Flood Risk Assessment and Surface Water Drainage Strategy for Planning

January 2026

Prepared for:

Wildgoose UK ltd

Location:

Units 4 to 5
Redkiln Close
Horsham
West Sussex
RH13 5QL

Our reference:

96656-MadeArch-RedkilnCl

Unda

unda.co.uk

Document Issue Record

Project Details	
Project:	Flood Risk Assessment and Surface Water Drainage Strategy for Planning
Prepared for:	Wildgoose UK ltd
Application:	Demolition of warehouse building and associated structures. Construction of two no self-contained warehouse units for storage (Class B8).
Location:	Units 4 To 5 Redkiln Close, Horsham, West Sussex, RH13 5QL
Our reference:	96656-MadeArch-RedkilnCl
Issue no.:	v1.0
Issue date:	26th January 2026

Project Consultants	
Lead Consultant:	Mr Antony Rousou, BSc (Hons)
Document Check:	Miss Ellen Webb, BSc (Hons)
Authorisation:	Mr Antony Rousou, BSc (Hons)

This report (including any enclosures and attachments) has been prepared for the exclusive use and benefit of the commissioning party and solely for the purpose for which it is provided. Unless we provide express prior written consent, no part of this report should be reproduced, distributed or communicated to any third party. We do not accept any liability if this report is used for an alternative purpose from which it is intended, nor to any third party in respect of this report. Any data and information provided by third parties and referred to herein has not been checked or verified by us unless otherwise expressly stated within this report. This report was checked and approved on the date it was issued and is therefore valid on this date. Understanding, circumstances, regulations and professional standards do change, which could subsequently affect the validity of this report. This report is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

Contents

1. Key Facts

Flood Risk Posed:

- The site is located within Flood Zone 1 (Low Probability), which means it is defined as land having a less than 1:1000 annual probability of river or sea flooding. The nearest watercourse is an unnamed watercourse, located approximately 160m south west of the site.
- No Flood Storage Areas located in close proximity to the site.
- The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at "Very Low" to "High" chance of flooding from surface water for the present day and "Very Low" to "High" chance between 2040 and 2060.
- According to the 2024 Horsham District Council SFRA, the site is located within a Class 4 area (Negligible Risk). Ground investigations at the site have shown there to be shallow groundwater with a minimum recorded depth of 0.94mbgl.
- According to the 2024 Horsham District Council SFRA the site's postcode area (RH13) has had between 41-120 sewer flooding incidents.
- No EA records of historic flooding having affected the site or surrounding area.

Flood Risk Mitigation:

- Post development, the site will remain classified as "less vulnerable".
- The applicant has agreed to implement flood resistant design measures into the development where practical and feasible, in consultation with the Local Authority building control department. It is recommended that flood proof doors and windows are installed for all ground floor external doors and windows. Demountable flood defence barriers to 600mm to defend ground level doorways and low windows could be used if flood doors are not practical or other planning constraints prevent it.
- There will be no loss of fluvial floodplain storage.
- The applicant will register with the National Severe Weather Warning Service.

Surface Water Drainage:

- The existing site is predominantly impermeable. The brownfield runoff rate for the site has been calculated as 1.5 l/s for the 1:1 annual runoff event, 4.2 l/s for the for the 1:30 year event and 5.6 l/s for the 1:100 year event.
- The greenfield runoff rate for the area of the site being attenuated has been calculated as 1.1 l/s for the 1:1 annual runoff event, 3.2 l/s for the 1:30 year event and 4.3 l/s for the 1:100 year event. Refer to calculations in Appendix.
- Runoff from the impermeable ground surfaces and roof areas will be directed into the cellular storage located beneath the car park.
- From the cellular storage, runoff will be gradually discharged to the public foul water sewer. The discharge will be limited to 1.5 l/s for all storms up to the 1:100 year + 45% climate change event via a Hydro-Brake. The Hydro-Brake will be installed in an inspection chamber within the site.
- As the site currently discharges its surface water to the public foul water sewer at an unattenuated rate betterment will be provided for all scenarios greater than the 1:1 year event.

This drainage strategy has been undertaken in accordance with the principles set out in NPPF. We can conclude that providing the development adheres to the conditions advised above, the said development proposals can be accommodated without increasing flood risk within the locality in accordance with objectives set by Central Government and the EA. 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. This Flood Risk Assessment and Surface Water Drainage Strategy has been prepared by Unda Consulting Limited on behalf of Wildgoose UK ltd, in support of a planning application for the demolition of warehouse building and associated structures. Construction of two no self-contained warehouse units for storage (Class B8). The proposed development is being undertaken at Units 4 To 5 Redkiln Close, Horsham, West Sussex, RH13 5QL. This report assesses the flood risk and sets out the surface water drainage strategy for the proposed development.

2.2. The proposed planning application is for the demolition of warehouse building and associated structures. Construction of two no self-contained warehouse units for storage (Class B8). Post development the impermeable area onsite will amount to approximately 2162m².

2.3. In order to mitigate flood risk posed by post development runoff, adequate control measures will be required within the site. This will ensure that surface water runoff is dealt with at source and the flood risk off site is not increased.

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

3. Existing Site

3.1. The site consists of an existing warehouse unit, and smaller ancillary structures adjoined to the warehouse such as the compressor housing, metal sheds and a metal enclosure housing a diesel tank.

3.2. The surrounding area is primarily industrial, with a residential area to the west of the site within Bowes Close.

3.3. Existing plans are provided in the report Appendix.

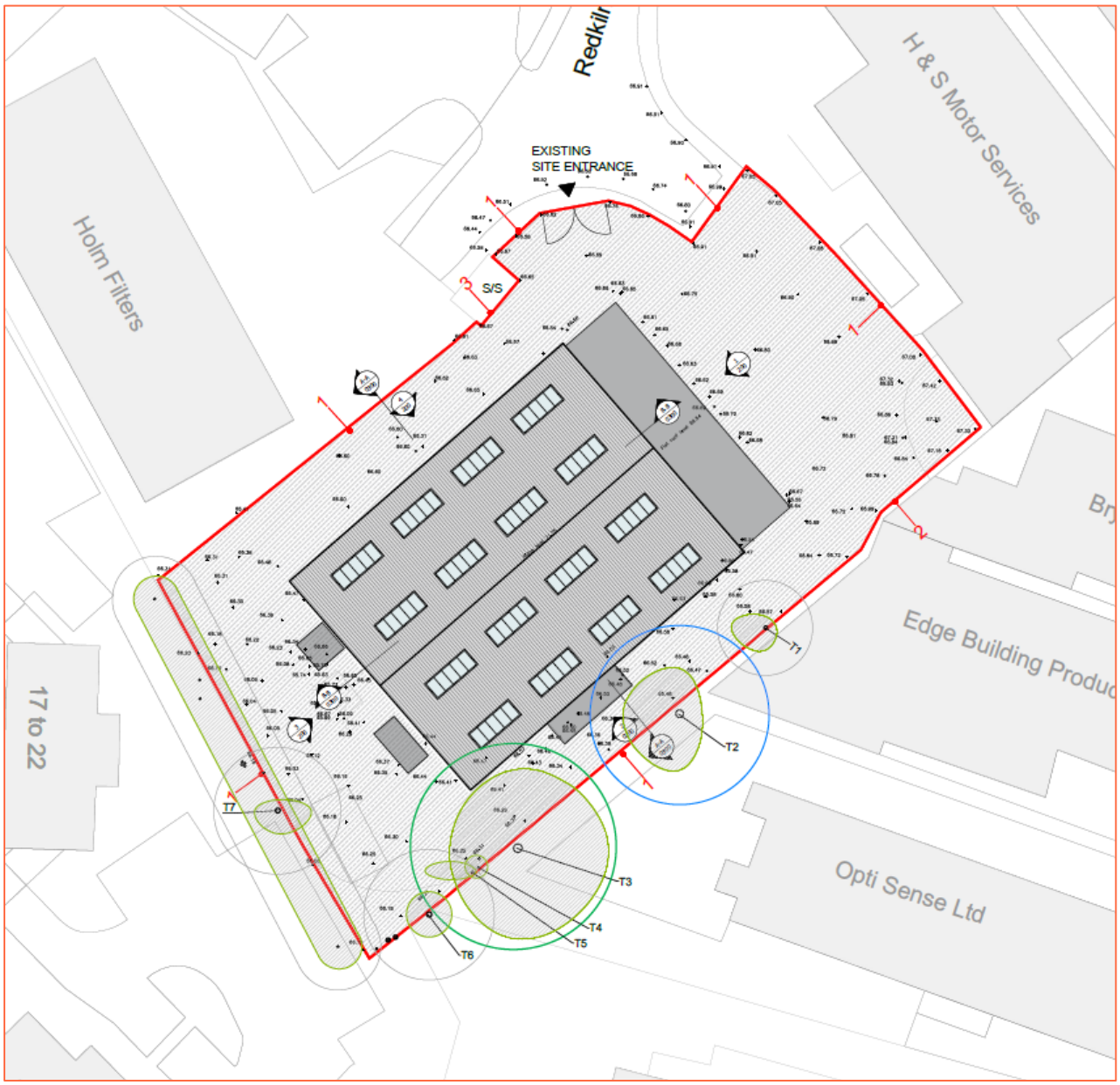


Figure 2: Existing Site Plan (Source: made Architects Ltd)

Site Topography:

3.4. A topographic survey of the site shows ground topography on site ranges between 66.03mAOD to 67.42mAOD. Refer to Appendix.

Existing Ground Conditions:

3.5. The 1:50,000 BGS map shows that the bedrock underlying the site is Upper Tunbridge Wells Sand-Mudstone.

3.6. The BGS mapping shows there are not superficial deposits underlying the site.

3.7. The soil type taken from the UKSO Soil Map Viewer shows the site to be located upon relatively deep soils of Claystone/ Mudstone parent material with a soil texture of Clay to Clayey Loam.

3.8. The published Environment Agency Groundwater Source Protection Zone map shows the site is not located within a Groundwater Source Protection Zone.

Figure 3: BGS Bedrock Geology (Source: BGS)

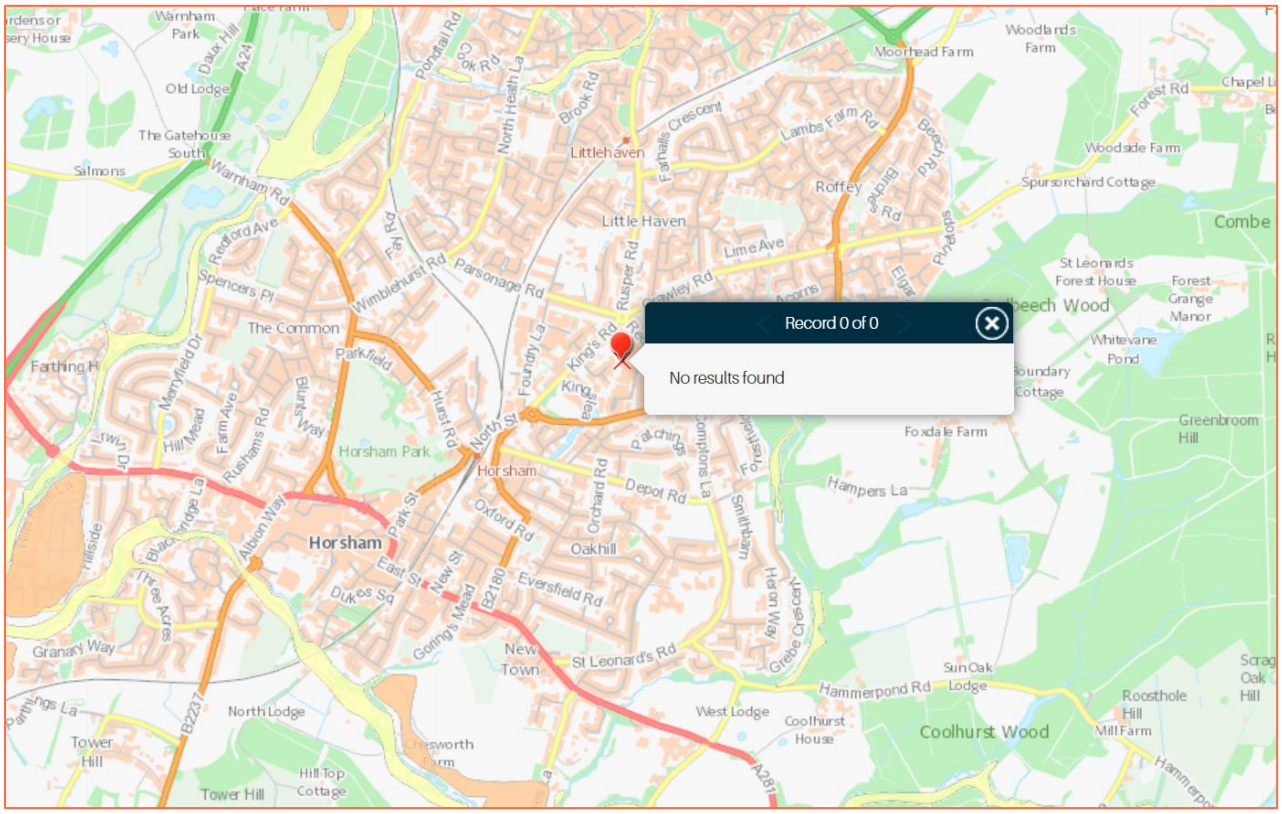


Figure 4: BGS superficial deposits (Source: BGS)

Figure 5: Soil map (Source: UK Soils, BGS)

Nearby Watercourses / Drainage Features:

3.9. The nearest watercourse is an unnamed watercourse, located approximately 160m south west of the site.

4. Development Proposal

4.1. The proposed planning application is for the demolition of warehouse building and associated structures. Construction of two no self-contained warehouse units for storage (Class B8). Post development the impermeable area onsite will amount to approximately 2162m².

4.2. In light of this, SuDS storage sizing within the strategy has been based on a total area of 2162m².

4.3. Proposed plans are provided in the report Appendix.

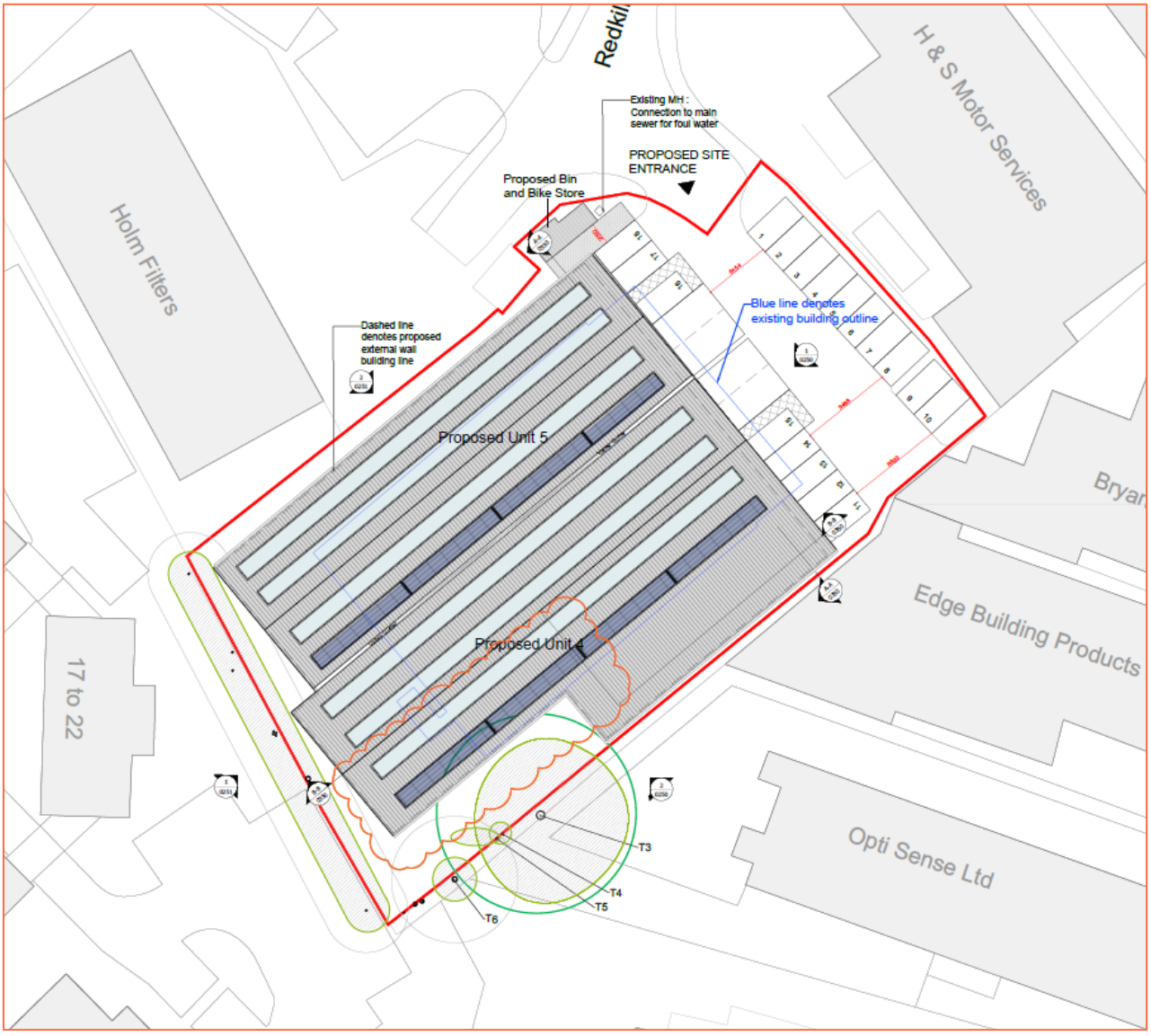


Figure 6: Proposed site block plan (Source: made Architects Ltd)

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

5.3. The site is located within Flood Zone 1 (Low Probability), which means it is defined as land having a less than 1:1000 annual probability of river or 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 outside the EA Flood Zones plus climate change (2070 to 2125) extent.

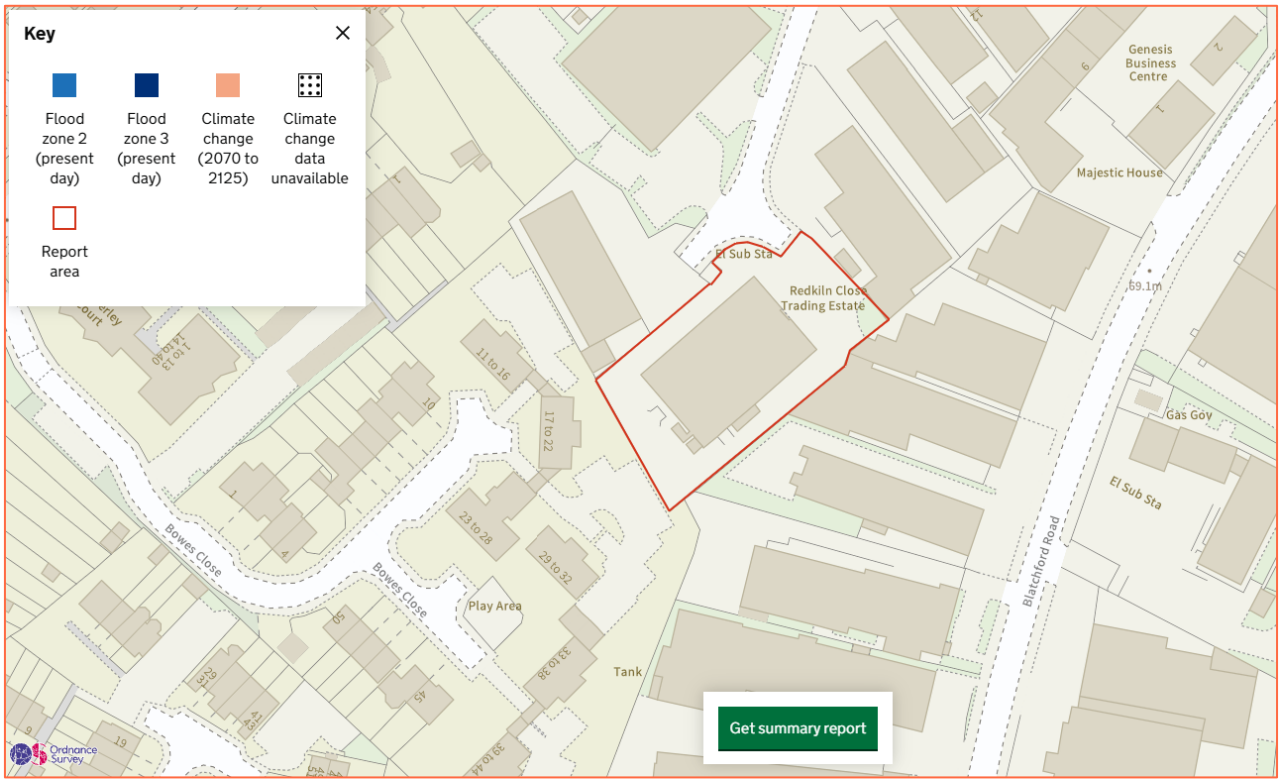


Figure 8: Environment Agency Flood Map for Planning – Flood Zones with Climate Change (Source: EA)

Fluvial:

5.11. The site is situated entirely in Flood Zone 1, defined as land having a less than 1:1000 year probability of river or sea flooding.

5.12. The nearest watercourse is an unnamed watercourse, located approximately 160m south west of the site.

Flood Storage Areas:

5.13. 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.

5.14. According to EA data, there are no Flood Storage Areas located in close proximity to the site.

Flood Defences:

5.15. 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.

5.16. 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.

5.17. 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.

5.18. According to the Environment Agency, there are no EA maintained raised defences that defend the site directly.

Residual Risk (breach or overtopping of flood defences):

5.19. 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 concur 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.

5.20. 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.

5.21. The site is not shown to be defended by formal flood defences.

Tidal Flooding:

5.22. 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):

5.23. 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.

5.24. The mapping below shows the Risk of Flooding from Surface Water (RoFSW). Please note that the EA do not consider this information suitable to be used to identify the risk to individual properties or sites. It is useful to raise awareness in areas which may be at risk and may require additional investigation. This information tells you the flood risk of the land around a building, not the building itself.

5.25. The RoFSW products are an assessment of where surface water flooding may occur.

5.26. The mapping shows the following likelihood categories, for the present day risk of flooding from surface water, and the climate change scenarios have been produced to indicate the predicted impacts of climate change on future flood risk.

- High - greater than or equal to 1 in 30 (3.3%) chance of flooding in any year.
- Medium – Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance of flooding in any given year.
- Low – Less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) chance of flooding in any given year.

5.27. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5. A near-term epoch (2040 – 2060 "2050s" epoch) and central allowances are being used initially, to support short and medium-term decisions informed by the highest flood likelihood projections.

5.28. The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at "Very Low" to "High" chance of flooding from surface water.

5.29. The EA Risk of Flooding from Surface Water mapping shows the site to be at "Very Low" to "High" chance of flooding between 2040 and 2060.

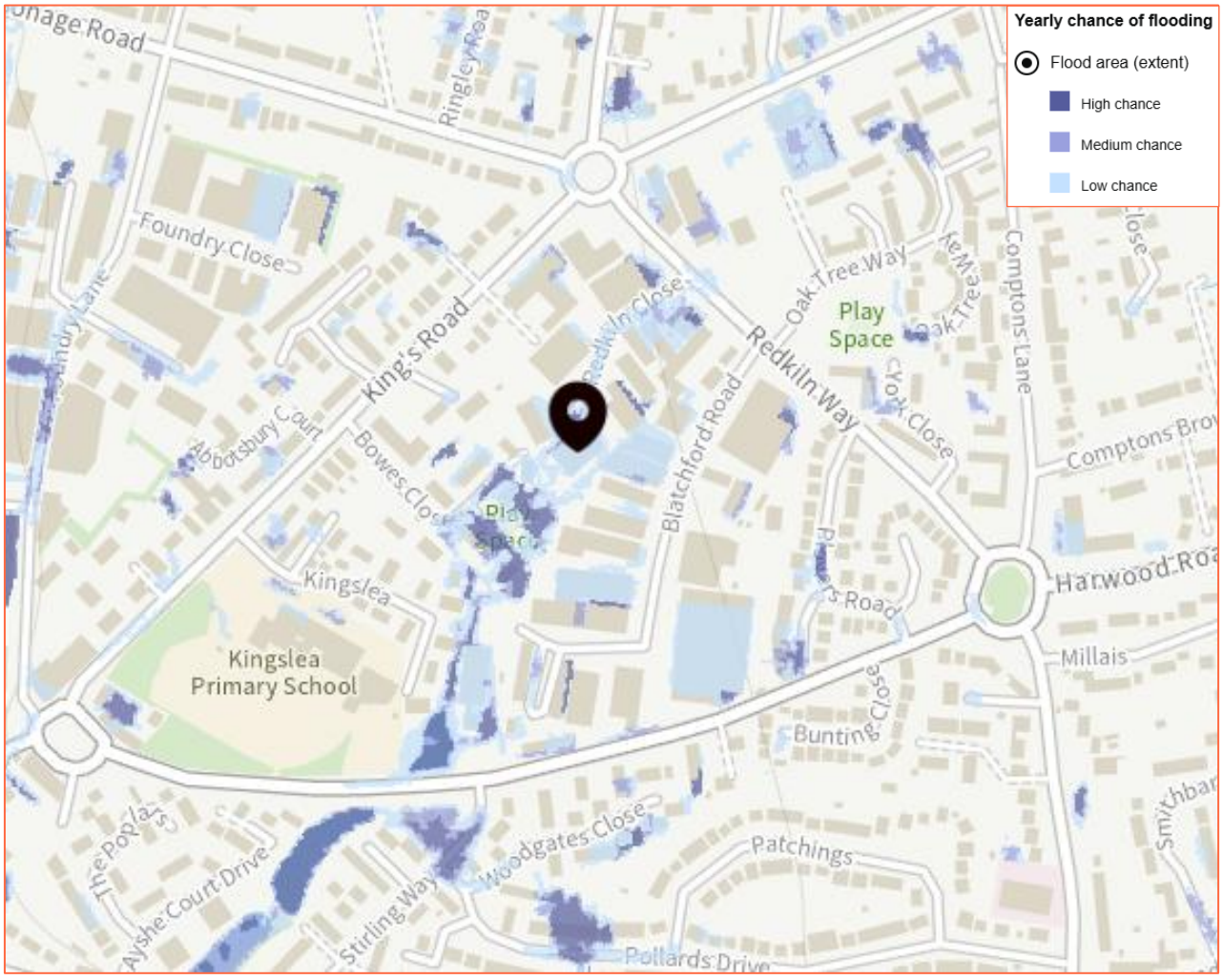


Figure 9: Extract from EA Risk of Flooding from Surface Water mapping – present day (Source: EA)

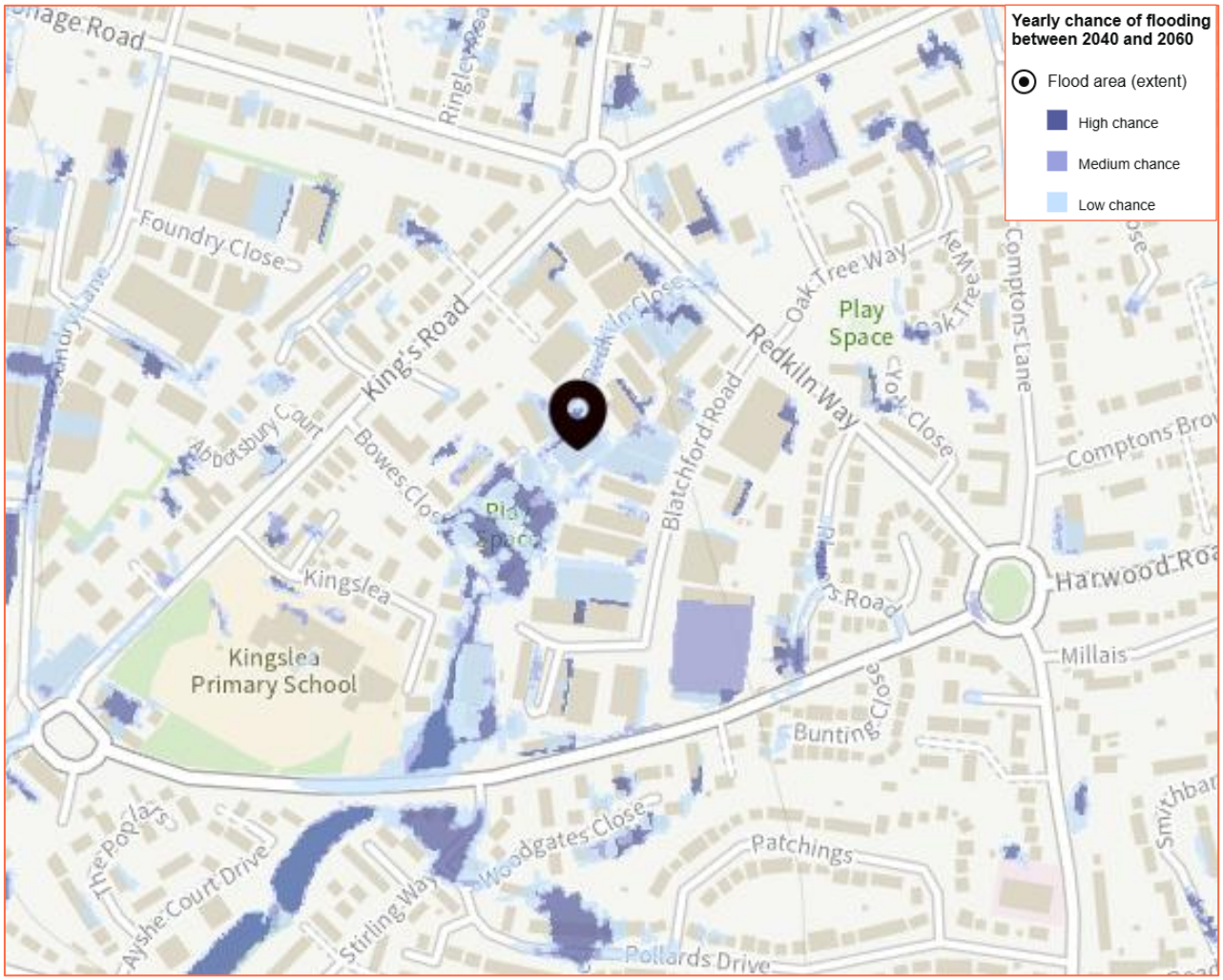


Figure 10: Extract from Environment Agency RoFSW map – between 2040 and 2060 (Source: EA)

Groundwater:

5.30. 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.

5.31. 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.

5.32. According to the 2024 Horsham District Council SFRA, the site is located within a Class 4 area (Negligible Risk).

5.33. Ground investigations at the site have shown there to be shallow groundwater with a minimum recorded depth of 0.94mbgl.

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

Sewer:

5.35. 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.

5.36. 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.

5.37. According to the 2024 Horsham District Council SFRA the site's postcode area (RH13) has had between 41-120 sewer flooding incidents.

5.38. No further information has been presented to suggest that the site is susceptible to sewer flooding.

Other Sources:

5.39. 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.

5.40. 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.

5.41. 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.

5.42. No information has been provided to suggest that the site is susceptible to flooding from other sources.

Figure 11: Extract from Environment Agency Reservoir Flood Map (Source: EA)

Historical Flood Events:

5.43. 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.

5.44. According to the According to the EA and 2024 Horsham District Council SFRA, the site and immediate surrounding area are not within any recorded historic flood extents.

5.45. No further records of flooding at the site previously have been provided.

5.46. The EA historical flood records are not comprehensive, and they advise that further enquiries locally are made with specific reference to flooding at the location.

6. Flood Risk Management

Vulnerability to Flooding:

6.1. The NPPF classifies property usage by vulnerability to flooding. Post development, the site will remain classified as "less vulnerable", as the application is for the demolition of warehouse building and associated structures. Construction of two no self-contained warehouse units for storage (Class B8).

6.2. Although there will not be an increase in vulnerability at the site, there will be an introduction of an additional unit.

Physical Design Measures:

6.3. The site lies entirely outside of Flood Zone 1 according to the EA Flood Map for planning (Rivers and the Sea).

6.4. The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at "Very Low" to "High" chance of flooding from surface water for the present day and "Very Low" to "High" chance between 2040 and 2060.

6.5. To help protect against flooding during extreme events, the applicant has agreed to implement flood resistant design measures into the development where practical and feasible, in consultation with the Local Authority building control department. These measures can include the following:

- Solid concrete ground floor slab, with waterproof membrane;
- Closed-cell foam used in wall cavities;
- Waterproof ground floor internal render;
- Waterproof screed used on ground floors;
- Damp proof membranes;
- External walls rendered resistant to flooding to at least 600mm above ground floor level;
- Exterior ventilation outlets, utility points and air bricks fitted with removable waterproof covers;
- Raised wiring and power outlets at least 600mm above ground floor level;
- Ground floor electrical main ring run from first floor level; and on separately switched circuit from first floor;
- Electrical incomer and meter situated at least 600mm above ground floor level;
- Boilers, control and water storage / immersion installed at least 600mm above ground floor level;
- Gas meter installed at least 600mm above ground floor level;
- Plumbing insulation of closed-cell design;
- Non-return valves fitted to all drain and sewer outlets;
- Manhole covers secured;
- Kitchen units of solid, water resistant material at ground floor level;
- Use of MDF carpentry (i.e. skirting, architrave, built-in storage) avoided at ground floor level;
- Stairs of solid hardwood construction with wood faces treated to resist water penetration at ground floor level.

6.6. It is recommended that flood proof doors and windows are installed for all ground floor external doors and windows. Demountable flood defence barriers to 600mm to defend ground level doorways and low windows could be used if flood doors are not practical or other planning constraints prevent it.

Safe Escape:

6.7. 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.

6.8. The site is located entirely within Flood Zone 1 according to the EA Flood Map for planning (Rivers and the Sea), however it is shown to be within the EA Flood Zones plus climate change (2070 to 2125) extent. The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at "Low" to "High" chance of flooding from surface water at the present day and between 2040 and 2060.

6.9. The flood hazard along an escape route can be calculated using flood depth, flood velocity and an associated debris factor using the FD2320 analysis. The degree of flood hazard is given four classifications. Under the NPPF routes should not be subject to any combination of depth and velocity that would result in a flood hazard rating of 0.75 ('danger for some') or greater.

6.10. A "danger for all" degree of flood hazard includes the emergency services.

Flood Hazard Rating (HR)	Hazard to People Classification
Less than 0.75	Very low hazard – caution
0.75 to 1.25	Danger for some – includes children, the elderly and the infirm
1.25 to 2.0	Danger for most – includes the general public
More than 2.0	Danger for all – includes the emergency services

Table 2: Hazard to People Classification using Hazard Rating (Source: Table 13.1 of FD2320/TR2 – Extended Version)

6.11. The EA have released a Risk of Flooding from Surface Water (RoFSW) dataset including information about hazard ratings. Flood hazard ratings are a measure of how dangerous a flood might be. They are calculated using a combination of flood depth and speed – higher depths and speed mean more dangerous flooding and a higher flood hazard rating.

6.12. The RoFSW is a probabilistic product, meaning that it shows the overall risk, rather than the risk associated with a specific event or scenario. In externally published versions of this dataset, risk is displayed as one of three likelihood bandings, High, Medium or Low.

6.13. The hazard data shows the chance (High, Medium or Low) of a flood occurring with a given flood hazard rating (or higher). There are separate layers for hazard ratings of 0 (i.e. flooding extent), 0.25, 0.5, 0.75, 1.25 and 2.

6.14. The EA RoFSW data includes the 1:30 year (Low), 1:100 year (Medium) and 1:1000 year (High) events with a climate change allowance for between 2040 and 2060.

6.15. For the 0.75, 1.25 and 2.0 hazard ratings, the site and proposed escape route are entirely outside of the key "Medium" (1:100 year) and "High" (1:30 year) flood likelihood categories between 2040 and 2060.

6.16. A potential route of safe escape is provided below. Site users should exit the site onto Redkiln Close and head North to Redkiln Way.

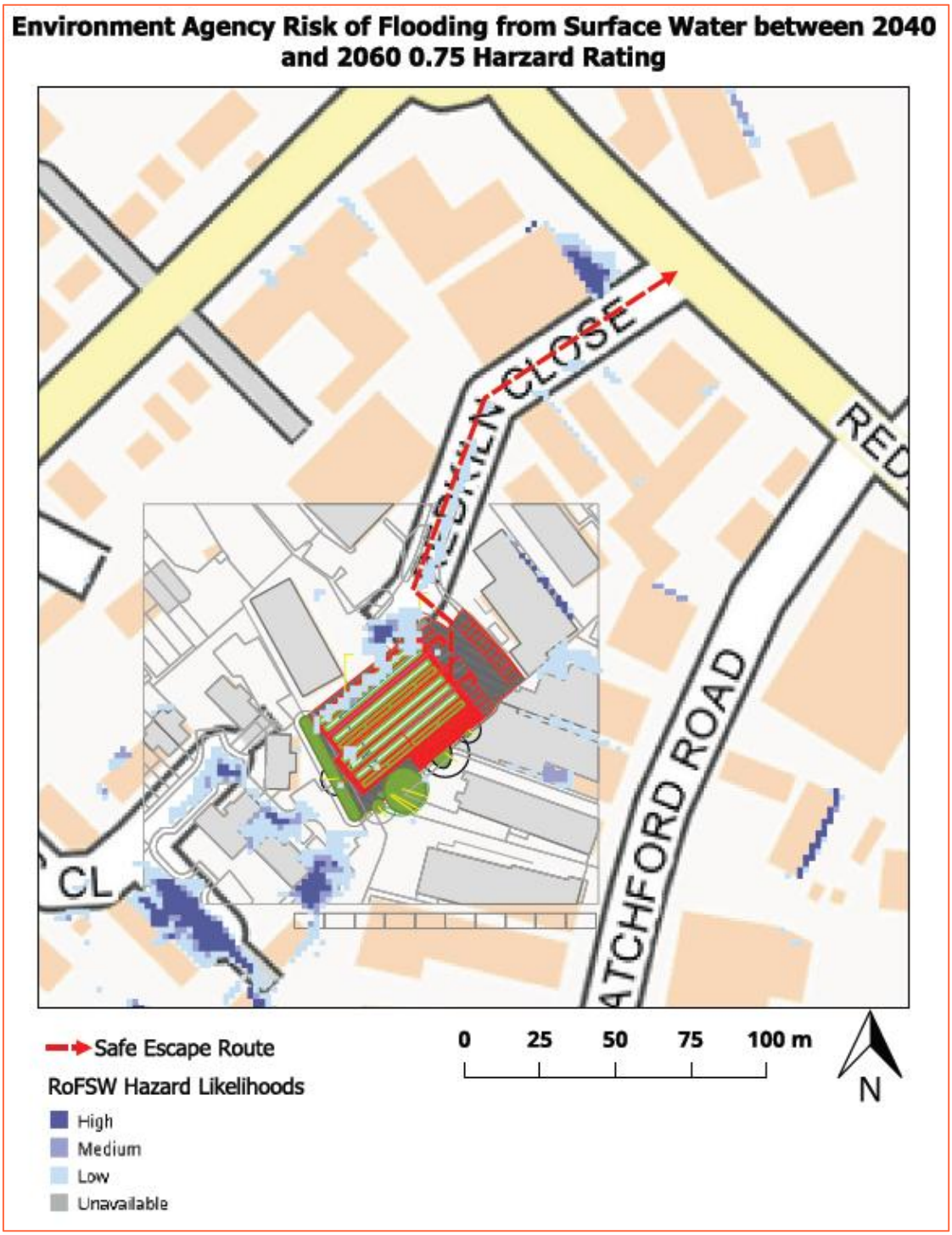


Figure 12: EA RoFSW between 2040 and 2060 0.75 Hazard Rating (Source: EA, OS)

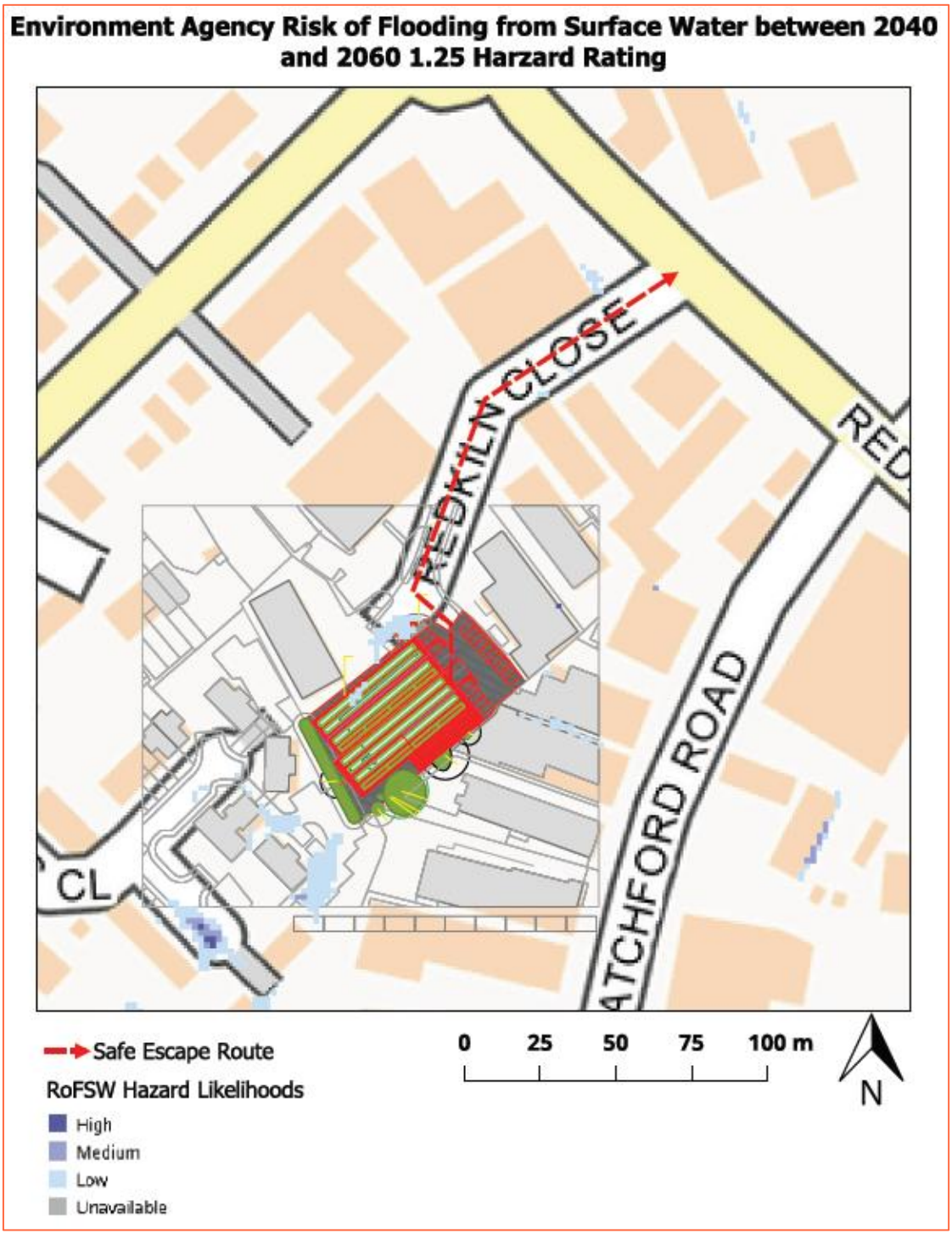


Figure 13: EA RoFSW between 2040 and 2060 1.25 Hazard Rating (Source: EA, OS)

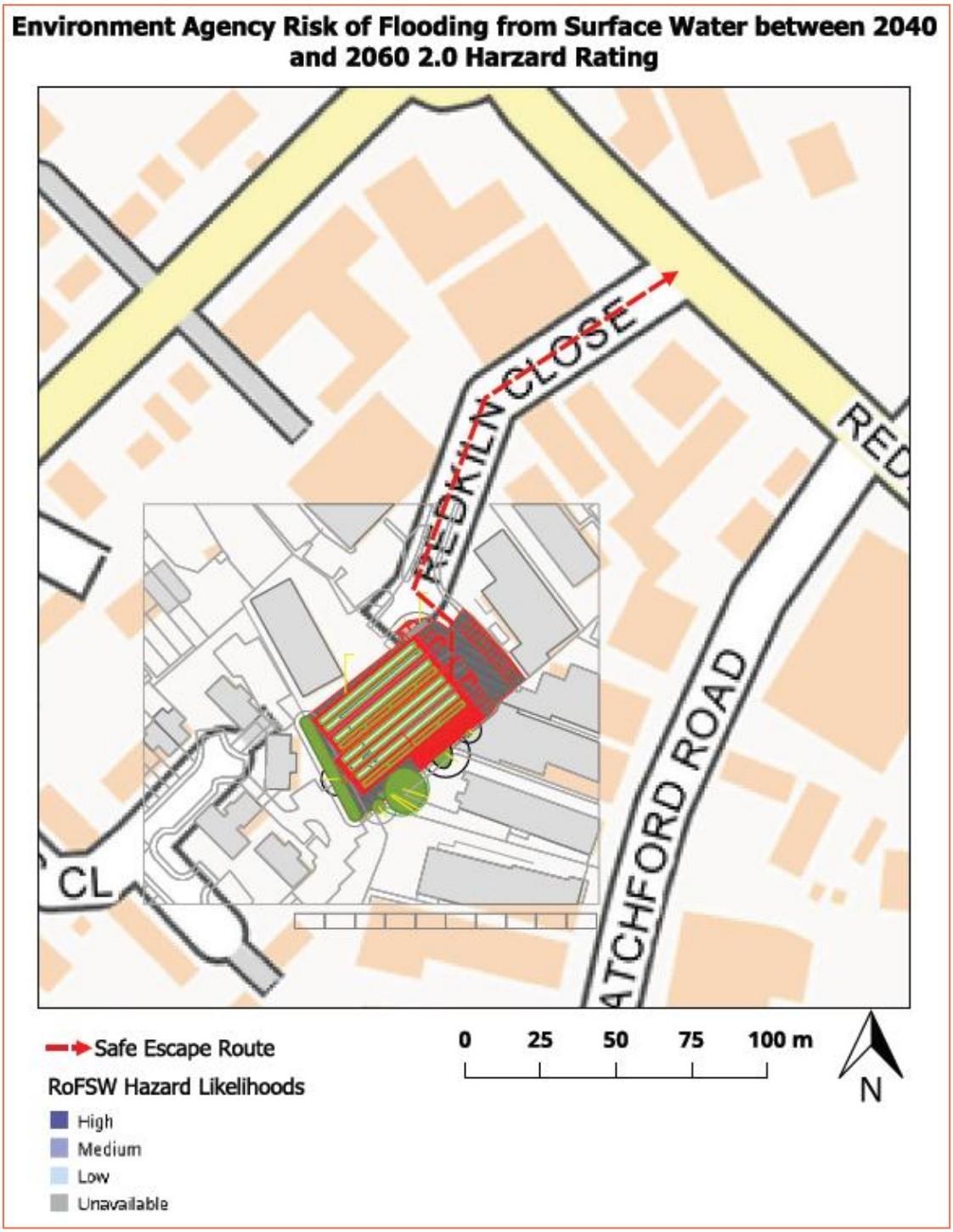


Figure 14: EA RoFSW between 2040 and 2060 2.0 Hazard Rating (Source: EA, OS)

6.17. Residents will follow the Flood Warning and Evacuation Plan detailed in the following section.

Flood Warning:

6.18. As the UK's official weather service, the Met Office is responsible for issuing weather warnings, which warn of impacts caused by severe weather. The Met Office provide warnings up to seven days ahead for rain, thunderstorms, wind, snow, lightning, ice and fog.

6.19. Met Office weather warnings are available in a number of ways, which make it easy to get the very latest information wherever you are. These include the Met Office app and website, social media, email alerts, TV, radio and RSS.

6.20. It is recommended that the site owner sign up to the National Severe Weather Warning Service. More information can be found here: https://www.metoffice.gov.uk/weather/guides/warnings.

6.21. The Met Office issues weather warnings, through the National Severe Weather Warning Service, when severe weather has the potential to bring impacts to the UK. These warnings are given a colour (yellow, amber or red) depending on a combination of both the impact the weather may have and the likelihood of those impacts occurring.

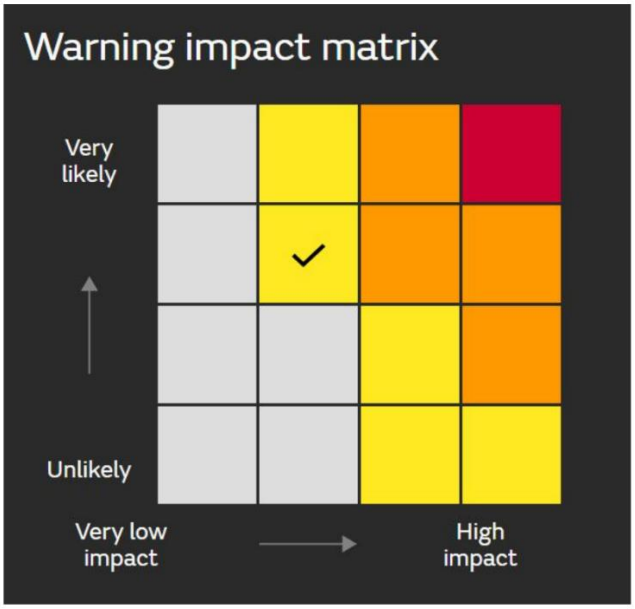


Figure 15: Met Office Weather Warning Impact Matrix (Source: Met Office)

6.22. **Yellow Warning:** Yellow warnings can be issued for a range of weather situations. Many are issued when it is likely that the weather will cause some low level impacts, including some disruption to travel in a few places. Many people may be able to continue with their daily routine, but there will be some that will be directly impacted and so it is important to assess if you could be affected. Other yellow warnings are issued when the weather could bring much more severe impacts to the majority of people but the certainty of those impacts occurring is much lower. It is important to read the content of yellow warnings to determine which weather situation is being covered by the yellow warning.

6.23. **Amber Warning:** There is an increased likelihood of impacts from severe weather, which could potentially disrupt your plans. This means there is the possibility of travel delays, road and rail closures, power cuts and the potential risk to life and property. You should think about changing your plans and taking action to protect yourself and your property. You may want to consider the impact of the weather on your family and your community and whether there is anything you need to do ahead of the severe weather to minimise the impact.

6.24. **Red Warning:** Dangerous weather is expected and, if you haven't already done so, you should take action now to keep yourself and others safe from the impact of the severe weather. It is very likely that there will be a risk to life, with substantial disruption to travel, energy supplies and possibly widespread damage to property and infrastructure. You should avoid travelling, where possible, and follow the advice of the emergency services and local authorities.

Flood Plan:

6.25. It is recommended that the applicant and future owners, occupiers and Landlords of the units 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

Off-Site Impacts:

Fluvial Floodplain Storage:

6.26. 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.

6.27. 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.

6.28. 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.

6.29. The site is located within Flood Zone 1 entirely outside of the functional floodplain. Therefore, no fluvial floodwater would be displaced by the proposed development.

7. Surface Water Drainage Strategy

Existing Drainage:

7.1. The existing site is understood to discharge its surface water to foul sewer at an unattenuated rate.

7.2. Asset records obtained from Southern Water indicate that there is a public foul water sewer within the site.

Drainage Hierarchy:

7.3. In order to mitigate flood risk posed by post development runoff, adequate control measures will need to be considered within the site. This will ensure that surface water runoff is dealt with at source and flood risk is not increased elsewhere.

7.4. The drainage strategy for the site has been prepared according to the drainage discharge hierarchy from CIRIA C753 The SuDS Manual, as follows:

1. Infiltration to the maximum extent that is practical;
2. Discharge to surface waters;
3. Discharge to surface water sewer;
4. Discharge to combined sewer.

Infiltration Potential:

7.5. The 1:50,000 BGS map showed the site to be located upon the bedrock of Upper Tunbridge Wells Sand-Mudstone. The soil type taken from the UKSO Soil Map Viewer shows the site to be located upon relatively deep soils of Claystone/ Mudstone parent material with a soil texture of Clay to Clayey Loam.

7.6. Ground investigations at the site have shown there to be shallow groundwater with a minimum recorded depth of 0.94mbgl. Therefore, infiltration SuDS are not considered feasible at the site.

Proposed Discharge Rate and Location:

7.7. The existing site is predominantly impermeable. The brownfield runoff rate for the site has been calculated as 1.5 l/s for the 1:1 annual runoff event, 4.2 l/s for the for the 1:30 year event and 5.6 l/s for the 1:100 year event.

7.8. The greenfield runoff rate for the area of the site being attenuated has been calculated as 1.1 l/s for the 1:1 annual runoff event, 3.2 l/s for the 1:30 year event and 4.3 l/s for the 1:100 year event. Refer to calculations in Appendix.

7.9. Runoff from the impermeable ground surfaces and roof areas will be directed into the cellular storage located beneath the car park.

7.10. From the cellular storage, runoff will be gradually discharged to the public foul water sewer. The discharge will be limited to 1.5 l/s for all storms up to the 1:100 year + 45% climate change event via a Hydro-Brake. The Hydro-Brake will be installed in an inspection chamber within the site.

7.11. As the site currently discharges its surface water to the public foul water sewer at an unattenuated rate betterment will be provided for all scenarios greater than the 1:1 year event.

7.12. Any surface water pipework connections originating outside the site will continue to discharge to the public sewer at the existing location.

7.13. All new ground surfaces outside the extent shown on the layout 96656-02 will be of permeable construction.

Cellular Storage Attenuation:

7.14. The proposed area discharging into the cellular storage amounts to approximately 2,162m^2.

7.15. Preliminary calculations indicate that sufficient storage required to attenuate runoff from the proposed impermeable ground surfaces and roof areas arising from the critical 1:100 year + 45% climate change event can be provided by cellular storage of dimensions 307.2m^2 x 0.66m x 0.95 (voids).

7.16. Preliminary calculations indicated that some 192.6m^3 of storage is required to attenuate the runoff for all storms up to and including the 1:100 year + 45% climate change event.

7.17. *Please note that that the locations of the cellular storage within the Causeway calculations are arbitrary for modelling purposes*.

7.18. All preliminary surface water drainage calculations have been undertaken using Causeway software. Refer to Appendix.

Water Quality:

7.19. Water quality has been assessed in line with the Simple Index approach from Chapter 26 of CIRIA C753 The SuDS Manual:

Step 1 – Allocate suitable pollution hazard indices for the proposed land use.
Step 2 – Select SuDS with a total pollution mitigation index that equals or exceeds the pollution hazard index.

7.20. The highest pollution hazard level for the proposed land use is Medium. The pollution hazard indices for this land use are shown in the table below.

Land Uses	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Commercial yard and delivery areas, non-residential car parking	Medium	0.7	0.6	0.7

Table 4: Pollution hazard indices for the proposed site (from Table 26.2 of CIRIA C753 The SuDS Manual)

7.21. All SuDS components are assessed for their effectiveness in pollutant removal prior to discharge in Table 26.3 in CIRIA C753 The SuDS Manual. The pollution mitigation indices for permeable pavements are show in the Table below.

SuDS Component	Total Suspended Solids (TSS)	Metals	Hydrocarbons
SPEL ESR Bypass Treatment System (or similar)	0.8	0.6	0.9

Table 5: Pollution mitigation hazard indices for SPEL ESR Bypass Treatment System (or similar)

7.22. The Pollution Mitigation Indices for SPEL ESR Bypass Treatment System (or similar) are greater than the Pollution Hazard Indices for residential car parks. Therefore, a SPEL ESR Bypass Treatment System (or similar) will provide sufficient water quality treatment.

7.23. Roof water will contain negligible contaminant concentrations and does not warrant treatment. Nevertheless, it is suggested to include debris / sediment traps on any new drainage.

Design Exceedance:

7.24. Should the onsite drainage system fail under extreme rainfall events or blockage, flooding may occur within the site. In the event of the drainage system failure, the runoff flow can be managed through detailing the new external levels to direct water away from structures.

Adoption and Maintenance:

7.25. It is proposed that all SuDS facilities will be maintained privately by the freeholder.

7.26. A draft Maintenance Schedule is outlined below.

7.27. In addition, it is recommended that all drainage elements are inspected following the first storm event and monthly for the first 3 months following commissioning.

Cellular Storage:

7.28. It is not envisaged that silt build up within the cellular crate systems will require a rigorous maintenance regime so long as silt is removed from upstream catch pits and inspection chambers on a regular basis. Notwithstanding this, a suitable maintenance regime is outlined in the table below.

Maintenance Schedule	Action	Frequency
Routine Maintenance	• Remove silt build-up from system.	Action as required.
	• Remove debris from catchment surface if it may cause risks to performance.	Action as required.
Remedial Actions	• Repair inlets, outlets and overflows.	Action as required.
Monitoring	• CCTV inspection of crates for silt build-up to establish silt removal frequencies.	Following first storm event and every five years thereafter.
	• Inspection of inlet, outlet and overflow pipework for silt accumulation to establish silt removal frequencies.	Monthly for first 3 months and annually thereafter.
	• Inspection of inlets, outlets and overflows to ensure they are functioning correctly.	Annually.

Table 6: Suggested maintenance regime for cellular storage

7.29. Inspection and maintenance access can be gained via inspection chambers and inlet pipework.

7.30. Jetting should be undertaken in accordance with current jetting guidelines, particularly the Sewer Jetting Code of Practice published by The Water Research Centre. Jetting at 150 bar at 300 l/min should be more than adequate in removing any build-up of material. However, unlike regular jetting which relies heavily on high pressure to remove hardened deposits on the inner bore of pipes, effective cleansing of a crate system relies more on the delivery flow rate to flush solids back through the system.

7.31. A standard jet head with rear facing nozzles should be used. The head should be fed to the far end of the crate tunnel via the nearest inspection chamber, activated and retracted. As the nozzle is removed, debris will be swept back into the inspection chamber where it can then be removed with the use of a standard gully sucker. This method will ensure the effective removal of gross solids (carrier bags, cans, leaf litter etc.) from the system. Whilst 100% removal cannot be guaranteed, it has been shown that this jetting method will also remove an element of finer material which would otherwise be 'lost' within the system.

Pipework, Inspection Chambers, Catchpits and Flow Controls:

7.32. It is not envisaged that silt build up within the pipework systems will require a rigorous maintenance regime so long as silt is removed from upstream catch pits on a regular basis. Notwithstanding this, a suitable maintenance regime for the systems is outlined in the table below.

Maintenance Schedule	Action	Frequency
Routine Maintenance	• Remove silt and debris from inspection chambers, catchpits and flow controls. • Cleaning of gutters and downpipe filters.	Annually or as required.
	• Remove root ingress.	Action as required.
Monitoring	• Inspect for silt and debris.	Every three months.
	• CCTV survey of drainage system to identify alignment issues, cracked pipes or leaking joints.	Every 10 years.

Table 7: Suggested maintenance regime for pipework, inspection chambers, catchpits and flow controls

8. Discussion and Conclusion

8.1. This Flood Risk Assessment and Surface Water Drainage Strategy has been prepared by Unda Consulting Limited on behalf of Wildgoose UK ltd, in support of a planning application for the demolition of warehouse building and associated structures. Construction of two no self-contained warehouse units for storage (Class B8). The proposed development is being undertaken at Units 4 To 5 Redkiln Close, Horsham, West Sussex, RH13 5QL. This report assesses the flood risk and sets out the surface water drainage strategy for the proposed development.

8.2. The site consists of an existing warehouse unit, and smaller ancillary structures adjoined to the warehouse such as the compressor housing, metal sheds and a metal enclosure housing a diesel tank. The surrounding area is primarily industrial, with a residential area to the west of the site within Bowes Close.

8.3. A topographic survey of the site shows ground topography on site ranges between 66.03mAOD to 67.42mAOD.

8.4. The 1:50,000 BGS map shows that the bedrock underlying the site is Upper Tunbridge Wells Sand-Mudstone.

8.5. The BGS mapping shows there are not superficial deposits underlying the site.

8.6. The soil type taken from the UKSO Soil Map Viewer shows the site to be located upon relatively deep soils of Claystone/ Mudstone parent material with a soil texture of Clay to Clayey Loam.

8.7. The published Environment Agency Groundwater Source Protection Zone map shows the site is not located within a Groundwater Source Protection Zone.

Flood Risk Discussion:

8.8. The site is located within Flood Zone 1 (Low Probability), which means it is defined as land having a less than 1:1000 annual probability of river or sea flooding.

8.9. The nearest watercourse is an unnamed watercourse, located approximately 160m south west of the site.

8.10. According to EA data, there are no Flood Storage Areas located in close proximity to the site.

8.11. According to the Environment Agency, there are no EA maintained raised defences that defend the site directly.

8.12. The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at “Very Low” to “High” chance of flooding from surface water.

8.13. The EA Risk of Flooding from Surface Water mapping shows the site to be at “Very Low” to “High” chance of flooding between 2040 and 2060.

8.14. According to the 2024 Horsham District Council SFRA, the site is located within a Class 4 area (Negligible Risk). Ground investigations at the site have shown there to be shallow groundwater with a minimum recorded depth of 0.94mbgl.

8.15. According to the 2024 Horsham District Council SFRA the site’s postcode area (RH13) has had between 41-120 sewer flooding incidents.

8.16. According to the According to the EA and 2024 Horsham District Council SFRA, the site and immediate surrounding area are not within any recorded historic flood extents.

8.17. The NPPF classifies property usage by vulnerability to flooding. Post development, the site will remain classified as "less vulnerable", as the application is for the demolition of warehouse building and associated structures. Construction of two no self-contained warehouse units for storage (Class B8).

8.18. Although there will not be an increase in vulnerability at the site, there will be an introduction of an additional unit.

8.19. To help protect against flooding during extreme events, the applicant has agreed to implement flood resistant design measures into the development where practical and feasible, in consultation with the Local Authority building control department.

8.20. The site is located within Flood Zone 1 entirely outside of the functional floodplain. Therefore, no fluvial floodwater would be displaced by the proposed development.

Surface Water Drainage Discussion:

8.21. The existing site is understood to discharge its surface water to foul sewer at an unattenuated rate.

8.22. Ground investigations at the site have shown there to be shallow groundwater with a minimum recorded depth of 0.94mbgl. Therefore, infiltration SuDS are not considered feasible at the site.

8.23.

8.24. The existing site is predominantly impermeable. The brownfield runoff rate for the site has been calculated as 1.5 l/s for the 1:1 annual runoff event, 4.2 l/s for the for the 1:30 year event and 5.6 l/s for the 1:100 year event.

8.25. The greenfield runoff rate for the area of the site being attenuated has been calculated as 1.1 l/s for the 1:1 annual runoff event, 3.2 l/s for the 1:30 year event and 4.3 l/s for the 1:100 year event. Refer to calculations in Appendix.

8.26. Runoff from the impermeable ground surfaces and roof areas will be directed into the cellular storage located beneath the car park.

8.27. From the cellular storage, runoff will be gradually discharged to the public foul water sewer. The discharge will be limited to 1.5 l/s for all storms up to the 1:100 year + 45% climate change event via a Hydro-Brake. The Hydro-Brake will be installed in an inspection chamber within the site.

8.28. As the site currently discharges its surface water to the public foul water sewer at an unattenuated rate betterment will be provided for all scenarios greater than the 1:1 year event.

8.29. Any surface water pipework connections originating outside the site will continue to discharge to the public sewer at the existing location.

8.30. All new ground surfaces outside the extent shown on the layout 96656-02 will be of permeable construction.

8.31. The proposed area discharging into the cellular storage amounts to approximately 2,162m^2.

8.32. Preliminary calculations indicate that sufficient storage required to attenuate runoff from the proposed impermeable ground surfaces and roof areas arising from the critical 1:100 year + 45% climate change event can be provided by cellular storage of dimensions 307.2m^2 x 0.66m x 0.95 (voids).

8.33. Preliminary calculations indicated that some 192.6m^3 of storage is required to attenuate the runoff for all storms up to and including the 1:100 year + 45% climate change event.

8.34. *Please note that that the locations of the cellular storage within the Causeway calculations are arbitrary for modelling purposes*.

8.35. All preliminary surface water drainage calculations have been undertaken using Causeway software. Refer to Appendix.

8.36. The Pollution Mitigation Indices for SPEL ESR Bypass Treatment System (or similar) are greater than the Pollution Hazard Indices for residential car parks. Therefore, a SPEL ESR Bypass Treatment System (or similar) will provide sufficient water quality treatment.

8.37. Roof water will contain negligible contaminant concentrations and does not warrant treatment. Nevertheless, it is suggested to include debris / sediment traps on any new drainage.

8.38. It is proposed that all SuDS facilities will be maintained privately by the freeholder. A draft Maintenance Schedule is outlined within the report.

8.39. Should the onsite drainage system fail under extreme rainfall events or blockage, flooding may occur within the site. In the event of the drainage system failure, the runoff flow can be managed through detailing the new external levels to direct water away from structures.

This drainage strategy has been undertaken in accordance with the principles set out in NPPF. We can conclude that providing the development adheres to the conditions advised above, the said development proposals can be accommodated without increasing flood risk within the locality in accordance with objectives set by Central Government and the EA.

Unda Consulting Limited
January 2026

Appendix

A – Development Plans:

- Site location, existing and proposed plans – made Architects Ltd.

B – Causeway Calculations:

- Brownfield Runoff Calculations;
- IH124 Pre-Development Greenfield Runoff Calculations for the area of the site being attenuated;
- Cellular Storage Soakaway (Depth/Area Storage Structure) Calculations.

C – Drainage Layout Plans:

- Proposed Drainage Layout [96656-01];
- Proposed Catchment Plan [96656-02].

D – Southern Water:

- Sewer records – Southern Water.

E – Drainage Survey:

- Drainage Survey – Jetting Services Direct Ltd.

F – NPPF Annex 3:

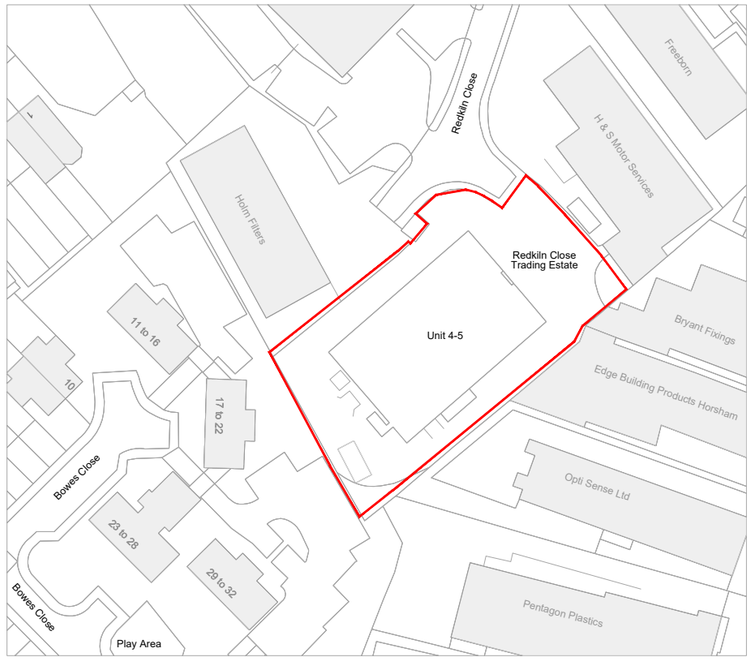
- NPPF Annex 3: Flood risk vulnerability classification table.

THIS DRAWING IS ONLY LICENSED FOR THE PURPOSE INDICATED IN THE STATUS BAR.

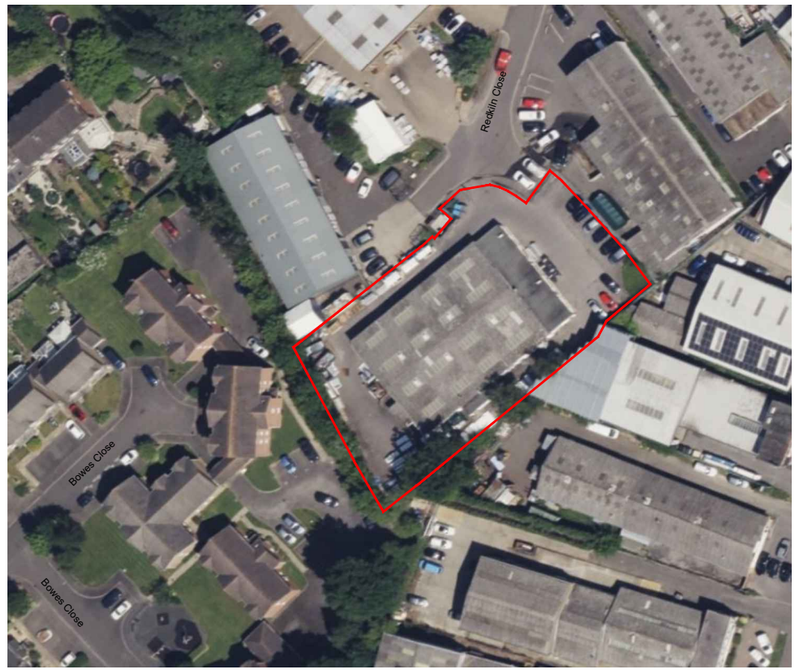
UNAUTHORISED USE SHOULD BE REPORTED TO THE DRAWING OFFICE AND ANY SUCH USE IS NOT INDEMNIFIED

KEY

APPLICATION BOUNDARY



Site Location Plan @ 1:1250



Google Map Extract - NTS

0' 25' 50' 75' 100' 125' 150' 175' 200' 225' 250' 275' 300'
0m 10m 20m 30m 40m 50m 60m 70m 80m 90m 100m

REVISIONS				
P1	23.4.25	For planning	AM	NM
REV.	DATE	REVISION	DRW.	CHK.

made Architects Ltd
The Stables | 1B Howard Road | Reigate
w: www.made-architects.com
e: info@made-architects.com
t: +44 (0)203 633 4625
madearchitects_

Client:	Wildgoose UK Limited
Job:	2473
Address:	Redkiln Close, Horsham RH13 5QL
Drawing:	Site Location Plan
Scale:	1:1250
Drawn	AM
Checked	NM
Date:	02/12/2024
Size	A3

PRELIMINARY
Liable to change without notice, not for construction

2473-MAL-XX-00-DR-A 0001 Rev P1

THIS DRAWING IS ONLY LICENSED FOR THE PURPOSE INDICATED IN THE STATUS BAR.

UNAUTHORISED USE SHOULD BE REPORTED TO THE DRAWING OFFICE AND ANY SUCH USE IS NOT INDEMNIFIED

KEY

- APPLICATION BOUNDARY
- EXISTING TREE CANOPIES AS PER SURVEY DRAWING. Refer ARB drawings for details.
- EXISTING BUILDINGS OUTSIDE BOUNDARY
- EXISTING TARMAC WITHIN APPLICATION BOUNDARY
- S/S EXISTING Sub-Station

RPA KEY (As per ARB Tree Restraint Plan)

- Category A
- Category B
- Category C
- T## Tree Reference - in accordance with ARB tree survey.

EXISTING BOUNDARY TYPES

1. Chain Link Fencing
2. Palisade Security Fencing
3. Timber Fencing

0' 10' 20' 30' 40' 50' 60' 70' 80' 90' 100' 110' 120' 130' 140' 150'

0m 5m 10m 15m 20m 25m 30m 35m 40m 45m 50m

REVISIONS				
P2	23.4.25	For planning	AM	NM
P1	19.2.25	ARB input	AM	NM
REV.	DATE	REVISION	DRW	CHK

made Architects Ltd
The Stables | 1B Howard Road | Reigate
w: www.made-architects.com
e: info@made-architects.com
t: +44 (0)203 633 4625
madearchitects_

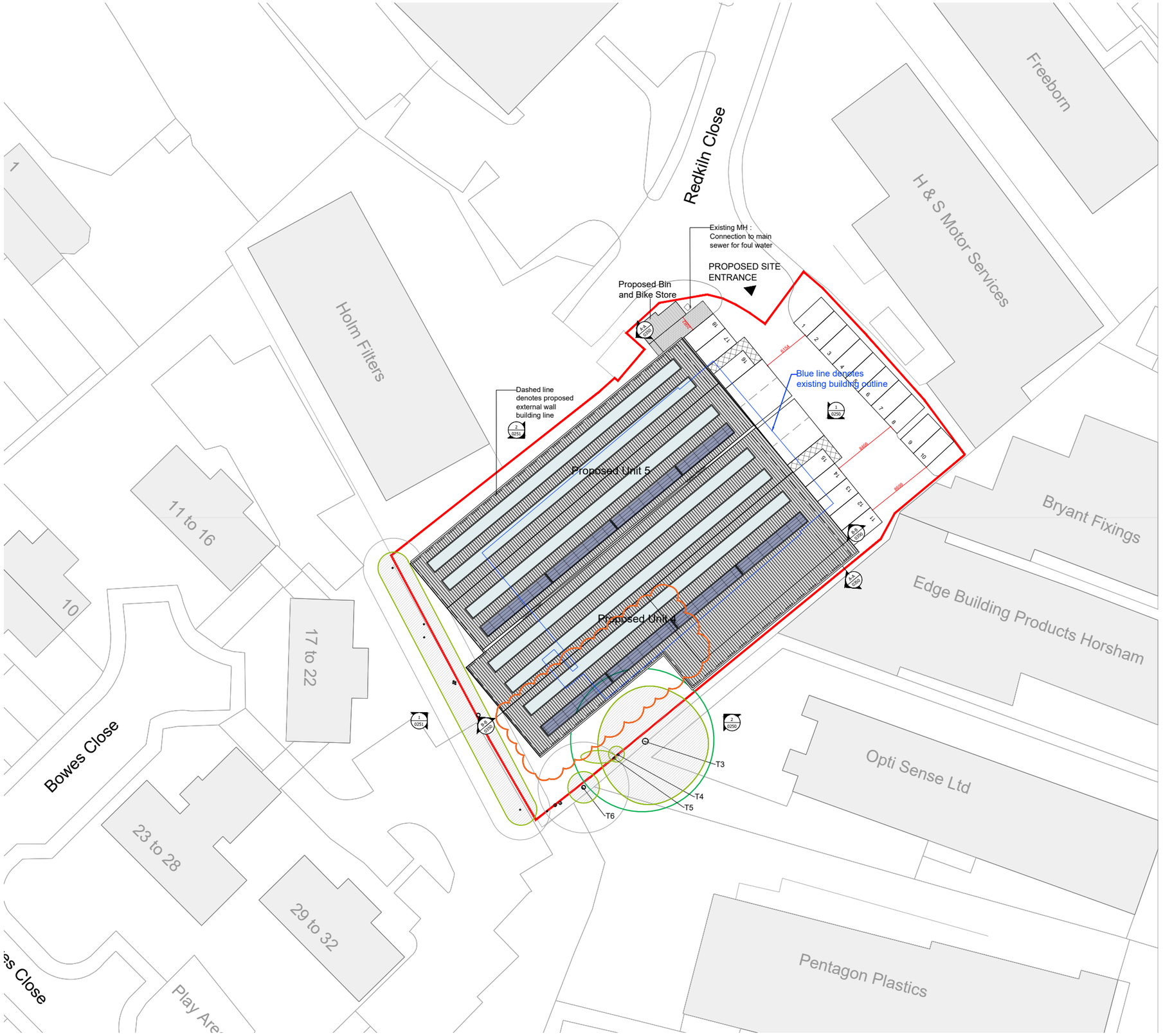
Client:	Wildgoose UK Limited
Job:	2473
Address:	Redkiln Close, Horsham RH13 5QL
Drawing:	Existing Site Plan
Scale:	1:500
Drawn	AM
Checked	NM
Date:	02/12/2024

PRELIMINARY
Liable to change without notice, not for construction

Size		Rev
A3	2473-MAL-XX-00-DR-A-0010	P2

THIS DRAWING IS ONLY LICENSED FOR THE PURPOSE INDICATED IN THE STATUS BAR.

UNAUTHORISED USE SHOULD BE REPORTED TO THE DRAWING OFFICE AND ANY SUCH USE IS NOT INDEMNIFIED



KEY

- APPLICATION BOUNDARY
- PROPOSED ROOFLIGHT
- PROPOSED PV PANELS
- EXISTING TREE CANOPIES AS PER SURVEY DRAWING. Refer ARB drawings for details.
- EXISTING BUILDINGS OUTSIDE BOUNDARY
- PROPOSED PAVIORS

RPA KEY (As per ARB Tree Restraint Plan)

- Category A
- Category B
- Category C
- T## Tree Reference - in accordance with ARB tree survey.

GIA

GF : 1401 sqm
MEZZANINE : 134 sqm

TOTAL GIA = 1535 sqm / 16522 sqft

BIN PROVISION

-360 litres for residual waste
- 660 litres for mixed dry recycling

BIKE PARKING ROVISION

- Enclosed bike store providing 6 cycles (3 sheffield stands)
- Bike store to be secured and lockable

Total Bin and Bike store GIA = 13 sqm / 139 sqft

PARKING

- 18no. car parking spaces including 2no. disabled parking spaces

DELIVERY BAY

- 4no. van bays

0' 10' 20' 30' 40' 50' 60' 70' 80' 90' 100' 110' 120' 130' 140' 150'
0m 5m 10m 15m 20m 25m 30m 35m 40m 45m 50m

REVISIONS			
P3	06.8.25	Revised footprint to 13-15DC Comments	AM NM
P2	23.4.25	For planning	AM NM
P1	18.2.25	ARB Input	AM NM
REV.	DATE	REVISION	DRN CHK

made Architects Ltd
The Stables | 1B Howard Road | Reigate
w: www.made-architects.com
e: info@made-architects.com
t: +44 (0)203 633 4625
madearchitects_

Client:	Wildgoose UK Limited
Job:	2473
Address:	Redkiln Close, Horsham RH13 5QL
Drawing:	Proposed Site Plan
Scale:	1:500
Drawn	AM
Checked	NM
Date:	02/12/2024

PRELIMINARY
Liable to change without notice, not for construction

Size		Rev
A3	2473-MAL-XX-00-DR-A 0050	P3

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	x	1 year (l/s)	1.5
Rainfall Events	Singular	Drain Down Time (mins)	240	30 year (l/s)	4.2
Summer CV	1.000	Additional Storage (m³/ha)	0.0	100 year (l/s)	5.6
Winter CV	1.000	Starting Level (m)		Check Discharge Volume	x
Analysis Speed	Normal	Check Discharge Rate(s)	✓		

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
100	45	0	0

Pre-development Discharge Rate

Site Makeup	Brownfield	Growth Factor 1 year	0.85
Brownfield Method	Greenfield	Growth Factor 30 year	2.40
Greenfield Method	IH124	Growth Factor 100 year	3.19
Positively Drained Area (ha)	0.238	Betterment (%)	0
SAAR (mm)	799	QBar	1.7
Soil Index	5	Q 1 year (l/s)	1.5
SPR	0.53	Q 30 year (l/s)	4.2
Region	7	Q 100 year (l/s)	5.6

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
MH1	0.217	5.00	66.700		1230795.906	192781.517	1.800	64.900
MH2			66.700	1200	1230795.829	192778.604	1.890	64.810
EXMH5303			66.150		1230755.116	192747.141	1.940	64.210

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	x	1 year (l/s)	1.1
Rainfall Events	Singular	Drain Down Time (mins)	240	30 year (l/s)	3.2
Summer CV	1.000	Additional Storage (m³/ha)	0.0	100 year (l/s)	4.3
Winter CV	1.000	Starting Level (m)		Check Discharge Volume	x
Analysis Speed	Normal	Check Discharge Rate(s)	✓		

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
100	45	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	2.40
Greenfield Method	IH124	Growth Factor 100 year	3.19
Positively Drained Area (ha)	0.238	Betterment (%)	0
SAAR (mm)	799	QBar	1.3
Soil Index	4	Q 1 year (l/s)	1.1
SPR	0.47	Q 30 year (l/s)	3.2
Region	7	Q 100 year (l/s)	4.3
Growth Factor 1 year	0.85		

Node MH2 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	64.810	Product Number	CTL-SHE-0061-1500-0750-1500
Design Depth (m)	0.750	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.5	Min Node Diameter (mm)	1200

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Node MH1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	64.900
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	307.2	0.0	0.660	307.2	0.0	0.661	0.0	0.0

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	MH1	705	65.534	0.634	14.0	185.1210	0.0000	SURCHARGED
720 minute winter	MH2	705	65.534	0.724	11.0	0.8192	0.0000	SURCHARGED
8640 minute winter	EXMH5303	4680	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute winter	MH1	1.000	MH2	11.0	0.559	0.120	0.1159	
720 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	75.7

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 99.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	MH1	20	65.166	0.266	182.8	77.5857	0.0000	SURCHARGED
15 minute summer	MH2	20	65.166	0.356	6.8	0.4024	0.0000	SURCHARGED
15 minute summer	EXMH5303	255	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	MH1	1.000	MH2	6.6	0.594	0.072	0.1159	
15 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1189	22.2

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 99.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	MH1	20	65.166	0.266	171.5	77.5868	0.0000	SURCHARGED
15 minute winter	MH2	20	65.166	0.356	11.3	0.4024	0.0000	SURCHARGED
15 minute winter	EXMH5303	12	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	MH1	1.000	MH2	11.3	0.602	0.123	0.1159	
15 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1189	22.2

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 30 minute summer. 270 minute analysis at 1 minute timestep. Mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	MH1	35	65.256	0.356	169.9	103.9730	0.0000	SURCHARGED
30 minute summer	MH2	35	65.256	0.446	10.2	0.5047	0.0000	SURCHARGED
30 minute summer	EXMH5303	18	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	MH1	1.000	MH2	-11.2	0.527	-0.122	0.1159	
30 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1189	22.4

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 30 minute winter. 270 minute analysis at 1 minute timestep. Mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	MH1	34	65.256	0.356	136.4	103.9538	0.0000	SURCHARGED
30 minute winter	MH2	34	65.256	0.446	15.8	0.5046	0.0000	SURCHARGED
30 minute winter	EXMH5303	18	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	MH1	1.000	MH2	15.8	0.592	0.172	0.1159	
30 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1189	22.4

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 60 minute summer. 300 minute analysis at 1 minute timestep. Mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	MH1	65	65.351	0.451	128.9	131.7567	0.0000	SURCHARGED
60 minute summer	MH2	65	65.351	0.541	14.5	0.6124	0.0000	SURCHARGED
60 minute summer	EXMH5303	31	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	MH1	1.000	MH2	14.5	0.579	0.158	0.1159	
60 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	22.2

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 60 minute winter. 300 minute analysis at 1 minute timestep. Mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	MH1	64	65.351	0.451	93.2	131.7005	0.0000	SURCHARGED
60 minute winter	MH2	64	65.351	0.541	11.8	0.6121	0.0000	SURCHARGED
60 minute winter	EXMH5303	30	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	MH1	1.000	MH2	11.8	0.585	0.129	0.1159	
60 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	22.2

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 120 minute summer. 360 minute analysis at 2 minute timestep. Mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute summer	MH1	124	65.418	0.518	80.9	151.0562	0.0000	SURCHARGED
120 minute summer	MH2	124	65.418	0.608	13.9	0.6872	0.0000	SURCHARGED
120 minute summer	EXMH5303	58	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute summer	MH1	1.000	MH2	13.9	0.576	0.152	0.1159	
120 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	27.4

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 120 minute winter. 360 minute analysis at 2 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	MH1	124	65.418	0.518	55.7	151.2796	0.0000	SURCHARGED
120 minute winter	MH2	124	65.418	0.608	12.2	0.6880	0.0000	SURCHARGED
120 minute winter	EXMH5303	54	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	MH1	1.000	MH2	12.2	0.491	0.133	0.1159	
120 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	27.4

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 180 minute summer. 420 minute analysis at 4 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute summer	MH1	188	65.454	0.554	59.3	161.7841	0.0000	SURCHARGED
180 minute summer	MH2	188	65.454	0.644	11.9	0.7287	0.0000	SURCHARGED
180 minute summer	EXMH5303	84	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute summer	MH1	1.000	MH2	11.9	0.575	0.130	0.1159	
180 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	32.6

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 180 minute winter. 420 minute analysis at 4 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	MH1	184	65.456	0.556	40.8	162.2896	0.0000	SURCHARGED
180 minute winter	MH2	184	65.456	0.646	13.0	0.7307	0.0000	SURCHARGED
180 minute winter	EXMH5303	80	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute winter	MH1	1.000	MH2	13.0	0.518	0.142	0.1159	
180 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	32.5

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 240 minute summer. 480 minute analysis at 4 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute summer	MH1	244	65.479	0.579	49.5	168.8966	0.0000	SURCHARGED
240 minute summer	MH2	244	65.479	0.669	12.7	0.7563	0.0000	SURCHARGED
240 minute summer	EXMH5303	108	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute summer	MH1	1.000	MH2	12.7	0.557	0.139	0.1159	
240 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	37.7

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 240 minute winter. 480 minute analysis at 4 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	MH1	240	65.481	0.581	32.9	169.4757	0.0000	SURCHARGED
240 minute winter	MH2	240	65.481	0.671	12.0	0.7585	0.0000	SURCHARGED
240 minute winter	EXMH5303	104	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	MH1	1.000	MH2	12.0	0.546	0.131	0.1159	
240 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	37.5

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	MH1	368	65.505	0.605	37.0	176.5092	0.0000	SURCHARGED
360 minute summer	MH2	368	65.505	0.695	13.3	0.7858	0.0000	SURCHARGED
360 minute summer	EXMH5303	160	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	MH1	1.000	MH2	13.3	0.553	0.145	0.1159	
360 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	47.4

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	MH1	360	65.510	0.610	24.1	178.0699	0.0000	SURCHARGED
360 minute winter	MH2	360	65.510	0.700	10.2	0.7918	0.0000	SURCHARGED
360 minute winter	EXMH5303	152	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	MH1	1.000	MH2	10.2	0.556	0.111	0.1159	
360 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	47.3

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 480 minute summer. 720 minute analysis at 8 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute summer	MH1	480	65.520	0.620	28.9	180.8212	0.0000	SURCHARGED
480 minute summer	MH2	480	65.520	0.710	13.5	0.8025	0.0000	SURCHARGED
480 minute summer	EXMH5303	216	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute summer	MH1	1.000	MH2	13.5	0.572	0.147	0.1159	
480 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	57.2

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 480 minute winter. 720 minute analysis at 8 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	MH1	472	65.525	0.625	19.2	182.3235	0.0000	SURCHARGED
480 minute winter	MH2	472	65.525	0.715	11.9	0.8083	0.0000	SURCHARGED
480 minute winter	EXMH5303	200	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	MH1	1.000	MH2	11.9	0.517	0.130	0.1159	
480 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	57.0

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 600 minute summer. 840 minute analysis at 15 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute summer	MH1	600	65.526	0.626	23.5	182.7727	0.0000	SURCHARGED
600 minute summer	MH2	600	65.526	0.716	7.4	0.8101	0.0000	SURCHARGED
600 minute summer	EXMH5303	270	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute summer	MH1	1.000	MH2	-7.6	0.428	-0.083	0.1159	
600 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	66.4

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 600 minute winter. 840 minute analysis at 15 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	MH1	585	65.533	0.633	16.2	184.5927	0.0000	SURCHARGED
600 minute winter	MH2	585	65.532	0.722	10.7	0.8171	0.0000	SURCHARGED
600 minute winter	EXMH5303	255	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	MH1	1.000	MH2	10.7	0.476	0.117	0.1159	
600 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	66.2

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 720 minute summer. 960 minute analysis at 15 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	MH1	720	65.526	0.626	20.8	182.5603	0.0000	SURCHARGED
720 minute summer	MH2	720	65.526	0.716	12.4	0.8092	0.0000	SURCHARGED
720 minute summer	EXMH5303	315	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute summer	MH1	1.000	MH2	12.4	0.600	0.135	0.1159	
720 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1189	75.9

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 720 minute winter. 960 minute analysis at 15 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	MH1	705	65.534	0.634	14.0	185.1210	0.0000	SURCHARGED
720 minute winter	MH2	705	65.534	0.724	11.0	0.8192	0.0000	SURCHARGED
720 minute winter	EXMH5303	300	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute winter	MH1	1.000	MH2	11.0	0.559	0.120	0.1159	
720 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	75.7

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 960 minute summer. 1200 minute analysis at 15 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute summer	MH1	960	65.519	0.619	17.0	180.6706	0.0000	SURCHARGED
960 minute summer	MH2	960	65.519	0.709	12.9	0.8019	0.0000	SURCHARGED
960 minute summer	EXMH5303	435	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute summer	MH1	1.000	MH2	12.9	0.591	0.141	0.1159	
960 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	94.6

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 960 minute winter. 1200 minute analysis at 15 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	MH1	930	65.528	0.628	14.3	183.3847	0.0000	SURCHARGED
960 minute winter	MH2	930	65.528	0.718	11.2	0.8124	0.0000	SURCHARGED
960 minute winter	EXMH5303	405	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute winter	MH1	1.000	MH2	11.2	0.478	0.122	0.1159	
960 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	94.3

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	MH1	1200	65.501	0.601	13.4	175.4594	0.0000	SURCHARGED
1440 minute summer	MH2	1200	65.501	0.691	3.6	0.7817	0.0000	SURCHARGED
1440 minute summer	EXMH5303	660	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	MH1	1.000	MH2	-7.7	-0.266	-0.083	0.1159	
1440 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	129.2

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	MH1	1320	65.505	0.605	13.2	176.5874	0.0000	SURCHARGED
1440 minute winter	MH2	1320	65.505	0.695	7.7	0.7861	0.0000	SURCHARGED
1440 minute winter	EXMH5303	630	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	MH1	1.000	MH2	-8.3	0.354	-0.090	0.1159	
1440 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	129.5

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 2160 minute summer. 2400 minute analysis at 60 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
2160 minute summer	MH1	1620	65.466	0.566	8.7	165.1274	0.0000	SURCHARGED
2160 minute summer	MH2	1620	65.466	0.656	13.4	0.7417	0.0000	SURCHARGED
2160 minute summer	EXMH5303	1020	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
2160 minute summer	MH1	1.000	MH2	13.4	0.577	0.146	0.1159	
2160 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	174.0

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 2160 minute winter. 2400 minute analysis at 60 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
2160 minute winter	MH1	1680	65.464	0.564	6.0	164.4823	0.0000	SURCHARGED
2160 minute winter	MH2	1680	65.464	0.654	13.6	0.7392	0.0000	SURCHARGED
2160 minute winter	EXMH5303	960	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
2160 minute winter	MH1	1.000	MH2	13.6	0.588	0.148	0.1159	
2160 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	176.6

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 2880 minute summer. 3120 minute analysis at 60 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
2880 minute summer	MH1	2040	65.441	0.541	8.5	157.7477	0.0000	SURCHARGED
2880 minute summer	MH2	2040	65.440	0.630	4.3	0.7131	0.0000	SURCHARGED
2880 minute summer	EXMH5303	1380	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
2880 minute summer	MH1	1.000	MH2	-4.4	0.252	-0.048	0.1159	
2880 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	215.7

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 2880 minute winter. 3120 minute analysis at 60 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
2880 minute winter	MH1	2160	65.426	0.526	10.9	153.3704	0.0000	SURCHARGED
2880 minute winter	MH2	2160	65.425	0.615	14.1	0.6961	0.0000	SURCHARGED
2880 minute winter	EXMH5303	1320	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
2880 minute winter	MH1	1.000	MH2	14.1	0.559	0.154	0.1159	
2880 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	219.9

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 4320 minute summer. 4560 minute analysis at 60 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
4320 minute summer	MH1	2820	65.389	0.489	11.2	142.6400	0.0000	SURCHARGED
4320 minute summer	MH2	2820	65.389	0.579	2.8	0.6545	0.0000	SURCHARGED
4320 minute summer	EXMH5303	2100	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
4320 minute summer	MH1	1.000	MH2	-7.9	-0.329	-0.087	0.1159	
4320 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	300.0

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 4320 minute winter. 4560 minute analysis at 60 minute timestep. Mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
4320 minute winter	MH1	3060	65.338	0.438	7.7	127.6830	0.0000	SURCHARGED
4320 minute winter	MH2	3060	65.337	0.527	14.0	0.5966	0.0000	SURCHARGED
4320 minute winter	EXMH5303	2040	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
4320 minute winter	MH1	1.000	MH2	14.0	0.545	0.153	0.1159	
4320 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	310.9

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 5760 minute summer. 6000 minute analysis at 60 minute timestep. Mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
5760 minute summer	MH1	3660	65.341	0.441	10.1	128.6668	0.0000	SURCHARGED
5760 minute summer	MH2	3660	65.341	0.531	9.1	0.6004	0.0000	SURCHARGED
5760 minute summer	EXMH5303	2820	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
5760 minute summer	MH1	1.000	MH2	9.1	0.476	0.100	0.1159	
5760 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	387.6

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 5760 minute winter. 6000 minute analysis at 60 minute timestep. Mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
5760 minute winter	MH1	3840	65.239	0.339	12.0	98.8053	0.0000	SURCHARGED
5760 minute winter	MH2	3840	65.239	0.429	10.0	0.4847	0.0000	SURCHARGED
5760 minute winter	EXMH5303	5040	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
5760 minute winter	MH1	1.000	MH2	10.0	0.540	0.109	0.1159	
5760 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	396.8

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 7200 minute summer. 7440 minute analysis at 60 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
7200 minute summer	MH1	4500	65.292	0.392	10.4	114.4008	0.0000	SURCHARGED
7200 minute summer	MH2	4500	65.292	0.482	11.0	0.5451	0.0000	SURCHARGED
7200 minute summer	EXMH5303	5940	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
7200 minute summer	MH1	1.000	MH2	11.0	0.599	0.120	0.1159	
7200 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	424.1

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 7200 minute winter. 7440 minute analysis at 60 minute timestep. Mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
7200 minute winter	MH1	4560	65.162	0.262	10.2	76.4984	0.0000	SURCHARGED
7200 minute winter	MH2	4560	65.162	0.352	11.1	0.3982	0.0000	SURCHARGED
7200 minute winter	EXMH5303	3720	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
7200 minute winter	MH1	1.000	MH2	11.1	0.588	0.121	0.1159	
7200 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	421.1

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 8640 minute summer. 8880 minute analysis at 60 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
8640 minute summer	MH1	5220	65.239	0.339	11.4	98.9292	0.0000	SURCHARGED
8640 minute summer	MH2	5220	65.239	0.429	11.7	0.4851	0.0000	SURCHARGED
8640 minute summer	EXMH5303	4320	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
8640 minute summer	MH1	1.000	MH2	11.7	0.598	0.127	0.1159	
8640 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	447.4

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 8640 minute winter. 8880 minute analysis at 60 minute timestep. Mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
8640 minute winter	MH1	5340	65.106	0.206	9.4	60.2353	0.0000	OK
8640 minute winter	MH2	5340	65.106	0.296	12.9	0.3352	0.0000	SURCHARGED
8640 minute winter	EXMH5303	4680	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
8640 minute winter	MH1	1.000	MH2	12.9	0.572	0.140	0.1136	
8640 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	450.7

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 10080 minute summer. 10320 minute analysis at 60 minute timestep. Mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
10080 minute summer	MH1	5940	65.200	0.300	10.6	87.5226	0.0000	SURCHARGED
10080 minute summer	MH2	5940	65.200	0.390	11.8	0.4409	0.0000	SURCHARGED
10080 minute summer	EXMH5303	7020	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
10080 minute summer	MH1	1.000	MH2	11.8	0.429	0.129	0.1159	
10080 minute summer	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	474.0

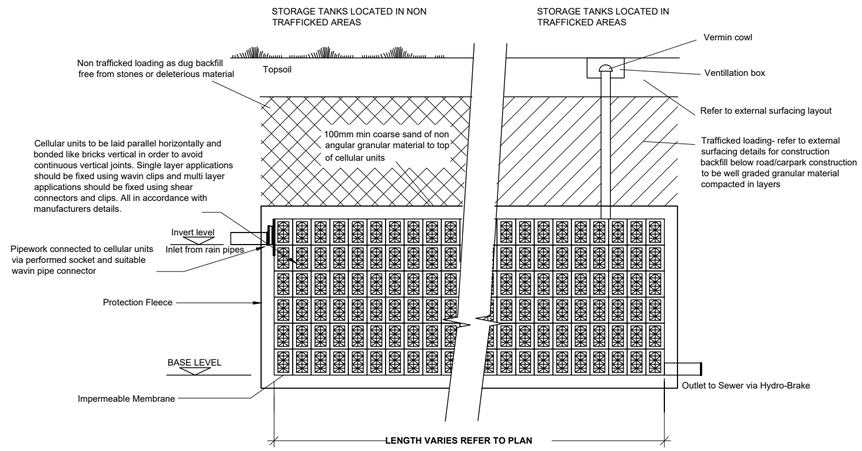
Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC 10080 minute winter. 10320 minute analysis at 60 minute timestep. Mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
10080 minute winter	MH1	5940	65.056	0.156	7.6	45.6691	0.0000	OK
10080 minute winter	MH2	6060	65.058	0.248	13.9	0.2804	0.0000	SURCHARGED
10080 minute winter	EXMH5303	5940	64.238	0.028	1.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
10080 minute winter	MH1	1.000	MH2	13.9	0.586	0.152	0.1009	
10080 minute winter	MH2	1.001	EXMH5303	1.5	0.649	0.078	0.1190	472.1

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd



Cellular storage to sewer - NTS
(or other similar approved)

Notes:

1. Discharge of surface water via cellular storage attenuation. Preliminary calculations indicate that sufficient storage required to attenuate runoff arising from the proposed impermeable areas, during the critical 1 in 100 year + 45% Climate Change event, can be provided within cellular storage of dimensions 307.2m^2 x 0.66m deep x 0.95 (voids).
2. All levels are in metres above ordnance datum.
3. Location of EXMH5303 to be confirmed at the detailed design stage.

Legend

- Proposed Cellular Storage Attenuation
- Proposed Hydro-Brake
- Proposed Surface Water Pipework
- Proposed Surface Water Downpipe
- Existing South Water Foul Manhole
- Existing South Water Foul Pipework
- Design Exceedance Route

Unda Consulting Limited
Unit 3
Oak Cottage
County Oak Way
County Oak
Crawley
RH11 7ST

Tel: 01293 214444
Email: info@unda.co.uk
Web: www.unda.co.uk

Client:
Wildgoose UK ltd

Site Address:
Units 4 To 5 Redkiln Close
Horsham
West Sussex
RH13 5QL

Job Reference:	Date:
96656-MadeArch-RedkilnCl	26-Jan-26
Drawing Number:	**Revision:**
96656-01	v1

Designed by:	Drawn by:	Checked by:
AR	AR	EW

Scale: 1:250@A2

Disclaimer: The drawings provided are for planning purposes only.

Redkiln Close

H & S Motor Services

Holm Filters

11 to 16

17 to 22

23 to 28

Edge Building Produ

Opti Sense Ltd

Existing MH : Connection to main sewer for foul water

PROPOSED SITE ENTRANCE

Proposed Bin and Bike Store

A-A 0250

Dashed line denotes proposed external wall building line

Blue line denotes existing building outline

1 0250

2 0251

Attenuation Unit 5

Attenuation Unit 4

B-B 0250

C-C 0250

D-D 0250

1 0251

2 0250

T3

T4

T5

T6

Notes:

Legend

Proposed Cellular Storage Catchment

Unda

Unda Consulting Limited
Unit 3
Oak Cottage
County Oak Way
County Oak
Crawley
RH11 7ST

Tel: 01293 214444
Email: info@unda.co.uk
Web: www.unda.co.uk

Client:
Wildgoose UK ltd

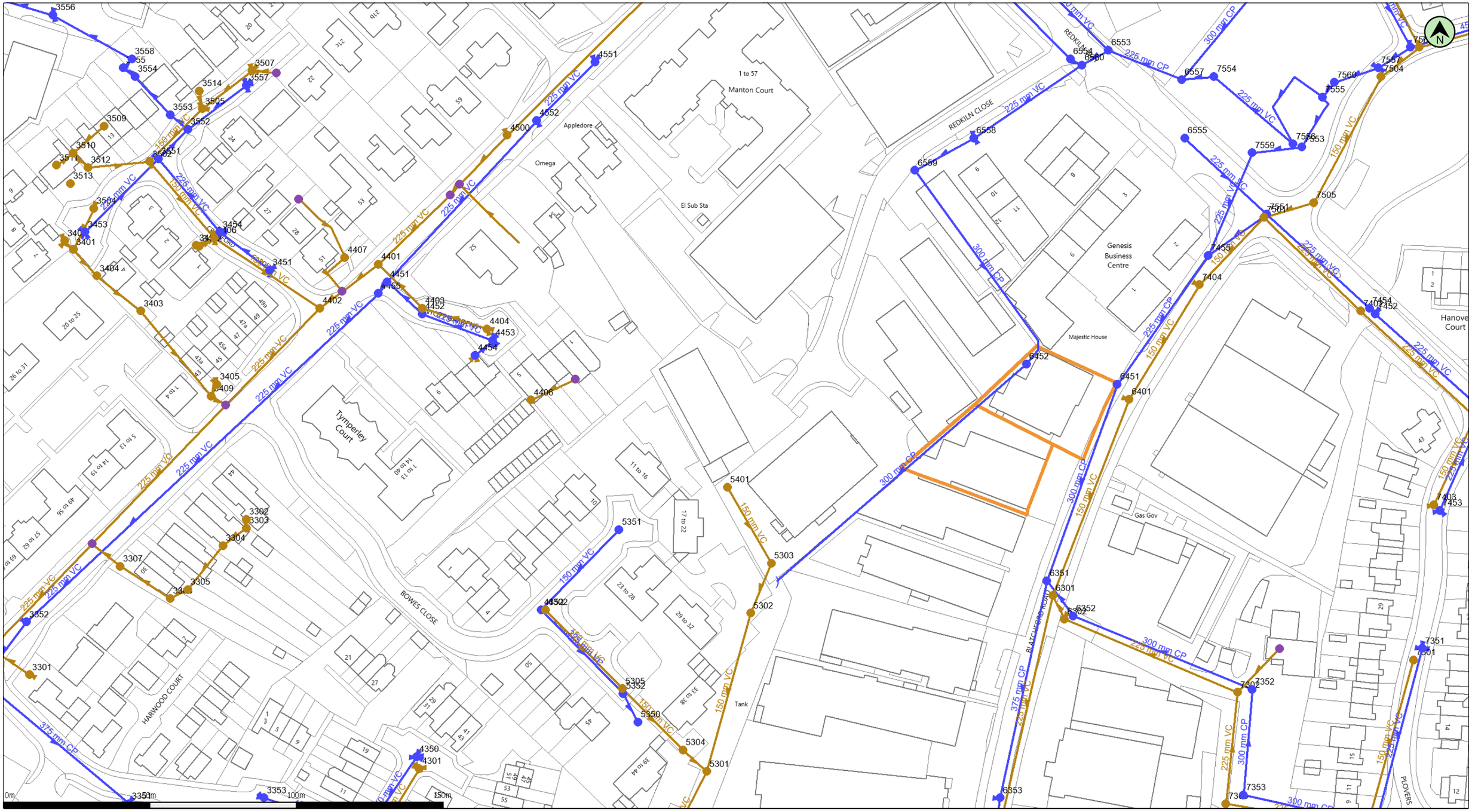
Site Address:
Units 4 To 5 Redkiln Close
Horsham
West Sussex
RH13 5QL

Job Reference:	Date:
96656-MadeArch-RedkilnCl	21-Jan-26
Drawing Number:	**Revision:**
96656-02	v1

Designed by:	Drawn by:	Checked by:
AR	AR	AR

Scale: 1:250@A2

Disclaimer:
The drawings provided are for planning purposes only.



(c) Crown copyright and database rights 2026 Ordnance Survey AC0000808122 | Date: 08/01/26 | Scale: 1:1250 | Map Centre: 518543,131438 | Data updated: 19/12/25 | Our Ref: 1987539 - 1 | Wastewater Plan A3 Powered by digdat

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2026 Ordnance Survey AC0000808122 .This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.

Foul Gravity Sewer
Combined Gravity Sewer
Culverted Water Course or Treated Effluent
Surface Water Gravity Sewer
Rising Main, Vacuum or Syphon
Combined Outfall
Surface Water Outfall
Foul Outfall
Surface Water Inlet
Combined Pumping Station
Surface Water Pumping Station
Foul Pumping Station
Water Treatment Works
Section 104 Area
Building Over Agreement Area
Foul Manhole
Combined Manhole
Surface Water Manhole
Side Entry Manhole, Demarcation Chamber, Dummy Manhole or Surface Water Soakaway

edward.bouet@unda.co.uk
96656

WATER for LIFE from Southern Water

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
3301	F	65.15	63.60	
3302	F	66.60	0.00	
3303	F	66.37	0.00	
3304	F	66.15	0.00	
3305	F	65.99	0.00	
3306	F	65.92	0.00	
3307	F	65.78	0.00	
3401	F	66.82	65.92	
3402	F	66.85	66.01	
3403	F	66.75	0.00	
3404	F	66.83	0.00	
3405	F	66.94	65.84	
3406	F	67.13	65.82	
3409	F	66.96	65.46	
3411	F	0.00	0.00	
3412	F	0.00	0.00	
3502	F	66.91	66.11	
3504	F	66.80	66.08	
3505	F	67.27	66.28	
3507	F	67.41	66.51	
3509	F	0.00	0.00	
3510	F	0.00	0.00	
3511	F	0.00	0.00	
3512	F	0.00	0.00	
3513	F	0.00	0.00	
3514	F	0.00	0.00	
4301	F	66.13	64.63	
4302	F	65.39	64.54	
4401	F	67.95	0.00	
4402	F	67.61	65.27	
4403	F	68.03	66.26	
4404	F	67.84	66.44	
4406	F	0.00	0.00	
4407	F	0.00	0.00	
4500	F	69.16	66.71	
5301	F	65.40	63.43	
5302	F	65.57	63.95	
5303	F	66.15	64.21	
5304	F	65.26	64.03	
5305	F	64.96	64.26	
5401	F	66.30	64.56	
6301	F	67.86	65.26	
6302	F	67.92	65.48	
6401	F	69.25	67.15	
7301	F	73.55	71.29	
7302	F	72.44	67.35	
7303	F	72.35	67.89	
7402	F	73.16	71.20	
7403	F	74.02	72.02	
7404	F	70.14	68.34	

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
7501	F	70.88	69.38	
7503	F	74.14	71.68	
7504	F	73.75	71.33	
7505	F	71.41	70.00	
3351	S	65.49	62.71	
3352	S	66.18	64.75	
3353	S	66.06	64.85	
3451	S	67.23	66.11	
3453	S	66.77	65.88	
3454	S	67.15	66.14	
3551	S	66.96	65.73	
3552	S	67.17	65.64	
3553	S	67.15	0.00	
3554	S	67.02	0.00	
3555	S	66.97	0.00	
3556	S	66.24	65.24	
3557	S	67.40	65.74	
3558	S	66.94	0.00	
4350	S	66.18	64.54	
4352	S	65.39	64.34	
4451	S	67.90	66.86	
4452	S	67.93	67.01	
4453	S	67.82	67.08	
4454	S	67.86	67.24	
4455	S	67.85	66.83	
4551	S	69.58	68.66	
4552	S	69.24	68.12	
5350	S	65.30	0.00	
5351	S	65.40	64.60	
5352	S	64.94	63.82	
6351	S	67.82	65.97	
6352	S	67.98	66.22	
6353	S	67.35	65.34	
6451	S	69.18	67.28	
6452	S	68.39	66.83	
6553	S	69.94	0.00	
6554	S	69.85	68.62	
6555	S	70.24	0.00	
6557	S	70.61	69.49	
6558	S	69.37	68.14	
6559	S	69.03	0.00	
6560	S	0.00	0.00	
7351	S	73.53	71.61	
7352	S	72.56	67.95	
7353	S	72.43	68.49	
7452	S	73.24	71.15	
7453	S	74.05	72.68	
7454	S	73.18	71.09	
7455	S	70.35	0.00	
7551	S	70.86	69.08	

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
7553	S	72.43	70.98	
7554	S	71.58	69.90	
7555	S	73.33	0.00	
7556	S	72.44	70.84	
7557	S	73.76	70.96	
7559	S	70.84	68.25	
7560	S	73.49	70.61	
7561	S	74.11	71.03	

Drainage Report

Prepared For

Unit 3, Redkiln Close,

Horsham,
RH13 5QL

Site

Unit 3, Redkiln Close,

Horsham,
RH13 5QL

JETTING SERVICES DIRECT LTD
Surveyor:

contact@jettingservicedirect.com

Total Defects for Project

0	1	0	0	0

Total DRB Grades for Project

17	0	0

Unit 3, Redkiln Close, Horsham, RH13 5QL - CCTV Survey Report : 11/12/25

Name :	JETTING SERVICES DIRECT LTD
Contact :	
Location :	Unit 5 Starborough Farm
Town :	Edenbridge
Region :	
Postcode :	TN8 5RB
Email :	contact@jettingservicedirect.com
Contact Number :	
Surveyor :	
Valid Certification No :	

Client Information

Name :	
Contact :	
Location :	Unit 3, Redkiln Close,
Town :	
Region :	Horsham,
Postcode :	RH13 5QL
Tel :	
Mobile :	
Email :	
Fax :	

Site Information

Name :	
Contact :	
Location :	Unit 3, Redkiln Close,
Town :	
Region :	Horsham,
Postcode :	RH13 5QL
Tel :	
Mobile :	
Email :	
Fax :	

Total Defects for Project

0 1 0 0 0

Total DRB Grades for Project

17 0 0

Report interpretation.

Overview:

Each section of the drainage system is allocated a score indicating areas that require attention. These areas are detailed in the Overview section on the following page and also at the bottom right of the first few pages. We use colour coding as an indicator of severity. Additional information concerning rehabilitation options/recomendations is included in the Overview page, which can also be used as an, "at a glance" indication of system condition. More in depth information for each section, Including images can be found later in the report. Grade indicators are as follows:

Grade A: Drain is serviceable no recommendations required

Grade B: There is an issue that might require remedial works

Grade C: There is a defect that requires remedial works, the drain is not serviceable.

Observations:

Each section of drainage reported on (manhole to manhole for example), contains detailed information about that drain and any observations made concerning condition are detailed below the header section. The observations are colour coded and given a severity score, with more significant defects being given a higher score, using a scale from 1 to 5 as detailed below:

Severity 1 to 2: These defects may require remedial monitoring

Severity 3: These defects probably require some form of remedial works

Severity 4 to 5: Defects that will require remedial repair or replacement

General:

The information provided is relevant at the time of survey. The coding system in this report is based on the Manual of Sewer Condition Classification, 5th edition (MSCC5) domestic codes (BS EN 13508-1:2003). This is the official standard for the water industry.

The severity system is based on significant experience in general practice and the 1 -5 grades represent the severity of individual defects: 5 representing a more serious defect.

Please feel free to contact us for further explanation or pricing for remedial works required.

Total Defects for Project

Total DRB Grades for Project

Overview

Section: 1 **From: MH1** **To: LINE 1** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 2 **From: MH1** **To: LINE 2** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 3 **From: MH1** **To: LINE 3** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 4 **From: MH1** **To: LINE 4** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 5 **From: MH2** **To: LINE 5** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 6 **From: MH2** **To: LINE 6** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**

Total Defects for Project

0 1 0 0 0

Total DRB Grades for Project

17 0 0

Section: 7 **From: MH2** **To: LINE 7** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 8 **From: MH3** **To: LINE 8** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 9 **From: MH3** **To: LINE 9** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 10 **From: MH3** **To: LINE 10** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 11 **From: SW1** **To: LINE 11** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 12 **From: SW1** **To: LINE 12** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 13 **From: SW2** **To: LINE 13** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**

Total Defects for Project

0 1 0 0 0

Total DRB Grades for Project

17 0 0

Section: 14 **From: SW3** **To: LINE 14** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 15 **From: SW3** **To: LINE 15** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 16 **From: SW7** **To: LINE 16** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 150** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 17 **From: SW7** **To: LINE 17** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 150** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**

Total Defects for Project

0 1 0 0 0

Total DRB Grades for Project

17 0 0

Site: Unit 3, Redkiln Close, ,

Section 1

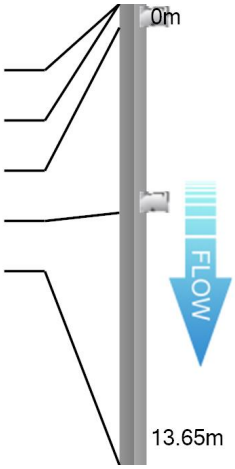
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	MH1	Finish Node Ref:	LINE 1	Direction:	D	Height/Dia:	100
Start Node Depth:	0.70	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	13.65	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		0_0	
00.00m	WL	Water level 0%			0:00:00
00.70m	JN	Junction 11 : 0mm Diameter		0_2	0:00:07
06.18m	JN	Junction 09 : 0mm Diameter		0_3	0:00:19
13.65m	MHF	Finish node type, manhole		0_99	



Total Defects for section

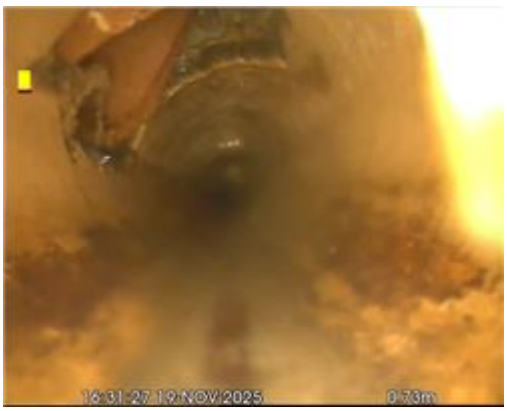
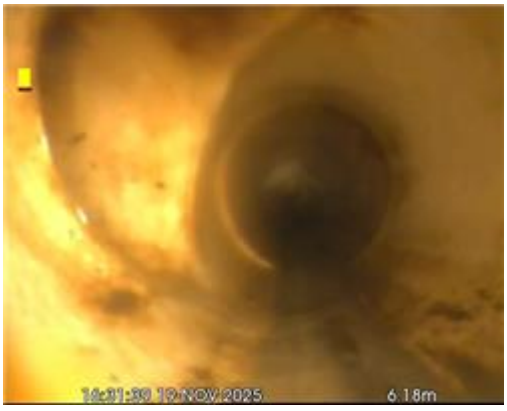
0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 1

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH1	Image Provided - Ref: 0_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.70m	0:00:07	JN	Junction at 11 o'clock: 0mm Diameter	Image Provided - Ref: 0_2 
06.18m	0:00:19	JN	Junction at 09 o'clock: 0mm Diameter	Image Provided - Ref: 0_3 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Pos	Video Ref	Code	Description	Image
13.65m		MHF	Finish node type, manhole LINE 1 ENTERS MH AT GATE UNABLE TO LIFT	Image Provided - Ref: 0_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 2

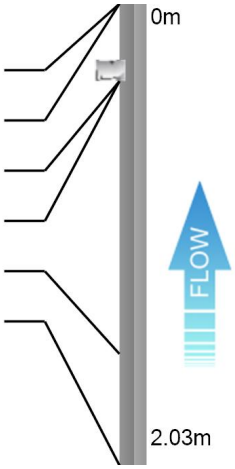
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	MH1	Finish Node Ref:	LINE 2	Direction:	U	Height/Dia:	100
Start Node Depth:	0.70	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	2.03	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		1_0	
00.00m	WL	Water level 0%			0:00:00
00.34m	JN	Junction 02 : 0mm Diameter		1_2	0:00:04
00.34m	CM	Cracks, multiple		1_3	0:00:04
01.54m	LUF	Line of drain/sewer deviates up [full]		1_4	0:00:11
02.03m	GYF	Finish node type Gully		1_99	



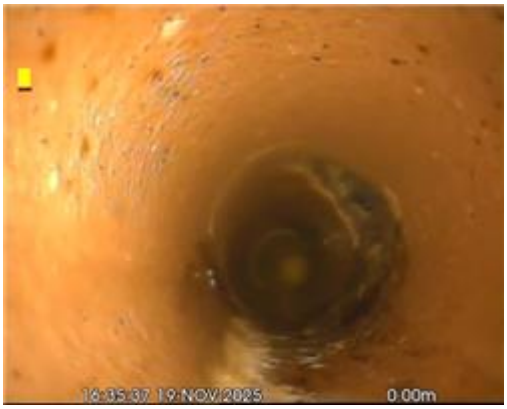
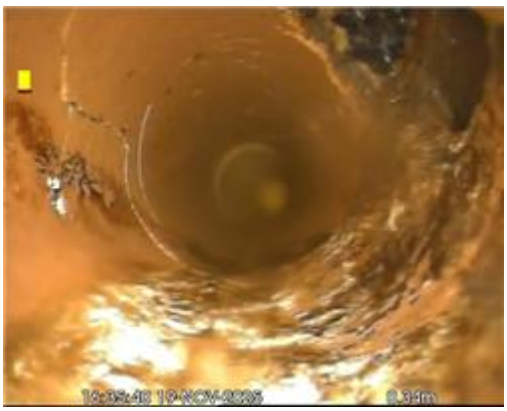
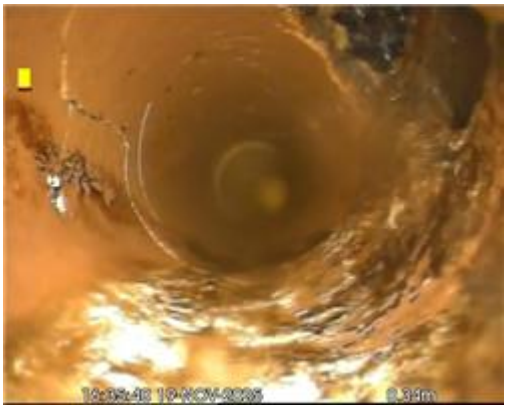
Total Defects for section

0	1	0	0	0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 2

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH1	Image Provided - Ref: 1_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.34m	0:00:04	JN	Junction at 02 o'clock: 0mm Diameter	Image Provided - Ref: 1_2 
00.34m	0:00:04	CM	Cracks, multiple - Severity 2	Image Provided - Ref: 1_3 

Total Defects for section

0	1	0	0	0

DRB Grade for Section

A

Pos	Video Ref	Code	Description	Image
01.54m	0:00:11	LUF	Line of drain/sewer deviates up [full]	Image Provided - Ref: 1_4 
02.03m		GYF	Finish node type Gully LINE 2	Image Provided - Ref: 1_9999 

Total Defects for section

0	1	0	0	0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 3

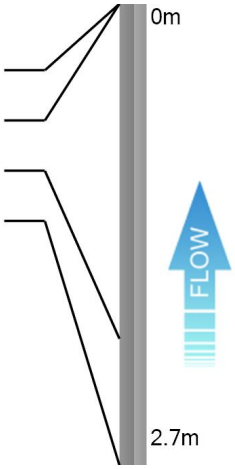
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	MH1	Finish Node Ref:	LINE 3	Direction:	U	Height/Dia:	100
Start Node Depth:	0.70	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	2.7	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		2_0	
00.00m	WL	Water level 0%			0:00:00
01.96m	LUF	Line of drain/sewer deviates up [full]		2_2	0:00:06
02.70m	MHF	Finish node type, manhole		2_99	



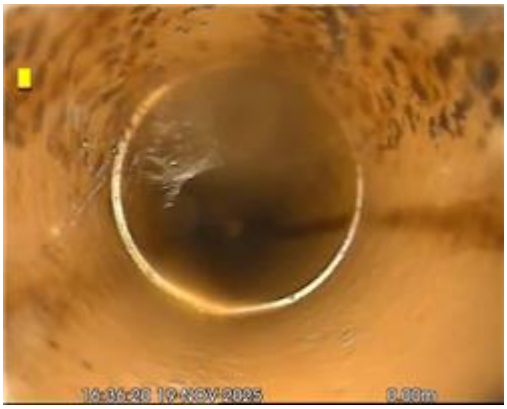
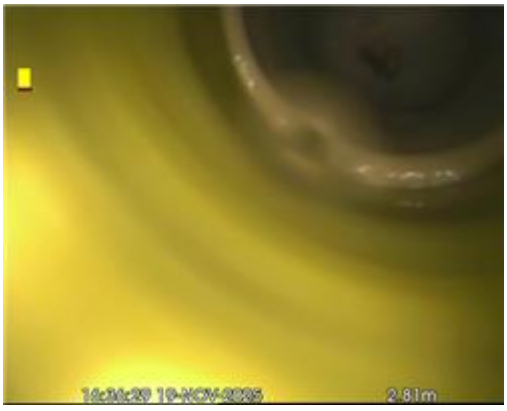
Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 3

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH1	Image Provided - Ref: 2_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.96m	0:00:06	LUF	Line of drain/sewer deviates up [full]	Image Provided - Ref: 2_2 
02.70m		MHF	Finish node type, manhole LINE 3 ENTERS W.C	Image Provided - Ref: 2_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 4

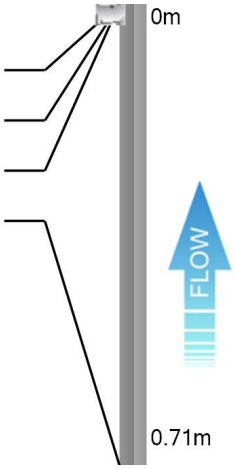
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	MH1	Finish Node Ref:	LINE 4	Direction:	U	Height/Dia:	100
Start Node Depth:	0.70	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	0.71	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		3_0	
00.00m	WL	Water level 0%			0:00:00
00.00m	JN	Junction 03 : 0mm Diameter		3_2	0:00:01
00.71m	MHF	Finish node type, manhole		3_99	



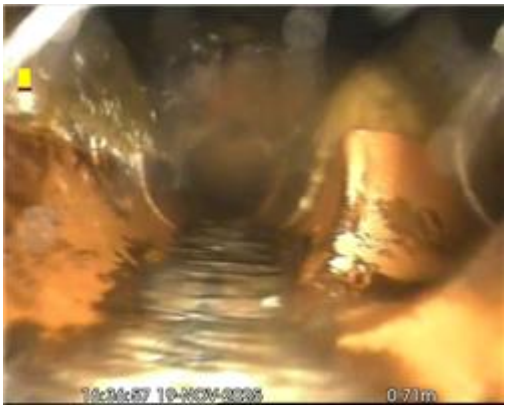
Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 4

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH1	Image Provided - Ref: 3_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.00m	0:00:01	JN	Junction at 03 o'clock: 0mm Diameter	Image Provided - Ref: 3_2 
00.71m		MHF	Finish node type, manhole LINE 4 ENTERS MH2	Image Provided - Ref: 3_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 5

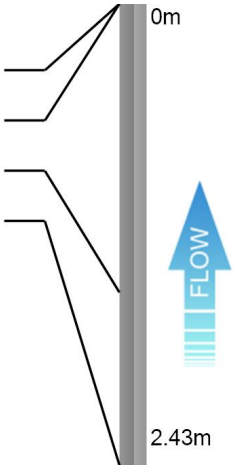
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	MH2	Finish Node Ref:	LINE 5	Direction:	U	Height/Dia:	100
Start Node Depth:	0.62	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	2.43	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		4_0	
00.00m	WL	Water level 0%			0:00:00
01.52m	LUF	Line of drain/sewer deviates up [full]		4_2	0:00:07
02.43m	WRF	Finish node type, major connection without		4_99	



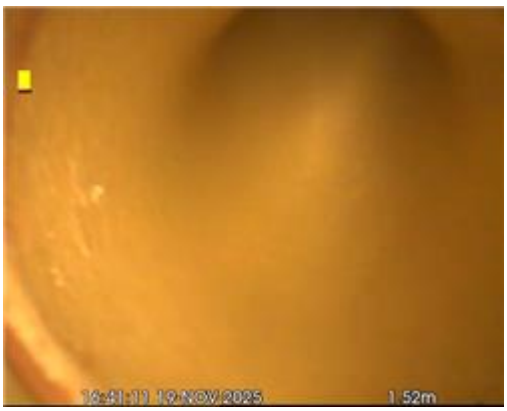
Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 5

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH2	Image Provided - Ref: 4_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.52m	0:00:07	LUF	Line of drain/sewer deviates up [full]	Image Provided - Ref: 4_2 
02.43m		WRF	Finish node type, major connection without manhole LINE 5 ENTERS W.C	Image Provided - Ref: 4_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 6

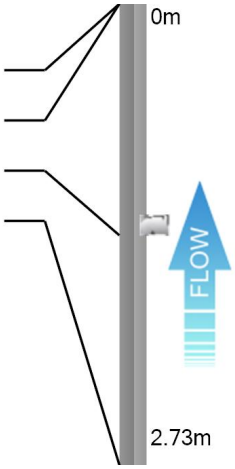
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	MH2	Finish Node Ref:	LINE 6	Direction:	U	Height/Dia:	100
Start Node Depth:	0.62	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	2.73	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		5_0	
00.00m	WL	Water level 0%			0:00:00
01.37m	JN	Junction 09 : 0mm Diameter		5_2	0:00:05
02.73m	WRF	Finish node type, major connection without		5_99	



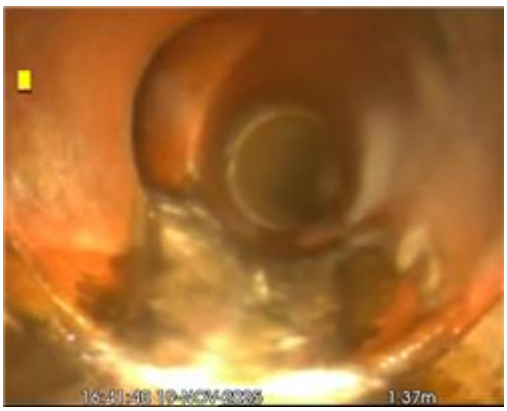
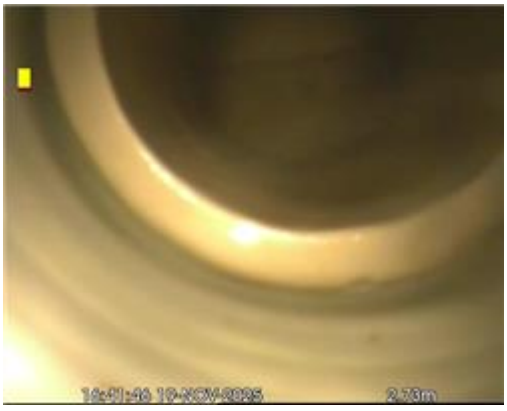
Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 6

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH2	Image Provided - Ref: 5_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.37m	0:00:05	JN	Junction at 09 o'clock: 0mm Diameter	Image Provided - Ref: 5_2 
02.73m		WRF	Finish node type, major connection without manhole LINE 6 ENTERS W.C	Image Provided - Ref: 5_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 7

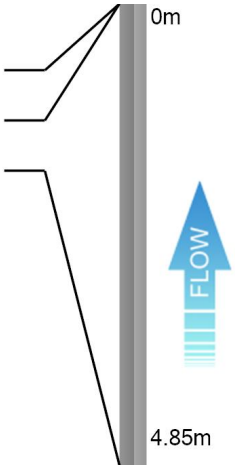
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	MH2	Finish Node Ref:	LINE 7	Direction:	U	Height/Dia:	100
Start Node Depth:	0.62	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	4.85	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		6_0	
00.00m	WL	Water level 0%			0:00:00
04.85m	MHF	Finish node type, manhole		6_99	



Total Defects for section

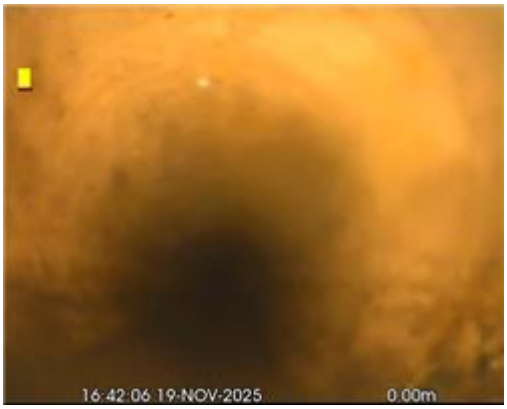
0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 7

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH2	Image Provided - Ref: 6_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
04.85m		MHF	Finish node type, manhole LINE 7 ENTERS MH3	Image Provided - Ref: 6_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 8

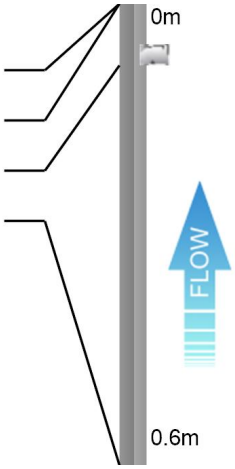
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	MH3	Finish Node Ref:	LINE 8	Direction:	U	Height/Dia:	100
Start Node Depth:	0.52	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	0.6	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		7_0	
00.00m	WL	Water level 0%			0:00:00
00.08m	JN	Junction 09 : 0mm Diameter		7_2	0:00:02
00.60m	GYF	Finish node type Gully		7_99	



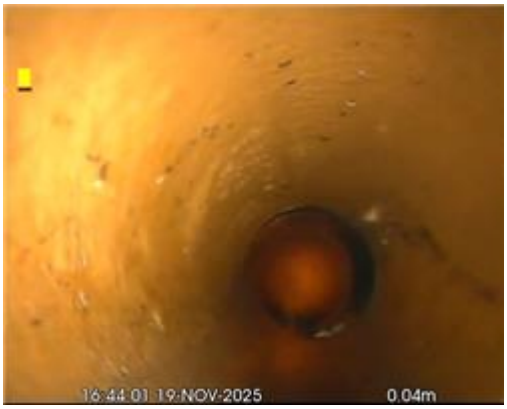
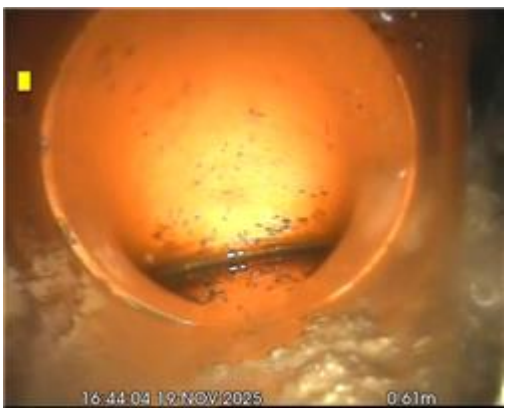
Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 8

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH3	Image Provided - Ref: 7_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.08m	0:00:02	JN	Junction at 09 o'clock: 0mm Diameter	Image Provided - Ref: 7_2 
00.60m		GYF	Finish node type Gully LINE 8	Image Provided - Ref: 7_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 9

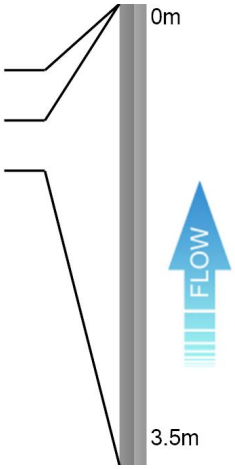
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	MH3	Finish Node Ref:	LINE 9	Direction:	U	Height/Dia:	100
Start Node Depth:	0.52	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	3.5	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		8_0	
00.00m	WL	Water level 0%			0:00:00
03.50m	GYF	Finish node type Gully		8_99	



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 9

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH3	Image Provided - Ref: 8_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
03.50m		GYF	Finish node type Gully LINE 9	Image Provided - Ref: 8_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 10

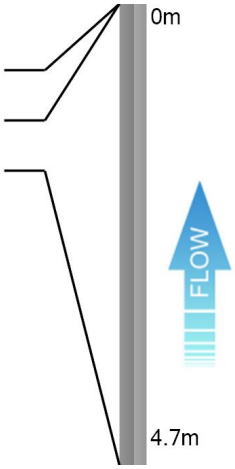
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	MH3	Finish Node Ref:	LINE 10	Direction:	U	Height/Dia:	100
Start Node Depth:	0.52	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	4.7	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		9_0	
00.00m	WL	Water level 0%			0:00:00
04.70m	GYF	Finish node type Gully		9_99	



Total Defects for section

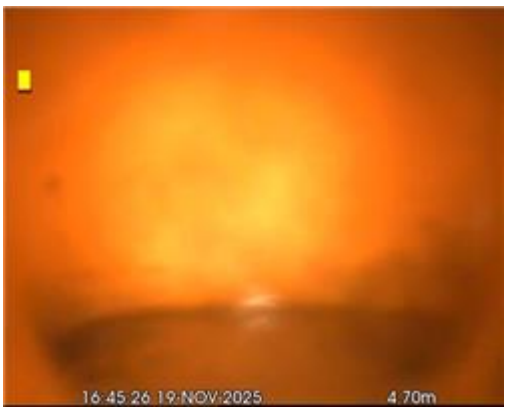
0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 10

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH3	Image Provided - Ref: 9_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
04.70m		GYF	Finish node type Gully LINE 10	Image Provided - Ref: 9_9999 

Site: Unit 3, Redkiln Close, ,

Section 11

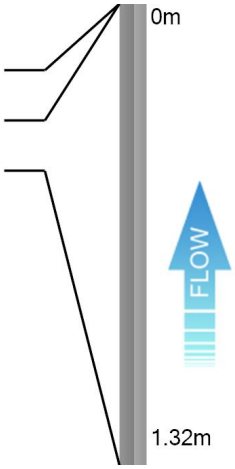
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	SW1	Finish Node Ref:	LINE 11	Direction:	U	Height/Dia:	100
Start Node Depth:	0.35	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	1.32	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		10_0	
00.00m	WL	Water level 0%			0:00:00
01.32m	GYF	Finish node type Gully		10_9	



Total Defects for section

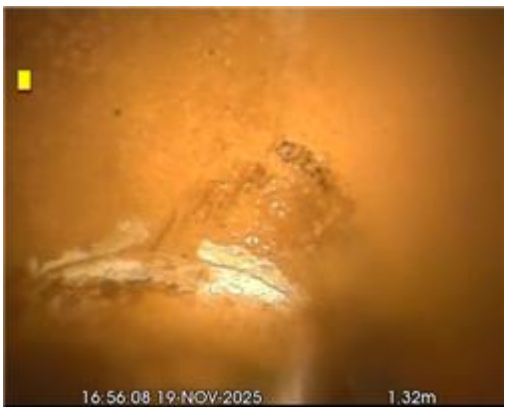
0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 11

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW1	Image Provided - Ref: 10_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.32m		GYF	Finish node type Gully LINE 11	Image Provided - Ref: 10_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 12

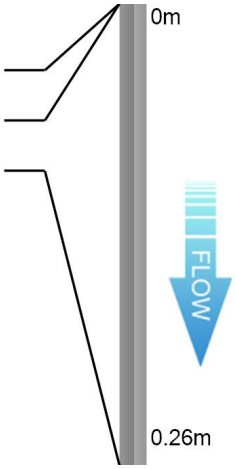
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	SW1	Finish Node Ref:	LINE 12	Direction:	D	Height/Dia:	100
Start Node Depth:	0.35	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	0.26	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		11_0	
00.00m	WL	Water level 0%			0:00:00
00.26m	SKF	Finish node type, soakaway		11_9	



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 12

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW1	Image Provided - Ref: 11_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.26m		SKF	Finish node type, soakaway LINE 12	Image Provided - Ref: 11_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 13

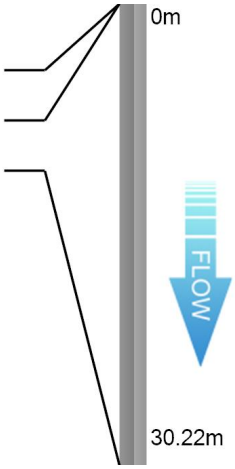
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	SW2	Finish Node Ref:	LINE 13	Direction:	D	Height/Dia:	100
Start Node Depth:	1.35	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	30.22	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		12_0	
00.00m	WL	Water level 0%			0:00:00
30.22m	MHF	Finish node type, manhole		12_9	



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 13

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW2	Image Provided - Ref: 12_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
30.22m		MHF	Finish node type, manhole LINE 13 ENTERS HIDDEN MH	Image Provided - Ref: 12_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 14

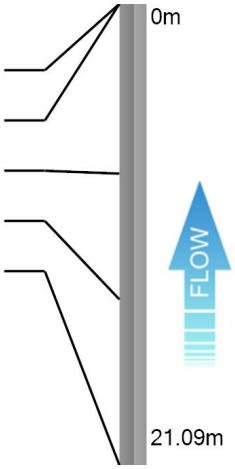
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	SW3	Finish Node Ref:	LINE 14	Direction:	U	Height/Dia:	100
Start Node Depth:	1.20	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	21.09	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		13_0	
00.00m	WL	Water level 0%			0:00:00
07.76m	REM	General remark		13_2	0:00:22
13.51m	REM	General remark		13_3	0:01:28
21.09m	MHF	Finish node type, manhole		13_9	



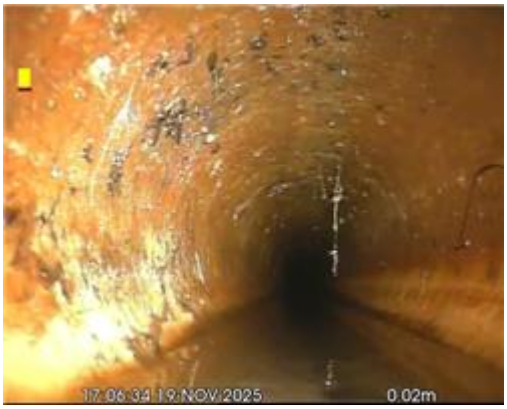
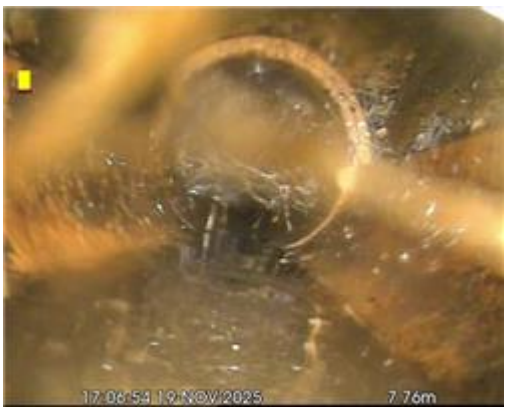
Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 14

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW3	Image Provided - Ref: 13_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
07.76m	0:00:22	REM	General remark ENTERS SW4	Image Provided - Ref: 13_2 
13.51m	0:01:28	REM	General remark ENTERS SW5	Image Provided - Ref: 13_3 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Pos	Video Ref	Code	Description	Image
21.09m		MHF	Finish node type, manhole LINE 14 ENTERS SW6	Image Provided - Ref: 13_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 15

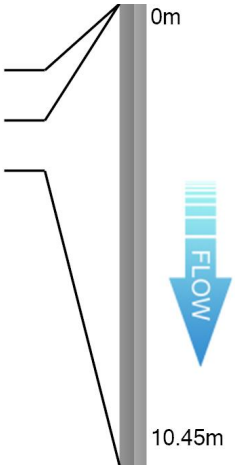
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	SW3	Finish Node Ref:	LINE 15	Direction:	D	Height/Dia:	100
Start Node Depth:	1.20	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	10.45	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		14_0	
00.00m	WL	Water level 0%			0:00:00
10.45m	MHF	Finish node type, manhole		14_9	



Total Defects for section

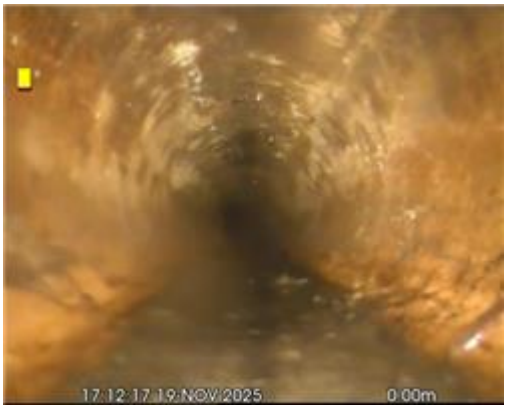
0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 15

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW3	Image Provided - Ref: 14_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
10.45m		MHF	Finish node type, manhole LINE 15 ENTERS MH UNDER SKIP	Image Provided - Ref: 14_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 16

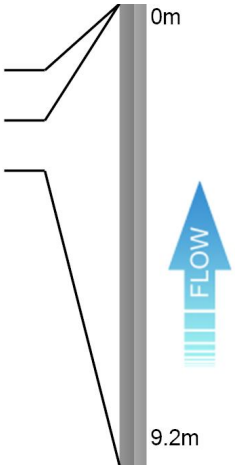
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	SW7	Finish Node Ref:	LINE 16	Direction:	U	Height/Dia:	150
Start Node Depth:	1.20	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	9.2	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		15_0	
00.00m	WL	Water level 0%			0:00:00
09.20m	GYF	Finish node type Gully		15_9	



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 16

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW7	Image Provided - Ref: 15_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
09.20m		GYF	Finish node type Gully LINE 16 ENTERS ROAD GULLY	Image Provided - Ref: 15_9999 

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Site: Unit 3, Redkiln Close, ,

Section 17

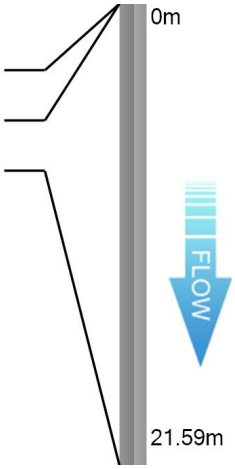
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	Unit 3, Redkiln Close,				11/12/2025

Start Node Ref:	SW7	Finish Node Ref:	LINE 17	Direction:	D	Height/Dia:	150
Start Node Depth:	1.20	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH				

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	21.59	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole		16_0	
00.00m	WL	Water level 0%			0:00:00
21.59m	MHF	Finish node type, manhole		16_9	



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 17

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW7	Image Provided - Ref: 16_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
21.59m		MHF	Finish node type, manhole LINE 17 ENTERS LINE 13	Image Provided - Ref: 16_9999 

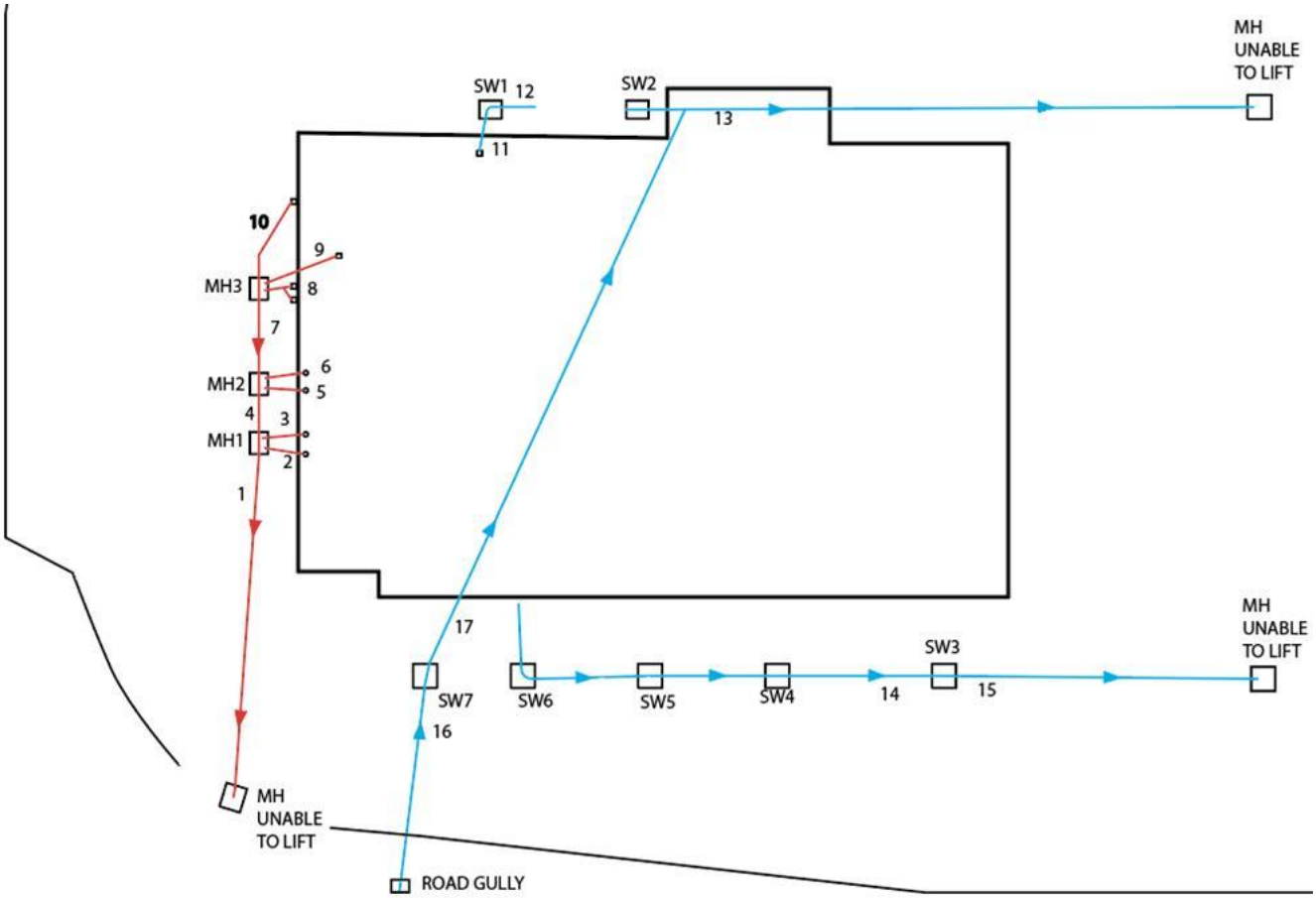
Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Plan of Site



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

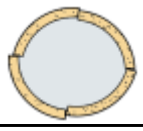
A guide to defects and other observations in drainage systems

More detailed information can be found in the National Standard (BS EN 13508-1:2003) and in the Manual of Sewer Condition Classification (MSCC) 5th Edition, written by the Water Research Centre (WRc).

Use	
Code	**Description**
C	Combined
F	Foul
S	Surface Water
T	Trade Effulent
W	Culverted Watercourse
Z	Other

Common Materials	
Code	**Description**
VC	Vitrified Clay
PVC	Polyvinyl Chloride
CO	Concrete
CI	Cast Iron
PF	Pitch Fibre
PE	Polyethylene
DI	Ductile Iron

Start Node	Description	Finish Node
MH	Manhole	MHF
IC	Inspection Chamber	ICF
GY	Gulley	GYF
RE	Rodding Eye	REF
SK	Soakaway	SKF
BN	Buchan Trap	BNF
BR	Major Connection without Ref	BRF
CP	Cacth Pit	CPF
OC	Other Special Chamber	OCF
OF	Outfall	OFF
OS	Oil Seperator	OSF
WR	Winser Trap	WRF
LH	Lamphole	LHF

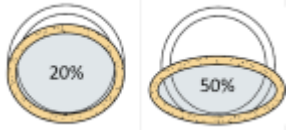
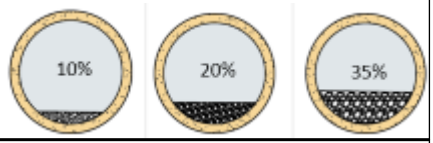
Code	Observation	Description	Attributes	
B	Broken	Pieces pipe have visibly moved	Defined by clock references. Associated with deformity in rigid pipe	
CC CL CM CR	Cracks	Cracks are break lines that are not visibly open	Defined by clock reference position/s. Longitudinal and radiating cracks attract only one clock reference	
CN	Connection	Lateral pipe has been connected after original construction	Described by clock reference position and diameter	

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

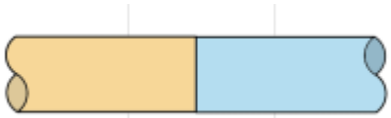
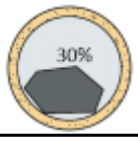
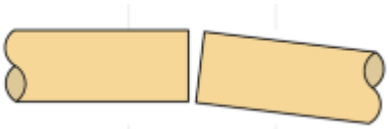
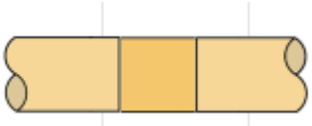
CX(I)	Defective Connection (Intruding)	Defective by intrusion or damage due to factors including: cracks, fractures, obstruction, position etc	Described by clock reference position and diameter (+ % intrusion)	
CU	Loss of Vision	Lens of camera is obscured by debris, water etc. Operator is unable to see drain clearly	'W' can be added if loss of vision is due to water	
D	Deformed	Pipe has lost its structure	Described by percentage loss of height or width. Recorded in 5% increments	
DEE	Deposits Encrustation	Eg. Attached scale deposits evident	Described by clock referenced position and percentage loss of cross-sectional area (5% increments)	
DEG	Deposits Grease	Attached grease deposits evident	Described by clock referenced position and percentage loss of cross-sectional area (5% increments)	
DER DES	Deposits Coarse/Fine	Settled deposits on the invert of the pipe.	Described by percentage loss of height or diameter. Recorded in 5% increments.	
FC FL FM FR	Fractures	Fractures are visibly open. Pieces of pipe have not moved	Defined by clock reference position/s. Longitudinal and radiating fractures attract only one clock reference	
H	Holes	Section of pipe fabric is missing	Defined by clock reference location. Normally two clock references	
I	Infiltration	Water is infiltrating the pipe, normally via a joint but could be via another defect	Can be described in Remarks using terms such as Seeper, Dripper and Runner	
JDL	Joint Displaced Large	Pipe has moved at joint, perpendicular to axis of pipe	More than 1.5 times the pipe wall thickness must be visible	

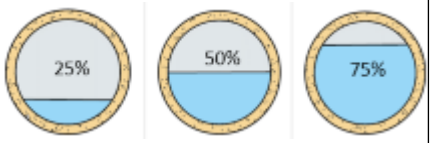
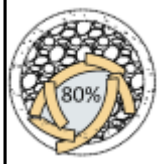
Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

JDM	Joint Displaced Medium	Pipe has moved at joint, perpendicular to axis of pipe	Between 1 and 1.5 times the pipe wall thickness must be visible	
JN	Junction	Lateral pipe was installed at construction	Described by clock reference position and diameter	
JX	Defective Junction	Lateral pipe was installed at construction but is defective in some way	Joint can be defective due to factors including: cracks, fractures, obstruction, position etc	
LD **LU** **LL** **LR**	Line Deviation	LD = Line Down, LU = Line Up, LL = Line Left, LR = Line Right. Not related to CIPP lining.	Additional modifiers are added: Q = Quarter (22.5), H = Half (45), F = Full (90). In degrees.	
LC	Lining Changes	If the drain is lined, the lining material has changed	Position of lining material change	
MC	Material Change	The pipe material has changed	Position of change is noted. Type of material change can be defined	
OB	Obstruction/Obstacle	An obstruction or obstacle is affecting the flow through the pipe	Described in percentage loss of cross-sectional area	
OJL	Open Joint Large	Pipe has moved at joint, along the axis of pipe	More than 1.5 times the pipe wall thickness must be visible	
OJM	Open Joint Medium	Pipe has moved at joint, along the axis of pipe	Between 1 and 1.5 times the pipe wall thickness must be visible	
PC	Pipe Length Changes	Length of individual pipe changes	New length described at this position	

R	Roots	Evidence of root ingress	Roots will normally infiltrate via bad joints, cracks, fractures, breaks etc	
REM	Remark	General remark	Used for additional information	
S	Surface Damage	This might include corrosion, spalling and chemical attack	Position only. Additional information can be added in Remarks	
SA	Survey Abandoned	Used when a survey cannot continue for any reason	The reason for abandoning a survey should be noted in the remarks area	
SC	Shape Changes	Dimension of drain changes	Diameter dimension change recorded. Second dimension is recorded for no circular pipe changes	
SR	Sealing Ring	Sealing ring intrudes into pipe at joint	Described by clock reference position	
V	Vermin	Evidence of Vermin in pipe	Can also be used for evidence within manhole etc	
WL	Water Level	Used to record changes in water level. Always shown at the beginning of every survey, if dry noted as 00.	Described by percentage of height or diameter. Recorded in 5% increments	
XP	Collapsed	Drain is suffering from complete loss of structural integrity. Always followed by SA - Survey Abandoned	Percentage loss of cross-sectional area is recorded. Other related structural defects are not recorded	

Annex 3: 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 infrastructure for electricity supply including generation, storage and distribution systems; including electricity generating power stations, grid and primary substations storage; and water treatment works that need to remain operational in times of flood. • Wind turbines. • Solar farms.
Highly Vulnerable:	• Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes and park homes intended for permanent residential use. • Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure'.)
More Vulnerable: * Landfill 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, student halls of residence, drinking establishments, nightclubs and hotels. • Non–residential uses for health services, nurseries and educational establishments. • Landfill* and sites used for waste management facilities for hazardous waste. • Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.
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.
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 3: Flood risk vulnerability classification