

Flood Risk Assessment and Surface and Foul Water Drainage Strategy for Planning

May 2026

Prepared for:

Ivana & Bruce Selkirk

Location:

Oak Tree Caravan

Bishopstone Lane

Ansty

Haywards Heath

RH17 5AR

Our reference:

97006-MurrayPlnng-BishopstoneLn



Document Issue Record

Project Details	
Project:	Flood Risk Assessment and Surface and Foul Water Drainage Strategy for Planning
Prepared for:	Ivana & Bruce Selkirk
Application:	Replace existing caravan and 2x outbuildings with new permanent dwelling
Location:	Oak Tree Caravan, Bishopstone Lane, Ansty, Haywards Heath, RH17 5AR
Our reference:	97006-MurrayPlnng-BishopstoneLn
Issue no.:	v1.0
Issue date:	15 th May 2026

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

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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 watercourses to the site are located approximately 12m west and 33m east of the site. An existing pond on the site is understood to discharge to another pond east 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 at the present day and between 2040 and 2060.
- It should be noted that the area of “Low” to “High” risk on the site is associated with the pond. The areas of the proposed development are at “Very Low” risk of flooding at the present day and between 2040 and 2060.
- The site is not shown to be within an active surface water flow path.
- The areas of the proposed development are not shown to be located within Future Flood Zones 3a or 3b.
- According to the 2024 Mid Sussex District Council SFRA, the site is within a MSDC historic flood extent. The EA hold no records of historic flooding at the site.

Flood Risk Mitigation:

- The existing site is classified as “highly vulnerable” (caravans). Post development, the site will be classified as “more vulnerable”, as the application is for the replace existing caravan and 2x outbuildings with new permanent dwelling.
- No basement accommodation is proposed.
- To protect against flooding during extreme events, the finished ground floor level of the proposed dwelling will be set 300mm above the adjacent ground level.
- 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.
- There will be no loss of fluvial floodplain storage.
- The applicant will register with the National Severe Weather Warning Service.

Surface Water Drainage:

- Infiltration testing will be conducted at a later stage to confirm feasibility for soakaways. As such, a strategy with a secondary discharge route has been developed.
- Runoff from the roof area of the dwelling will be directed into the cellular storage attenuation located beneath the garden.
- From the cellular storage, runoff will be gradually discharged to the watercourse west of the site at an attenuated rate.
- The watercourse is within the Applicant’s ownership boundary, and has onward connectivity to the wider drainage network. Ordinary Watercourse Consent for the proposed discharge will be obtained from the LLFA.
- All new ground surfaces will be of permeable construction, with permeable paving utilised for all new trafficked areas.
- The proposed decking will discharge to permeable surfacing.
- Green roofs are to be located on the proposed bin and cycle stores.
- A water butt will be incorporated into the development.

Foul Water Drainage:

- The existing site is understood to discharge its foul water to a shared septic tank located within the neighbouring Willows Cattery.
- Post development, foul water will be directed into a package sewage treatment plant located within the site boundary.
- The proposed discharge to watercourse is thereby considered to comply with the Environment Agency's General Binding Rules.

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 and Foul Water Drainage Strategy has been prepared by Unda Consulting Limited on behalf of Ivana & Bruce Selkirk, in support of a planning application for the replace existing caravan and 2x outbuildings with new permanent dwelling. The proposed development is being undertaken at Oak Tree Caravan, Bishopstone Lane, Ansty, Haywards Heath, RH17 5AR. This report assesses the flood risk and sets out the surface and foul water drainage strategy for the proposed development.
- 2.2. The proposed planning application is for the replace existing caravan and 2x outbuildings with new permanent dwelling. Post development the roof area of the dwelling will cover approximately 121m².
- 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 is currently occupied by a static caravan with an adjoining building to the rear. There is also a large garage outbuilding structure along the northern boundary. The remainder of the site is a mix of grassland, trees, and a pond.
- 3.2. The surrounding area is characterised by agricultural land and sporadic residential dwellings.
- 3.3. Existing plans are provided in the report Appendix.

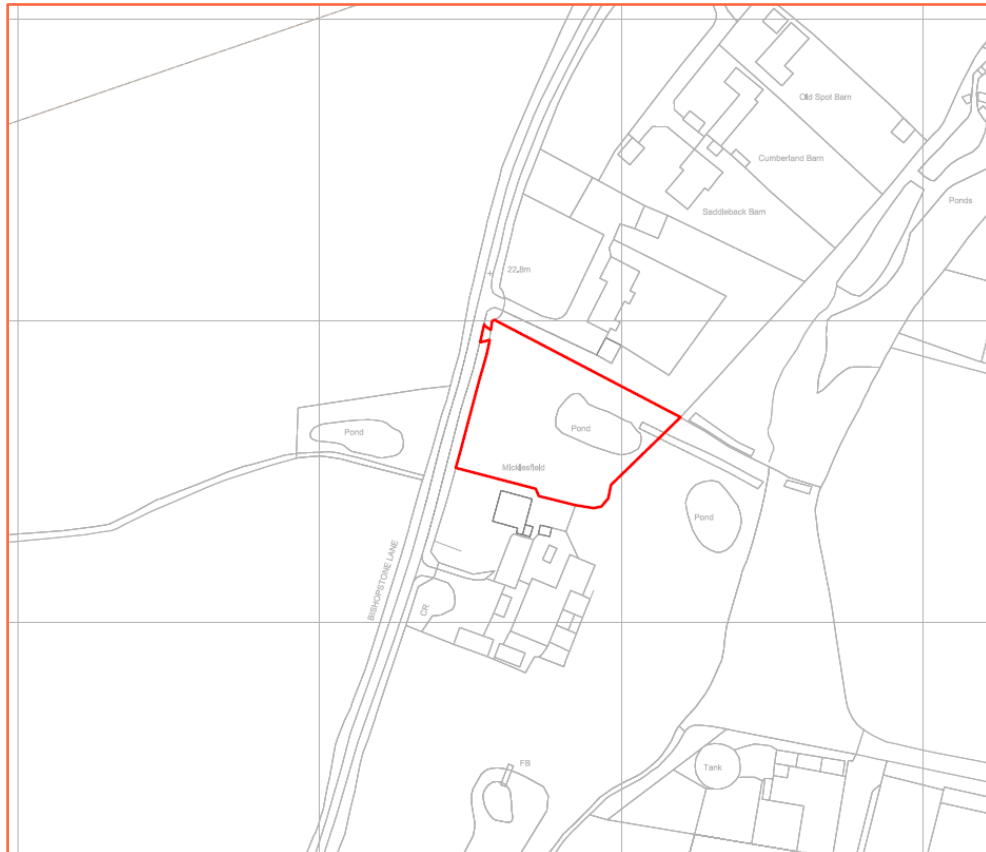


Figure 2: Site location plan (Source: Applicant)



Figure 3: Existing site plan (Source: Applicant)

Site Topography:

- 3.4. A topographic survey of the site undertaken in September 2025 by J. Brotherton & Partners shows ground topography on site ranges between 18.74mAOD to 22.84mAOD. The topographic low point is the existing pond.
- 3.5. LiDAR remotely sensed digital elevation data indicates that the top of bank and bed levels of the watercourse east of the site are 18.00mAOD and 16.80mAOD, respectively.

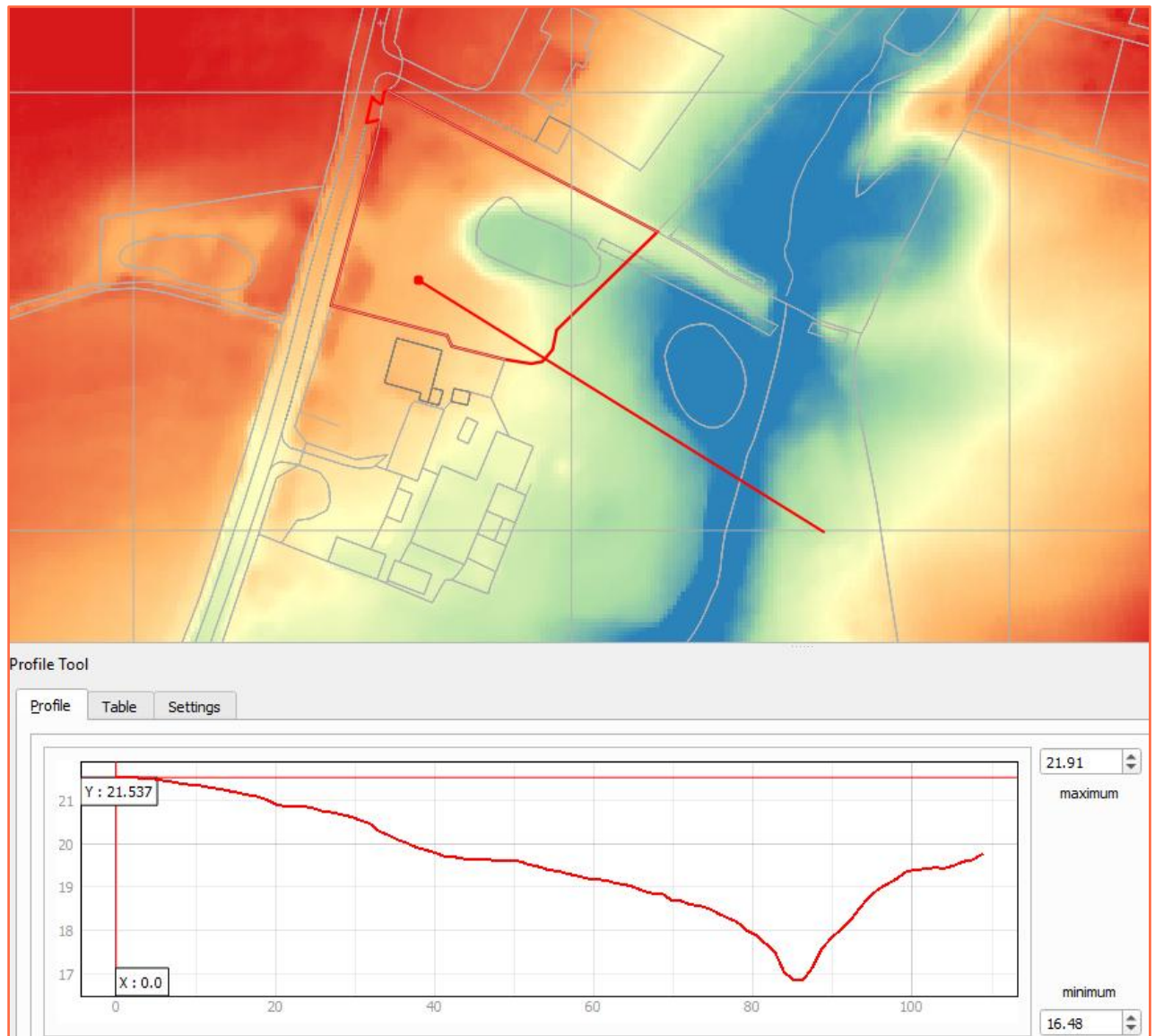


Figure 4: 1m LiDAR DTM with transect west to east (Source: EA, OS)

Existing Ground Conditions:

- 3.6. The 1:50,000 BGS map shows that the bedrock underlying the site is Weald Clay Formation – Mudstone.
- 3.7. The BGS hold no records of superficial deposits underlying the site.
- 3.8. 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.
- 3.9. The published Environment Agency Groundwater Source Protection Zone map shows the site is not located within a Groundwater Source Protection Zone.

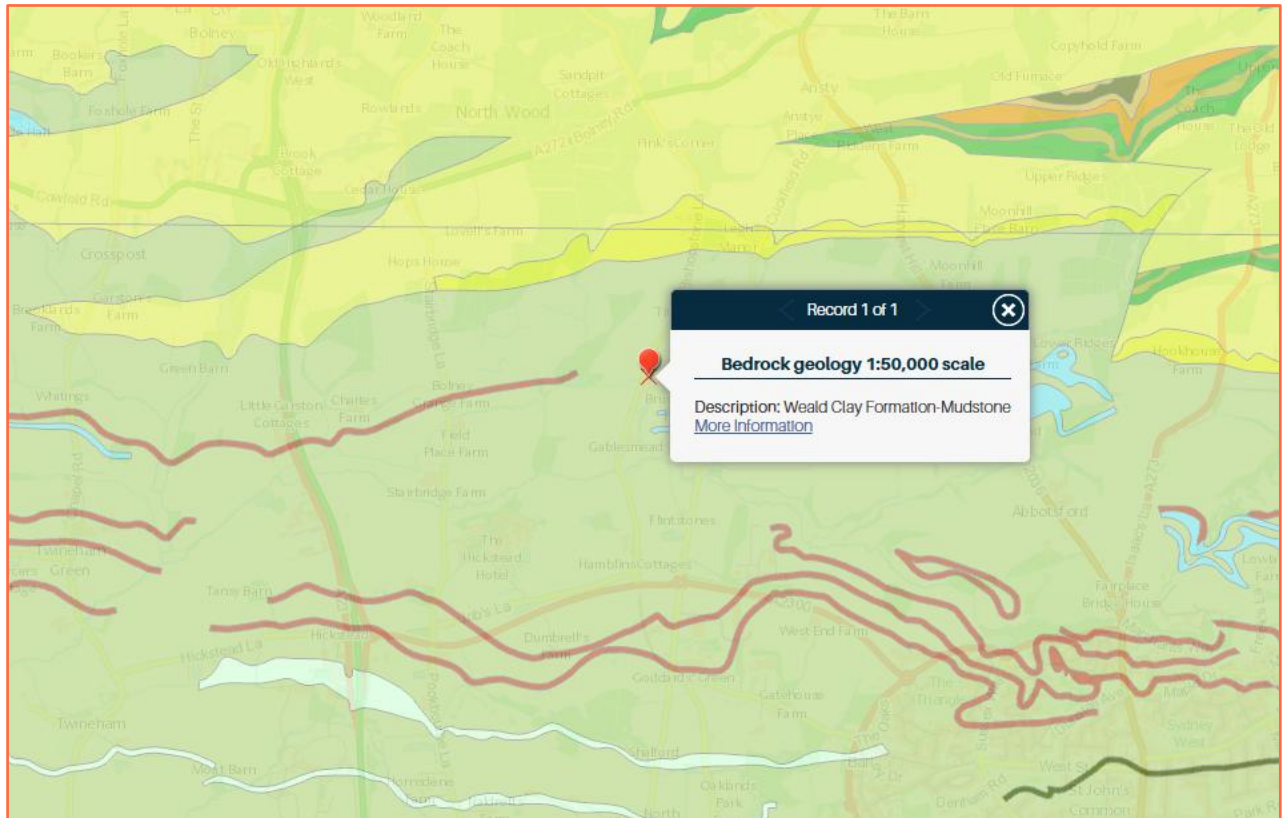


Figure 5: BGS Bedrock Geology (Source: BGS)

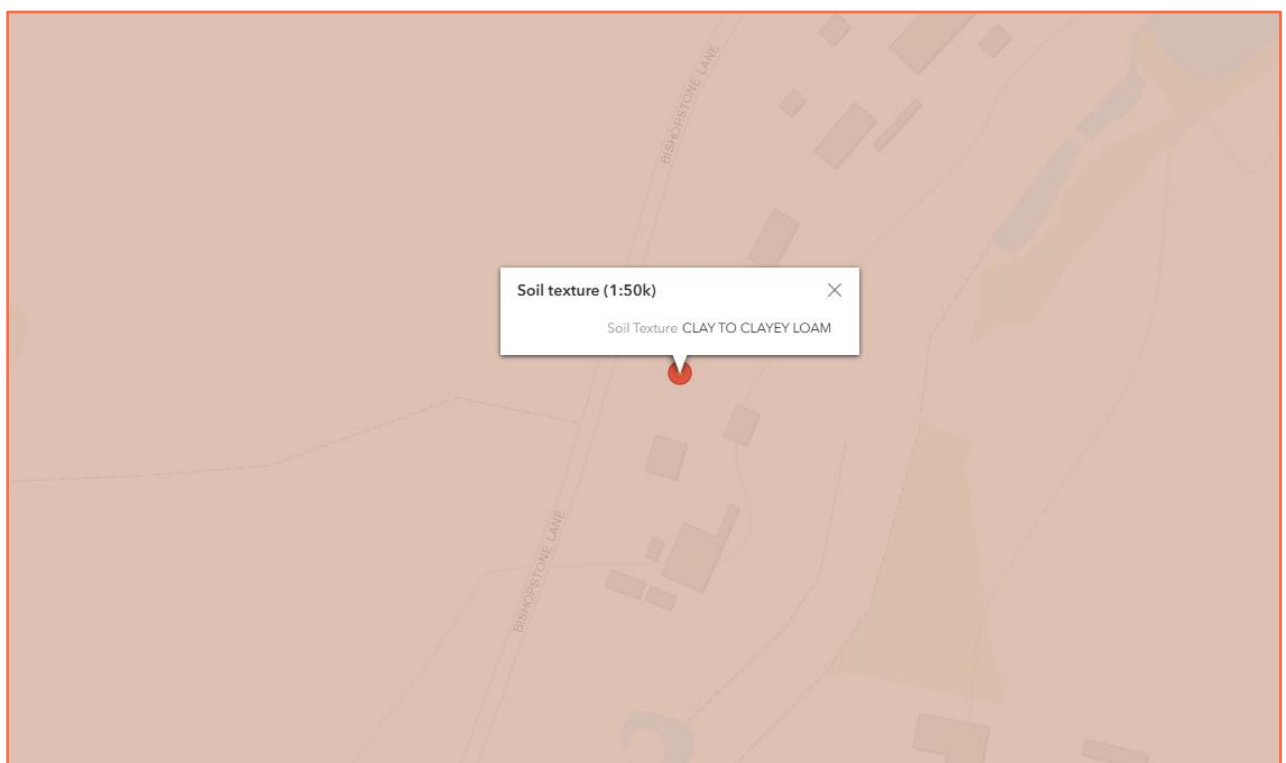


Figure 6: Soil map (Source: UK Soils, BGS)

Nearby Watercourses / Drainage Features:

- 3.10. The nearest watercourses to the site are located approximately 12m west and 33m east of the site. An existing pond on the site is understood to discharge to another pond east of the site.

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4. Development Proposal

- 4.1. The proposed planning application is for the replace existing caravan and 2x outbuildings with new permanent dwelling. Post development the roof area of the dwelling will cover approximately 121m².
- 4.2. All new ground surfaces will be of permeable construction, with permeable paving utilised for all new trafficked areas.
- 4.3. In light of this, SuDS storage sizing within the strategy has been based on a total roof area of 121m².
- 4.4. Proposed plans are provided in the report Appendix.

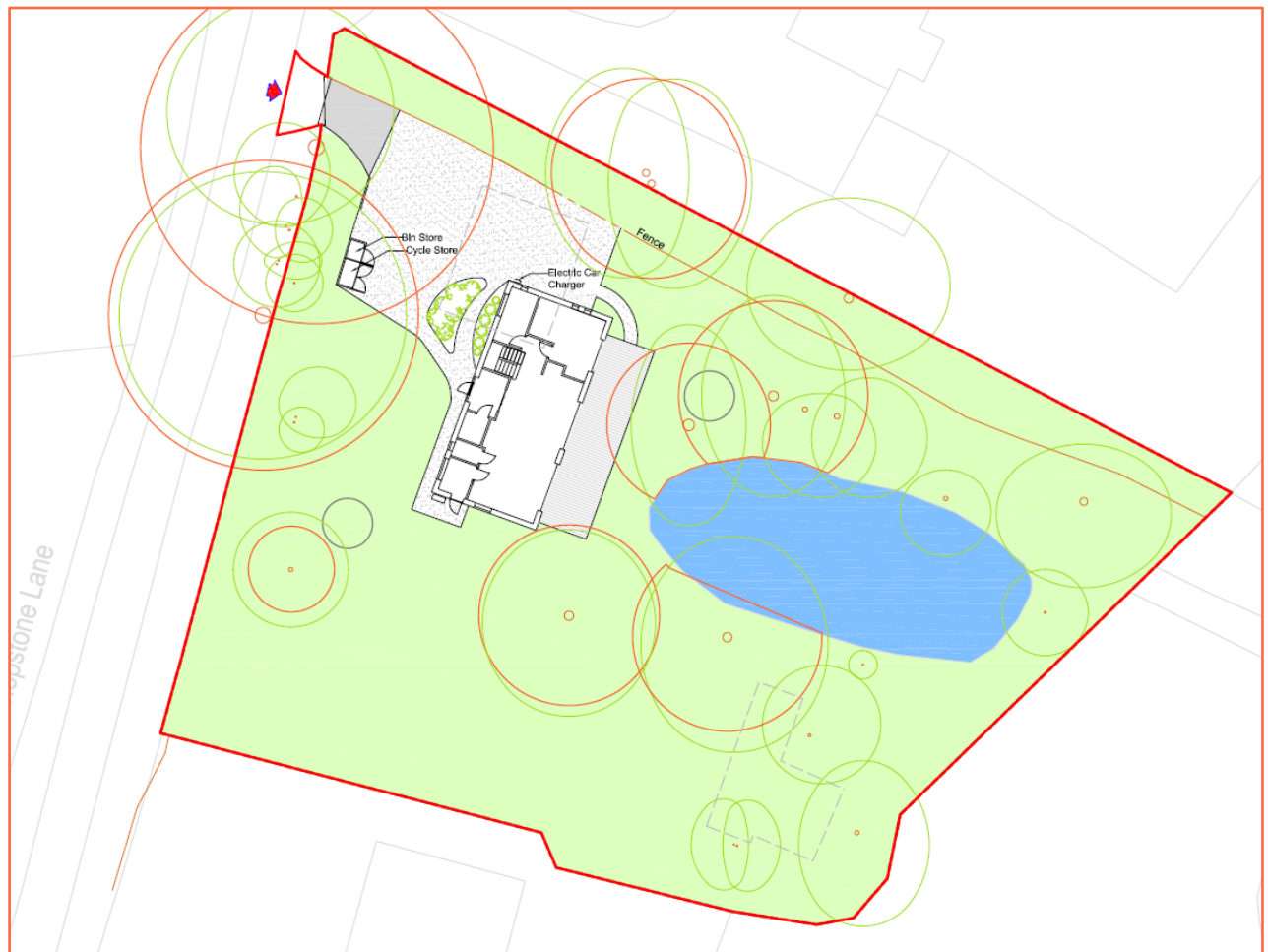


Figure 7: Proposed site plan (Source: Applicant)

5. Flood Risk Assessment

EA Flood Zones:

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

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

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

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

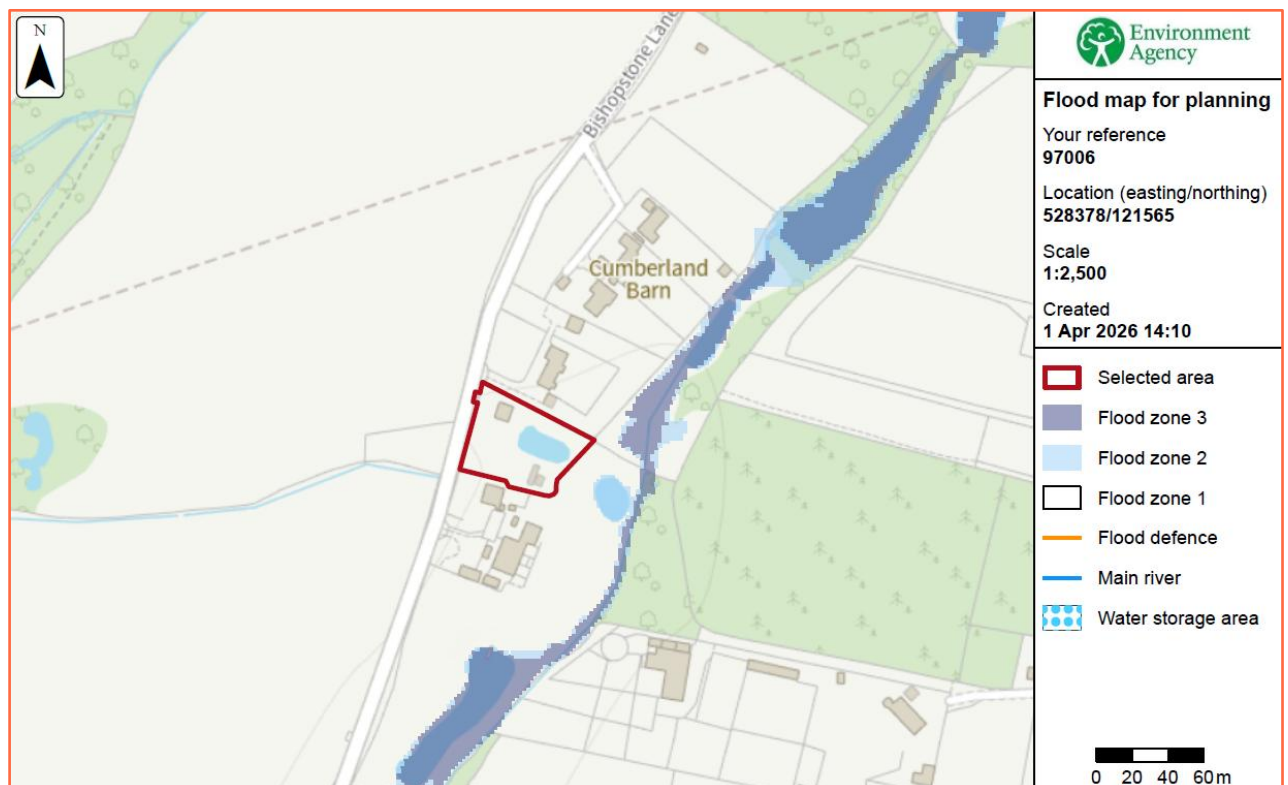


Figure 8: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

- 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 of the EA Flood Zones plus climate change (2070 to 2125) extent.



Figure 9: 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 watercourses to the site are located approximately 12m west and 33m east of the site. An existing pond on the site is understood to discharge to another pond east 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.
- 5.30. It should be noted that the area of “Low” to High” risk on the site is associated with the pond. The areas of the proposed development are at “Very Low” risk of flooding at the present day and between 2040 and 2060.
- 5.31. The site is not shown to be within an active surface water flow path.

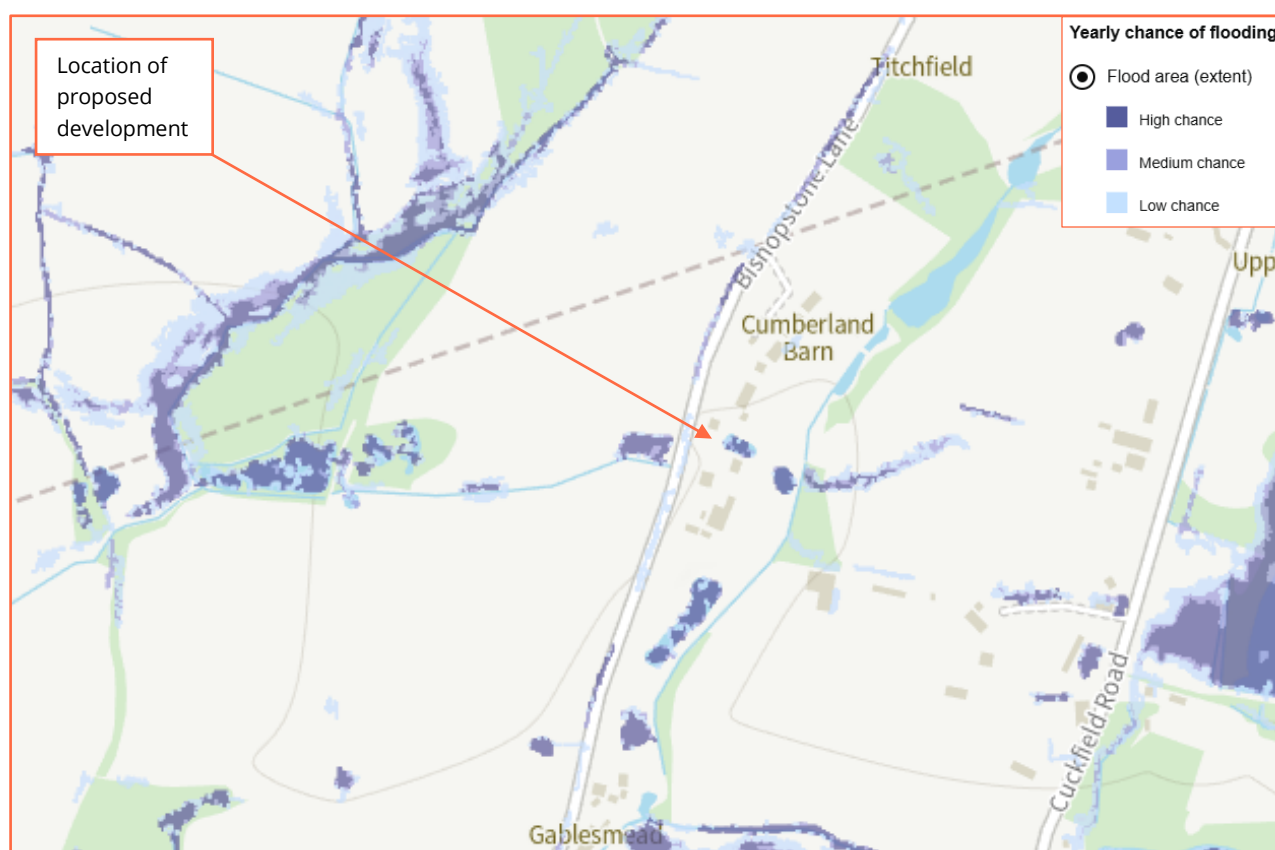


Figure 10: Extract from EA Risk of Flooding from Surface Water mapping – present day (Source: EA)

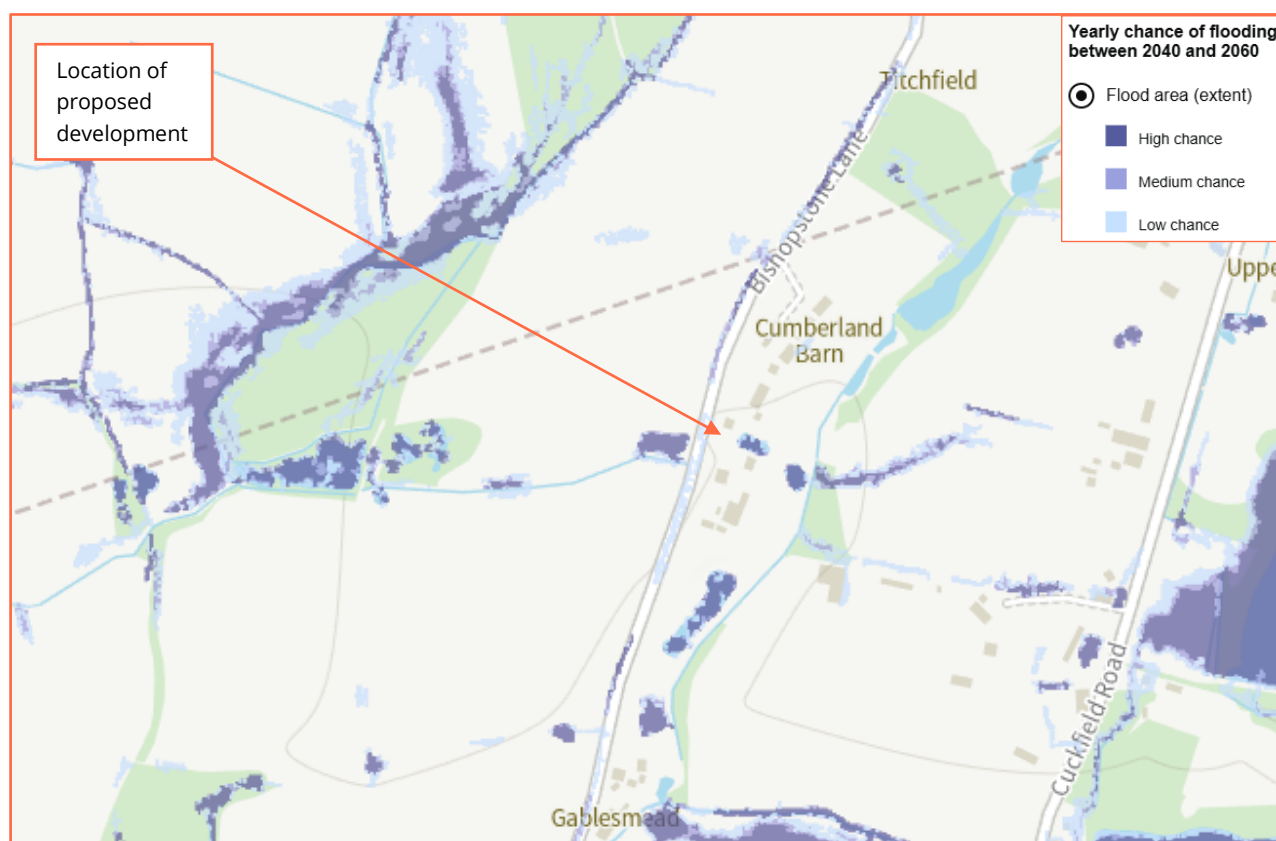


Figure 11: Extract from Environment Agency RoFSW map – between 2040 and 2060 (Source: EA)

- 5.32. The 2024 Mid Sussex District Council Strategic Flood Risk Assessment (SFRA) categorises areas of “Low” surface water flood risk as being the equivalent of Flood Zone 2, whilst areas of “Medium” and “High” risk are equivalent to Flood Zones 3a and 3b, respectively.
- 5.33. EA mapping shows the areas of the proposed development within the application boundary to be at “Very Low” risk of surface water flooding.
- 5.34. The 2024 Mid Sussex District Council SFRA also provides guidance on accommodating future climate change within assessments of surface water flood risk. Areas at “Low” risk at the present day are classed as Future Flood Zone 3, whilst areas of “Medium” and “High” risk are classed as Future Flood Zone 3b (functional floodplain).
- 5.35. The areas of the proposed development are not shown to be located within Future Flood Zones 3a or 3b.

Groundwater:

- 5.36. 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.
- 5.37. 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.

- 5.38. The EA advise that this location is outside of a groundwater flood alert area.
- 5.39. No information has been provided to suggest that the site has flooded historically due to groundwater.

Sewer:

- 5.40. 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.
- 5.41. 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.
- 5.42. According to the 2024 Mid Sussex District Council SFRA the site's postcode area (RH17 5) has had 2 internal and 9 external incidents of sewer flooding recorded by Southern Water.
- 5.43. No further information has been presented to suggest that the site itself is susceptible to sewer flooding.

Other Sources:

- 5.44. 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.
- 5.45. 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.
- 5.46. 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.
- 5.47. No information has been provided to suggest that the site is susceptible to flooding from other sources.



Figure 12: Extract from Environment Agency Reservoir Flood Map (Source: EA)

Historical Flood Events:

- 5.48. 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.
- 5.49. According to the 2024 Mid Sussex District Council SFRA, the site is within a MSDC historic flood extent. The EA hold no records of historic flooding at the site.
- 5.50. No further records of flooding at the site previously have been provided.
- 5.51. 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. The existing site is classified as “highly vulnerable” (caravans). Post development, the site will be classified as “more vulnerable”, as the application is for the replace existing caravan and 2x outbuildings with new permanent dwelling. No basement accommodation is proposed.
- 6.2. Accordingly, it is considered that the vulnerability of the site as a whole will decrease post development.

EA Standing Advice for Vulnerable Developments:

- 6.3. EA Standing Advice for vulnerable development (for example, more vulnerable, less vulnerable and water compatible) development in Flood Zone 2 states that finished floor levels should be a minimum of whichever is higher of 600mm above the:
- Average ground level of the site
 - Adjacent road level to the building
 - Estimated river or sea flood level
- 6.4. If you cannot raise floor levels to meet the minimum requirements, you will need to:
- Raise them as much as possible
 - Consider moving vulnerable uses to upper floors
 - Include extra flood resistance and resilience measures
- 6.5. To protect against flooding during extreme events, the finished ground floor level of the proposed dwelling will be set 300mm above the adjacent ground level.

Physical Design Measures:

- 6.6. The site lies entirely within Flood Zone 1 according to the EA Flood Map for planning (Rivers and the Sea).
- 6.7. 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 at the present day and between 2040 and 2060. It should be noted that the area of “Low” to “High” risk on the site is associated with the pond. The areas of the proposed development are at “Very Low” risk of flooding at the present day and between 2040 and 2060. The site is not shown to be within an active surface water flow path.
- 6.8. The EA Standing Advice states that the design should be appropriately flood resistant and resilient by:
- Using flood resistant materials that have low permeability to at least 600mm above the estimated flood level;
 - Making sure any doors, windows or other openings are flood resistant to at least 600mm above the estimated flood level;
 - Using flood resilient materials (for example lime plaster) to at least 600mm above the estimated flood level;
 - By raising all sensitive electrical equipment, wiring and sockets to at least 600mm above the estimated flood level;
 - Making it easy for water to drain away after flooding such as installing a sump and a pump;
 - Making sure there is access to all spaces to enable drying and cleaning;
 - Ensuring that soil pipes are protected from back-flow such as by using non-return valves.

6.9. 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.

6.10. It is recommended that flood proof doors and windows are installed for all ground floor external doors and windows.

Safe Escape:

6.11. 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.

6.12. It should be noted that the site is entirely within Flood Zone 1 and at “Very Low” to “High” chance of flooding from surface water for the present day and between 2040 and 2060. It should be noted that the area of “Low” to “High” risk on the site is associated with the pond. The areas of the proposed development are at “Very Low” risk of flooding at the present day and between 2040 and 2060. The site is not shown to be within an active surface water flow path.

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

Flood Warning:

6.14. 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.

6.15. 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.

6.16. 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>.

- 6.17. 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.

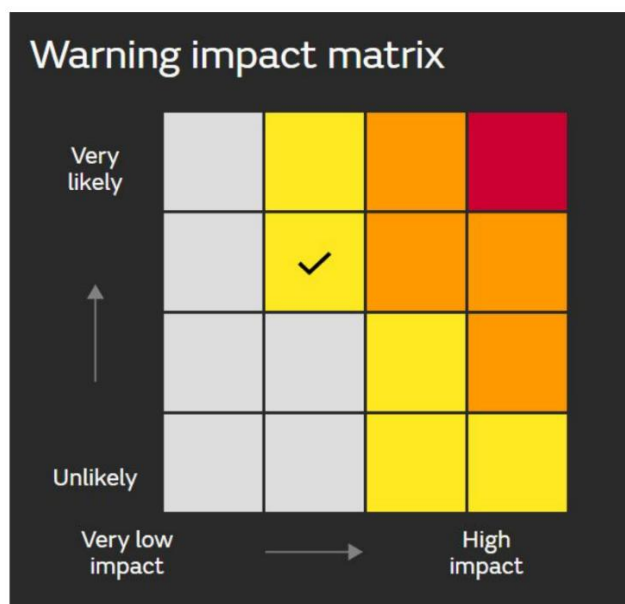


Figure 13: Met Office Weather Warning Impact Matrix (Source: Met Office)

- 6.18. **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.
- 6.19. **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.
- 6.20. **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:

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

Action	
Before a flood	- Find out if you are at risk of flooding. - Find out if you can receive flood warnings. - 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 such as pets, cars, furniture, and electrical equipment. - Know how to turn off gas, electricity and water supplies. - 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. - Consider buying flood protection products such as flood boards and airbrick covers to help reduce flood water getting into your property.
During a flood	- Tune into your local radio station on a battery or wind-up radio. - Fill jugs and saucepans with water. - Grab your flood kit - if you have prepared one. - Collect blankets, torch, first aid kit, medication and food. - Move important documents, personal items, valuables, and lightweight belongings upstairs or to high shelves. - Raise large items of furniture, or put them in large bags if you have them. - Move people, outdoor belongings, cars and pets to higher ground. - Switch off water, gas and electricity at mains when water is about to enter your home. Do not touch sources of electricity when standing in water. - Fit flood protection products, if you have them, for example flood boards, airbrick covers, sandbags. - Put plugs in sinks and baths. Weigh them down with a pillowcase or plastic bag filled with soil. - If you do not have non-return valves fitted, plug water inlet pipes with towels or cloths. - Move your family and pets upstairs or to a high place with a means of escape. - 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, central heating and water checked by qualified engineers before switching them back on.

Table 2: Flood plan

Off Site Impacts:

Fluvial Floodplain Storage:

- 6.22. 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.
- 6.23. 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.

- 6.24. 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.
- 6.25. 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. Sequential and Exception Test

- 7.1. The Sequential Test aims to ensure that development does not take place in areas at high risk of flooding when appropriate areas of lower risk are reasonably available.
- 7.2. The Sequential Test is applied to developments in areas identified as being at risk of any source of flooding now or in the future. The Sequential Test ensures that a sequential, risk-based approach is followed to steer new development to areas with the lowest risk of flooding, taking all sources of flood risk and climate change into account.
- 7.3. The sequential approach is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding. Other forms of flooding need to be treated consistently with river and tidal flooding in mapping probability and assessing vulnerability, so that the sequential approach can be applied across all areas of flood risk.
- 7.4. The site is situated within Flood Zone 1 when using the Environment Agency Flood Map for Planning (Rivers and Sea) and 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. It should be noted that the area of “Low” to High” risk on the site is associated with the pond. The areas of the proposed development are at “Very Low” risk of flooding at the present day and between 2040 and 2060. The proposed development is considered to be ‘more vulnerable’ (residential).

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

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

- 7.5. Using the above table, the proposed application (‘more vulnerable’) is considered to be suitable within Flood Zone 1.

8. Surface Water Drainage Strategy

Drainage Hierarchy:

- 8.1. 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.
- 8.2. 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:

- 8.3. The 1:50,000 BGS map shows that the bedrock underlying the site is Weald Clay Formation – 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.
- 8.4. Infiltration testing will be conducted at a later stage to confirm feasibility for soakaways. As such, a strategy with a secondary discharge route has been developed.

Proposed Discharge Rate and Location:

- 8.5. The greenfield runoff rate for the area of the site being attenuated has been calculated as 0.1 l/s for the 1:1 annual runoff event, 0.2 l/s for the 1:30 year event and 0.2 l/s for the 1:100 year event. Refer to calculations in Appendix.
- 8.6. Runoff from the roof area of the dwelling will be directed into the cellular storage attenuation located beneath the garden.
- 8.7. From the cellular storage, runoff will be gradually discharged to the watercourse west of the site at an attenuated rate of 0.1 l/s via an orifice plate. Due to the small diameter of the orifice plate, a filter will be fitted to protect the orifice plate from blockages, and a high-level overflow weir will be fitted to allow discharge should the orifice become blocked.
- 8.8. The watercourse is within the Applicant's ownership boundary, and has onward connectivity to the wider drainage network. Ordinary Watercourse Consent for the proposed discharge will be obtained from the LLFA.
- 8.9. All new ground surfaces will be of permeable construction, with permeable paving utilised for all new trafficked areas.
- 8.10. The proposed decking will discharge to permeable surfacing.

Cellular Storage Attenuation:

- 8.11. The proposed area discharging into the cellular storage amounts to approximately 121m².
- 8.12. In order to comply with CIRIA C753 The SuDS Manual, a 10% allowance will be added to take into account future urban creep. Applying a 10% allowance to all areas discharging to cellular storage gives a value of 133.1m².

Therefore, all cellular storage drainage calculations have been made on a basis of a total impermeable area of 133.1m².

- 8.13. Preliminary calculations indicate that sufficient storage required to attenuate runoff from the roof area of the dwelling from the critical 1:100 year + 45% climate change event can be provided by cellular storage of dimensions 38m² x 0.40m x 0.95 (voids).
- 8.14. Preliminary calculations indicated that some 14.44m³ of storage is required to attenuate the runoff for all storms up to and including the 1:100 year + 45% climate change event.
- 8.15. *Please note that the levels and locations of the cellular storage within the Causeway calculations are arbitrary for modelling purposes.*
- 8.16. All preliminary surface water drainage calculations have been undertaken using Causeway software. Refer to Appendix.

Green Roofs:

- 8.17. Green roofs are to be located on the proposed bin and cycle stores.
- 8.18. Discharge from the green roofs will be directed onto adjacent permeable surfacing.

Water Butt:

- 8.19. A water butt will be incorporated into the development. Rainwater collected by the water butt will be for garden use.
- 8.20. Overflows from the water butts will be directed into the cellular storage attenuation.

Water Quality:

- 8.21. 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.

- 8.22. The highest pollution hazard level for the proposed land use is Low (individual property driveways). 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
Individual property driveways	Low	0.5	0.4	0.4

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

- 8.23. 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 shown in the Table below.

SuDS Component	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Permeable Pavement	0.7	0.6	0.7

Table 5: Pollution mitigation hazard indices for permeable pavements

Commercial in Confidence

- 8.24. Permeable paving utilised for all new trafficked areas. The Pollution Mitigation Indices for permeable pavement are greater than the Pollution Hazard Indices for residential car parks. Therefore, permeable pavements will provide sufficient water quality treatment.
- 8.25. 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:

- 8.26. 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:

- 8.27. It is proposed that all SuDS facilities will be maintained privately by the end users.
- 8.28. A draft Maintenance Schedule is outlined below.
- 8.29. 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.

Permeable Paving:

- 8.30. Permeable surfaces should be maintained with the following actions at the specified intervals to preserve their infiltration capacity and structural integrity, or in line with the manufacturer's recommendations.

Maintenance Schedule	Action	Frequency
Routine Maintenance	- Clean of silt and other sediments using a brush and vacuum. - Remove any other debris.	Three times a year: - End of winter - Mid-summer - After autumn leaf fall Or as required.
Occasional Maintenance	- Removal of weeds manually or with weedkiller. - Stabilise adjacent landscaped areas to prevent sediment spills onto surface.	Action as required.
Remedial Actions	- Replace damaged or lost blocks. - Level depressions in the surface. - Apply pure rock salt de-icer free from additional sand or grit.	Action as required.
	Rehabilitation of upper substructure by remedial sweeping of joints and reapplication of jointing material.	Every 10 – 15 years or as required (if infiltration performance is reduced due to clogging of joints).
Monitoring	Initial inspection.	Monthly for 3 months post-installation.
	Inspect for poor infiltration performance or structural damage and take remedial action as necessary.	Every three months 48hrs after storm events.
	Visually inspect for blocked joints between pavers.	Annually.
	Monitor inspection chambers.	Annually.

Table 6: Suggested maintenance regime for permeable paving

- 8.31. Materials removed from the voids or the layers below the surface of the paving may contain hazardous substances such as heavy metals and hydrocarbons which may need to be disposed of as controlled waste.

Cellular Storage:

- 8.32. 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 7: Suggested maintenance regime for cellular storage

- 8.33. Inspection and maintenance access can be gained via inspection chambers and inlet pipework.
- 8.34. 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.
- 8.35. 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.

Green Roofs:

- 8.36. Green roofs should be maintained in line with manufacturer's guidance. However, some general maintenance and checks are outlined in the following table.

Maintenance Schedule	Action	Frequency
Routine Maintenance	Water via surface sprinkler or fine rose.	6-12 weeks following installation to aid establishment. As required during droughts.
Occasional Maintenance	- Apply an organic slow release granular fertiliser. - Remove weeds.	Action as required.
	Remove leaves and other debris.	During the spring and after autumn leaf fall.
Remedial Actions	Replace lost or damaged plants/sedum	Action as required. Avoid patching sedum between November and February or in very hot, dry conditions.
	Secure metal flashings and termination bars.	Action as required.
Monitoring	Inspect drainage outlets, inspection chambers, walkways and pebble vegetation barriers to ensure they are clear of debris and encroaching vegetation.	Minimum two times per year, ideally during the Spring and after Autumn leaf fall.
	Inspect health of plants/sedum.	Minimum two times per year or as required if extreme weather conditions are experienced.
	- Check metal flashings and termination bars are secure. - Examine mastic sealant and mortar pointing for signs of degradation.	Minimum two times per year.

Table 7: Suggested maintenance regime for green roofs**Water Butts:**

- 8.37. Water butts should be maintained in line with manufacturer's guidance. However, some general maintenance and checks are outlined in the following table.

Maintenance Schedule	Action	Frequency
Routine Maintenance	Clean debris or sediment build-up from inlets/outlets.	Every three months.
	Remove and clean filter by soaking in a mixture of vinegar and water.	Every three months.
Occasional Maintenance	- Wash exterior with soapy water, a coarse brush and jet hose. - Clean interior of water butt with disinfectant.	Annually.
	Descale using a mixture of vinegar and water.	Action as required.
Remedial Actions	Replace lid if not fitting tightly.	Action as required.
Monitoring	Monitor interior for evidence of stagnation, algae formation or limescale.	Every three months.
	- Inspect for signs of damage or cracking. - Ensure lid is fitting correctly.	Every three months.

Table 8: Suggested maintenance regime for water butts

Pipework, Inspection Chambers, Catchpits and Flow Controls

- 8.38. 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 9: Suggested maintenance regime for pipework, inspection chambers, catchpits and flow controls

9. Foul Drainage Strategy

Existing Drainage:

- 9.1. The existing site is understood to discharge its foul water to a shared septic tank located within the neighbouring Willows Cattery.
- 9.2. Asset records provided by Southern Water indicate that this location is not served by public sewerage infrastructure. Refer to Appendix.

Foul Drainage Hierarchy:

- 9.3. The drainage strategy for the site has been prepared according to the drainage discharge hierarchy from the NPPF, as follows.
 - 1. Connection to public sewer;
 - 2. Installation of a package sewage treatment works;
 - 3. Installation of a septic tank.

Proposed Foul Drainage:

- 9.4. Post development, foul water will be directed into a package sewage treatment plant located within the site boundary. The sewage treatment plant will be sized to accommodate foul flows from the development. Given the proposed development is for a residential dwelling with 2no. double bedrooms, the system will be designed for a minimum population of 5 people. A Klargester BA BioDisc (or equivalent) will be utilised.
- 9.5. The watercourse is understood to contain flowing water throughout the year.
- 9.6. The proposed discharge to watercourse is thereby considered to comply with the Environment Agency's General Binding Rules.

Maintenance:

- 9.7. The foul system will be maintained privately by the end users.

10. Discussion and Conclusion

- 10.1. This Flood Risk Assessment and Surface and Foul Water Drainage Strategy has been prepared by Unda Consulting Limited on behalf of Ivana & Bruce Selkirk, in support of a planning application for the replace existing caravan and 2x outbuildings with new permanent dwelling. The proposed development is being undertaken at Oak Tree Caravan, Bishopstone Lane, Ansty, Haywards Heath, RH17 5AR. This report assesses the flood risk and sets out the surface and foul water drainage strategy for the proposed development.
- 10.2. The surrounding area is characterised by agricultural land and sporadic residential dwellings.
- 10.3. A topographic survey of the site undertaken in September 2025 by J. Brotherton & Partners shows ground topography on site ranges between 18.74mAOD to 22.84mAOD. The topographic low point is the existing pond.
- 10.4. LiDAR remotely sensed digital elevation data indicates that the top of bank and bed levels of the watercourse east of the site are 18.00mAOD and 16.80mAOD, respectively.
- 10.5. The 1:50,000 BGS map shows that the bedrock underlying the site is Weald Clay Formation – Mudstone.
- 10.6. The BGS hold no records of superficial deposits underlying the site.
- 10.7. 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.
- 10.8. The published Environment Agency Groundwater Source Protection Zone map shows the site is not located within a Groundwater Source Protection Zone.

Flood Risk Discussion:

- 10.9. 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.
- 10.10. The nearest watercourses to the site are located approximately 12m west and 33m east of the site. An existing pond on the site is understood to discharge to another pond east of the site.
- 10.11. According to EA data, there are no Flood Storage Areas located in close proximity to the site.
- 10.12. According to the Environment Agency, there are no EA maintained raised defences that defend the site directly.
- 10.13. 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.
- 10.14. 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.
- 10.15. It should be noted that the area of “Low” to High” risk on the site is associated with the pond. The areas of the proposed development are at “Very Low” risk of flooding at the present day and between 2040 and 2060.
- 10.16. The site is not shown to be within an active surface water flow path.
- 10.17. The 2024 Mid Sussex District Council Strategic Flood Risk Assessment (SFRA) categorises areas of “Low” surface water flood risk as being the equivalent of Flood Zone 2, whilst areas of “Medium” and “High” risk are equivalent to Flood Zones 3a and 3b, respectively.

- 10.18. EA mapping shows the areas of the proposed development within the application boundary to be at “Very Low” risk of surface water flooding.
- 10.19. The 2024 Mid Sussex District Council SFRA also provides guidance on accommodating future climate change within assessments of surface water flood risk. Areas at “Low” risk at the present day are classed as Future Flood Zone 3, whilst areas of “Medium” and “High” risk are classed as Future Flood Zone 3b (functional floodplain).
- 10.20. The areas of the proposed development are not shown to be located within Future Flood Zones 3a or 3b.
- 10.21. The EA advise that this location is outside of a groundwater flood alert area. No information has been provided to suggest that the site has flooded historically due to groundwater.
- 10.22. According to the 2024 Mid Sussex District Council SFRA the site’s postcode area (RH17 5) has had 2 internal and 9 external incidents of sewer flooding recorded by Southern Water. No further information has been presented to suggest that the site itself is susceptible to sewer flooding.
- 10.23. According to the 2024 Mid Sussex District Council SFRA, the site is within a MSDC historic flood extent. The EA hold no records of historic flooding at the site. No further records of flooding at the site previously have been provided.
- 10.24. The NPPF classifies property usage by vulnerability to flooding. The existing site is classified as “highly vulnerable” (caravans). Post development, the site will be classified as “more vulnerable”, as the application is for the replace existing caravan and 2x outbuildings with new permanent dwelling. No basement accommodation is proposed.
- 10.25. Accordingly, it is considered that the vulnerability of the site as a whole will decrease post development.
- 10.26. 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. To protect against flooding during extreme events, the finished ground floor level of the proposed dwelling will be set 300mm above the adjacent ground level.
- 10.27. 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:

- 10.28. The 1:50,000 BGS map shows that the bedrock underlying the site is Weald Clay Formation – 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.
- 10.29. Infiltration testing will be conducted at a later stage to confirm feasibility for soakaways. As such, a strategy with a secondary discharge route has been developed.
- 10.30. The greenfield runoff rate for the area of the site being attenuated has been calculated as 0.1 l/s for the 1:1 annual runoff event, 0.2 l/s for the 1:30 year event and 0.2 l/s for the 1:100 year event. Refer to calculations in Appendix.
- 10.31. Runoff from the roof area of the dwelling will be directed into the cellular storage attenuation located beneath the garden.
- 10.32. From the cellular storage, runoff will be gradually discharged to the watercourse west of the site at an attenuated rate of 0.1 l/s via an orifice plate. Due to the small diameter of the orifice plate, a filter will be fitted to protect the orifice plate from blockages, and a high-level overflow weir will be fitted to allow discharge should the orifice become blocked.

- 10.33. The watercourse is within the Applicant's ownership boundary, and has onward connectivity to the wider drainage network. Ordinary Watercourse Consent for the proposed discharge will be obtained from the LLFA.
- 10.34. All new ground surfaces will be of permeable construction, with permeable paving utilised for all new trafficked areas.
- 10.35. The proposed decking will discharge to permeable surfacing.
- 10.36. The proposed area discharging into the cellular storage amounts to approximately 121m².
- 10.37. In order to comply with CIRIA C753 The SuDS Manual, a 10% allowance will be added to take into account future urban creep. Applying a 10% allowance to all areas discharging to cellular storage gives a value of 133.1m². Therefore, all cellular storage drainage calculations have been made on a basis of a total impermeable area of 133.1m².
- 10.38. Preliminary calculations indicate that sufficient storage required to attenuate runoff from the roof area of the dwelling from the critical 1:100 year + 45% climate change event can be provided by cellular storage of dimensions 38m² x 0.40m x 0.95 (voids).
- 10.39. Preliminary calculations indicated that some 14.44m³ of storage is required to attenuate the runoff for all storms up to and including the 1:100 year + 45% climate change event.
- 10.40. Green roofs are to be located on the proposed bin and cycle stores. Discharge from the green roofs will be directed onto adjacent permeable surfacing.
- 10.41. A water butt will be incorporated into the development. Rainwater collected by the water butt will be for garden use. Overflows from the water butts will be directed into the cellular storage attenuation.
- 10.42. Permeable paving utilised for all new trafficked areas. The Pollution Mitigation Indices for permeable pavement are greater than the Pollution Hazard Indices for residential car parks. Therefore, permeable pavements will provide sufficient water quality treatment.
- 10.43. 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.
- 10.44. It is proposed that all SuDS facilities will be maintained privately by the end users. A draft Maintenance Schedule is outlined within the report.
- 10.45. 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.

Foul Drainage Discussion:

- 10.46. The existing site is understood to discharge its foul water to a shared septic tank located within the neighbouring Willows Cattery.
- 10.47. Asset records provided by Southern Water indicate that this location is not served by public sewerage infrastructure. Refer to Appendix.
- 10.48. Post development, foul water will be directed into a package sewage treatment plant located within the site boundary. The sewage treatment plant will be sized to accommodate foul flows from the development. Given the

proposed development is for a residential dwelling with 2no. double bedrooms, the system will be designed for a minimum population of 5 people. A Klargest BA BioDisc (or equivalent) will be utilised.

- 10.49. The watercourse is understood to contain flowing water throughout the year.
- 10.50. The proposed discharge to watercourse is thereby considered to comply with the Environment Agency's General Binding Rules.
- 10.51. The foul system will be maintained privately by the end users.

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
May 2026**

Appendix

A – Development Plans:

- Site location, existing and proposed plans – Applicant.

B – Topographic Survey:

- Topographic Survey – J. Brotherson & Partners.

C – Sewer Records:

- Sewer Records – Southern Water.

D – Causeway Calculations:

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

E – Drainage Layout Plans:

- Proposed Drainage Layout [97006-01; 97006-02].

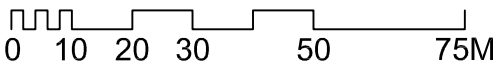
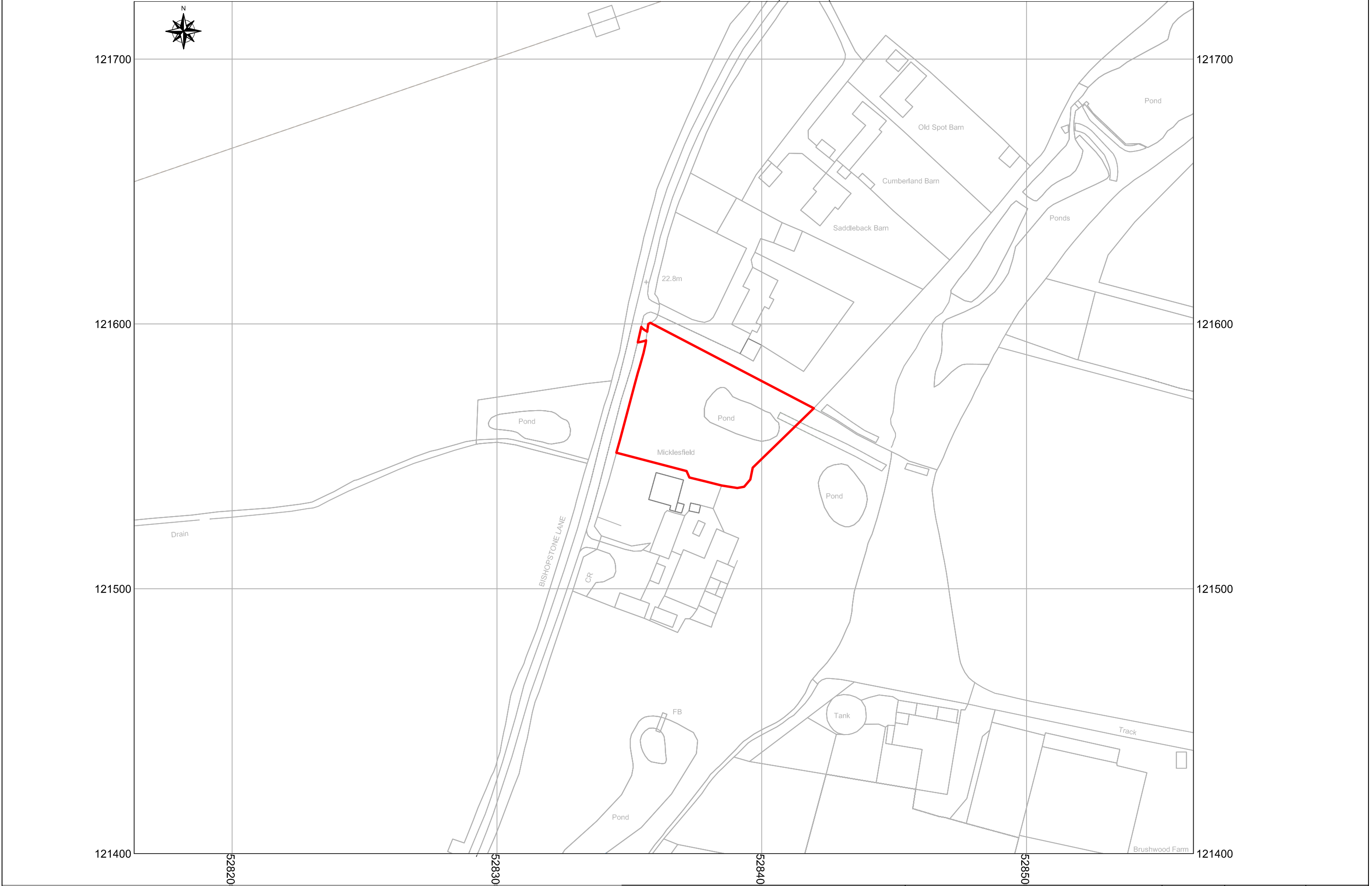
F – EA Flood Map for Planning:

- Flood Map for Planning – Environment Agency.

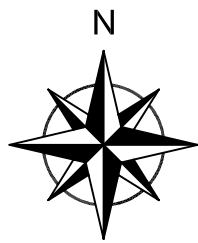
G – NPPF Annex 3:

- NPPF Annex 3: Flood risk vulnerability classification table.

Appendix A

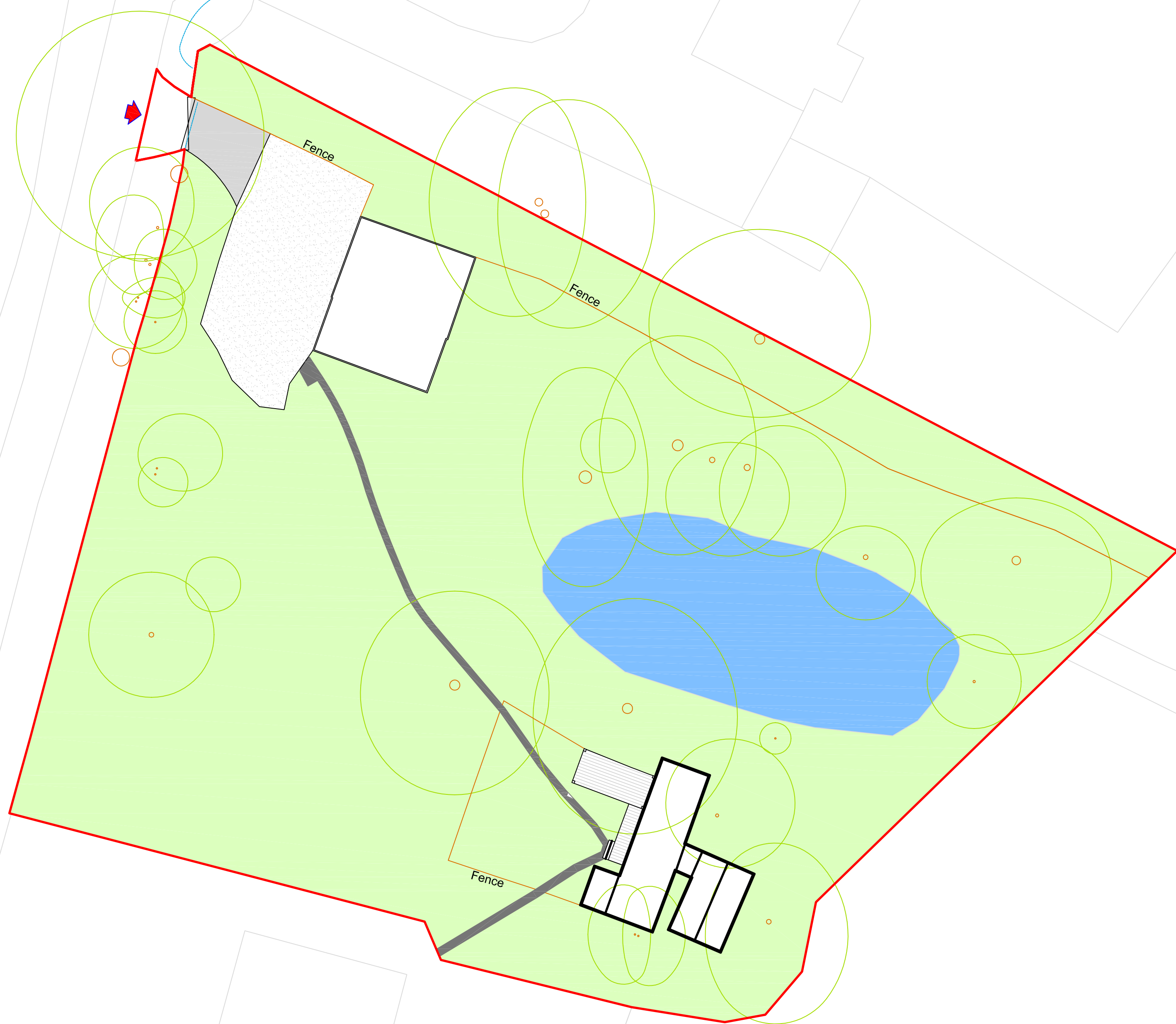


Client	840-Selkirk			Drawn by	DW	Client Number	840	Drawing Number:	840/2
Project Title	Oak Tree House			Checked By:	BS	Drawing status	Planning	Revision:	D
Drawing Title	Location Plan			Date:	14/01/25	Scale:	1/1250	Format:	A3



Pond

Bishopstone Lane



Pond

Legend

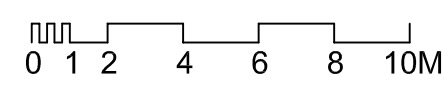
Existing Buildings GIA 123 m2

- Development Boundary
- Existing buildings

- Concrete
- Gravel

- Decking
- Pond

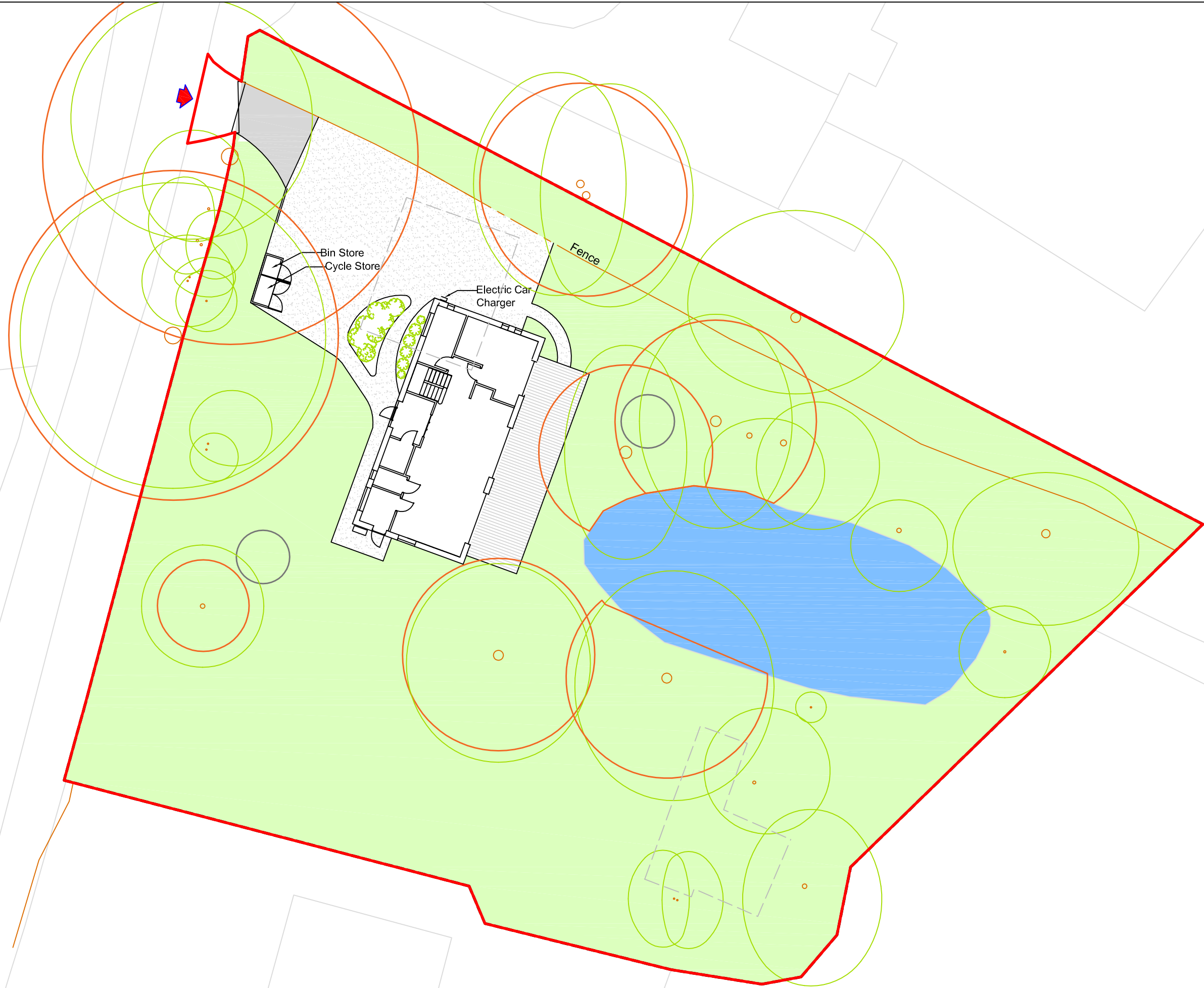
- Paved Path
- Grass



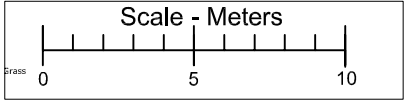
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Project Title	Oak Tree House		
Drawing Title	Existing Site Plan		
Drawn by	DW	Client Number	840
Checked By:	BS	Drawing status	Planning
Date:	21/01/26	Scale:	1/200
Drawing Number:	840/4	Revision:	B
		Format:	A1



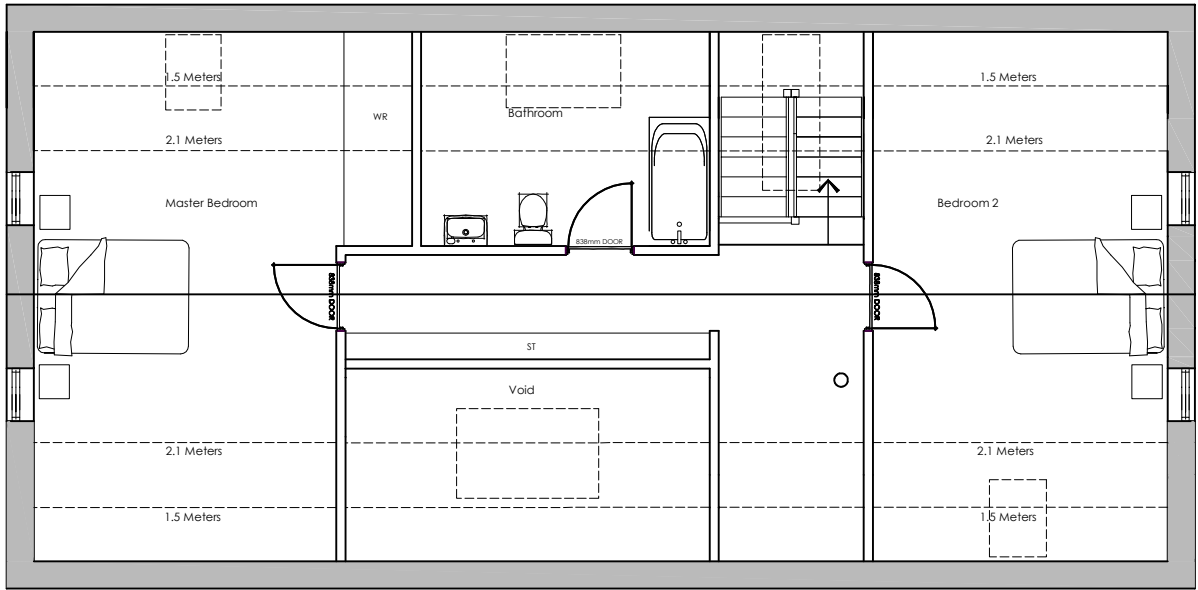
Bishopstone Lane



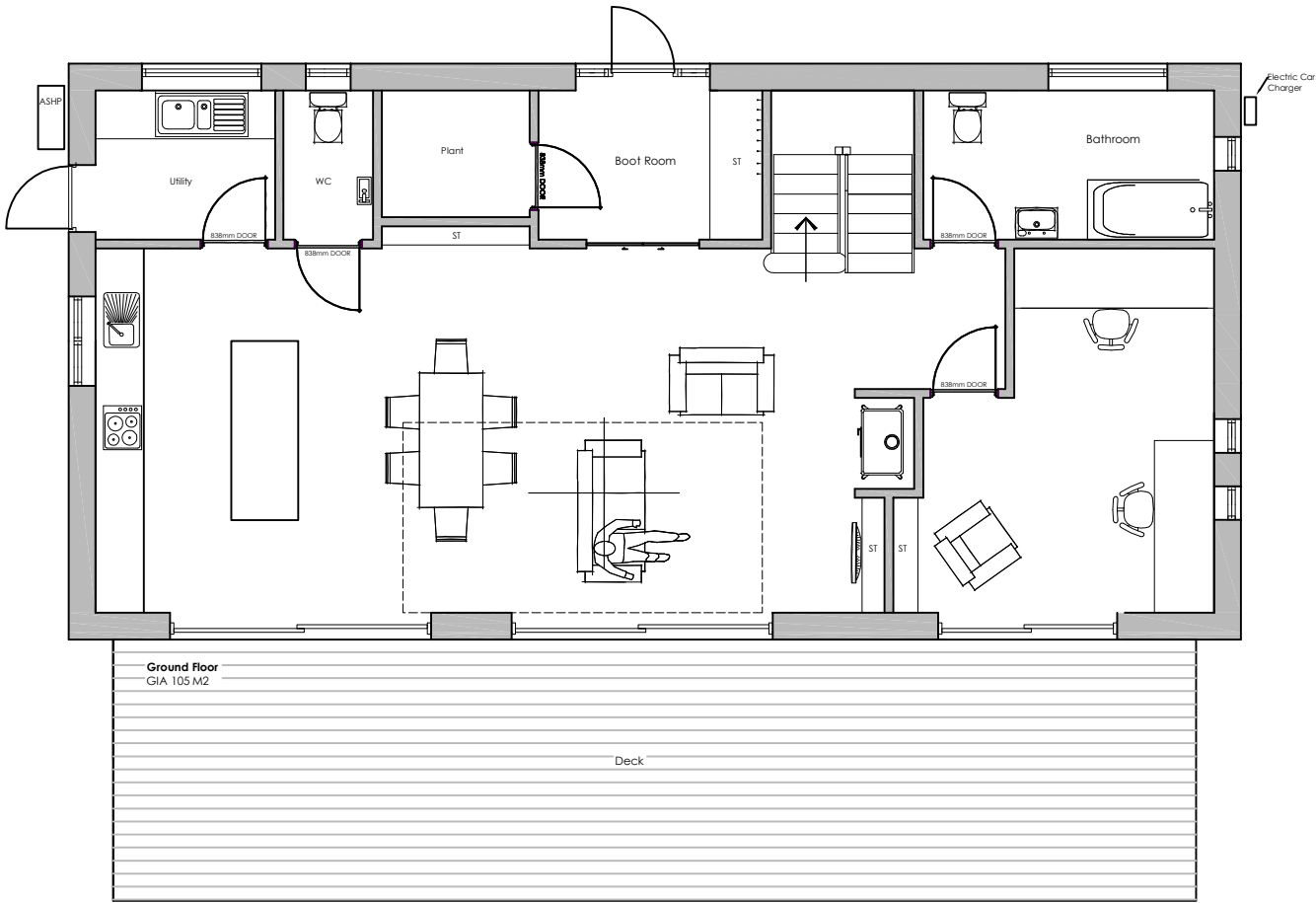
Development Boundary	Existing buildings	Concrete	Decking
Root Protection Area (RPA)		Gravel	Pond
			Grass



Client	840-Selkirk	Drawn by	DW	Client Number	840	Drawing Number:	840/2
Project Title	Oak Tree House	Checked By:	BS	Drawing status	Planning	Revision:	D
Drawing Title	Site Plan	Date:	18/12/25	Scale:	1/250	Format:	A3



First Floor
GIA 83 M2

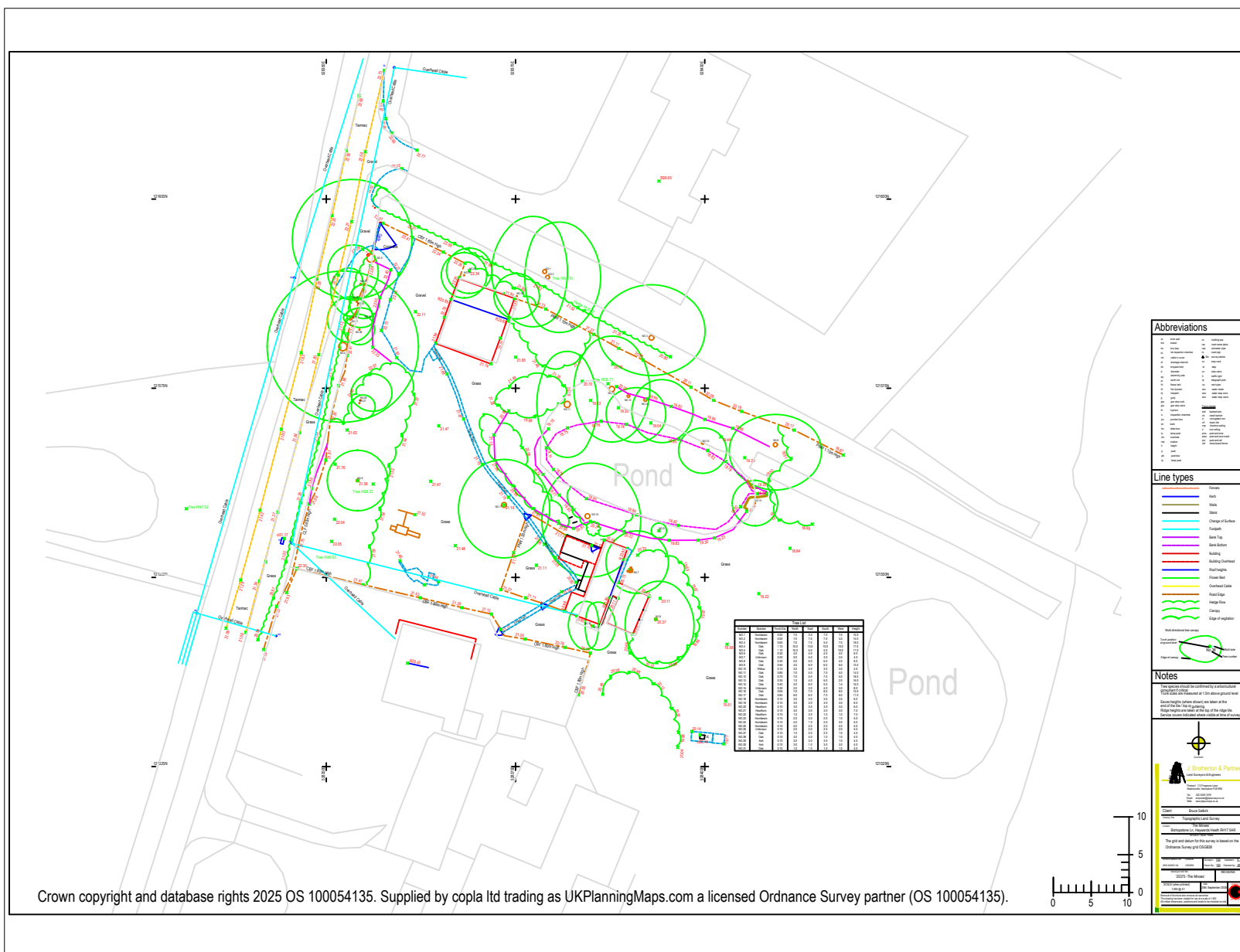


Ground Floor
GIA 105 M2



B	11/12/25	Planning Issue	DW
A	4/12/25	Planning Issue	DW
Rev.	Date.	Description.	By.
Drawing Status		Planning	
Client		840-Selkirk	
Project Title		Oak Tree House	
Drawing Title		Ground & First Floor Plan	
Drawn By:	DW	Drawing Number:	Revision:
Checked By:	BS	840/22	B
Date:	11/12/2025	Scale:	Format:
		1-50	A3

Appendix B



Appendix C



Map Title: DSA000052244 GIS

Printed By: Kelly.Donaldson
Date Printed: 17/03/2026
Map Scale: 1250

The information provided is believed to be correct but is provided on an 'as is' basis and without any warranty or condition express or implied, statutory or otherwise as to its quality or fitness for purpose. Actual positions of assets should always be determined on site.



Controllable Valve			Flow Control			Inlet-Outfall	
Damboards	Penstock	Valve	Anti Flood Device	Pumped Anti Flood Device	Reflux Valve	Inlet	Outfall
Manhole							
BIF Bifurcation	Cascade	CP Catchpit	Head Of Public Sewer	IC Interceptor Chamber	Manhole	S Soakaway	WO Washout
Outfall Headworks		Overflow Chamber		Pipe Bridge		Pumping Station	
Outfall Headworks	CSO Combined Sewer Overflow	EMO Emergency Overflow	Pipe Bridge	Micro Pumping Station	Pumping Station		
Sewer Level Monitor		Storage		Treatment Works		Weir	
Sewer Level Monitor	Storm Tank	Tidal Storage Tank	Treatment Works	Weir	Wastewater Site		
Wastewater Pipe				Wastewater Use		Developer Services	
Culverted Water Course	Syphon	Tank Sewer	Trunk Sewer	Foul	Combined	Build Over Agreement	Section 104
Drain	Vacuum Main	Decommissioned Pipe	Sludge	Treated Effluent	Surface Water	Catchment	Sub-Catchment
Outfall			Private				
Overflow							
Rising Main							
Sewer							

Appendix D



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	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
MH1	0.014	5.00	10.000	100.000	100.000	0.401	9.599

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	x	1 year (l/s)	0.1
Rainfall Events	Singular	Drain Down Time (mins)	240	30 year (l/s)	0.2
Summer CV	1.000	Additional Storage (m³/ha)	0.0	100 year (l/s)	0.2
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)	0.012	Betterment (%)	0
SAAR (mm)	800	QBar	0.1
Soil Index	4	Q 1 year (l/s)	0.1
SPR	0.47	Q 30 year (l/s)	0.2
Region	7	Q 100 year (l/s)	0.2
Growth Factor 1 year	0.85		

Node MH1 Online Orifice Control

Flap Valve	x	Invert Level (m)	9.599	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.010		

Node MH1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	9.599
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	



Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	38.0	0.0	0.400	38.0	0.0	0.401	0.0	0.0



Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
2160 minute summer	MH1	1500	9.991	0.392	0.6	14.1571	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
2160 minute summer	MH1	Orifice	0.1	12.8



Results for 100 year +45% CC 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	MH1	20	9.739	0.140	11.8	5.0718	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
15 minute summer	MH1	Orifice	0.1	1.1



Results for 100 year +45% CC 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	MH1	20	9.740	0.141	11.1	5.0804	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
15 minute winter	MH1	Orifice	0.1	1.1



Results for 100 year +45% CC 30 minute summer. 270 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
30 minute summer	MH1	35	9.787	0.188	10.9	6.7692	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
30 minute summer	MH1	Orifice	0.1	1.3



Results for 100 year +45% CC 30 minute winter. 270 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
30 minute winter	MH1	34	9.787	0.188	8.8	6.7763	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
30 minute winter	MH1	Orifice	0.1	1.3



Results for 100 year +45% CC 60 minute summer. 300 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	MH1	65	9.838	0.239	8.3	8.6251	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m³)
60 minute summer	MH1	Orifice	0.1	1.6



Results for 100 year +45% CC 60 minute winter. 300 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
60 minute winter	MH1	63	9.837	0.238	6.0	8.6033	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
60 minute winter	MH1	Orifice	0.1	1.6



Results for 100 year +45% CC 120 minute summer. 360 minute analysis at 2 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
120 minute summer	MH1	124	9.880	0.281	5.4	10.1385	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
120 minute summer	MH1	Orifice	0.1	2.0



Results for 100 year +45% CC 120 minute winter. 360 minute analysis at 2 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
120 minute winter	MH1	122	9.882	0.283	3.7	10.2151	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
120 minute winter	MH1	Orifice	0.1	2.0



Results for 100 year +45% CC 180 minute summer. 420 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
180 minute summer	MH1	184	9.906	0.307	4.0	11.0865	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
180 minute summer	MH1	Orifice	0.1	2.3



Results for 100 year +45% CC 180 minute winter. 420 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
180 minute winter	MH1	184	9.904	0.305	2.7	11.0160	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
180 minute winter	MH1	Orifice	0.1	2.3



Results for 100 year +45% CC 240 minute summer. 480 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
240 minute summer	MH1	244	9.919	0.320	3.4	11.5503	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
240 minute summer	MH1	Orifice	0.1	2.6



Results for 100 year +45% CC 240 minute winter. 480 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
240 minute winter	MH1	240	9.922	0.323	2.2	11.6559	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
240 minute winter	MH1	Orifice	0.1	2.7



Results for 100 year +45% CC 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
360 minute summer	MH1	360	9.939	0.340	2.5	12.2721	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
360 minute summer	MH1	Orifice	0.1	3.3



Results for 100 year +45% CC 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
360 minute winter	MH1	360	9.944	0.345	1.6	12.4381	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
360 minute winter	MH1	Orifice	0.1	3.3



Results for 100 year +45% CC 480 minute summer. 720 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
480 minute summer	MH1	480	9.955	0.356	2.0	12.8477	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
480 minute summer	MH1	Orifice	0.1	3.9



Results for 100 year +45% CC 480 minute winter. 720 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
480 minute winter	MH1	472	9.951	0.352	1.3	12.7073	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
480 minute winter	MH1	Orifice	0.1	3.9



Results for 100 year +45% CC 600 minute summer. 840 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
600 minute summer	MH1	585	9.959	0.360	1.6	12.9853	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
600 minute summer	MH1	Orifice	0.1	4.5



Results for 100 year +45% CC 600 minute winter. 840 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
600 minute winter	MH1	585	9.969	0.370	1.1	13.3478	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
600 minute winter	MH1	Orifice	0.1	4.6



Results for 100 year +45% CC 720 minute summer. 960 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
720 minute summer	MH1	645	9.960	0.361	1.4	13.0419	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
720 minute summer	MH1	Orifice	0.1	5.1



Results for 100 year +45% CC 720 minute winter. 960 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
720 minute winter	MH1	690	9.974	0.375	1.0	13.5492	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
720 minute winter	MH1	Orifice	0.1	5.2



Results for 100 year +45% CC 960 minute summer. 1200 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
960 minute summer	MH1	765	9.971	0.372	1.2	13.4334	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
960 minute summer	MH1	Orifice	0.1	6.3



Results for 100 year +45% CC 960 minute winter. 1200 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
960 minute winter	MH1	780	9.969	0.370	0.8	13.3620	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
960 minute winter	MH1	Orifice	0.1	6.3



Results for 100 year +45% CC 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
1440 minute summer	MH1	1050	9.965	0.366	0.8	13.1963	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
1440 minute summer	MH1	Orifice	0.1	8.7



Results for 100 year +45% CC 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
1440 minute winter	MH1	1110	9.960	0.361	0.6	13.0339	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
1440 minute winter	MH1	Orifice	0.1	8.7



Results for 100 year +45% CC 2160 minute summer. 2400 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
2160 minute summer	MH1	1500	9.991	0.392	0.6	14.1571	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
2160 minute summer	MH1	Orifice	0.1	12.8



Results for 100 year +45% CC 2160 minute winter. 2400 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
2160 minute winter	MH1	1560	9.968	0.369	0.4	13.3372	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
2160 minute winter	MH1	Orifice	0.1	12.4



Results for 100 year +45% CC 2880 minute summer. 3120 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
2880 minute summer	MH1	1860	9.943	0.344	0.5	12.4232	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
2880 minute summer	MH1	Orifice	0.1	14.8



Results for 100 year +45% CC 2880 minute winter. 3120 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
2880 minute winter	MH1	1980	9.944	0.345	0.3	12.4567	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
2880 minute winter	MH1	Orifice	0.1	15.5



Results for 100 year +45% CC 4320 minute summer. 4560 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
4320 minute summer	MH1	2700	9.938	0.339	0.4	12.2441	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
4320 minute summer	MH1	Orifice	0.1	18.5



Results for 100 year +45% CC 4320 minute winter. 4560 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
4320 minute winter	MH1	2760	9.873	0.274	0.2	9.8992	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
4320 minute winter	MH1	Orifice	0.1	17.3



Results for 100 year +45% CC 5760 minute summer. 6000 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
5760 minute summer	MH1	3420	9.908	0.309	0.3	11.1398	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
5760 minute summer	MH1	Orifice	0.1	20.6



Results for 100 year +45% CC 5760 minute winter. 6000 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
5760 minute winter	MH1	3480	9.884	0.285	0.2	10.2888	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
5760 minute winter	MH1	Orifice	0.1	21.7



Results for 100 year +45% CC 7200 minute summer. 7440 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
7200 minute summer	MH1	4140	9.880	0.281	0.3	10.1405	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
7200 minute summer	MH1	Orifice	0.1	21.9



Results for 100 year +45% CC 7200 minute winter. 7440 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
7200 minute winter	MH1	4080	9.860	0.261	0.2	9.4195	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
7200 minute winter	MH1	Orifice	0.1	23.8



Results for 100 year +45% CC 8640 minute summer. 8880 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
8640 minute summer	MH1	4860	9.869	0.270	0.2	9.7319	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
8640 minute summer	MH1	Orifice	0.1	22.9



Results for 100 year +45% CC 8640 minute winter. 8880 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
8640 minute winter	MH1	6120	9.793	0.194	0.2	7.0122	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
8640 minute winter	MH1	Orifice	0.1	22.2

Results for 100 year +45% CC 10080 minute summer. 10320 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
10080 minute summer	MH1	5520	9.855	0.256	0.2	9.2446	0.0000	OK
Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m³)				
10080 minute summer	MH1	Orifice	0.1	23.0				



Results for 100 year +45% CC 10080 minute winter. 10320 minute analysis at 60 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
10080 minute winter	MH1	7020	9.790	0.191	0.1	6.9049	0.0000	OK

Link Event	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
10080 minute winter	MH1	Orifice	0.1	23.7

Appendix E



- Notes:**
1. Discharge of surface water via cellular storage attenuation. Preliminary calculations indicate that sufficient storage required to attenuate runoff arising from the roof area of the dwelling, during the critical 1 in 100 year + 45% Climate Change event, can be provided within cellular storage of dimensions 38m² x 0.40m deep x 0.95 (voids).
 2. Ordinary Watercourse Consent to discharge to be obtained from the LLFA.
 3. All new ground surfaces will be of permeable construction, with permeable paving utilised for all new trafficked areas.
 4. A water butt will be incorporated into the development, with overflows directed into the cellular storage attenuation.
 5. All levels are in metres above ordnance datum.
 6. Refer to 97006-02 for outfall route and cross-sections.

- Legend**
- Proposed Cellular Storage Attenuation
 - Proposed Green Roof
 - Proposed Surface Water Downpipe
 - Proposed Surface Water Manhole
 - Proposed Surface Water Pipework
 - Proposed Orifice Plate
 - Proposed Foul Water Manhole
 - Proposed Foul Water Pipework
 - Proposed Klargester BA BioDisc (or equivalent)
 - Proposed Surface Water and Treated Foul Effluent Manhole
 - Proposed Surface Water and Treated Foul Effluent Pipework
 - 7m Offset
 - Root Protection Areas
 - Design Exceedance Route

 **Unda**[™]

Unda Consulting Limited Tel: 01293 214444
Unit 3 Email: info@unda.co.uk
Oak Cottage Web: www.unda.co.uk
County Oak Way
County Oak
Crawley
RH11 7ST

Client:
Ivana & Bruce Selkirk

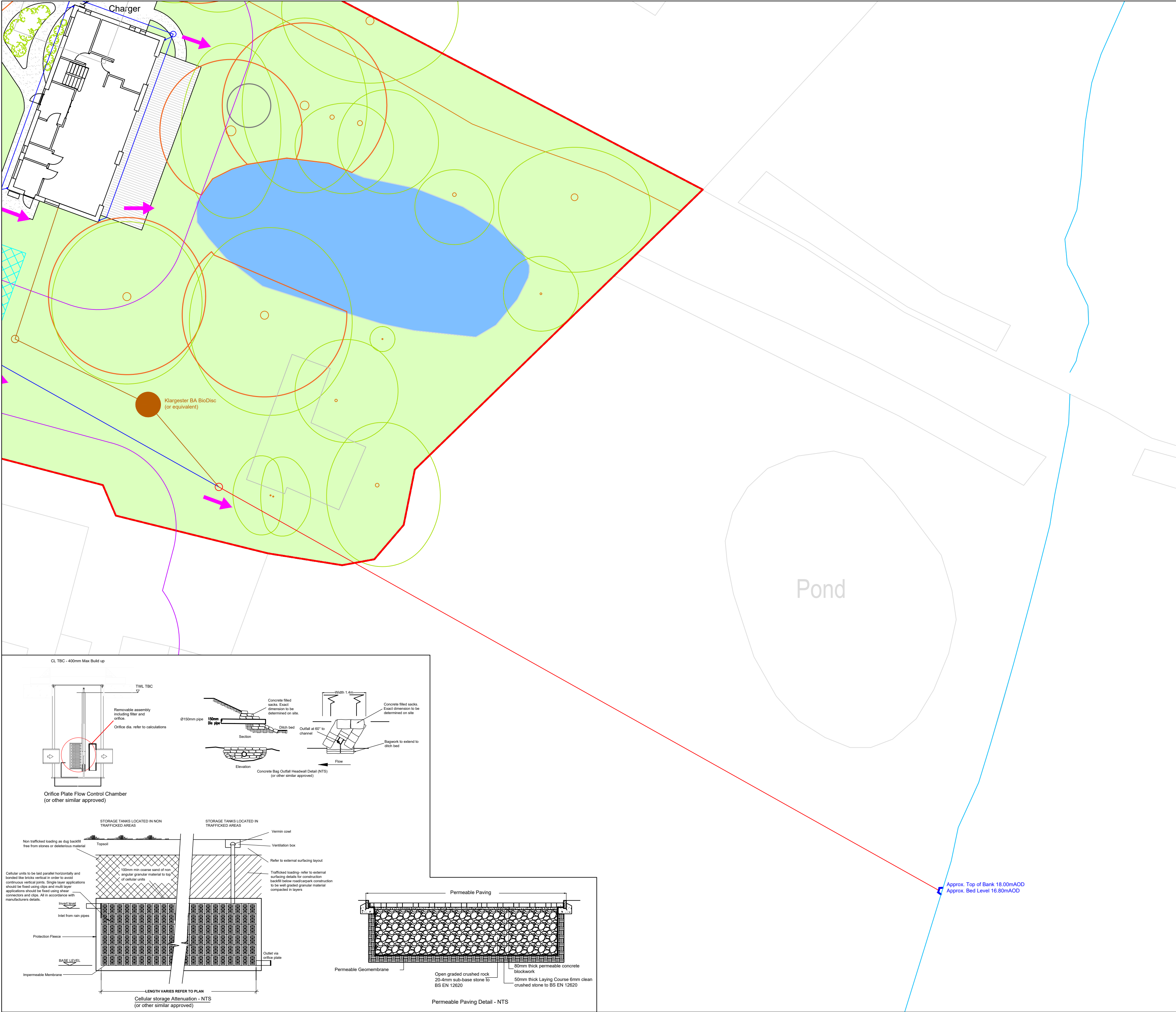
Site Address:
Oak Tree Caravan
Bishopstone Lane
Ansty
Haywards Heath
RH17 5AR

Job Reference: 97006-MurrayPlnng-BishopstoneLn	Date: 15-May-26
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Drawing Number: 97006-01	Revision: 1.0
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Designed by: EW	Drawn by: EW	Checked by: EB
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Scale: 1:200@A2	Disclaimer: The drawings provided are for planning purposes only.
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- Notes:**
1. Discharge of surface water via cellular storage attenuation. Preliminary calculations indicate that sufficient storage required to attenuate runoff arising from the roof area of the dwelling, during the critical 1 in 100 year + 45% Climate Change event, can be provided within cellular storage of dimensions 38m² x 0.40m deep x 0.95 (voids).
 2. Ordinary Watercourse Consent to discharge to be obtained from the LLFA.
 3. All new ground surfaces will be of permeable construction, with permeable paving utilised for all new trafficked areas.
 4. A water butt will be incorporated into the development, with overflows directed into the cellular storage attenuation.
 5. All levels are in metres above ordnance datum.
 6. Refer to 97006-01 for main drainage layout.

- Legend**
- Proposed Cellular Storage Attenuation
 - Proposed Green Roof
 - Proposed Surface Water Downpipe
 - Proposed Surface Water Manhole
 - Proposed Surface Water Pipework
 - Proposed Orifice Plate
 - Proposed Foul Water Manhole
 - Proposed Foul Water Pipework
 - Proposed Klargester BA BioDisc (or equivalent)
 - Proposed Surface Water and Treated Foul Effluent Manhole
 - Proposed Surface Water and Treated Foul Effluent Pipework
 - Proposed Headwall
 - 7m Offset
 - Root Protection Areas
 - Design Exceedance Route

Unda[™]

Unda Consulting Limited Tel: 01293 214444
Unit 3 Email: info@unda.co.uk
Oak Cottage Web: www.unda.co.uk
County Oak Way
County Oak
Crawley
RH11 7ST

Client:
Ivana & Bruce Selkirk

Site Address:
Oak Tree Caravan
Bishopstone Lane
Ansty
Haywards Heath
RH17 5AR

Job Reference: 97006-MurrayPInng-BishopestoneLn	Date: 15-May-26
Drawing Number: 97006-02	Revision: 1.0

Designed by: EW	Drawn by: EW	Checked by: EB
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Scale: 1:200@A2	Disclaimer: The drawings provided are for planning purposes only.
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Appendix F

Flood map for planning

Your reference
97006

Location (easting/northing)
528378/121565

Created
1 April 2026 14:10

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

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

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

Notes

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

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

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

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2026 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference

97006

Location (easting/northing)

528378/121565

Scale

1:2,500

Created

1 Apr 2026 14:10

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



0 20 40 60m

Appendix G

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