in undefended areas of floodplain, which lie outside of the functional floodplain, the implications of ground raising operations for flood risk elsewhere needs to be considered. Raising existing ground levels may reduce the capacity of the floodplain to accommodate floodwater and increase the risk of flooding by either increasing the depth of flooding to existing properties at risk or by extending the floodplain to cover properties normally outside of the floodplain. Flood storage capacity can be maintained by lowering ground levels either within the curtilage of the development or elsewhere in the floodplain, in order to maintain at least the same volume of flood storage capacity within the floodplain.
- 6.15. In undefended tidal areas, raising ground levels is unlikely to impact on maximum tidal levels so the provision of compensatory storage should not be necessary.
- 6.16. For development in a defended flood risk area, the impact on residual flood risk to other properties needs to be considered. New development behind flood defences can increase the residual risk of flooding if the flood defences are breached or overtopped by changing the conveyance of the flow paths or by displacing flood water elsewhere. If the potential impact on residual risk is unacceptable then mitigation should be provided.
- 6.17. The site is located within Flood Zone 2 according to the EA Flood Map for Planning (River and Sea). The proposed development comprises the addition of a canopy to the existing office entrance and will not result in a change of use or an increase to the built footprint. Given the minor nature of the proposed development, there will be no unacceptable loss of floodplain storage.

Surface Water Drainage:

- 6.18. The development will utilise Sustainable drainage systems (SuDS) design in accordance with the NPPF for Planning Applications and the drainage hierarchy as follows:
1. Store rainwater for later use;
 2. Infiltration techniques;
 3. Attenuate rainwater by storing in tanks for gradual release;
 4. Discharge rainwater direct into watercourse;
 5. Discharge rainwater into surface water sewer;
 6. Discharge rainwater into a combined sewer.
- 6.19. Due to the small scale of the development, a full Surface Water Drainage Strategy is not required at this stage of planning. However, SuDS features will be incorporated into the development where practically possible or will utilise the existing arrangement on site. As such, any change in surface water runoff from the site will likely be negligible.

7. Sequential and Exception Test

- 7.1. The Sequential Test aims to ensure that development does not take place in areas at high risk of flooding when appropriate areas of lower risk are reasonably available.
- 7.2. The Sequential Test is applied to developments in areas identified as being at risk of any source of flooding now or in the future. The Sequential Test ensures that a sequential, risk-based approach is followed to steer new development to areas with the lowest risk of flooding, taking all sources of flood risk and climate change into account.
- 7.3. The sequential approach is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. 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. Other forms of flooding need to be treated consistently with river and tidal flooding in mapping probability and assessing vulnerability, so that the sequential approach can be applied across all areas of flood risk.
- 7.4. The site is situated within Flood Zone 2 according to the EA Flood Map for Planning (Rivers and Sea). The proposed development comprises the addition of a canopy to the existing office entrance with no change to the existing office use. The site will therefore remain classified as 'less vulnerable' post-development.

Flood Zones	Flood Risk Vulnerability Classification				
	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a	Exception Test required	X	Exception Test required	✓	✓
Zone 3b	Exception Test required	X	X	X	✓

Table 4: Flood risk vulnerability and flood zone 'compatibility' (Source: NPPF Table 3 Technical Guidance)

- 7.5. Using the table above, the proposed application ("less vulnerable") is considered to be suitable within Flood Zone 2. The proposed works comprise replacing the canopy with no increase in flood risk vulnerability. As the proposal constitutes minor development, the Sequential Test does not need to be applied.

8. Discussion and Conclusion

- 8.1. Unda Consulting Limited have been appointed by Green Park Reading No.1 LLP to undertake a Flood Risk Assessment for the proposed development at 500 South Oak Way, Shinfield, Wokingham RG2 6AD. The purpose of the study is to support a planning application for the proposed development.
- 8.2. The site comprises an existing building currently used as offices (Class E). The surrounding area comprises of commercial development.
- 8.3. The proposed development comprises the addition of a canopy to the existing front entrance of the office building.
- 8.4. There will be no change of use associated with the proposed development and the existing office will be retained.
- 8.5. The proposed works will not result in any alteration to the existing finished floor levels of the building.
- 8.6. The existing site usage is classified as 'less vulnerable' (offices). As there will be no change of use, the site will remain classified as 'less vulnerable' post-development. Accordingly, the flood risk vulnerability classification of the site will remain unchanged.
- 8.7. The site is located within Flood Zone 2 (Medium Probability), defined as land having between a 1:100 and 1:1000 annual probability of river flooding; or Land having between a 1:200 and 1:1000 annual probability of sea flooding.
- 8.8. Given the minor nature of the development and that no new vulnerable accommodation is proposed, the development is not expected to result in a material increase in fluvial flood risk.
- 8.9. According to data provided from Kennet (Tyle mill to Thames Confluence) 2018, the site is shown to be outside all of the modelled 1:30 year, 1:70 year, 1:100 year, 1:100 year +25% CC and 1:1000 year extents.
- 8.10. According to the EA, there are no formal raised flood defences owned or operated by the EA protecting the site. There is natural high ground on either side of Foudry Brook which would act to reduce flooding for smaller flood events.
- 8.11. The proposed development is classified as "less vulnerable" and is considered an appropriate form of development within Flood Zone 2.
- 8.12. The proposed development comprises a minor addition to the existing building and will not alter the flood risk vulnerability classification of the site.
- 8.13. The EA Surface Water Spatial Planning Extents mapping indicates that the site is not affected by surface water flooding during the 1:30 year (3.3% AEP), 1:100 year (1% AEP) and 1:1000 year (0.1% AEP) events under present day and climate change conditions.
- 8.14. No information has been provided to suggest that the site itself has previously been affected by flooding from groundwater, sewer surcharge or reservoirs.
- 8.15. The EA hold records of historical flooding having affected the site and the surrounding area during June 1971 from the main river, attributed to the exceedance of the channel capacity.

In Summary:

- The proposed development comprises the addition of a new canopy to the existing front entrance of the office building.
- The proposed development is less than 250m² and therefore fits within the EA's Standing Advice for non-domestic extensions.

- No internal changes to the existing building are proposed as part of the proposal.
- There will be no increase to the built footprint of the site.
- The site will remain classified as “less vulnerable” post-development.
- Given the minor nature of the proposed development, there will be no unacceptable loss of fluvial floodplain storage.
- The development is not expected to materially increase surface water runoff or flood risk elsewhere, subject to the existing drainage and surface-water flow paths being maintained.
- The applicant will register with the National Severe Weather Warning Service and Environment Agency Floodline Alert/Warnings Direct service.

Assuming accordance with these flood risk management measures, Unda Consulting Limited consider the proposed application to be suitable in flood risk terms.

**Unda Consulting Limited
September 2026**

Appendix

A – Development Plans:

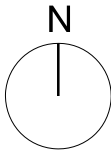
- Site location, existing and proposed plans

B – EA Flood Map for Planning:

- Flood Map for Planning – Environment Agency.

C – NPPF Annex F, Table 2:

- NPPF Annex F, Table 2: Flood risk vulnerability classification table.



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Rev	Description	Date	Checked
00	First Issue	20.06.12	JS

Status

Client
OXFORD PROPERTIES

Project
GREEN PARK, READING

Drawing
**GREEN PARK
SITE BOUNDARY PLAN**

Scale	Drawn	Date	Checked
1:5000@A3	JS	JUNE 12	SB

Project no.	Dwg	Revision
11540	A(03)001	00

tatehindle

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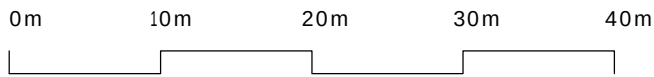
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KEY

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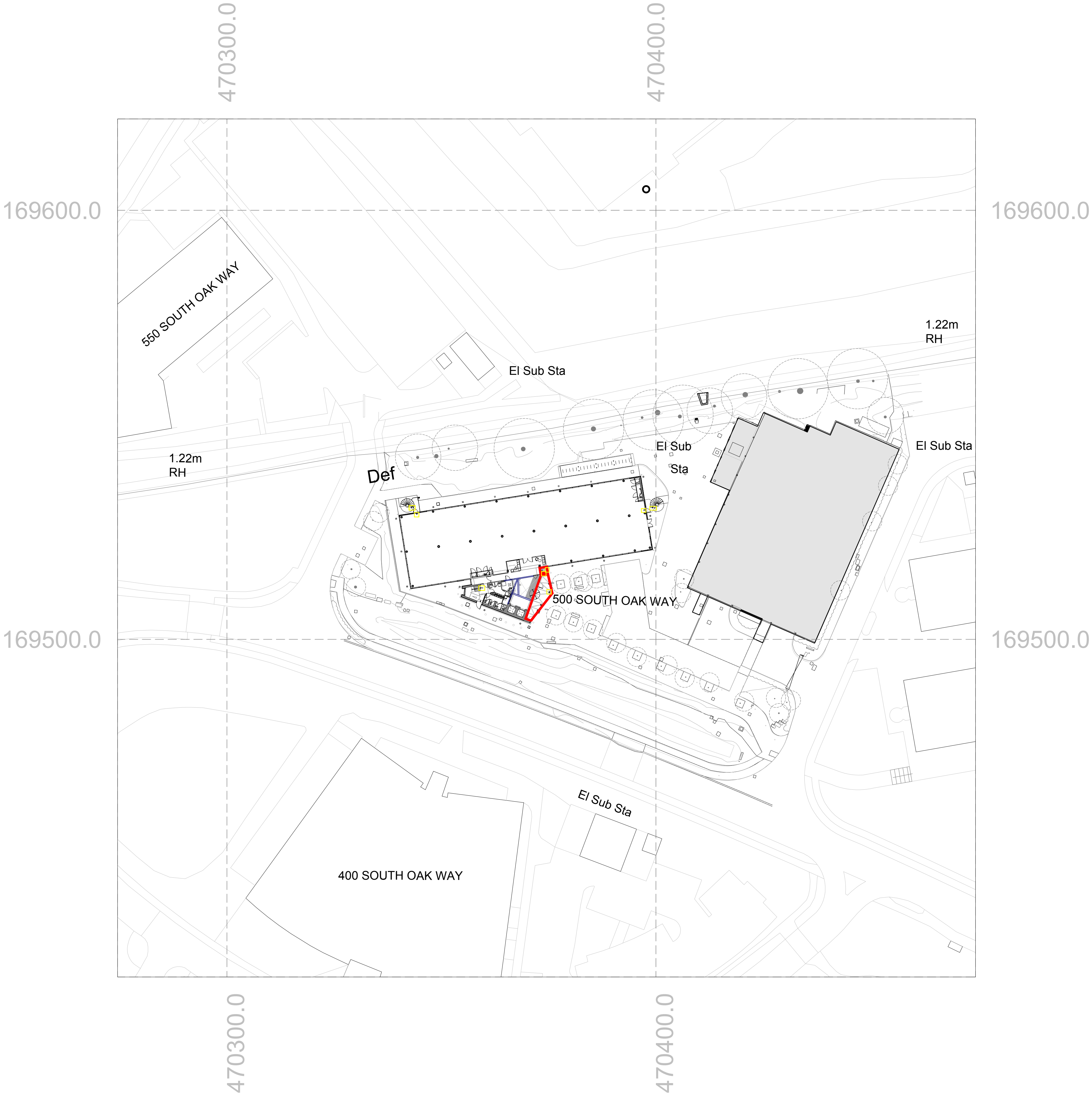
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EXISTING SITE PLAN

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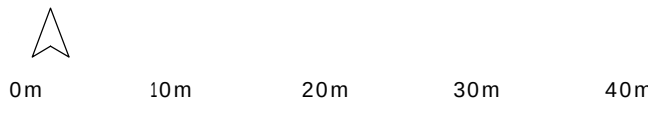
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PROPOSED SITE PLAN

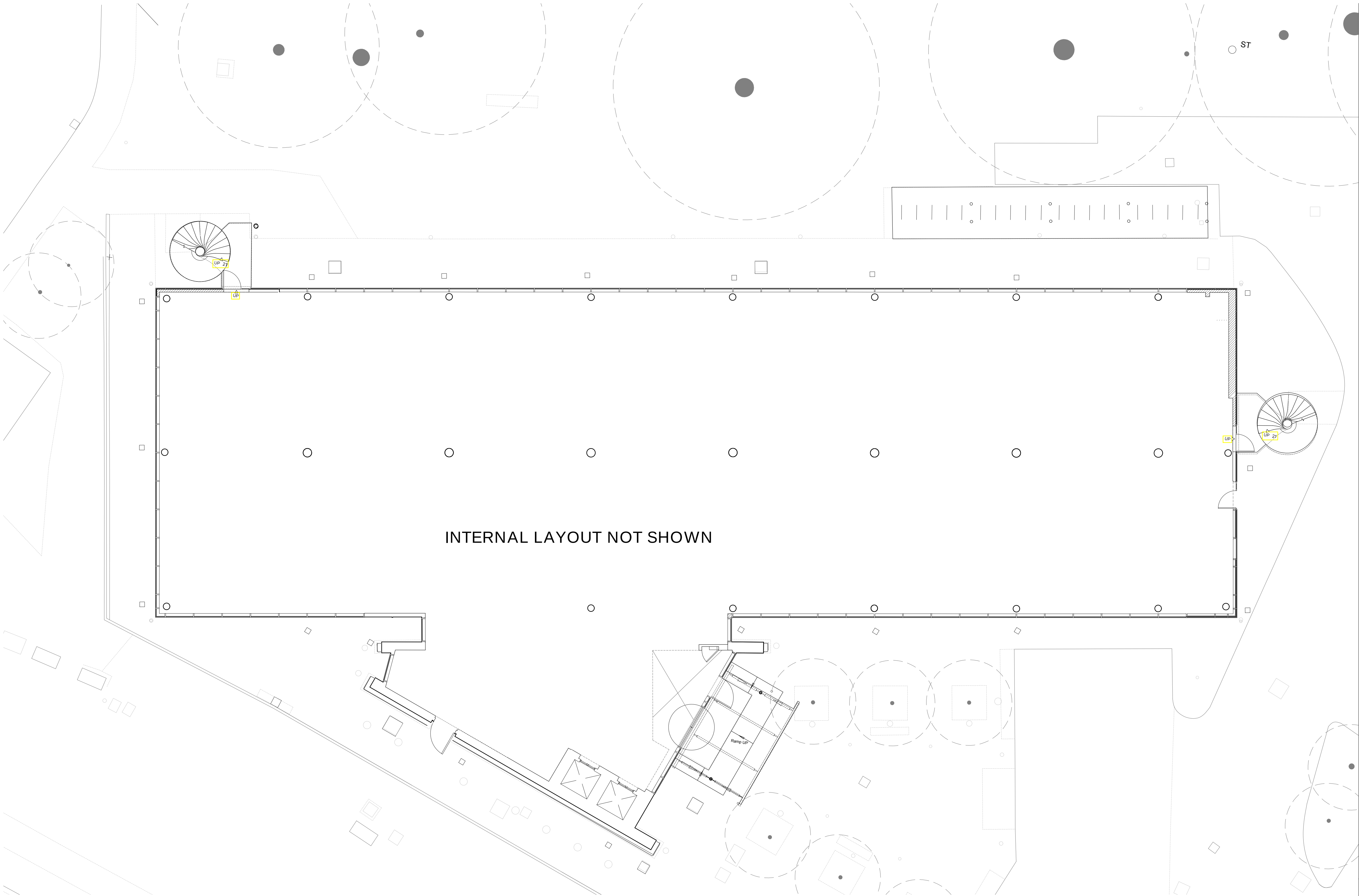
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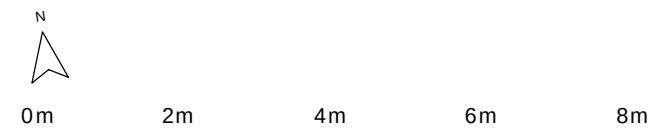
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EXISTING GROUND FLOOR PLAN

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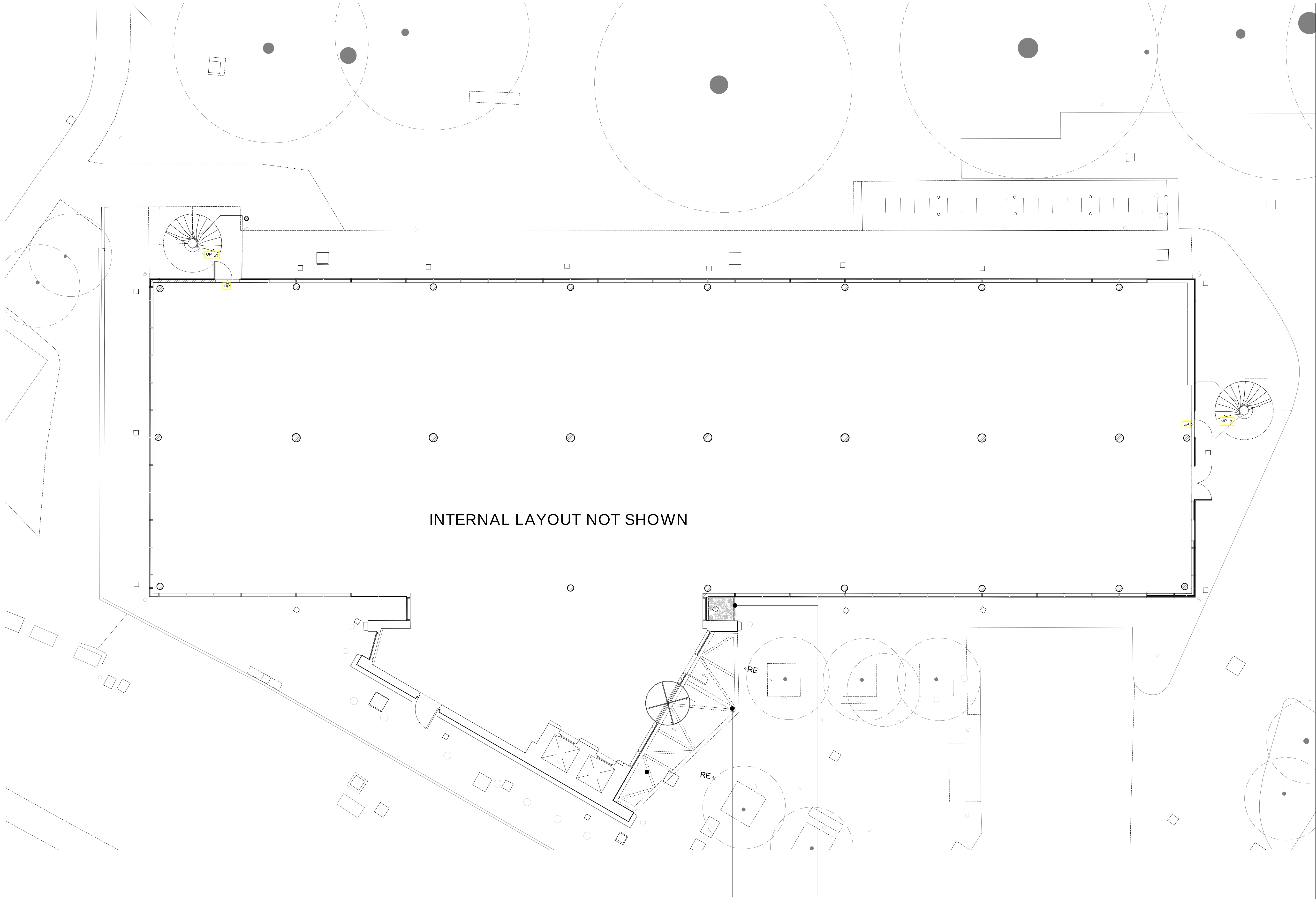
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INTERNAL LAYOUT NOT SHOWN

Proposed lattice canopy, finish in PPC metal. See AD(4)0 201 & 202 for details.

Integrated intercom within vertical post

Low level planting within reveal

NOTES

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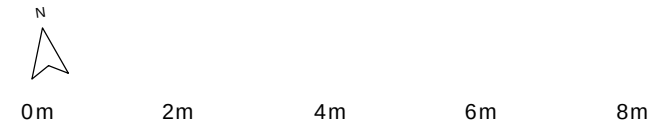
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Flood map for planning

Your reference	Location (easting/northing)	Created
Unspecified	470373/169510	22 September 2026 15:12

Your selected location is in flood zone 2, an area with a medium probability of flooding.

This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see <https://www.gov.uk/guidance/flood-risk-assessment-standing-advice>)

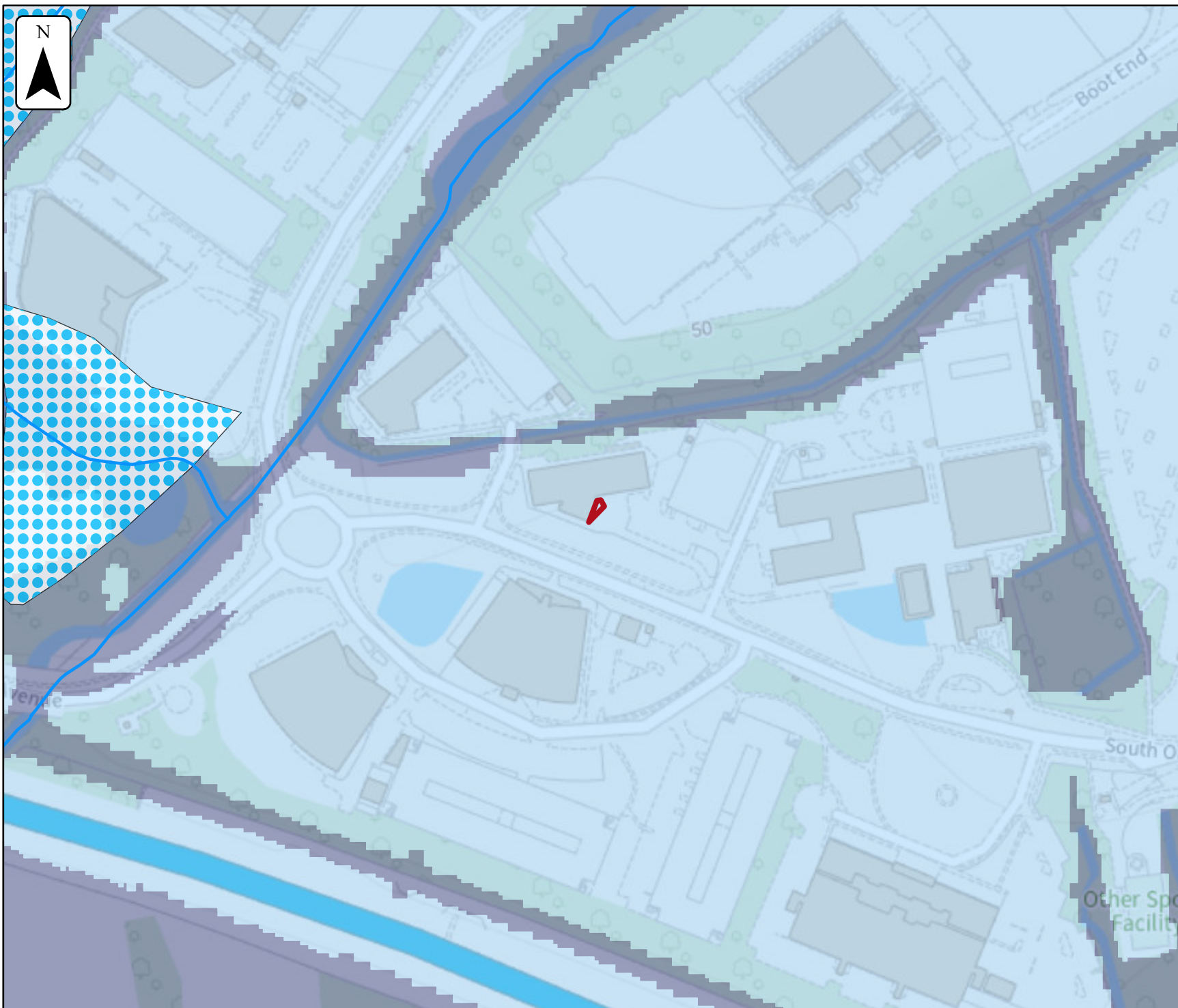
Notes

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 2026 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference

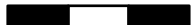
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Location (easting/northing)
470373/169510

Scale
1:2,500

Created
22 Sep 2026 15:12

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


0 20 40 60m

Annex F, Table 2: Flood risk vulnerability classification

Essential Infrastructure:	• Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk. • Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including for electricity generation and storage, electricity network infrastructure, telecommunications infrastructure, water supply reservoirs and water treatment works that need to remain operational in times of flood. • Wind turbines. • Solar farms. • Hydrogen production facilities. • Carbon Capture, distribution and storage facilities. • Heat networks. • Data Centres. • Electric vehicle charging stations.
Highly Vulnerable:	• Police and ambulance stations, fire stations and command centres. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes and park homes intended for permanent residential use. • Installations requiring hazardous substances consent or which fall under The Control of Major Accident Hazards Regulations 2015. Where there is a demonstrable need for such installations – including bulk storage associated with port or similar facilities, and energy infrastructure and carbon capture or storage – to be located at coastal, water-side, or other high flood risk areas, they should be classified as ‘Essential Infrastructure’. • Installations requiring a radioactive substances regulations permit for disposal to landfill or dedicated near-surface disposal by burial.
More Vulnerable: ⁷⁸ Landfill in this annex is as defined in Schedule 10 of the Environmental Permitting (England and Wales) Regulations 2010	• Hospitals. • Residential institutions such as residential care homes, children’s homes, social services homes, prisons and hostels. • Buildings used for dwelling houses (including floating/rising designs), student halls of residence, drinking establishments, nightclubs and hotels. • Non-residential uses for health services, nurseries and educational establishments. • Landfill⁷⁸ and sites used for waste management facilities for hazardous waste. • Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.
Less Vulnerable:	• Police, ambulance and fire stations which are not required to be operational during flooding. • Buildings used for: shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the ‘more vulnerable’ class; and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill and hazardous waste facilities). • Minerals working and processing (except for sand and gravel working). • Water treatment works which do not need to remain operational during times of flood. • Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place. • Car parks. • Land-raising (unless part of or enabling a development with a higher vulnerability classification).
Water-Compatible Development:	• Flood control infrastructure. • Water transmission infrastructure and pumping stations. • Sewage transmission infrastructure and pumping stations. • Sand and gravel working. • Docks, marinas and wharves. • Navigation facilities. • Ministry of Defence installations. • Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location. • Water-based recreation (excluding sleeping accommodation). • Lifeguard and coastguard stations. • Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms. • Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

National Planning Policy Framework Annex F, Table 2: Flood risk vulnerability classification