



Wyvols Court Farm, Swallowfield

Flood Risk Assessment and Foul & Surface Water Drainage Strategy

Job Number
FRA251195

Report Date
9th February 2026

Client
Wyvols Court Farm Ltd



www.thelkgroup.com

Ground Investigation | Land Remediation | Project Management



LK CONSULT

DOCUMENT QUALITY ASSURANCE

Site Address	Wyvols Court Farm, Basingstoke Road, Swallowfield, Reading, RG7 1WY
Report Title	Flood Risk Assessment and Foul & Surface Water Drainage Strategy
Job Number	FRA251195
Client	Mr Rory Waterer

Revision	0	Date of Issue	19/12/2025
Document Ref:	FRA251195-FRA&SuDS-Wyvols Court Farm R0		
Status	Draft for comment		
Written By	Dan Percival		
Approved By	Colin Crompton		

Revision	1	Date of Issue	04/02/2026
Document Ref:	FRA251195-FRA&SuDS-Wyvols Court Farm R1		
Status	Revised drainage layout and site boundary		
Written By	Dan Percival		
Approved By	Colin Crompton		

Revision	2	Date of Issue	09/02/2026
Document Ref:	FRA251195-FRA&SuDS-Wyvols Court Farm R1		
Status	For Planning		
Written By	Dan Percival		
Approved By	Colin Crompton		

DISCLAIMER

This report has been prepared by LK Consult Ltd (LKC) who have exercised such professional skill, care and diligence as may reasonably be expected of a properly qualified and competent consultant, experienced in preparing reports of a similar scope.

However, to the extent that the report is based or relies upon information contained in records, reports or other materials provided to LKC, which have not been independently produced or verified, LKC gives no warranty, representation, or assurance as to the accuracy or completeness of such information.

This report is prepared solely for the benefit of the client named above. It may not be relied upon by or submitted to a third party for their reliance for the purposes of valuation, mortgage, insurance, and regulatory approval until all invoices have been settled in full.

Those using this information in subsequent assessments or evaluations do so at their own risk.

EXECUTIVE SUMMARY

Scope and Background

This Flood Risk Assessment (FRA) and Outline Drainage Strategy has been undertaken by LKC to support a planning application for the development of land at Wyvols Court Farm, Swallowfield. The development comprises the construction of three commercial units.

LKC has prepared this FRA in line with the NPPF and Technical Guidance where appropriate.

In considering the proposals the following key principles have therefore been applied:

- Identification of flood risks.
- Protection of users of the new development.
- No increased flood risk to third parties.

Flood Risk

The site is considered to be at a negligible to low risk of flooding from all sources and no site specific flood risk mitigation is considered to be required.

Drainage

To ensure there is no increase in downstream flood risk as a result of the proposed development it is proposed to restrict surface water runoff to the existing QBAR runoff rate during all events up to and including the 1 in 100 year plus 40% climate change event. It is proposed to provide attenuation for Units 9 and 10 in the form of a SuDS pond location adjacent to Unit 10. The pond has been designed to provide the full balance of attenuation whilst also providing a permanent depth of water for BNG purposes. Attenuation for Unit 8 is proposed to be provided by within an attenuation tank which will discharge to the existing private surface water sewer network serving the existing buildings.

Foul effluent generated by the proposed development will discharge to the existing foul drainage network serving the wider farm site.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ii
TABLE OF CONTENTS	iii
1. Introduction	1
1.1 Background	1
1.2 Site Details	1
2. Site Setting	2
2.1 Vulnerability	2
2.2 The Sequential and Exception Tests	2
2.3 Environmental Setting	3
2.4 Site Topography	3
2.5 Ground Investigation	3
2.6 Existing Drainage	4
3. Consultation	5
4. Assessment of Flood Risk	6
4.1 Sources of Flooding	6
4.2 Summary of Flood Risk	7
5. Flood Mitigation Measures	8
5.1 Proposed Site Levels	8
5.2 Safe Access	8
6. Drainage Strategy	9
6.1 Overview	9
6.2 Sustainable Drainage Hierarchy	9
6.3 Surface Water Runoff Rates	10
6.4 Surface Water Drainage Strategy	10
6.5 SuDS for Pollution Management	11
6.6 SuDS Maintenance	12
6.7 Foul Water Drainage	13
7. Conclusions	14

Figures

Figure 1 – Site Location and Boundary Plan

Appendices

Appendix A – Proposed Development Plans
Appendix B – Topographic Survey
Appendix C – On-Site Foul and Surface Water Drainage
Appendix D – Environment Agency Modelled Flood Level Data
Appendix E – Thames Water Sewer Records
Appendix F – IoH124 Greenfield Runoff Calculations
Appendix G – Drainage Strategy
Appendix H – Causeway Flow Network Calculations
Appendix I – References

1. Introduction

1.1 Background

LK Consult Ltd (LKC) were commissioned by Wyvols Court Farm Ltd to carry out a Flood Risk Assessment (FRA) and Foul & Surface Water Drainage Strategy for Wyvols Court Farm, Swallowfield. The report has been undertaken to support the planning application for the proposed erection of three commercial units with associated car parking, infrastructure and landscaping.

The report will address the vulnerability to flooding from all possible sources and will also account for climate change and the potential to increase flood risk elsewhere. The Drainage Strategy in Section 5 will provide an overview of the SuDS techniques which have been considered on the site to ensure there is no increase in downstream flood risk as a result of the proposed development. The issues of actual flood risk are discussed in Section 4.

Government policy with respect to development in flood risk areas is contained within the Ministry of Housing Communities and Local Government National Planning Policy Frameworkⁱ (NPPF) and accompanying Planning Practice Guidanceⁱⁱ (PPG). The guidance on Climate Change allowances, most recently updated by the EA in May 2022, has also been considered.

LKC has prepared this FRA in line with the NPPF and the PPG where appropriate. The level of detail entered into any flood risk assessment is dependent upon the scale and potential impact of the proposed development, and the vulnerability classification of the proposed land-use.

1.2 Site Details

A summary of the general site details is presented in Table 1-1. Figure 1 indicates the site location and boundary.

Location	Wyvols Court Farm, Basingstoke Road, Swallowfield, Reading, RG7 1WY. Approximate National Grid Reference: 472031 164777
Area	Approximately 1.6ha
Current Site Use	<u>Site</u> The site currently comprises a grassed area of land located to the north of the existing vehicular access to Wyvols Court Farm and part of an existing agricultural field to the south of the access. Access to the site is provided to the east via Basingstoke Road. <u>Surrounding Area/ Boundary Treatment</u> The site is located within a predominantly rural setting with existing commercial buildings within the wider farm area located to the north. The site is bounded to the south and west by agricultural land and to the east by Basingstoke Road beyond which lies the Swallowfield urban area.
Proposed Development	The proposed development comprises the erection of three commercial units (referred to as Units 8, 9 and 10) with associated access, parking, infrastructure and landscaping. The development also comprises the excavation of a SuDS basin for surface water attenuation purposes and the provision of a landscaped bund to the southwest of the proposed units. Proposed development plans are included as Appendix A.

Table 1-1: Summary of site details.

2. Site Setting

2.1 Vulnerability

As an initial phase in identifying whether a site is potentially at risk of flooding, LKC has consulted the EA's Flood Map for Planning. This mapping is based on a combination of local flood model outputs, recorded flood outlines and national flood model information to identify areas that are at risk of fluvial and/or tidal flooding for strategic planning purposes.

The Flood Map for Planning divides the floodplain into three categories of flood risk and does not take flood defences into account. The PPG (Table 1: Flood Zones, Paragraph 78) defines the Flood Zones as:

- Flood Zone 1 – Very Low Risk, with annual probability of flooding from rivers and the sea of less than 0.1% (1 in 1000).
- Flood Zone 2 – Low Risk, with annual probability of flooding of 0.1 to 1.0% from rivers and 0.1 to 0.5% from the sea.
- Flood Zone 3 – Medium to High risk of flooding with an annual probability of flooding of 1.0% or greater from rivers, and 0.5% or greater from the sea.

A review of the EA Flood Map for Planning indicates the site is wholly located within Flood Zone 1. Areas of Flood Zone 2 and 3, associated with the River Loddon, are located to the west of the site.

The proposed development is for a commercial end use which is classified as 'Less Vulnerable' development within Annex 3 of the NPPF.

2.2 The Sequential and Exception Tests

The Sequential Test aims to steer new development to areas at the lowest risk of flooding. This FRA demonstrates that the site is shown to be located within Flood Zone 1 and is considered to be at a negligible to low risk of flooding from all other sources therefore application of the Sequential Test is not considered to be required.

Table 2 within the Flood Risk and Coastal Change Planning Practice Guidance identifies that 'More Vulnerable' development is acceptable within Flood Zone 1 without the requirement to apply the Exception Test.

2.3 Environmental Setting

LKC have previously undertaken a Phase 1 Preliminary Risk Assessment for the siteⁱⁱⁱ (Ref: LKC251507-A1-PRA-Wyvols Court Farm, Swallowfield R0 dated 16th September 2025). Pertinent environmental information for the site is summarised in Table 2-1 below.

Summary of the Environmental Setting			
Geology	Superficial		No BGS recorded superficial deposits.
	Bedrock		London Clay Formation (Clay, Silt and Sand).
	BGS Boreholes		None.
	Defra Soilscape Mapping		Type 18 - slowly permeable seasonally wet slightly acidic but base rich loamy and clayey soils.
Hydrogeology	Aquifer Designation	Superficial	N/A.
		Bedrock	Unproductive Strata.
	Source Protection Zone (SPZ)		Site not within an SPZ.
Hydrology	All adjacent and internal surface water		The following watercourses are located within the vicinity of the site: • An existing ditch is located to the southwest of the existing farm buildings and flows in a generally northerly direction towards the River Loddon; • The River Loddon is located approximately 260m west of the site at its nearest point. It is classified as an EA 'Main River' and flows in a generally north easterly direction within the vicinity of the site; • An Ordinary Watercourse is located approximately 410m northeast of the site. The watercourse flows in a northerly direction from Swallowfield Street before discharging into the River Loddon approximately 850m northeast of the site; • The Blackwater River is located approximately 785m northeast of the site at its nearest point. The Blackwater River is classified as an EA Main River and is situated to the east of Swallowfield. The river flows in a northerly direction before discharging into the River Loddon approximately 950m northeast of the site.

Table 2-1: Summary of the Environmental Setting.

2.4 Site Topography

A Topographic Survey of the site has been undertaken by K.A Rylance Ltd and is included as Appendix B. The levels from the Topographic Survey are summarised below:

- Ground levels in the northern area of the site, in which Unit 8 will be located, range between approximately 52.0m Above Ordnance Datum (m AOD) in the southwest and 51.0m AOD in the northeast;
- Ground levels in the southern area of the site, in which Units 9 and 10 will be located, range between approximately 53.0m AOD in the southeast and 51.5m AOD in the northwest.

2.5 Ground Investigation

A Phase 2 intrusive ground investigation was undertaken by LKC on 11th September 2025 to confirm ground conditions within the site for contamination and geotechnical assessment purposes. The investigation comprised the excavation of 7no. window sample boreholes drilled to 1.45 – 6.45m below ground level (bgl). The findings of the ground investigation are summarised in the Phase 2 Geo-

Environmental Investigation, Risk Assessment and Outline Remediation Strategy report^{iv} (ref. LKC251507-B1-GI-Wyvols Court Farm, Swallowfield R1, dated 9th October 2025).

Ground conditions identified within the site typically comprised a thin veneer of Topsoil/Made Ground over cohesive River Terrace Deposits to depths of 1.45/2.20m+. These deposits were identified to be underlain by the London Clay Formation to the completion depths investigation. No groundwater was encountered in any of the window sample borehole locations.

2.6 Existing Drainage

As noted in Table 2-1, an existing ditch is located to the southwest of the existing farm buildings and immediately northeast of the area in which Units 9 and 10 are proposed. The Topographic Survey indicates levels in the ditch slope in an easterly direction. Whilst the full route of the ditch is not included within the Topographic Survey, LiDAR elevation data indicates ground levels slope downwards towards the River Loddon.

The Topographic Survey indicates the presence of existing foul and surface water drainage infrastructure serving the existing buildings within the wider farm area. Utility survey information provided by K.A Rylance Ltd (included as Appendix C) identifies that surface water drainage infrastructure serving Unit 6, located immediately west of the area in which Unit 8 is proposed, drains in a westerly direction towards Unit 3. The surface water drainage network then turns northwards and drains towards the rear of Unit 1 at which point it discharges into a 300mm diameter surface water sewer which subsequently drains towards the River Loddon.

Foul network plans (also included as Appendix C) identify that foul drainage serving Units 1, 2 and 3 drains by gravity to a foul pumping station located to the west of the existing buildings. Foul water is subsequently pumped in an easterly direction to a gravity network serving Units 4, 5 and 6. The gravity network is shown to drain in an easterly direction towards Basingstoke Road.

3. Consultation

Information from all relevant consultees is summarised in Table 3-1 below.

Source	Details	
Environment Agency	The EA Flood Map for Planning indicates the site is located within Flood Zone 1, however, areas of Flood Zone 2 and 3 associated with the River Loddon are located to the west of the site.	
	Modelled Levels for River Loddon (Lower). Nearest Node: 8	Consultation has been undertaken with the EA to obtain site specific modelled flood level data to confirm the site is located within Flood Zone 1 during the present day and future climate change scenarios. The data provided by the EA is included as Appendix D and is described further in Section 4.
	Records of Flooding	Data provided by the EA indicates the site has not been impacted by any historic recorded flood events.
	Records of Flood Warning Service	The site is not shown to be located within a flood warning area.
	Surface Water Flooding	A review of the EA Risk of Flooding from Surface Water dataset indicates the site has very low chance (Less than 0.1% chance of a flood each year) of surface water flooding during the present day and future climate change scenarios.
	Flooding from reservoirs	A review of the EA Long Term Reservoir Flood map indicates that the site would remain free from flooding in the event of reservoir failure.
Thames Water (TW)	Sewer map	Consultation has undertaken with TW to obtain public sewer records which are included as Appendix E. TW public sewer records indicate the nearest public sewer is a public foul sewer located beneath "The Street" to the east of Basingstoke Road. No public sewers are shown to be located beneath Basingstoke Road within the vicinity of the site.
	Historic records	Consultation was undertaken to obtain the historic records of flooding within the site which are also included as Appendix E. Thames Water have confirmed that there are no records of historic sewer flooding as a result of surcharging public sewers within the vicinity of the site.
Level 1 Strategic Flood Risk Assessment (SFRA ^v)	The Wokingham Borough Council SFRA was published in May 2023. The SFRA provides information on the number of sewer flood incidents that have occurred across the wider Wokingham area; however, no site specific information is provided. Groundwater susceptibility mapping indicates the eastern part of the site is located within area there where is between a 50% and 75% susceptibility to groundwater flooding.	

Table 3-1: Summary consultee information.

4. Assessment of Flood Risk

4.1 Sources of Flooding

The risk of flooding from the following flood sources has been considered:

Fluvial Flooding

A review of the EA Flood Map for Planning indicates the site is located within Flood Zone 1. Areas of Flood Zone 2 and 3 associated with the River Loddon are located to the west of the site.

Consultation has been undertaken with the EA to obtain modelled flood level data for the site. The data provided by the EA (included as Appendix D) indicates the site remains free from flooding during all modelled scenarios.

In July 2021, the EA published updated climate change guidance for peak river flows. According to the EA peak river flow map, the site is located within the Loddon and Tributaries Management Catchment. Commercial development (i.e. less vulnerable development) within Flood Zone 1 (but in proximity to Flood Zone 2 and 3) is typically required to consider the central allowance for climate change which equates to a maximum 14% uplift on peak river flows within the Loddon and Tributaries Management Catchment. The data provided by the EA confirms that the site remains free from flooding during the 1 in 100 year plus 20% climate change scenario.

Based on the above, the overall risk of fluvial flooding is considered to be low.

Tidal Flooding

The study area is remote from the sea and tidally influenced water bodies. Therefore, the flood risk associated with this source is considered negligible.

Surface Water Flooding

A review of the EA Risk of Flooding from Surface Water dataset indicates the site has a very low chance of surface water flooding during the present day and future climate change scenarios.

Based on the above, the overall risk of surface water flooding is considered to be low.

Groundwater Flooding

The intrusive ground investigation undertaken by LKC identified that the site is underlain by a thin veneer of Topsoil/Made Ground over cohesive River Terrace Deposits which are further underlain by deposits from the London Clay Formation.

Groundwater susceptibility mapping contained within the Wokingham SFRA indicates the eastern part of the site is located within area there where is between a 50% and 75% susceptibility to groundwater flooding.

No groundwater was encountered during the LKC ground investigation and there are no basement levels proposed as part of the development therefore the overall risk of groundwater flooding is considered to be low.

The Environment Agency's Long-Term Flood Risk Mapping identifies the site as being within an area of low risk of groundwater flooding.

Based on the available evidence, the overall risk of groundwater flooding at the site is considered to be low. Nevertheless, during periods of prolonged or exceptionally heavy rainfall, a temporary rise in local groundwater or perched water levels could occur.

Sewer Flooding

Existing on site foul and surface water sewer records (included as Appendix) indicate the presence of an existing foul and surface water drainage network serving the existing units. The existing drainage is

generally down gradient of the proposed development therefore the risk of flooding from surcharging of the on site drainage network is considered to be low.

The location of public sewers within the vicinity of the site are described in Table 3-1. Thames Water have confirmed that there are no records of historic sewer flooding as a result of surcharging public sewers within the vicinity of the site.

Based on the above, the overall risk of sewer flooding is considered to be low.

Flooding from Artificial Sources

A review of the EA Long Term Reservoir Flood Map indicates the site will remain free from flooding in the event of reservoir failure.

There are no canals or other artificial waterbodies within the vicinity of the site therefore the overall risk of flooding from artificial sources is considered to be low.

4.2 Summary of Flood Risk

A summary of the risk of flooding from all sources is provided in Table 4-1.

Source of Flooding	Risk Assessment Level
Fluvial	Low
Tidal	Negligible
Pluvial (Rainfall)	Low
Surface Water	Low
Groundwater	Low
Sewers	Low
Artificial Sources	Low

Table 4-1: Summary of Existing Risk Level.

5. Flood Mitigation Measures

5.1 Proposed Site Levels

The site is considered to be at a negligible to low risk of flooding from all sources therefore there is no specific requirement to raise ground or finished floor levels for flood risk mitigation purposes.

5.2 Safe Access

Access and egress to the site are provided via the Basingstoke Road to the east. According to EA flood mapping, this section of the road remains free from fluvial flooding under both present-day and climate change conditions.

Surface water flood mapping indicates that the overall risk of surface water flooding along the access route is very low, with only isolated low-lying areas along the carriageway predicted to experience shallow ponding of up to around 0.3m during extreme rainfall events in the climate change scenario.

6. Drainage Strategy

6.1 Overview

The NPPF recognises that flood risk and other environmental damage can be managed by minimising changes in the volume and rate of surface run-off from development sites through the use of Sustainable Drainage Systems (SuDS), this being complementary to the control of development within the floodplain.

The site lies within the administrative boundary of Wokingham Borough Council. Wokingham Council has adopted the 'West Sussex LLFA Policy for the Management of Surface Water,' updated in November 2018. As such, any development proposals should seek to comply with SuDS Policy 3 'Mimic Natural Flows and Drainage Flow Paths'. This requires development to incorporate measures to mimic greenfield rates and paths.

The anticipated design life of residential buildings is in excess of 100 years. The EA climate change guidance for peak rainfall intensity (published in May 2022) identifies that development with a lifespan beyond 2100 should consider the upper end climate change allowance. According to the EA Peak Rainfall Allowances map, the site is located within the Loddon and Tributaries Management Catchment in which the upper end allowance equates to a 40% increase in peak rainfall intensity.

SuDS will not alleviate flooding in an area prone to flooding; however, properly designed SuDS have the potential to prevent the surface water runoff from new development worsening the flood risk. The effective disposal of surface water from any new development is a material planning consideration in determining if the proposals for the development and use of land are acceptable.

The accepted principles are that surface water arising from a developed area should, as far as practicable, be managed in a sustainable manner to mimic the surface water flows arising from the site prior to the proposed development, while reducing the flood risk to the site itself and elsewhere, taking climate change into account.

The Planning Practice guidance identifies that surface water runoff should be disposed of in the following order of preference:

1. Into the ground (infiltration);
2. To a surface water body;
3. To a surface water sewer, highway drain, or another drainage system; or
4. To a combined sewer

Suitability of different SuDS will be governed by prevailing site conditions, such as the type and scale of development, topography, ground conditions (soil permeability, ground stability, depth to water table), local hydrogeology and risk of groundwater contamination (presence of sensitive aquifers and source protection zones) etc.

6.2 Sustainable Drainage Hierarchy

6.2.1 Infiltration

The intrusive ground investigation undertaken by LKC identified that the site is underlain by a thin veneer of Topsoil/Made Ground over cohesive River Terrace Deposits which are further underlain by deposits from the London Clay Formation. Based on the cohesive nature of the underlying geology, the LKC Phase 2 report concludes that *"the soils at this site should be considered as impermeable for the purposes of drainage design"*.

Based on the above, the use of infiltration has not been considered further.

6.2.2 Watercourses

The nearest watercourse is the existing drain located to the southwest of the existing buildings immediately adjacent to the area in which Units 9 and 10 will be located. Based on the proximity of the existing drain, it is proposed to discharge surface water runoff generated by these units into this watercourse. Due to topographic constraints, it is not considered feasible for Unit 8 to discharge runoff to the watercourse as significant ground raising in excess of 0.75m would be required to achieve a gravity connection.

6.2.3 To a surface water sewer, highway drain or another drainage system

The existing buildings are drained by a network of private surface water sewers which drain towards the River Loddon via a 300mm diameter surface water sewer. It is proposed to discharge surface water runoff generated by Unit 8 to the existing on site drainage network which eliminates the requirement for significant ground raising thereby significantly reducing vehicle movements (i.e. to transport material into the site for ground raising) and associated emissions during the construction phase.

6.2.4 To a combined sewer

Existing site drainage information and Thames Water public sewer records indicate there are no combined sewers within the vicinity of the site.

6.3 Surface Water Runoff Rates

6.3.1 Greenfield runoff rates

Based on the above assessment of the drainage hierarchy, the proposed development has been separated into catchment areas that will be separately drained. Greenfield runoff rates have been calculated using the IoH 124 method based on respective catchment areas of 0.178ha for Unit 8 and 0.43ha for Units 9 and 10. Greenfield runoff rates calculations are included as Appendix F and summarised in Tables 6-1 and 6-2 below.

Event	Greenfield rate (l/s)
QBAR	0.8
1 in 30 year	1.8
1 in 100 year	2.6

Table 6-1: Greenfield runoff rates for Unit 8 catchment area.

Event	Greenfield rate (l/s)
QBAR	1.9
1 in 30 year	4.5
1 in 100 year	6.2

Table 6-2: Greenfield runoff rates for Unit 9 and 10 catchment area.

6.4 Surface Water Drainage Strategy

The proposed development comprises the construction of three commercial units upon an existing greenfield area. Based on a review of potential surface water receptors in accordance with the drainage hierarchy and to minimise ground raising requirements, it is proposed to separate the development into two catchment areas that will be drained separately. The proposed surface water drainage strategy is included as Appendix G with associated Causeway Flow network modelling calculations included as Appendix H.

6.4.1 Unit 8 Drainage Strategy

It is proposed to restrict surface water runoff generated within the Unit 8 catchment area to the QBAR runoff rate of 0.8l/s during all events up to and including the 1 in 100 year plus 40% climate change event. Restricting to a rate of 0.8l/s will provide significant betterment during the 1 in 30 and 1 in 100 year events.

In order to achieve this restriction, surface water attenuation for Unit 8 will be provided within underground geocellular storage crates located beneath the landscaped area immediately north of the proposed unit. The crates will measure 156m² x 0.8m deep with a 95% porosity. Surface water runoff stored within the crate system will discharge via a new 225mm diameter connection to the existing surface water drainage network serving the existing buildings on site. Flows will be restricted to a rate of 0.8l/s via a Hydrobrake or similar flow control device.

6.4.2 Unit 9 and 10 Drainage Strategy

It is proposed to restrict surface water runoff generated within the Units 9 and 10 catchment area to the QBAR runoff rate of 1.9l/s during all events up to and including the 1 in 100 year plus 40% climate change event. Restricting to a rate of 1.9l/s will provide significant betterment during the 1 in 30 and 1 in 100 year events.

In order to achieve this restriction, surface water attenuation will be provided within a SuDS pond located adjacent to Unit 10. The basin will measure 590m² x 1.3m deep and will provide storage to attenuate for all events up to and including the 1 in 100 year plus 40% climate change event. The pond has been designed to allow for a 0.5m permanent depth of water for Biodiversity Net Gain (BNG) purposes.

Surface water runoff stored within the basin will discharge into the existing ditch via a Hydrobrake or similar flow control device that will restrict surface water runoff to a rate of 1.9l/s.

6.5 SuDS for Pollution Management

A water quality assessment has been undertaken in accordance with the Simple Index Approach (SIA) outlined in the CIRIA SuDS Manual C753. The SIA classifies the pollution hazard indices based on proposed land use. The relevant pollution hazard levels to the proposed development have been adopted from Table 26.2 of the CIRIA SuDS Manual and are presented in Table 6-3 below.

Given the proposed commercial and lorry yard use of the site, where frequent vehicle movements and potential hydrocarbon contamination are expected, the relevant pollution hazard levels have been adopted from Table 26.2 of the SuDS Manual (C753) and are presented in Table 6-2 below.

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons (HCs)
Commercial roofs	Low	0.3	0.2	0.05
Non residential car park	Low	0.5	0.4	0.4

Table 6-3: Pollution Hazard Index adopted from Table 26.2 CIRIA SuDS Manual C753.

Table 26.3 within the CIRIA SuDS Manual identifies the pollution mitigation indices provided by individual SuDS features where discharge to a surface water feature is proposed. Table 6-4 below identifies the SuDS mitigation indices for the proposed SuDS pond.

SuDS Component	Total Suspended Solids (TSS)	Metals	Hydrocarbons (HCs)
Pond	0.7	0.7	0.5

Table 6-4: Pollution Hazard Index adopted from Table 26.2 CIRIA SuDS Manual C753.

Based on the above, the proposed SuDS pond will provide sufficient treatment for surface water runoff. Ponds treat incoming runoff through settling and biological uptake. The primary removal mechanism is the settling of silts and suspended sediments. The pond has been designed such that retention of water is maximised to allow for treatment processes to occur. Moreover, the pond has been designed to provide a 0.5m permanent depth of water for BNG purposes. Emergent and submerged aquatic

vegetation along the banks of the pond will support an active microbial community capable of consuming dissolved constituents within the runoff.

It is proposed to provide a SPEL interceptor or similar on the drainage network serving the Unit 8 parking area to provide treatment of surface water runoff prior to water entering the attenuation tank.

6.6 SuDS Maintenance

Maintenance of proposed SuDS features will be required to ensure these remain operational over the lifetime of the proposed development. An indicative maintenance plan for the proposed SuDS and associated features is provided in Table 6-5 below. The SuDS maintenance and inspections responsibility rests with the owners or could be arranged through appointment of a site management company.

Maintenance Schedule	Required Action	Typical Frequency
Geocellular Storage Crates		
Regular Maintenance	Remove debris from the catchment surface (where it may cause risks to performance).	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium, as necessary.	Annually
	Remove sediment from pre-treatment structures and/or internal forebays	Annually or as required.
Remedial Actions	Repair/rehabilitate inlets, outlet and overflows and vents.	As required.
Monitoring	Survey inside of tank for sediment build-up and remove if necessary.	Every 5 years or as required.
	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed.	Annually
SuDS Pond		
Regular maintenance	Remove litter and debris	Monthly (or as required)
	Cut the grass – public areas	Monthly (during growing season)
	Cut the meadow grass	Half yearly (spring, before nesting season, and autumn)
	Inspect marginal and bankside vegetation and remove nuisance plants (for first 3 years)	Monthly (at start, then as required)
	Inspect inlets, outlets, banksides, structures, pipework, etc for evidence of blockage and/or physical damage/	Monthly
	Inspect water body for signs of poor water quality	Monthly (May – October)
	Inspect silt accumulation rates and establish appropriate removal frequencies; undertake contamination testing once some build up has occurred to inform management and disposal options	Half yearly

Maintenance Schedule	Required Action	Typical Frequency
	Hand cut submerged and emergent aquatic plants (at minimum of 0.1m above pond base; including max 25% of pond surface)	Annually
	Remove 25% of bank vegetation from waters edge to a minimum of 1m above water level	Annually
	Tidy all dead growth (scrub clearance) before start of growing season	Annually
	Remove sediment and planting from one quadrant of the main body of the pond	Every 5 years or as required
Occasional maintenance	Remove sediment from main body of pond when pool volume is reduced by 20%	Required rarely, e.g. every 25 – 50 years
Remedial Actions	Repair erosion or other damage	As required
	Replant, where necessary	As required
	Aerate pond when signs of eutrophication are detected	As required
	Realign rip-rap or repair other damage	As required
	Repair / rehabilitate inlets, outlets and overflows	As required

Table 6-5: Summary of pond maintenance activities and schedule

6.7 Foul Water Drainage

It is proposed to discharge foul effluent generated by the proposed development to the existing on site foul drainage network as indicated on the drainage strategy drawings included as Appendix G.

7. Conclusions

This report has been prepared to support the planning application for the proposed construction of three commercial units with associated access, parking, infrastructure and landscaping.

The site is considered to be at a negligible to low risk of flooding from all sources and no site specific flood risk mitigation measures are considered to be required.

To ensure there is no increase in downstream flood risk as a result of the proposed development it is proposed to restrict surface water runoff to the existing QBAR runoff rate during all events up to and including the 1 in 100 year plus 40% climate change event. It is proposed to provide attenuation for Units 9 and 10 in the form of a SuDS pond location adjacent to Unit 10. The pond has been designed to provide the full balance of attenuation whilst also providing a permanent depth of water for BNG purposes. Attenuation for Unit 8 is proposed to be provided within an attenuation tank which will discharge to the existing private surface water sewer network serving the existing buildings.

Foul effluent generated by the proposed development will discharge to the existing foul drainage network serving the wider farm site.

Based on the above, the site is considered to be safe from flooding and will not result in an increase in off site flood risk.

Figures

Figure 1 – Site Location Plan



Client: Wyvols Court Farm Ltd				Title: Site Location & Boundary Plan		 LK CONSULT	
Site: Wyvols Court Farm, Swallowfield				Scale (see scale bar): 1:25,000 & 1:5,000 @ A4			
Job No.: FRA251195	Drawn By: AF	Checked By: DP	Drawn: Feb 2026	Figure: 1	Revision: 1		

Appendices

Appendix A – Proposed Development Plans



Appendix B – Topographic Survey

A	06.11.2025	Area of survey extended to the south.
---	------------	---------------------------------------

Sept 2025	Original drawing issue.
-----------	-------------------------

REV.	DATE	DETAILS	
<i>Abbreviations:</i>			
Bol	Bollard	IL	Invert Level
CBF	Close Board Fence	IRF	Iron Railing Fence
CBW	Concrete Block Wall	LP	Lamp Post
CL	Cover Level	PRF	Post & Rail Fence
CPF	Chestnut Trailing Fence	RG	Road Gully
EP	Electricity Pole	RS	Road Sign
Gu	Gully	RT	Retaining Wall
h	Height (metres)	T	Telephone
IC	Inspection Cover	WM	Water Meter

WARNING
All dimensions on this plan have only been measured to an accuracy commensurate with the original 1/200 plotting scale.

Note:
All tree dimensions are best estimates and are intended for indicative purposes only.
For safety reasons all underground drainage details are by visual inspection only.
Drainage must be verified on site before the commencement of any works.
Survey Grid set to Ordnance Survey National Grid using GPS Smartnet RTK network.
All values expressed in metres unless otherwise stated.

Survey incorporates updated section of previous survey
Aug 2008 Job No: 08:4067 Drawing file: swal200a.

Benchmark Details:
O.S.B.M is located on the North East corner of the brick building on Wyvols Court Farm.

Value 51.52m

Client:
WYVOLS COURT FARM LTD
Wyvols Court Farm
Basingstoke Road
Swallowfield
Berkshire

WYVOLS COURT FARM
SWALLOWFIELD
READING
BERKSHIRE

Drawing Title:
TOPOGRAPHICAL SURVEY
Revision A
Sheet 1

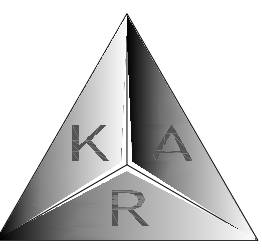
Scale:	Size:	Date:
1/200	A0	NOV 2025

Surveyed:	PC	Dwg File: wyvois topo rev A
Checked:	PSD	Job No: 25:5703

K.A.RYLANCE LIMITED

The Paddocks
Gambles Lane
Ripley
Surrey
GU23 6HS

Tel. 01483 346983
Email. mail@karylance.co.uk





A	06.11.2025	Area of survey extended to the south.
	Sept 2025	Original drawing issue.
REV.	DATE	DETAILS
Abbreviations:		
Bol	Bollard	IL Invert Level
CBF	Close Board Fence	IRF Iron Railing Fence
CBW	Concrete Block Wall	LP Lamp Post
CL	Cover Level	PRF Post & Rail Fence
CPF	Chestnut Paving Fence	RG Road Gully
EP	Electricity Pole	RS Road Sign
Gu	Gully	RW Retaining Wall
h	Height (metres)	T Telephone
IC	Inspection Cover	WM Water Meter

WARNING:
All dimensions on this plan have only been measured to an accuracy commensurate with the original 1:200 plotting scale.

Note:
All tree dimensions are best estimates and are intended for indicative purposes only.
For safety reasons all underground drainage details are by visual inspection only.
Drainage must be verified on site before the commencement of any works.
Survey Grid set to Ordnance Survey National Grid using GPS Smartnet RTK network.
All values expressed in metres unless otherwise stated.

Survey incorporates updated section of previous survey Aug 2008 Job No: 08-4067 Drawing file: swal200a.

Benchmark Details:
O.S.B.M is located on the North East corner of the brick building on Wyvols Court Farm.

Value 51.52m

Client:
WYVOLS COURT FARM LTD
Wyvols Court Farm
Basingstoke Road
Swallowfield
Berkshire

Job Title:
**WYVOLS COURT FARM
SWALLOWFIELD
READING
BERKSHIRE**

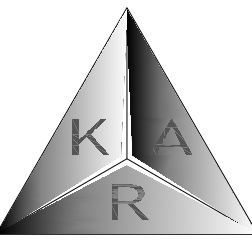
Drawing Title:
**TOPOGRAPHICAL SURVEY
Revision A
Sheet 2**

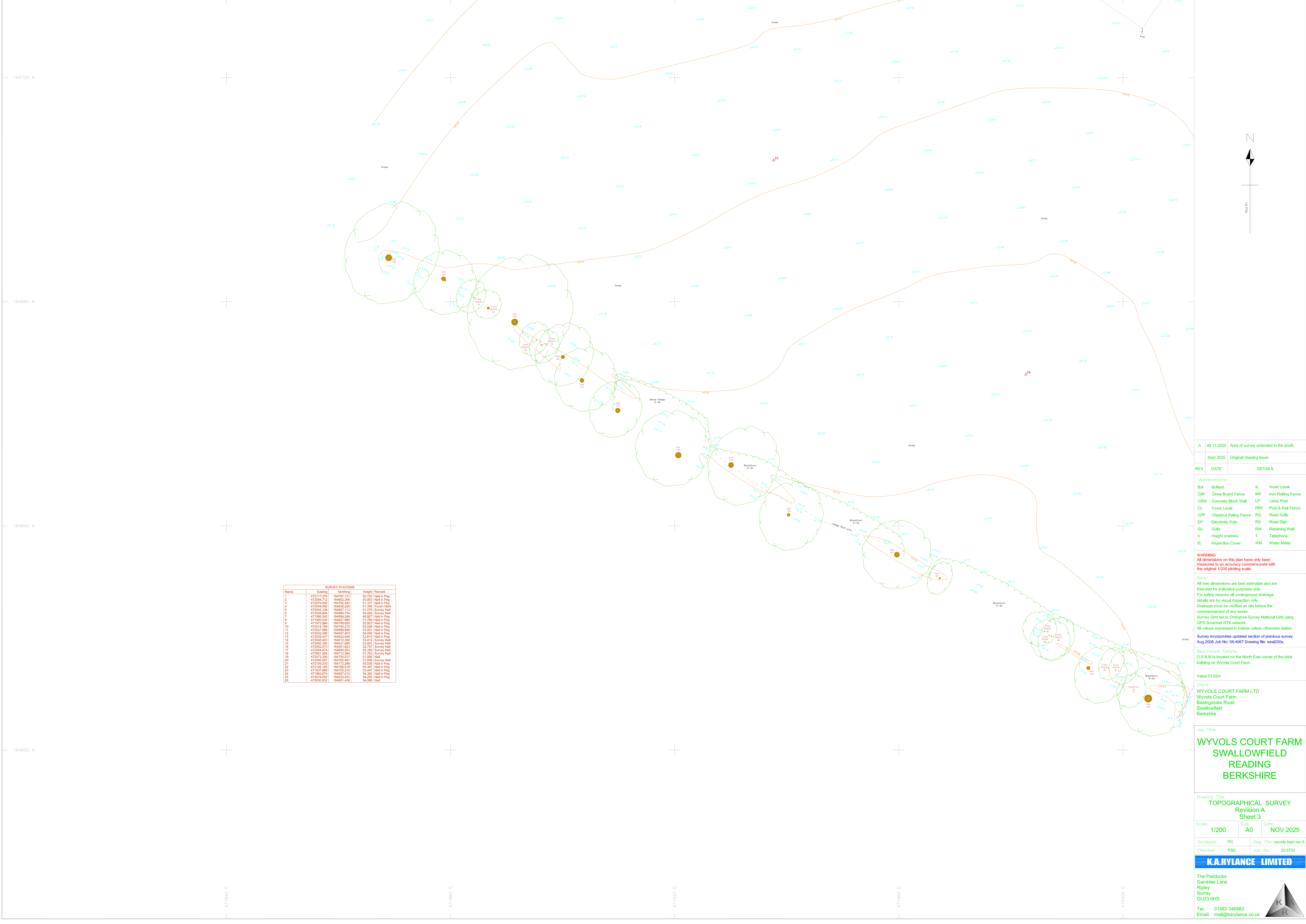
Scale: 1/200 Size: A0 Date: NOV 2025

Surveyed: PC Dwg File: wyvols topo rev A
Checked: PSD Job No: 25:5703

K.A.RYLANCE LIMITED

The Paddocks
Gambles Lane
Ripley
Survey
GU23 6HS
Tel. 01483 346983
Email. mail@karylance.co.uk





SURVEY STATIONS				
Name	Easting	Northing	Height	Remark
1	472117.274	164707.131	50.700	Nail in Peg
2	472084.712	164802.308	50.953	Nail in Peg
3	472070.800	164792.243	51.377	Nail in Peg
4	472054.082	164836.228	51.356	Punch Mark
5	472043.038	164847.113	51.073	Survey Nail
6	472030.384	164865.744	50.420	Survey Nail
7	471998.545	164884.249	48.927	Nail in Peg
8	471990.339	164872.361	51.789	Nail in Peg
9	471972.984	164749.825	52.823	Nail in Peg
10	472014.399	164742.516	53.028	Nail in Peg
11	472027.988	164888.888	53.801	Nail in Peg
12	472032.289	164847.803	54.056	Nail in Peg
13	472038.437	164622.494	53.815	Nail in Peg
14	472048.403	164612.392	53.412	Survey Nail
15	472050.350	164631.885	53.091	Survey Nail
16	472052.273	164651.623	52.787	Survey Nail
17	472054.474	164680.953	52.180	Survey Nail
18	472001.008	164772.084	51.763	Survey Nail
19	472073.308	164750.517	51.095	Nail
20	472080.927	164762.487	51.058	Survey Nail
21	472108.535	164772.288	50.536	Nail in Peg
22	472126.365	164788.819	50.387	Nail in Peg
23	471937.889	164702.233	53.447	Nail in Peg
24	471982.814	164697.010	54.382	Nail in Peg
25	472018.892	164830.353	54.250	Nail in Peg
26	472030.832	164601.438	54.086	Nail

A 06.11.2025 Area of survey extended to the south.

Sept 2025 Original drawing issue.

REV. DATE DETAILS

Abbreviations:
Bol Bollard
CBF Close Board Fence
CBW Concrete Block Wall
CL Cover Level
CPF Chestnut Paving Fence
EP Electricity Pole
Gu Gully
h Height (metres)
IC Inspection Cover
IL Invert Level
IRF Iron Railing Fence
LP Lamp Post
PRF Post & Rail Fence
RG Road Gully
RS Road Sign
RW Retaining Wall
T Telephone
WM Water Meter

WARNING:
All dimensions on this plan have only been measured to an accuracy commensurate with the original 1/200 plotting scale.

Note:
All tree dimensions are best estimates and are intended for indicative purposes only.
For safety reasons all underground drainage details are by visual inspection only.
Drainage must be verified on site before the commencement of any works.
Survey Grid set to Ordnance Survey National Grid using GPS Smartnet RTK network.
All values expressed in metres unless otherwise stated.

Survey incorporates updated section of previous survey Aug 2008 Job No: 08-4067 Drawing file: swal200a.

Benchmark Details:
O.S.B.M is located on the North East corner of the brick building on Wyvols Court Farm.

Value 51.52m

Client:
WYVOLS COURT FARM LTD
Wyvols Court Farm
Basingstoke Road
Swallowfield
Berkshire

Job Title:

WYVOLS COURT FARM
SWALLOWFIELD
READING
BERKSHIRE

Drawing Title:
TOPOGRAPHICAL SURVEY
Revision A
Sheet 3

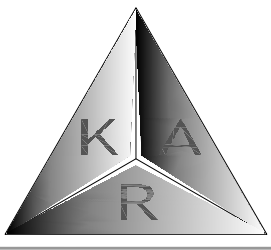
Scale: 1/200 Size: A0 Date: NOV 2025

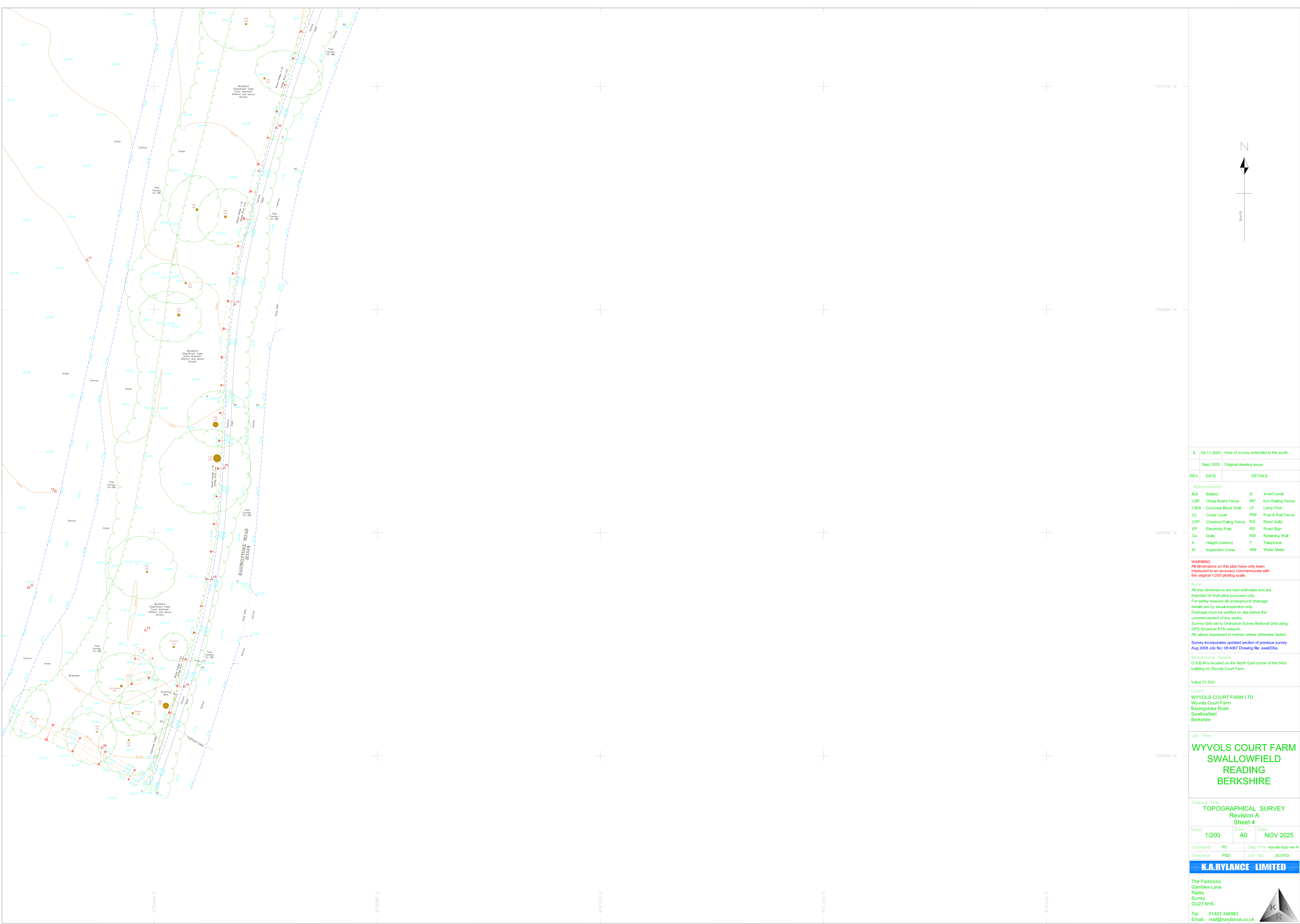
Surveyed: PC Dwg File: wyvols topo rev A

Checked: PSD Job No: 25:5703

K.A.RYLANCE LIMITED

The Paddocks
Gambles Lane
Ripley
Survey
GU23 6HS
Tel. 01483 346983
Email. mail@karylance.co.uk





REV.	DATE	DETAILS
A	06.11.2025	Area of survey extended to the south.
	Sept 2025	Original drawing issue.

Abbreviations:			
Bol	Bollard	IL	Invert Level
CBF	Close Board Fence	IRF	Iron Railing Fence
CBW	Concrete Block Wall	LP	Lamp Post
CL	Cover Level	PRF	Post & Rail Fence
CPF	Chestnut Palling Fence	RG	Road Gully
EP	Electricity Pole	RS	Road Sign
Gu	Gully	RW	Retaining Wall
h	Height (metres)	T	Telephone
IC	Inspection Cover	WM	Water Meter

WARNING:
All dimensions on this plan have only been measured to an accuracy commensurate with the original 1:200 plotting scale.

Note:
All tree dimensions are best estimates and are intended for indicative purposes only.
For safety reasons all underground drainage details are by visual inspection only.
Drainage must be verified on site before the commencement of any works.
Survey Grid set to Ordnance Survey National Grid using GPS Smartnet RTK network.
All values expressed in metres unless otherwise stated.

Survey incorporates updated section of previous survey Aug 2008 Job No: 08-4067 Drawing file: swal200a.

Benchmark Details:
O.S.B.M is located on the North East corner of the brick building on Wyvols Court Farm.

Value 51.52m
Client:
WYVOLS COURT FARM LTD
Wyvols Court Farm
Basingstoke Road
Swallowfield
Berkshire

Job Title:
**WYVOLS COURT FARM
SWALLOWFIELD
READING
BERKSHIRE**

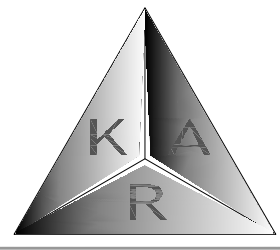
Drawing Title:
**TOPOGRAPHICAL SURVEY
Revision A
Sheet 4**

Scale: 1/200 Size: A0 Date: NOV 2025

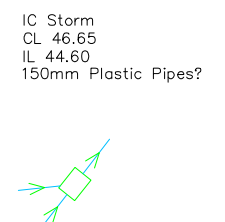
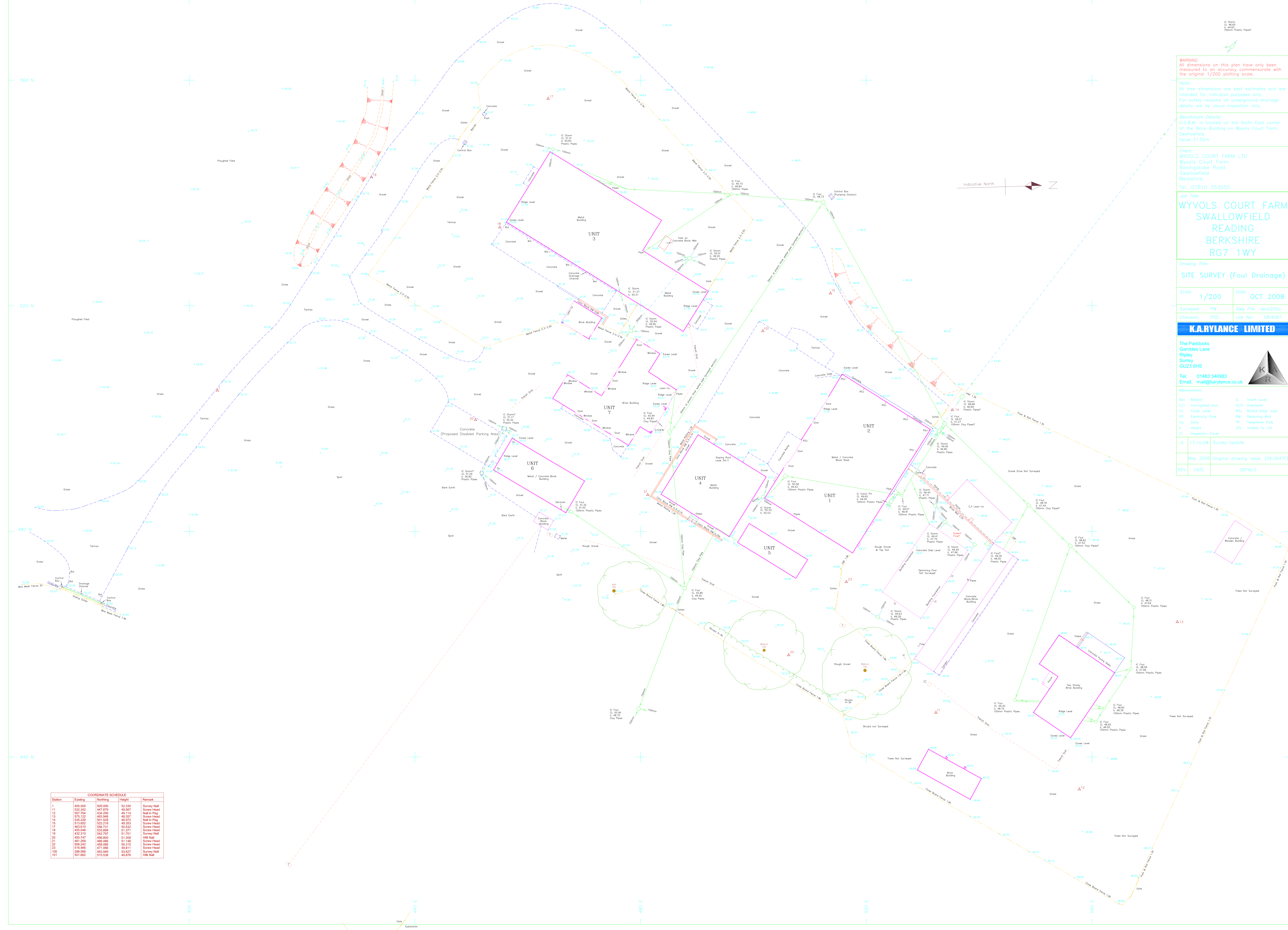
Surveyed: PC Dwg File: wyvols topo rev A
Checked: PSD Job No: 25:5703

K.A.RYLANDCE LIMITED

The Paddocks
Gambles Lane
Ripley
Surrey
GU23 6HS
Tel. 01483 346983
Email. mail@karylance.co.uk



Appendix C – On-Site Foul and Surface Water Drainage



WARNING
All dimensions on this plan have only been measured to an accuracy commensurate with the original 1/200 plotting scale.

Note:
All tree dimensions are best estimates and are intended for indicative purposes only. For safety reasons all underground drainage details are by visual inspection only.

Benchmark Details:
O.S.B.M. is located on the North East corner of the Brick Building on Wyvols Court Farm, Swallowfield.
Value 51.52m

Client:
WYVOLS COURT FARM LTD
Wyvols Court Farm
Basingstoke Road
Swallowfield
Berkshire.
Tel. 07810 553555

Job Title:
**WYVOLS COURT FARM LTD
SWALLOWFIELD
READING
BERKSHIRE
RG7 1WY**

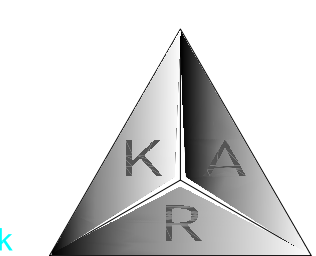
Drawing Title:
SITE SURVEY (Foul Drainage)

Scale: 1/200 **Date:** OCT 2008

Surveyed: PW **Dwg File:** swall200a
Checked: PSD **Job No:** 08:4067

K.A.R.YLANCE LIMITED

**The Paddocks
Gambleys Lane
Ripley
Surrey
GU23 6HS**
Tel. 01483 346983
Email. mail@karylance.co.uk



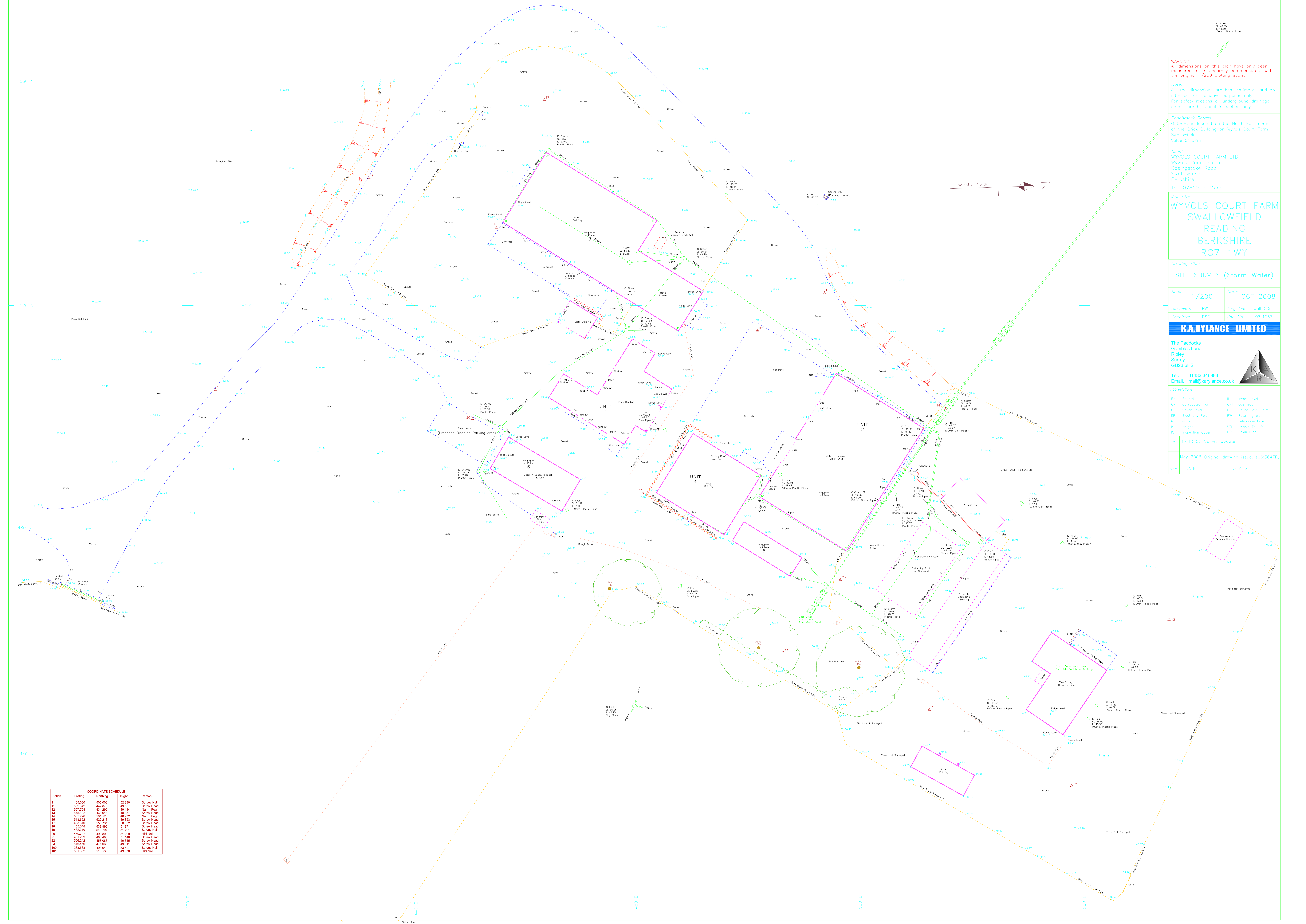
Abbreviations:
Bal Ballard I/- Invert Level
C/- Corrugated Iron O/H Overhead
CL Cover Level RSJ Rolled Steel Joint
EP Electricity Pole RW Retaining Wall
GU Gully TP Telephone Pole
H Height URL Unable To Lift
IC Inspection Cover

A 17.10.08 Survey Update.

May 2006 Original drawing issue. (06:36477)

REV.	DATE	DETAILS
------	------	---------

COORDINATE SCHEDULE				
Station	Easting	Northing	Height	Remark
11	495.000	505.000	52.330	Survey Nail
12	532.342	447.879	49.567	Screw Head
13	557.764	434.290	49.114	Nail in Peg
14	575.122	461.548	46.307	Screw Head
15	535.226	501.528	48.872	Nail in Peg
16	513.652	522.218	46.353	Screw Head
17	463.610	556.731	50.532	Screw Head
18	455.648	533.888	51.271	Screw Head
19	432.310	542.787	51.701	Survey Nail
20	450.747	499.800	51.209	HRI Nail
21	461.269	495.486	51.148	Screw Head
22	506.242	495.086	50.315	Screw Head
23	516.466	471.066	49.811	Screw Head
100	386.568	493.349	53.627	Survey Nail
101	501.662	515.538	49.876	HRI Nail



WARNING
All dimensions on this plan have only been measured to an accuracy commensurate with the original 1/200 plotting scale.

Notes
All tree dimensions are best estimates and are intended for indicative purposes only. For safety reasons all underground drainage details are by visual inspection only.

Benchmark Details:
O.S.B.M. is located on the North East corner of the Brick Building on Wyvols Court Farm, Swallowfield.
Value 51.52m

Client:
WYVOLS COURT FARM LTD
Wyvols Court Farm
Basingstoke Road
Swallowfield
Berkshire.
Tel. 07810 553555

Job Title:
WYVOLS COURT FARM
SWALLOWFIELD
READING
BERKSHIRE
RG7 1WY

Drawing Title:
SITE SURVEY (Storm Water)

Scale: 1/200 **Date:** OCT 2008

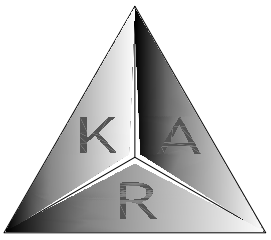
Surveyed: PW **Dwg File:** swall200a

Checked: PSD **Job No:** 08.4067

K.A.R.YLANCE LIMITED

The Paddocks
Gambles Lane
Ripley
Surrey
GU23 6HS

Tel. 01483 346983
Email: mail@karylance.co.uk



Abbreviations:

Boi	Bollard	IL	Invert Level
C/I	Corrugated Iron	O/N	Overhead
CL	Cover Level	RSJ	Rolled Steel Joist
EP	Electricity Pole	RW	Retaining Wall
GU	Gully	TP	Telephone Pole
HT	Height	UTL	Under To LIP
IC	Inspection Cover	DP	Down Pipe

A	17.10.08	Survey Update.
	May 2006	Original drawing issue. (06.36477)
REV	DATE	DETAILS

COORDINATE SCHEDULE				
Station	Easting	Northing	Height	Remark
1	405.000	505.000	52.330	Survey Nail
11	532.342	447.879	49.567	Screw Head
12	527.766	434.260	49.114	Nail in Peg
13	575.122	403.846	48.307	Screw Head
14	535.228	501.528	48.072	Nail in Peg
15	513.692	522.278	49.053	Screw Head
16	463.610	556.731	50.532	Screw Head
17	455.648	533.099	51.371	Survey Nail
18	432.310	542.797	51.701	Survey Nail
19	430.147	496.870	51.208	HBT Nail
20	481.269	456.486	51.146	Screw Head
21	506.342	456.095	50.315	Screw Head
22	516.466	471.866	49.811	Screw Head
23	268.669	493.949	50.627	Survey Nail
100	501.662	515.538	49.876	HBT Nail

Appendix D – Environment Agency Modelled Flood Data

Flood risk assessment data



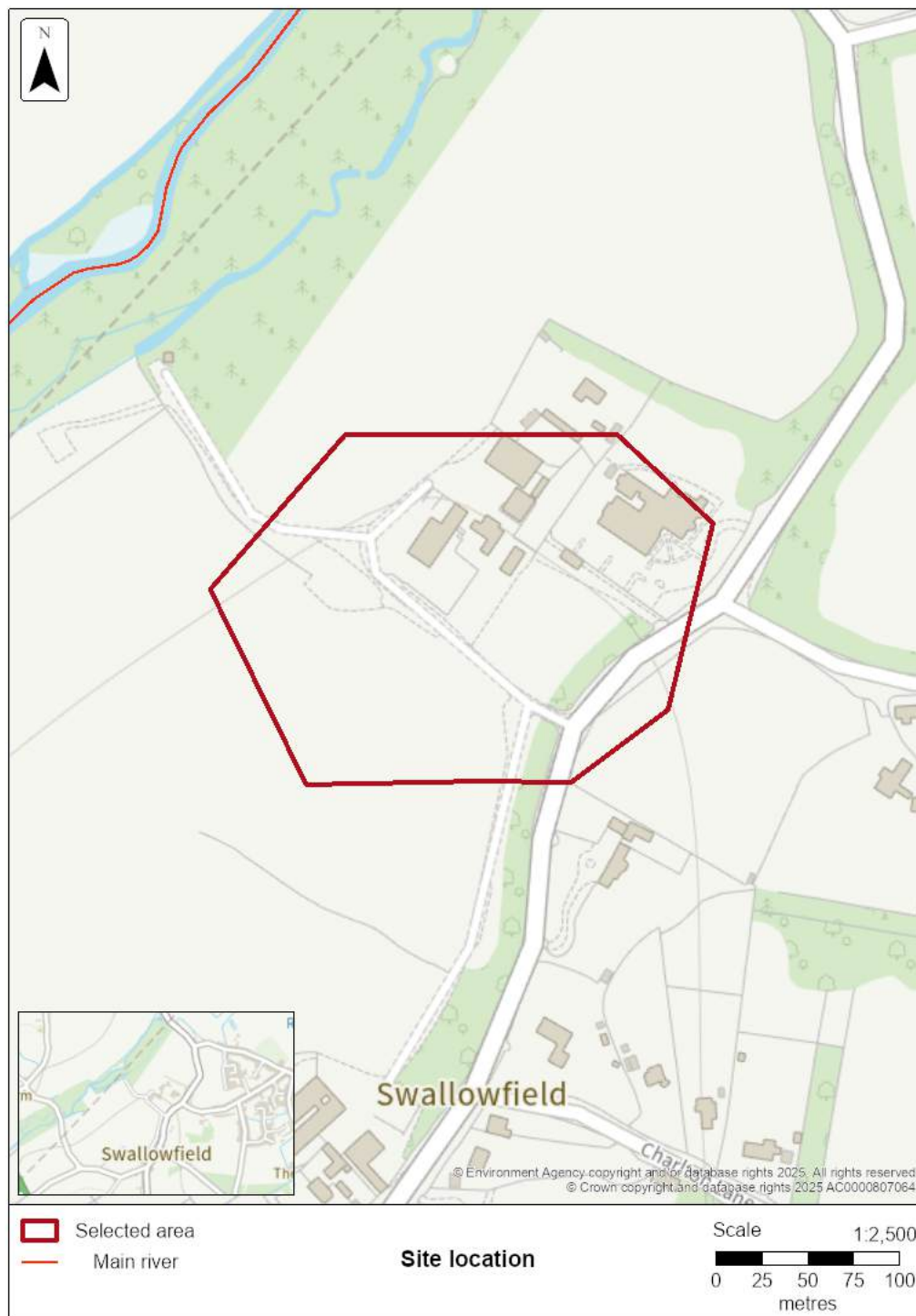
Location of site: 472018 / 164809 (shown as easting and northing coordinates)

Document created on: 20 August 2025

This information was previously known as a product 4.

Customer reference number: 9B77MVWWF24M

Map showing the location that flood risk assessment data has been requested for.



How to use this information

You can use this information as part of a flood risk assessment for a planning application. To do this, you should include it in the appendix of your flood risk assessment.

We recommend that you work with a flood risk consultant to get your flood risk assessment.

Included in this document

In this document you'll find:

- how to find information about surface water and other sources of flooding
- information on the models used
- definitions for the terminology used throughout
- flood map for planning (rivers and the sea)
- past floods
- modelled data
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

Information that's unavailable

This document **does not** contain:

- flood defences and attributes

We aren't able to display flood defence locations and attributes as there are no formal flood defences in the area of interest.

Surface water and other sources of flooding

When using the surface water map on the [check your long term flood risk service](#) the following considerations apply:

- surface water extents are suitable for use in planning
- surface water climate change scenarios may help to inform risk assessments, but the available data fall short of what is required to assess planned development
- surface water depth information should not be used for planning purposes

To find out about other factors that might affect the flood risk of this location, you should also check:

- [reservoir flood risk](#)
- groundwater flood risk - you could use the [British Geological Survey groundwater flooding data](#), [groundwater: current status and flood risk](#) and the guide on [mining and groundwater constraints for development](#) - further information may be available from the lead local flood authority (LLFA)
- your local planning authority's SFRA, which includes future flood risk

Your Lead Local Flood Authority is Wokingham.

For information about sewer flooding, contact the relevant water company for the area.

About the models used

Model name: Blackwater 2007 - River Blackwater

Scenario(s): Defended fluvial, defences removed fluvial, defended climate change fluvial, defences removed climate change fluvial

Date: 25 May 2007

Model name: Loddon (Lower) 2009

Scenario(s): No defences exist fluvial, no defences exist climate change fluvial

Date: 1 January 2009

These models contain the most relevant data for your area of interest.

Terminology used

Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1% chance of occurring in any one year, is described as 1% AEP.

Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.

Flood map for planning (rivers and the sea)

Your selected location is in flood zone 1.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change



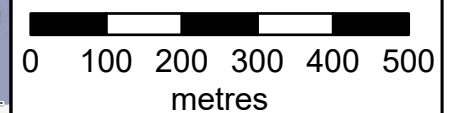
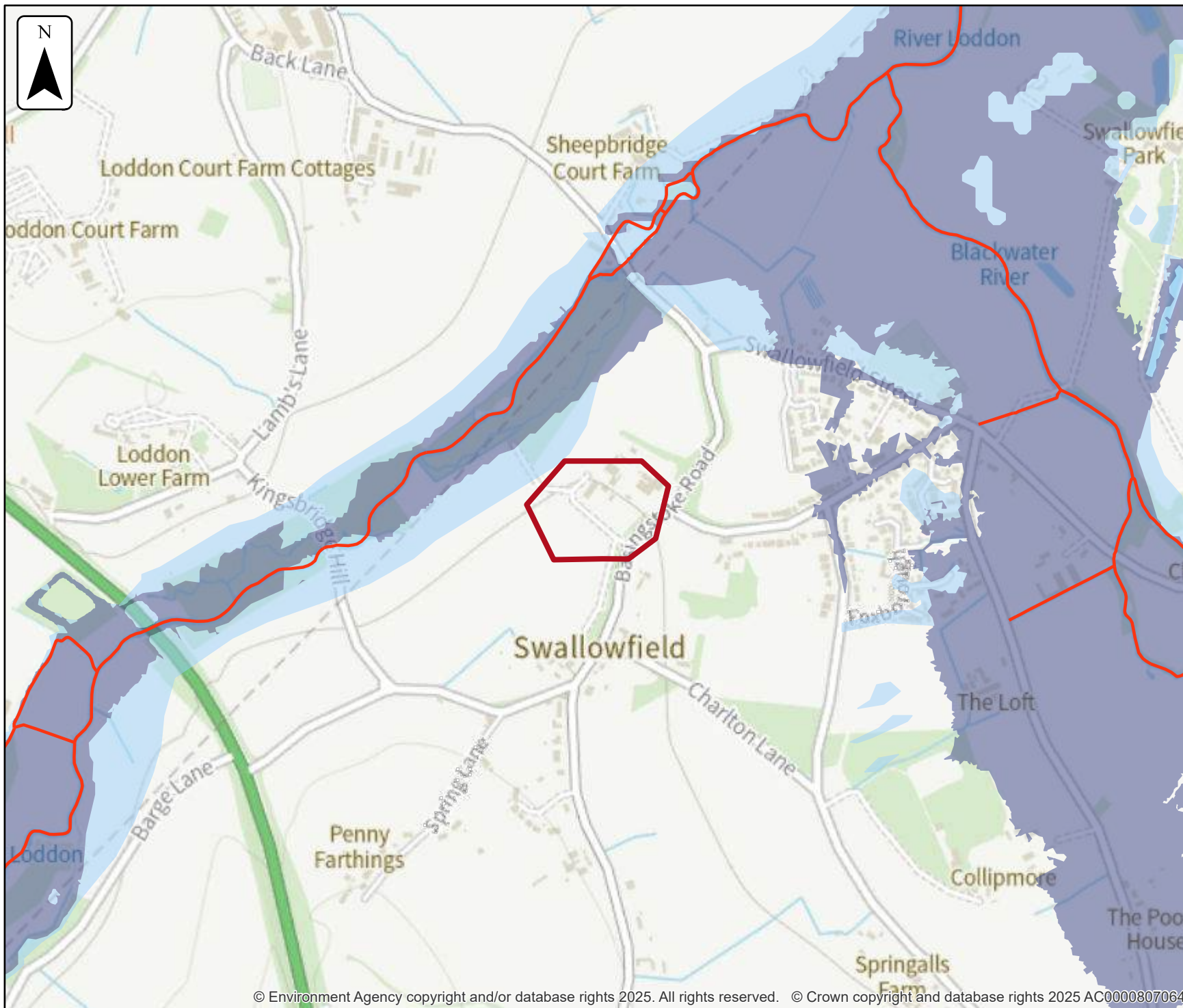
Flood map for planning

Location (easting/northing)
472018/164809

Scale
1:10,000

Created
20 Aug 2025

-  Selected area
-  Main river
-  Flood Zone 3
-  Flood Zone 2



Past floods

Past flood events included in this document

The recorded flood outlines included in this document are for areas of land local to your site location that have been flooded by any of these sources:

- ephemeral water
- main rivers
- ordinary watercourses
- the sea
- unknown

Data limitations

The outlines do not include flooding from:

- drainage where rainfall has led to surface water ponding or overland runoff
- artificial, water-bearing sewer, water supply and wastewater treatment pipelines

Changes to flood defences

The defences (also known as assets) that were in place may also have changed. For example, assets may have been built more recently than the last recorded flood outline.

What the recorded flood outlines dataset is

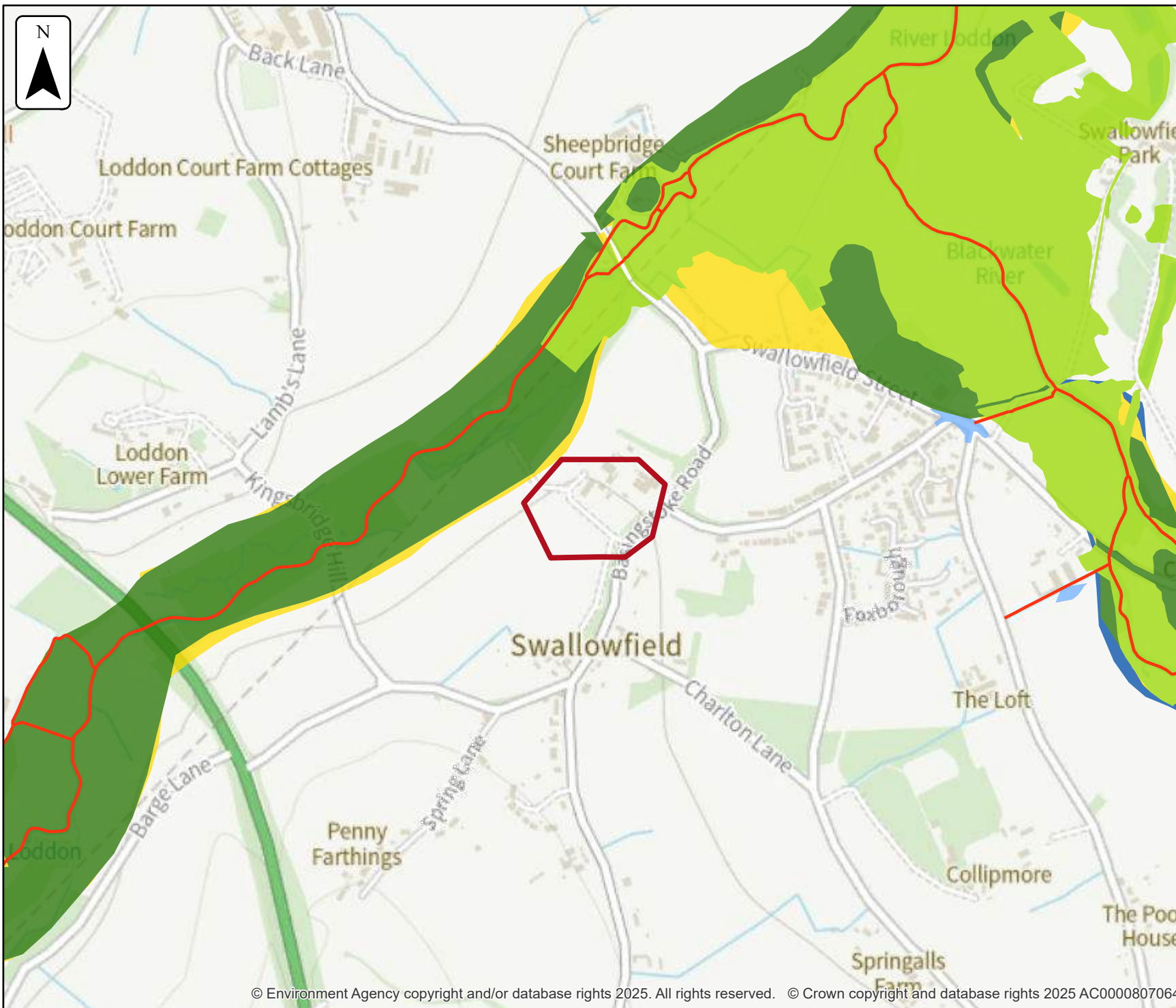
The recorded flood outlines are a geographical information system (GIS) data layer that show our verified records of areas that have flooded in the past from:

- rivers
- the sea
- groundwater
- surface water

[Download the complete recorded flood outlines dataset](#), which includes data quality flags for outlines recorded after April 2020. This indicates the confidence we have in an outline.

Get flood information from other organisations

Contact Wokingham Lead Local Flood Authority (LLFA) and your drainage board to get information about past flooding caused by surface water or drainage systems.



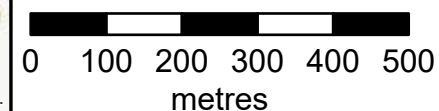
Past floods

Location (easting/northing)
472018/164809

Scale
1:10,000

Created
20 Aug 2025

-  Selected area
-  Main river
- Date of flood event
 -  July, 2007
 -  1991
 -  1990
 -  1974
 -  1968



Data on past flood events

Start date	End date	Source of flood	Cause of flood	Affects location
20 July 2007	21 July 2007	main river	channel capacity exceeded (no raised defences)	No
1991	1991	main river	channel capacity exceeded (no raised defences)	No
1990	1990	main river	channel capacity exceeded (no raised defences)	No
1974	1974	unknown	channel capacity exceeded (no raised defences)	No
1968	1968	main river	channel capacity exceeded (no raised defences)	No

Modelled data

This section provides details of different scenarios we have modelled and includes the following (where available):

- outline maps showing the area at risk from flooding in different modelled scenarios
- modelled node point map(s) showing the points used to get the data to model the scenarios and table(s) providing details of the flood risk for different return periods
- map(s) showing the approximate water levels for the return period with the largest flood extent for a scenario and table(s) of sample points providing details of the flood risk for different return periods

Climate change

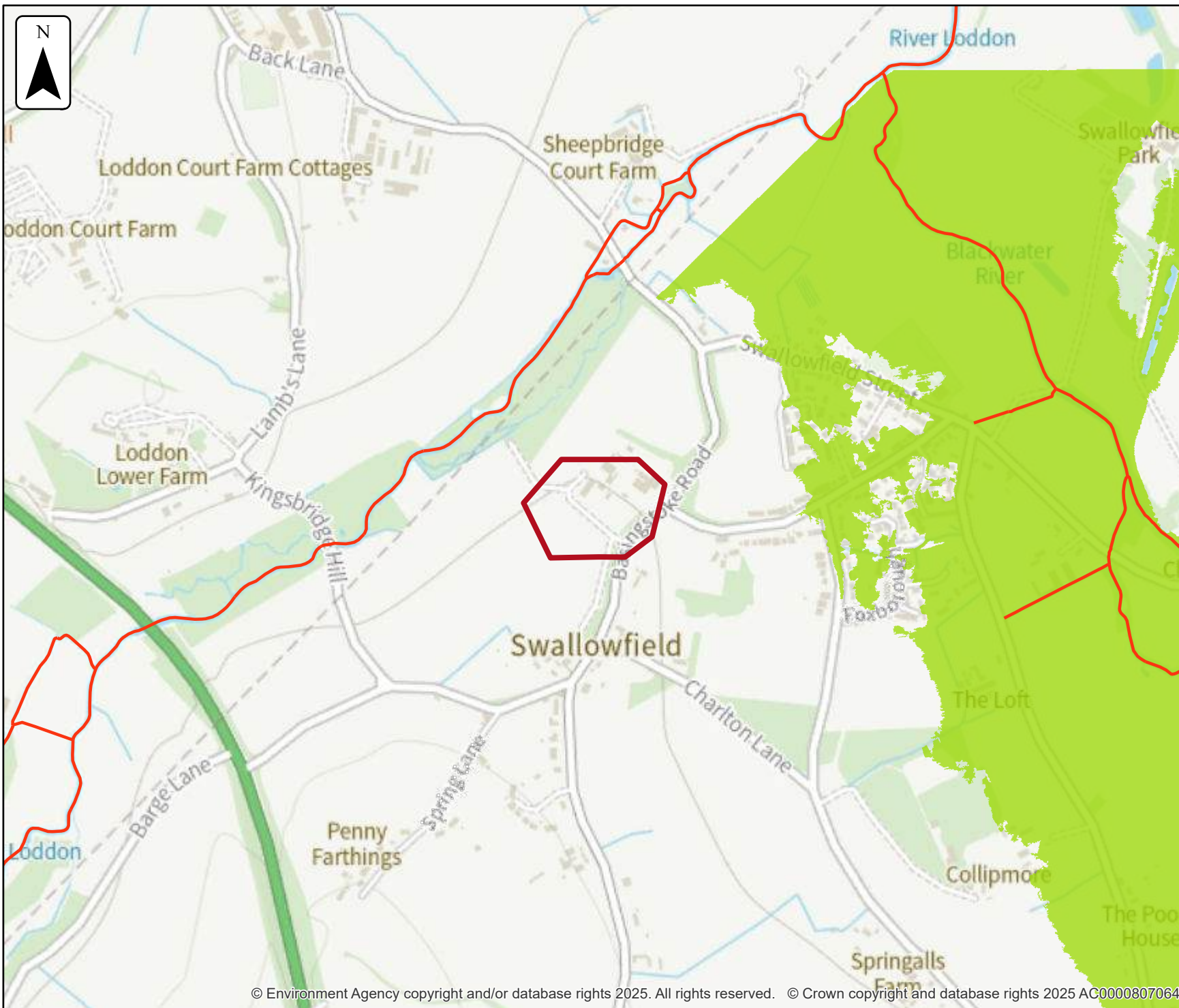
The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

The Environment Agency will incorporate the new allowances into future modelling studies. For now, it's your responsibility to demonstrate that new developments will be safe in flood risk terms for their lifetime.

Modelled scenarios

The following scenarios are included:

- Defended modelled fluvial: risk of flooding from rivers where there are flood defences
- Defences removed modelled fluvial: risk of flooding from rivers where flood defences have been removed
- No defences exist modelled fluvial: risk of flooding from rivers where there are no flood defences
- Defended climate change modelled fluvial: risk of flooding from rivers where there are flood defences, including estimated impact of climate change
- Defences removed climate change modelled fluvial: risk of flooding from rivers where flood defences have been removed, including estimated impact of climate change
- No defences exist climate change modelled fluvial: risk of flooding from rivers where there are no flood defences, including estimated impact of climate change



**Defences removed
climate change
modelled fluvial extent**

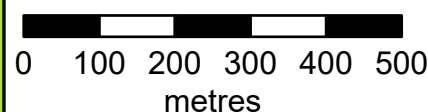
Location (easting/northing)
472018/164809

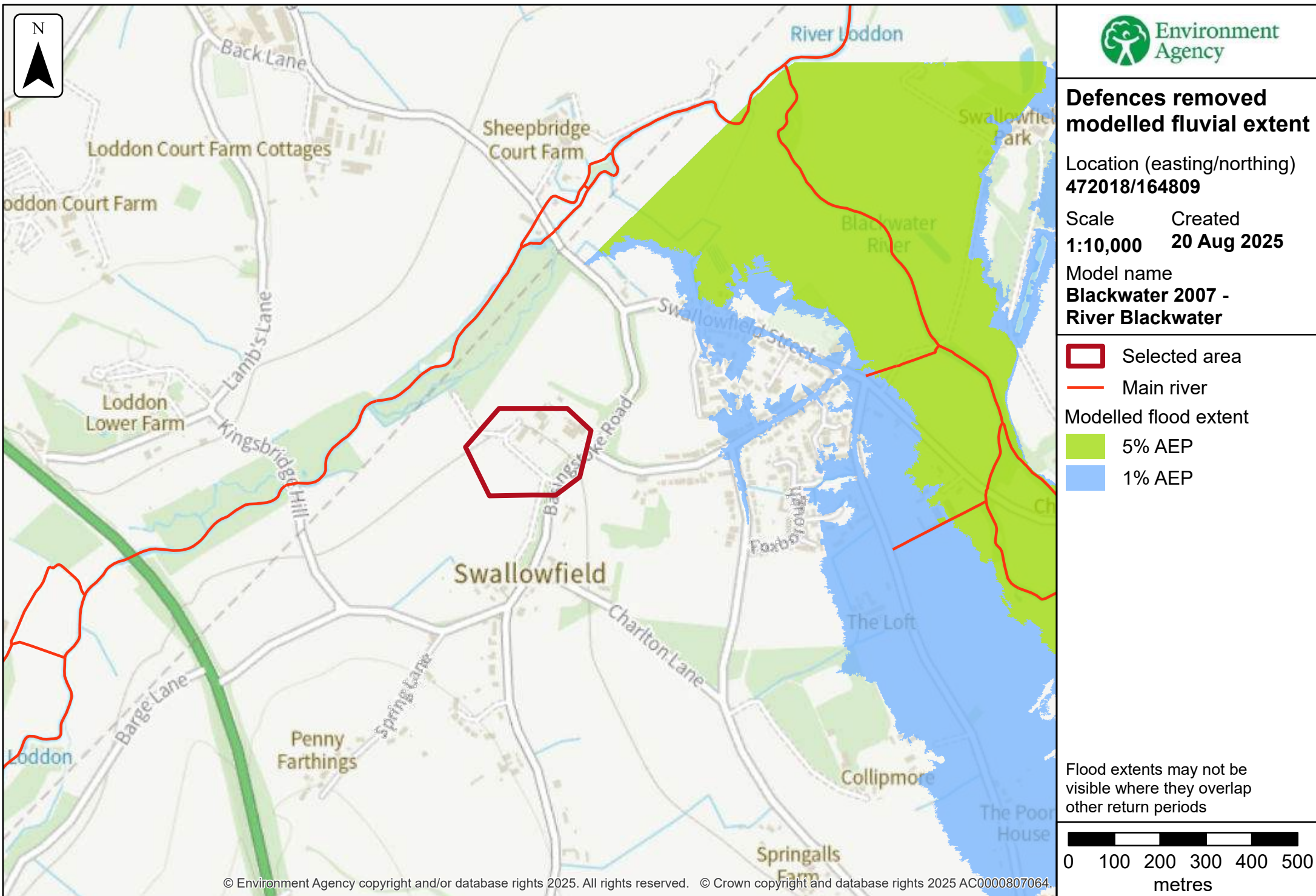
Scale Created
1:10,000 20 Aug 2025

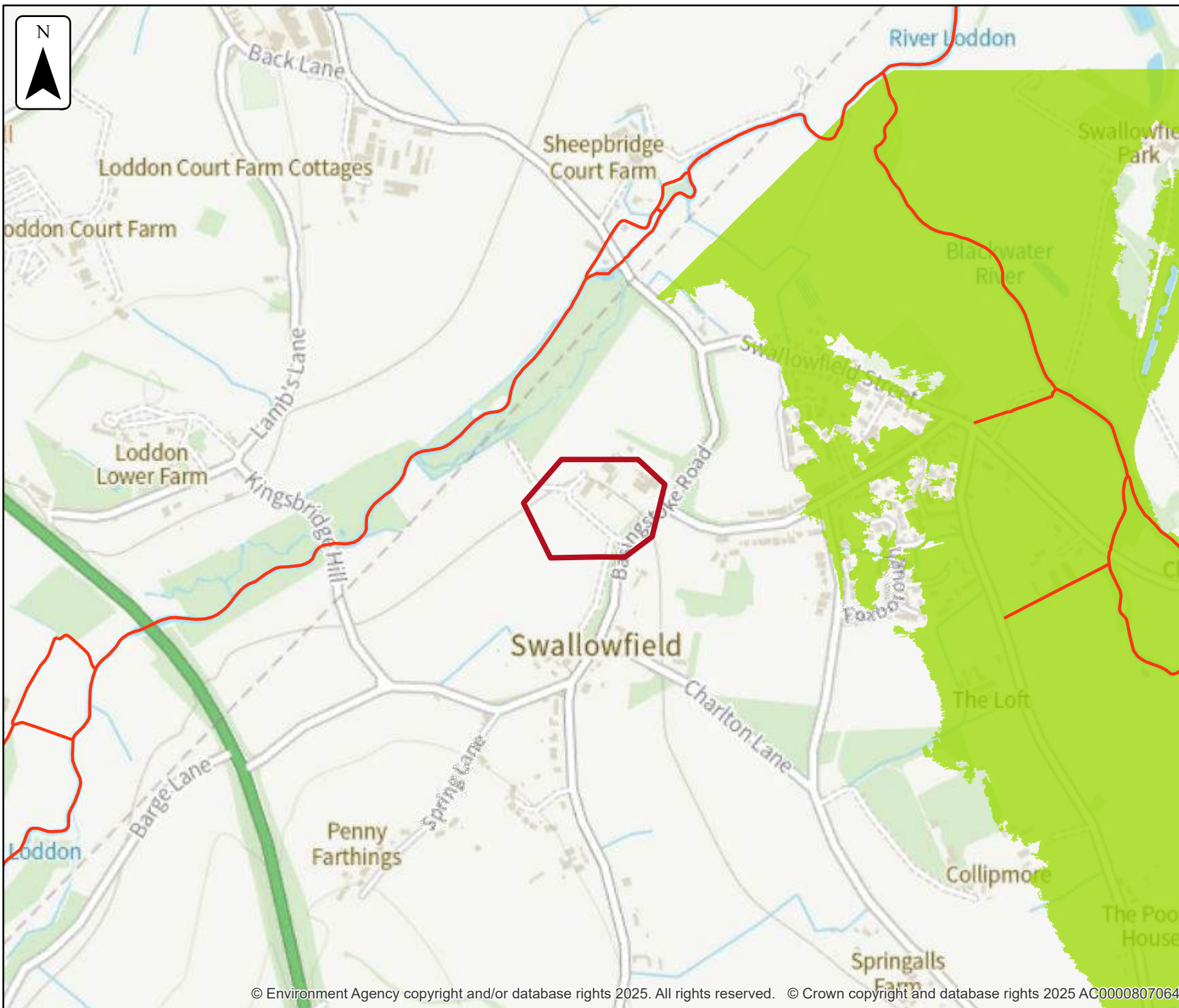
Model name
**Blackwater 2007 -
River Blackwater**

- Selected area
- Main river
- Modelled flood extent
 - 1% AEP (+20%)

Flood extents may not be
visible where they overlap
other return periods







Defended climate change modelled fluvial extent

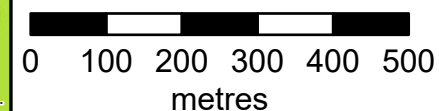
Location (easting/northing)
472018/164809

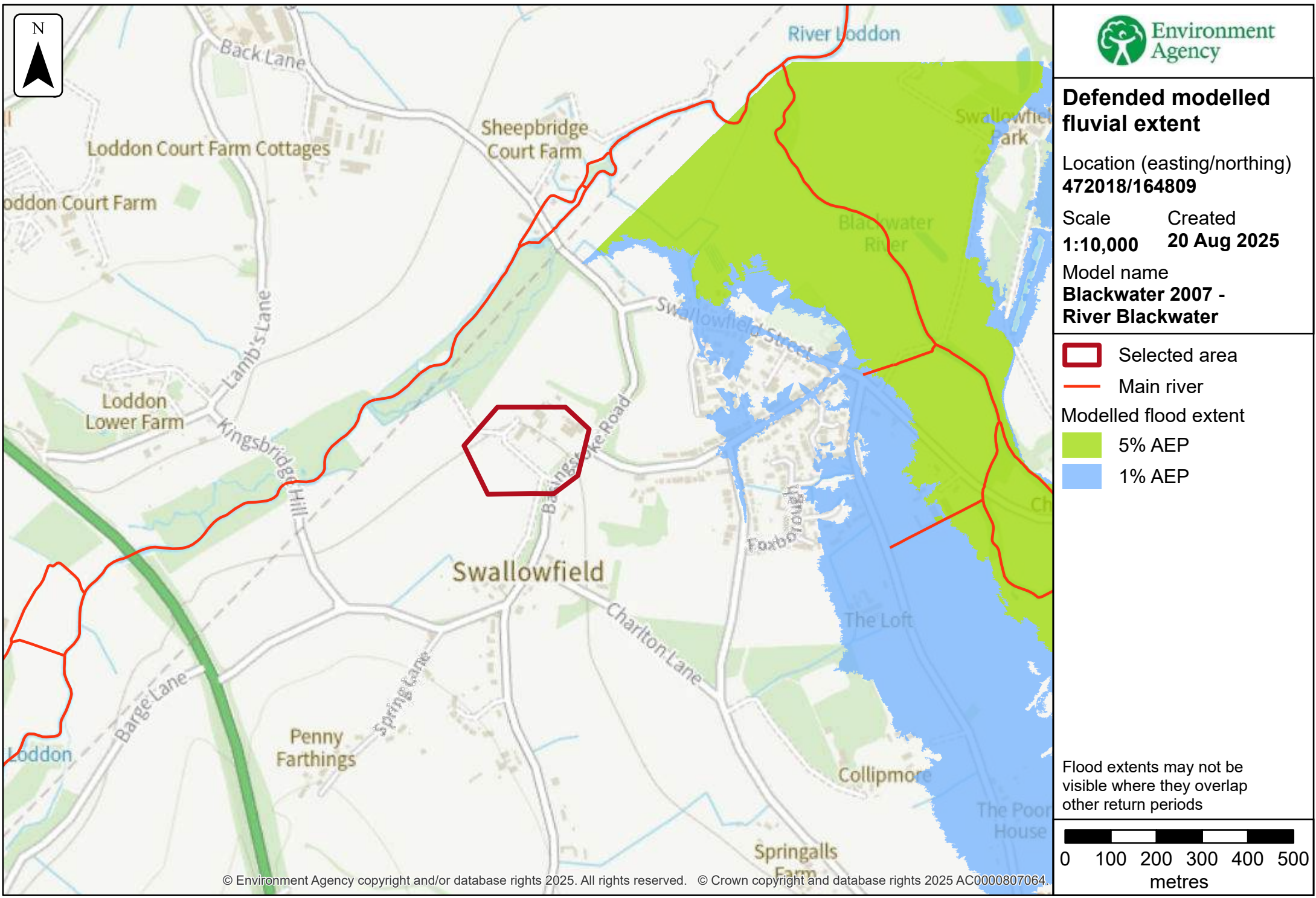
Scale Created
1:10,000 20 Aug 2025

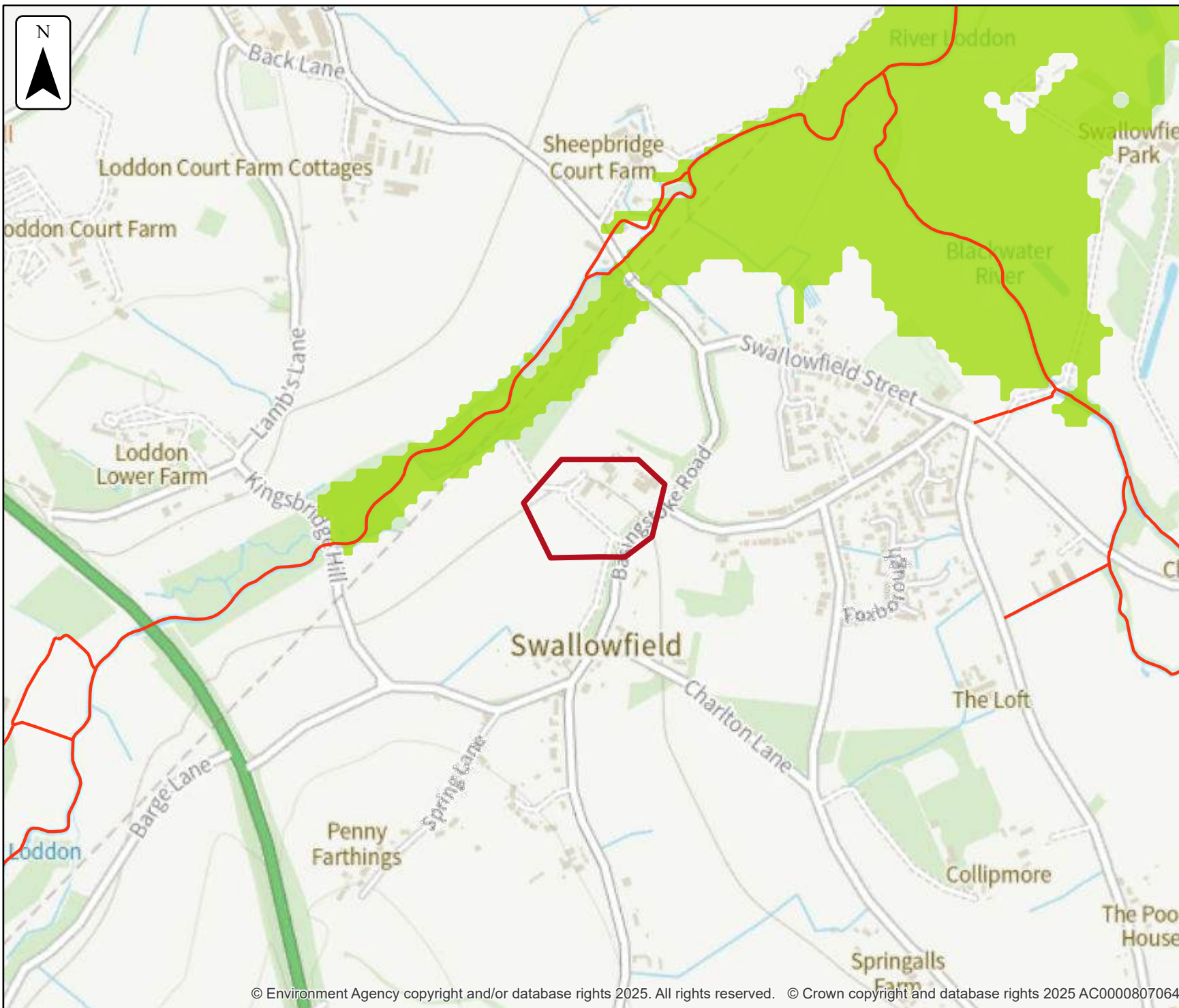
Model name
**Blackwater 2007 -
River Blackwater**

-  Selected area
-  Main river
- Modelled flood extent
 -  1% AEP (+20%)

Flood extents may not be
visible where they overlap
other return periods







No defences exist climate change modelled fluvial extent

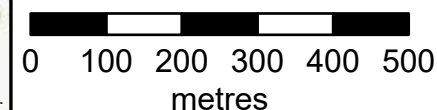
Location (easting/northing)
472018/164809

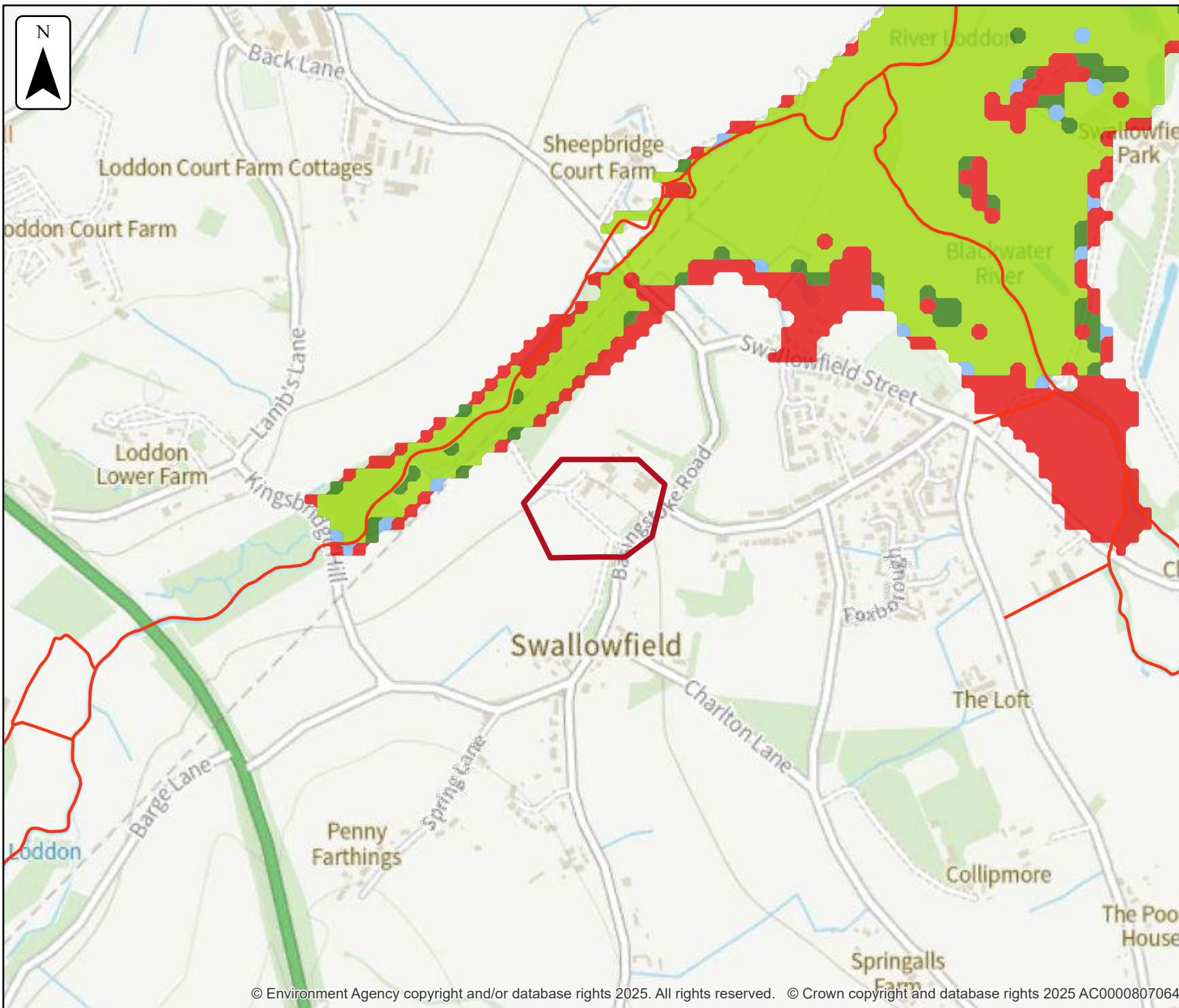
Scale Created
1:10,000 20 Aug 2025

Model name
Loddon (Lower) 2009

- Selected area
- Main river
- Modelled flood extent
 - 1% AEP (+20%)

Flood extents may not be visible where they overlap other return periods





No defences exist modelled fluvial extent

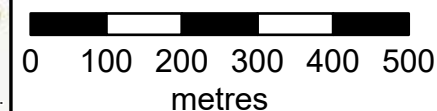
Location (easting/northing)
472018/164809

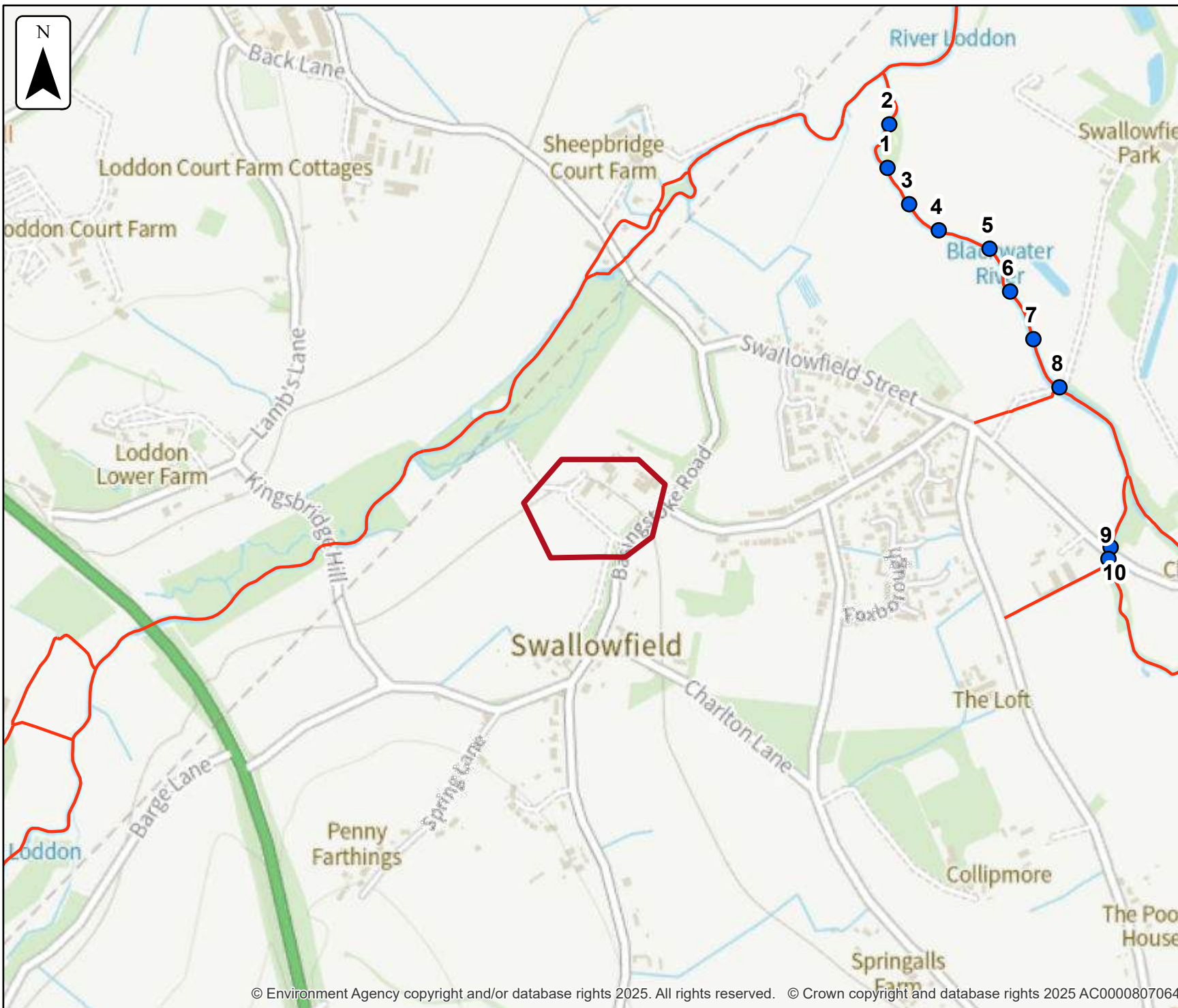
Scale Created
1:10,000 20 Aug 2025

Model name
Loddon (Lower) 2009

- Selected area
- Main river
- Modelled flood extent
- 5% AEP
- 2% AEP
- 1% AEP
- 0.1% AEP

Flood extents may not be
visible where they overlap
other return periods





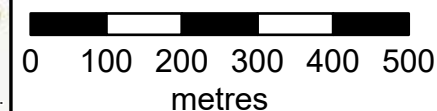
Defences removed climate change modelled fluvial node locations

Location (easting/northing)
472018/164809

Scale Created
1:10,000 20 Aug 2025

Model name
**Blackwater 2007 -
River Blackwater**

-  Selected area
-  Modelled location
-  Main river

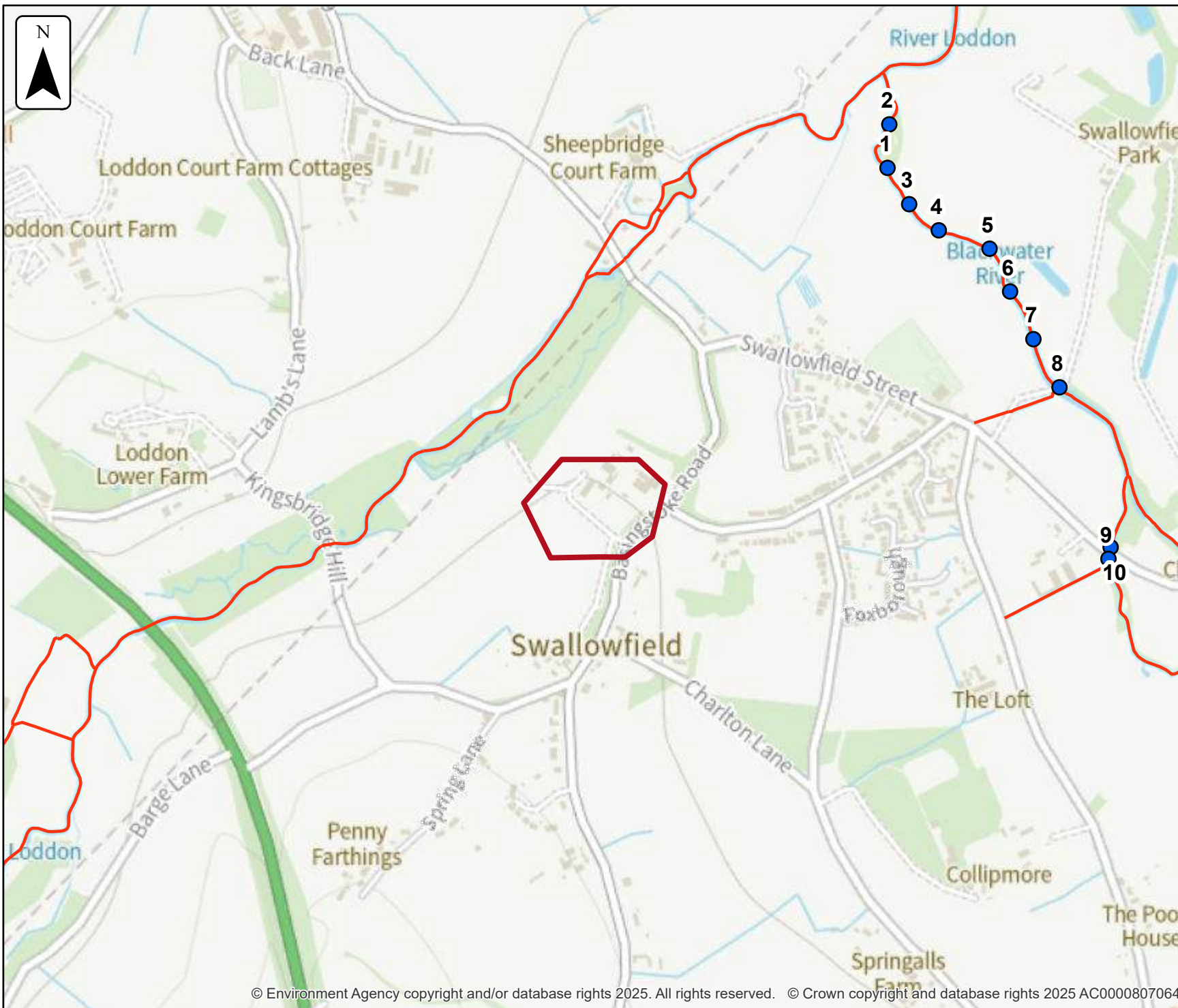


Modelled node locations data

Defences removed climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+20%)
				Level	Flow
1	1102596	472583	165469	43.85	65.20
2	1102304	472587	165553	43.77	65.48
3	1102447	472625	165398	43.85	64.79
4	1102726	472683	165347	43.86	64.51
5	1102362	472781	165312	43.86	64.27
6	1102707	472821	165229	43.87	64.08
7	1102731	472866	165136	43.89	63.99
8	1102399	472917	165043	44.19	63.90
9	1102727	473012	164710	44.63	41.09
10	1102406	473016	164732	44.31	41.09

Data in this table comes from the Blackwater 2007 - River Blackwater model.
 Level values are shown in mAOD, and flow values are shown in cubic metres per second.
 Any blank cells show where a particular scenario has not been modelled for this location.



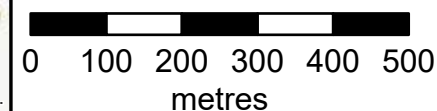
Defences removed modelled fluvial node locations

Location (easting/northing)
472018/164809

Scale Created
1:10,000 20 Aug 2025

Model name
**Blackwater 2007 -
River Blackwater**

-  Selected area
-  Modelled location
-  Main river

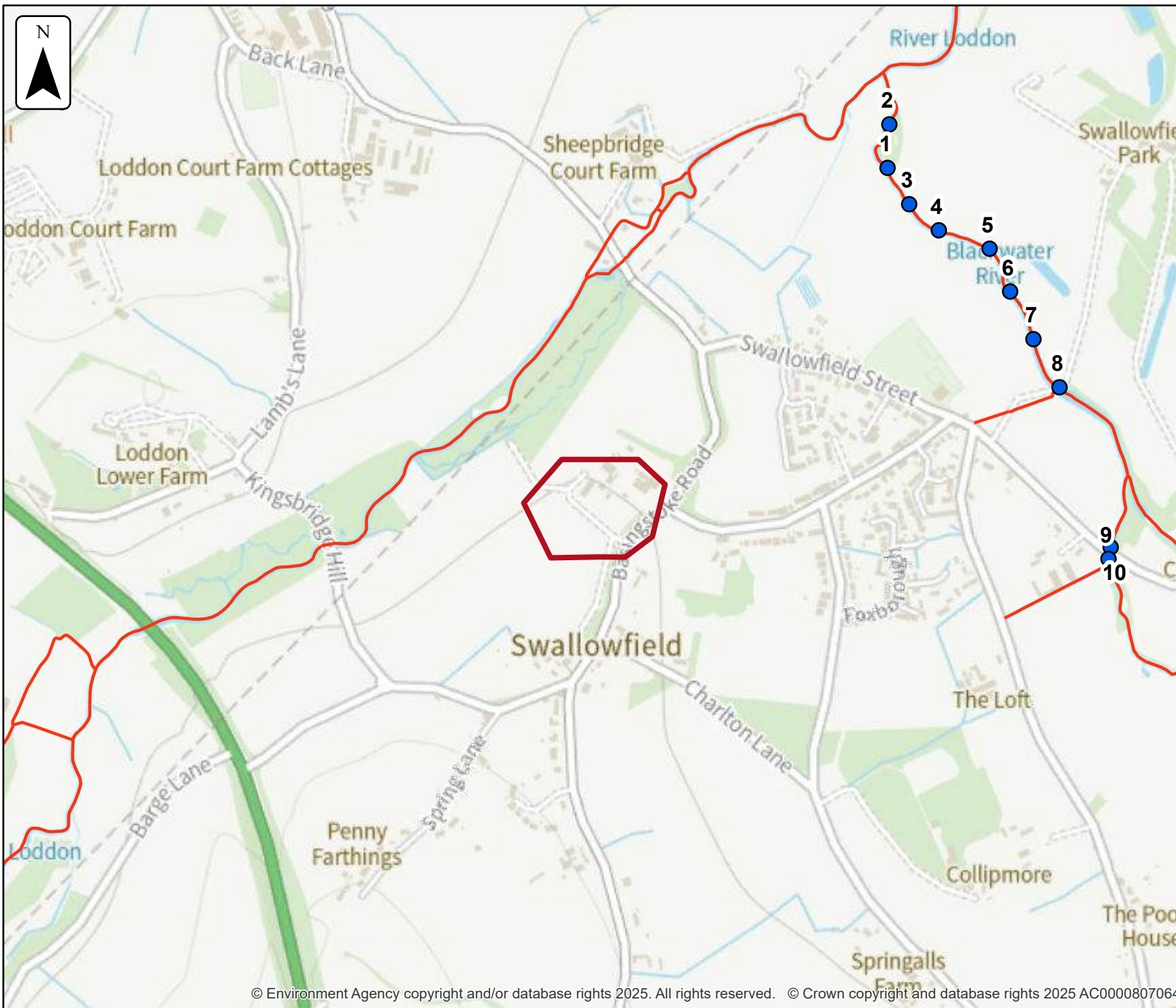


Modelled node locations data

Defences removed

Label	Modelled location ID	Easting	Northing	20% AEP	5% AEP	1% AEP	20% AEP	5% AEP	1% AEP
				Level	Level	Level	Flow	Flow	Flow
1	1102596	472583	165469	43.18	43.40	43.70	33.37	41.55	55.49
2	1102304	472587	165553	43.13	43.35	43.63	33.45	41.66	55.72
3	1102447	472625	165398	43.19	43.41	43.70	33.24	41.39	55.13
4	1102726	472683	165347	43.20	43.41	43.70	33.19	41.30	54.85
5	1102362	472781	165312	43.21	43.42	43.71	33.17	41.22	54.62
6	1102707	472821	165229	43.23	43.44	43.72	33.17	41.20	54.46
7	1102731	472866	165136	43.27	43.46	43.74	33.18	41.20	54.38
8	1102399	472917	165043	43.38	43.61	43.96	33.19	41.21	54.32
9	1102727	473012	164710	43.68	43.94	44.35	19.59	25.03	34.07
10	1102406	473016	164732	43.62	43.82	44.12	19.59	25.02	34.07

Data in this table comes from the Blackwater 2007 - River Blackwater model.
 Level values are shown in mAOD, and flow values are shown in cubic metres per second.
 Any blank cells show where a particular scenario has not been modelled for this location.



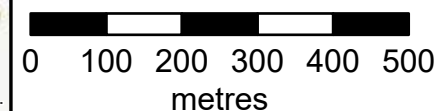
Defended climate change modelled fluvial node locations

Location (easting/northing)
472018/164809

Scale Created
1:10,000 20 Aug 2025

Model name
**Blackwater 2007 -
River Blackwater**

-  Selected area
-  Modelled location
-  Main river

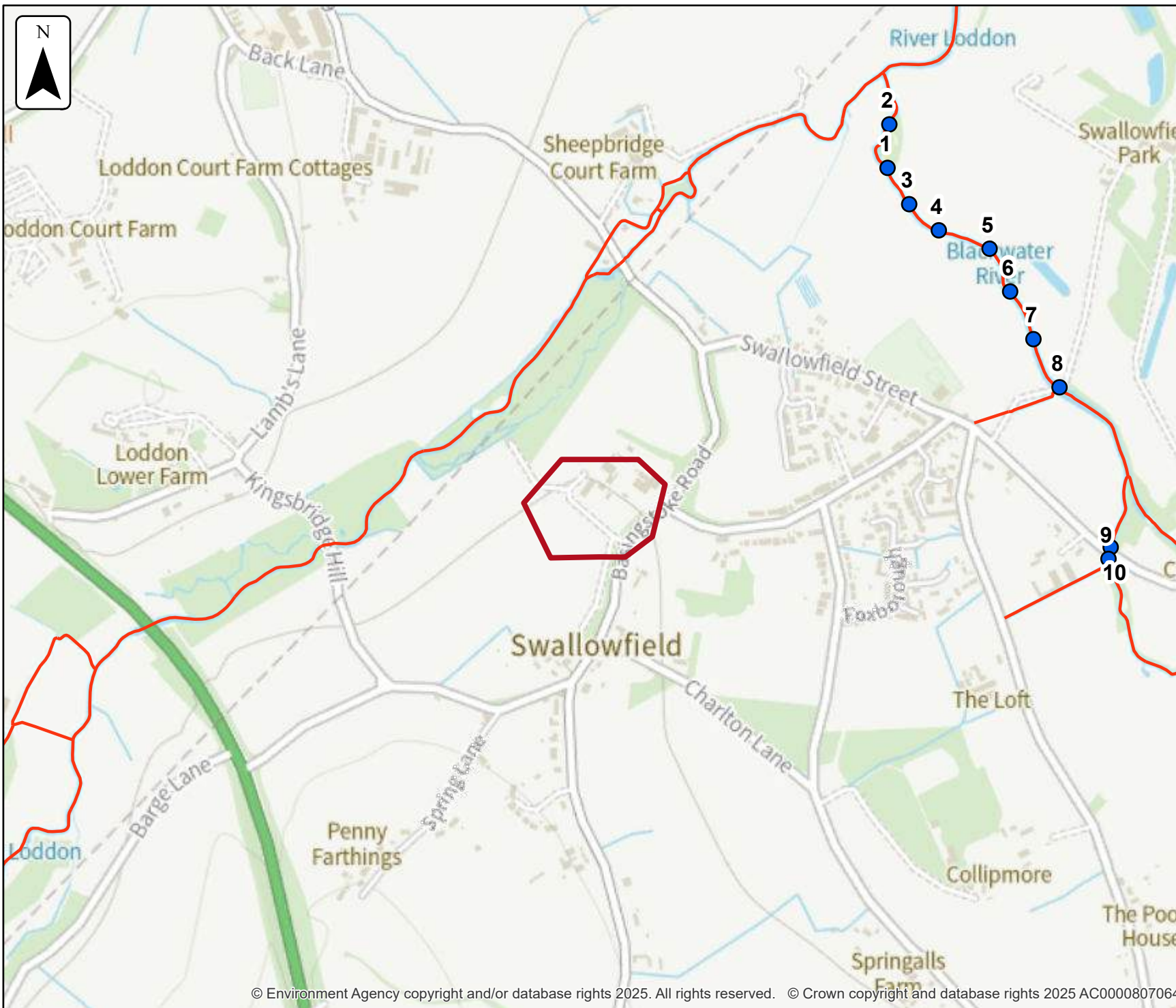


Modelled node locations data

Defended climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+20%)
				Level	Flow
1	1102596	472583	165469	43.85	65.21
2	1102304	472587	165553	43.77	65.48
3	1102447	472625	165398	43.85	64.82
4	1102726	472683	165347	43.86	64.54
5	1102362	472781	165312	43.86	64.28
6	1102707	472821	165229	43.87	64.10
7	1102731	472866	165136	43.89	63.99
8	1102399	472917	165043	44.19	63.90
9	1102727	473012	164710	44.63	41.08
10	1102406	473016	164732	44.31	41.09

Data in this table comes from the Blackwater 2007 - River Blackwater model.
 Level values are shown in mAOD, and flow values are shown in cubic metres per second.
 Any blank cells show where a particular scenario has not been modelled for this location.



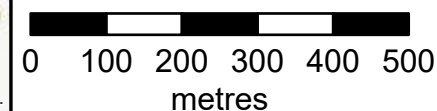
Defended modelled fluvial node locations

Location (easting/northing)
472018/164809

Scale Created
1:10,000 20 Aug 2025

Model name
**Blackwater 2007 -
River Blackwater**

-  Selected area
-  Modelled location
-  Main river

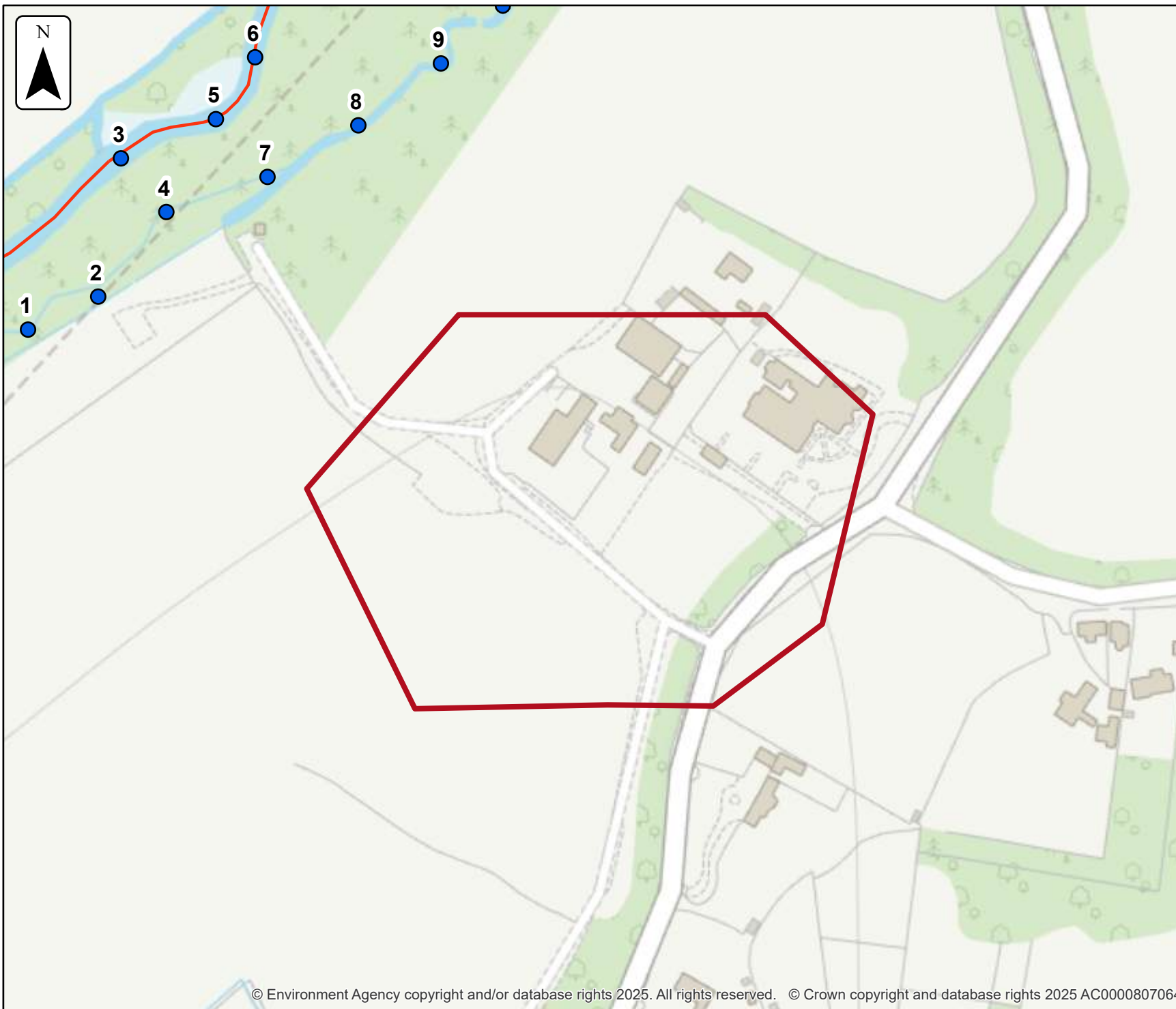


Modelled node locations data

Defended

Label	Modelled location ID	Easting	Northing	20% AEP	5% AEP	1% AEP	20% AEP	5% AEP	1% AEP
				Level	Level	Level	Flow	Flow	Flow
1	1102596	472583	165469	43.18	43.40	43.70	33.36	41.56	55.49
2	1102304	472587	165553	43.13	43.35	43.63	33.45	41.66	55.72
3	1102447	472625	165398	43.19	43.41	43.70	33.24	41.39	55.13
4	1102726	472683	165347	43.20	43.41	43.70	33.19	41.29	54.85
5	1102362	472781	165312	43.21	43.42	43.71	33.16	41.22	54.62
6	1102707	472821	165229	43.23	43.44	43.72	33.17	41.20	54.46
7	1102731	472866	165136	43.27	43.46	43.74	33.18	41.20	54.38
8	1102399	472917	165043	43.38	43.61	43.96	33.18	41.20	54.32
9	1102727	473012	164710	43.68	43.94	44.35	19.58	25.02	34.07
10	1102406	473016	164732	43.62	43.82	44.12	19.58	25.02	34.07

Data in this table comes from the Blackwater 2007 - River Blackwater model.
 Level values are shown in mAOD, and flow values are shown in cubic metres per second.
 Any blank cells show where a particular scenario has not been modelled for this location.



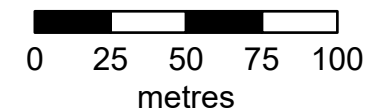
**No defences exist
climate change
modelled fluvial
node locations**

Location (easting/northing)
472018/164809

Scale Created
1:2,500 20 Aug 2025

Model name
Loddon (Lower) 2009

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

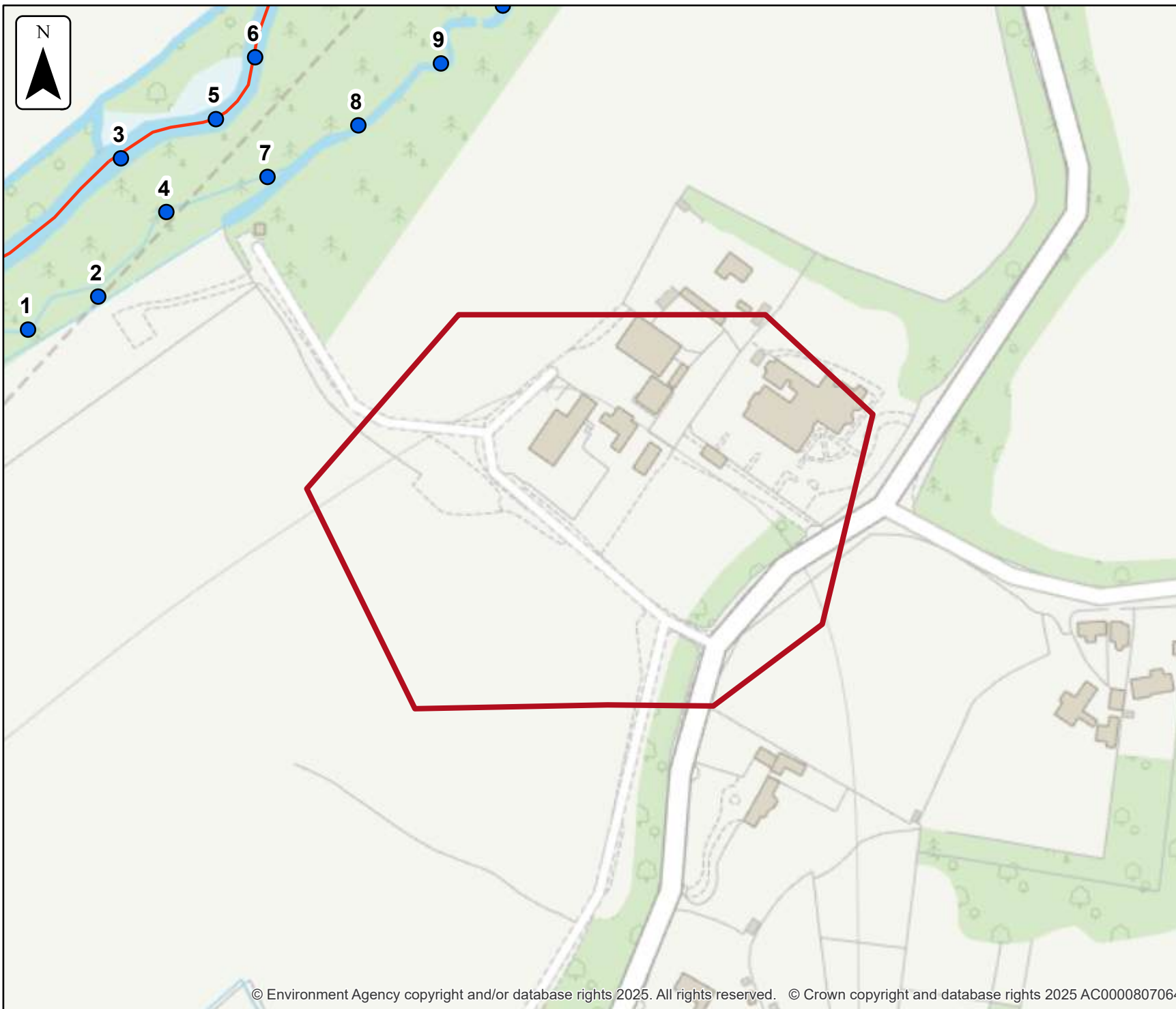
No defences exist climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+20%)
				Level	Flow
1	1207754	471743	164896	0.0	1.10
2	1207520	471777	164912	44.24	0.0
3	1207379	471788	164979	0.0	19.90
4	1207481	471810	164953	0.0	1.10
5	1208002	471834	164998	44.10	0.0
6	1207808	471853	165028	0.0	16.60
7	1208031	471859	164970	44.24	0.0
8	1208032	471903	164995	0.0	1.10
9	1207863	471943	165025	44.20	0.0
10	1207535	471973	165053	0.0	1.10

Data in this table comes from the Loddon (Lower) 2009 model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.



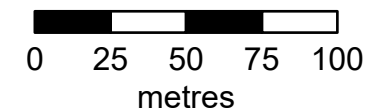
No defences exist modelled fluvial node locations

Location (easting/northing)
472018/164809

Scale Created
1:2,500 20 Aug 2025

Model name
Loddon (Lower) 2009

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

No defences exist

Label	Modelled location ID	Easting	Northing	20% AEP	5% AEP	2% AEP	1% AEP	0.1% AEP
				Level	Level	Level	Level	Level
1	1207754	471743	164896	0.0	0.0	0.0	0.0	0.0
2	1207520	471777	164912	43.54	44.06	44.09	44.15	44.70
3	1207379	471788	164979	0.0	0.0	0.0	0.0	0.0
4	1207481	471810	164953	0.0	0.0	0.0	0.0	0.0
5	1208002	471834	164998	43.87	43.98	44.01	44.03	44.56
6	1207808	471853	165028	0.0	0.0	0.0	0.0	0.0
7	1208031	471859	164970	43.54	44.06	44.09	44.15	44.70
8	1208032	471903	164995	0.0	0.0	0.0	0.0	0.0
9	1207863	471943	165025	43.54	44.03	44.07	44.11	44.59
10	1207535	471973	165053	0.0	0.0	0.0	0.0	0.0

Data in this table comes from the Loddon (Lower) 2009 model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.

No defences exist

Label	Modelled location ID	Easting	Northing	20% AEP	5% AEP	2% AEP	1% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow
1	1207754	471743	164896	0.10	0.50	0.60	0.80	3.30
2	1207520	471777	164912	0.0	0.0	0.0	0.0	0.0
3	1207379	471788	164979	14.60	17.10	18.10	18.50	31.10
4	1207481	471810	164953	0.10	0.50	0.60	0.80	3.30
5	1208002	471834	164998	0.0	0.0	0.0	0.0	0.0
6	1207808	471853	165028	14.60	16.0	16.40	16.50	25.40
7	1208031	471859	164970	0.0	0.0	0.0	0.0	0.0
8	1208032	471903	164995	0.0	0.50	0.60	0.80	3.30
9	1207863	471943	165025	0.0	0.0	0.0	0.0	0.0
10	1207535	471973	165053	0.0	0.50	0.60	0.80	3.30

Data in this table comes from the Loddon (Lower) 2009 model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.

Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as surface water, ground water and reservoirs

Your Lead Local Flood Authority is Wokingham.

About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

[Find out more about flood risk activity permits](#)

Help and advice

Contact the Thames Environment Agency team at enquiries_thm@environment-agency.gov.uk for:

- [more information about getting a product 5, 6, 7 or 8](#)
- general help and advice about the site you're requesting data for

Appendix E – Thames Water Sewer Records

The LK Group
UNIT 29, ETON BUSINESS PARK, E
RADCLIFFE
M26 2ZS

Search address supplied 2 Handpost Cottages
Basingstoke Road
Swallowfield
Reading
RG7 1PY

Your reference Wyvols Court FRA251195

Our reference ALS/ALS Standard/2025_5267413

Search date 18 December 2025

Keeping you up-to-date

Notification of price changes

We're changing our report prices from 4th June 2025. The price will increase by 3.5% based on Retail Price Index (RPI).

Find our new prices on our website thameswater.co.uk/property-searches

Any Questions? We're happy to talk through the changes with you – give our Property Searches team a call on 0800 009 4540 .



Thames Water Utilities Ltd
Property Searches,
Clearwater Court, Vastern Road, Reading RG1 8DB



property.searches@thameswater.co.uk
thameswater.co.uk/propertysearches



0800 009 4540

Search address supplied: 2 Handpost Cottages, Basingstoke Road, Swallowfield, Reading, RG7 1PY

Dear Sir / Madam

An Asset Location Search is recommended when undertaking a site development. It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This search provides maps showing the position and size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0800 009 4540, or use the contact details below:

Thames Water Utilities Ltd
Property Searches
Clearwater Court
Vastern Road
Reading
RG1 8DB

Email: property.searches@thameswater.co.uk

Web: thameswater.co.uk/propertysearches

Waste Water Services

Please provide a copy extract from the public sewer map.

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority. Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners. The public sewer map relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus. The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Clean Water Services

Please provide a copy extract from the public water main map.

Enclosed is a map showing the approximate positions of our water mains and associated apparatus. Please note that records are not kept of the positions of individual domestic supplies. For your information, there will be a pressure of at least 10m head at the outside stop valve. If you would like to know the static pressure, please contact our Customer Centre on 0800 316 9800. The Customer Centre can

also arrange for a full flow and pressure test to be carried out for a fee.

For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Further contacts:

Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. You can do this by emailing customer.feedback@thameswater.co.uk with the email subject header 'Enquiry – TWOSA', along with details of the request.

If you have any questions regarding sewer connections, budget estimates, diversions or building over issues please direct them to our service desk which can be contacted by writing to:

Developer Services (Waste Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

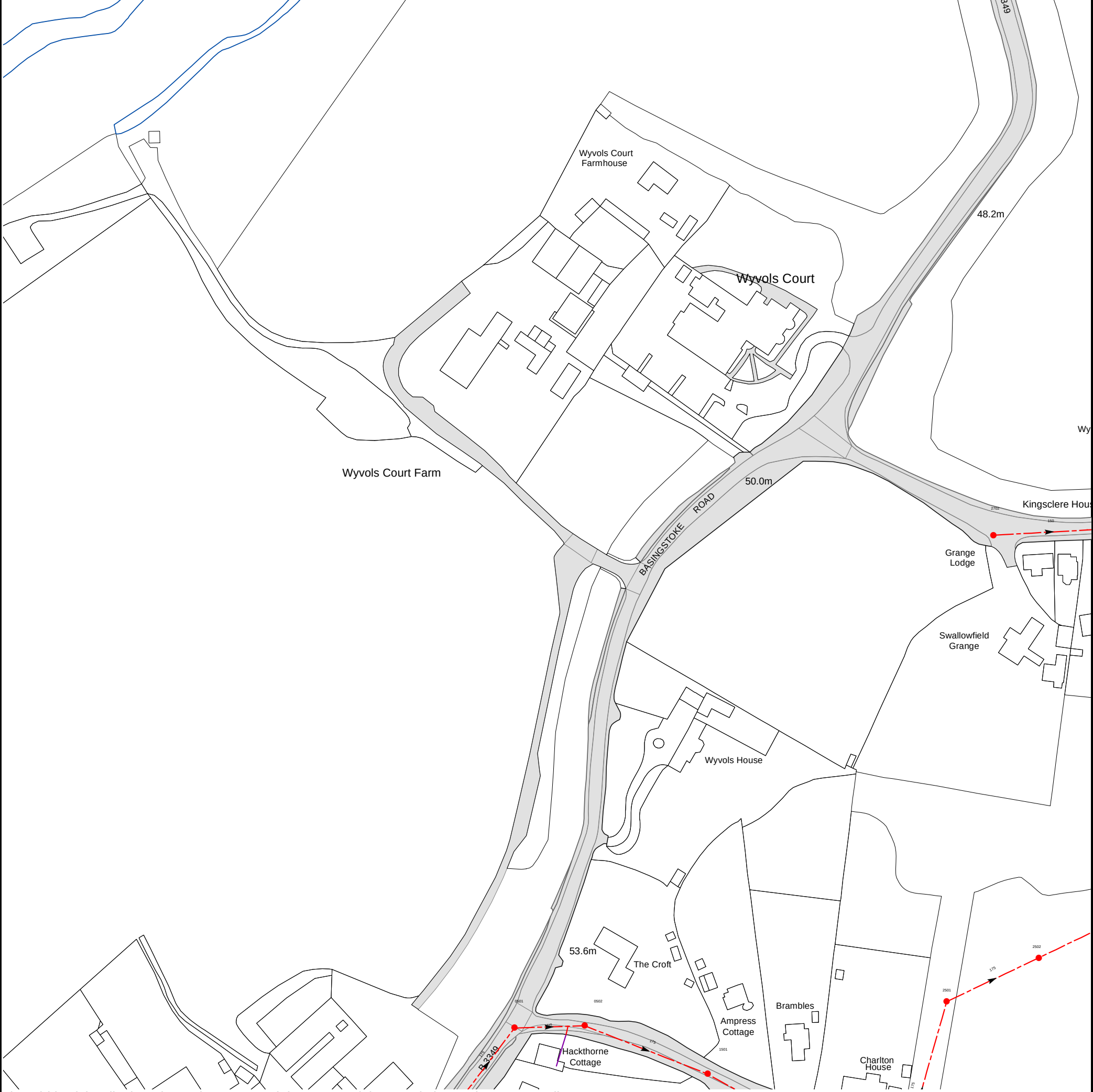
Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Clean Water queries

Should you require any advice concerning clean water connections, please contact:

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

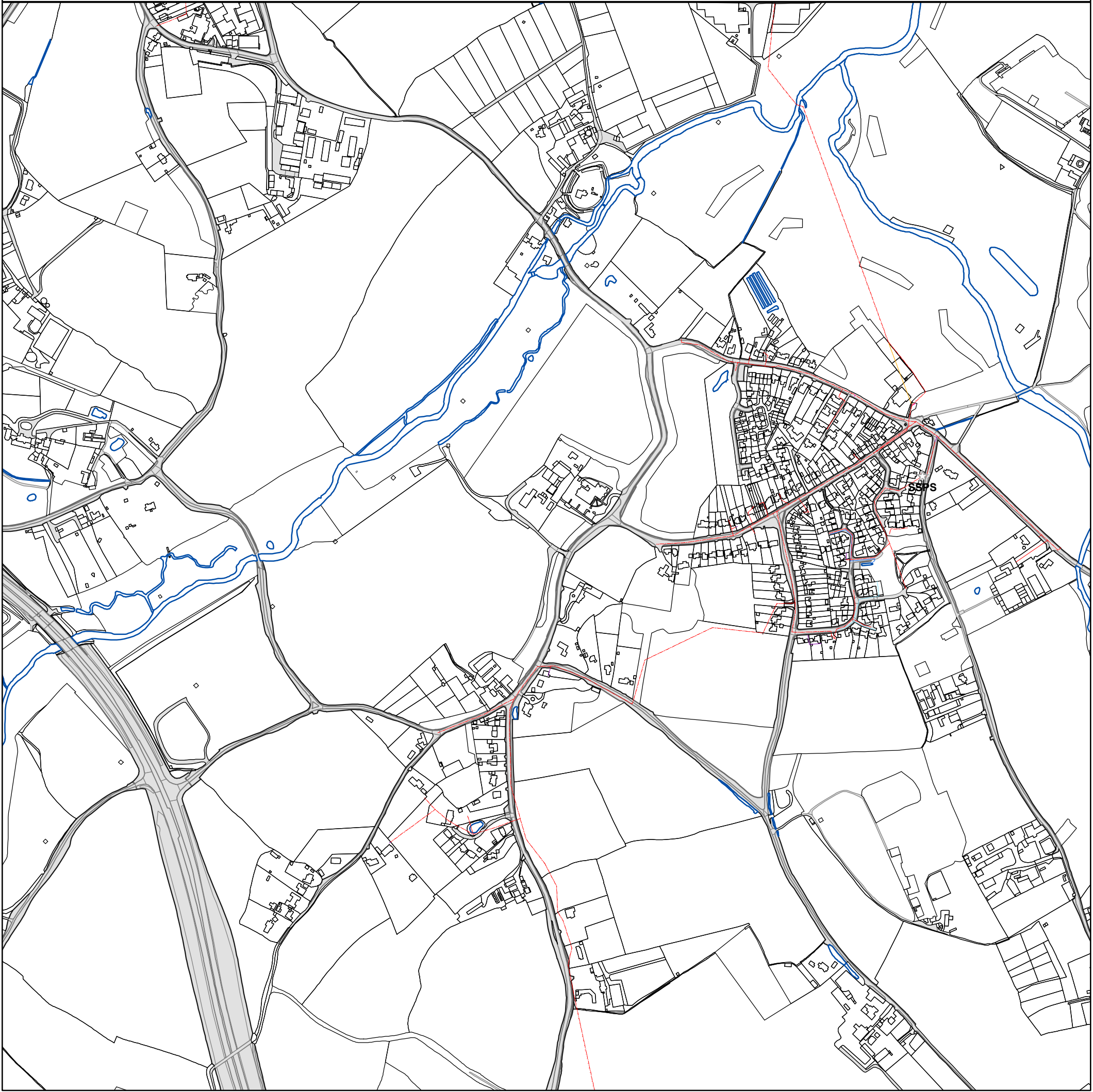


The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 472036,164760
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map (2024) with the Sanction of the controller of H.M. Stationery Office, License no. AC0000849556 Crown Copyright Reserved.

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
1501	50.92	49.61
0501	54.23	52.58
0502	53	51.48
2501	49.26	46.97
2502	48.84	n/a
2702	47.99	45.81
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.		



The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified before any works are undertaken. Crown copyright Reserved

Scale: 1:7161
Width: 2000m
Printed By: SEswara1
Print Date: 18/12/2025
Map Centre: 472036,164760
Grid Reference: SU7264NW

Comments:

ALS/ALS Standard/2025_5267413

NB: Level quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no Survey information is available.

REFERENCE	COVER LEVEL	INVERT LEVEL
5705		
6704		
5709		
5707		
3703	61.51	60.02
5502	45.4	44.33
9402	55.99	53.62
7907		
4606	45.42	43.76
1501	50.92	49.61
5651	45.3	44.09
2702	47.99	45.81
9301	57.15	54.15
6601	45.2	43.38
6655	44.85	43.68
2701	47.21	44.96
3101	43.89	42
8401	56.88	55.27
0502	53	51.48
5503	45.45	42.81
5605	45.19	43.11
6603	45	44.24
4604	44.32	43.07
4603	45.51	43.18
0101		
0001		
9401		
821B		
821A		
4607	44.18	42.77
2102	44.28	42.28
6803		
6701		
7801		
6804		
5702		
6802		
411A		
411C		
581B		
591A		
371A		
3701	45	43.48
481B		
481D		
481E		
481G		
9702	43.57	42.34
6002	43.603	40.403
4801	43.812	42.002
7901	43.818	40.26
6001	43.54	40.82
4802	43.75	41.7
5001	43.376	41.066
791B		
6906	43.817	40.237
6904	43.885	40.955
921A		
671B		
671A		
971A		
971D		
5704		
601A		
601C		
481H		
691A		
591B		
501C		
831A		
9201	57.77	54.62
0003		
0901	58.51	
381A		
821D		
721B		
411D		

REFERENCE	COVER LEVEL	INVERT LEVEL
6703		
5706		
5708		
1401	48.74	47.4
5602	45.28	44.24
9403	56.45	
8402	56.53	54.83
7902	43.66	40.6
8801	43.69	41.59
5604	45.3	42.97
9404	55.72	53.39
6653	45.1	43.81
6651	45.2	44.08
5601	45.4	43.91
6654	45	43.73
5650	45.37	44.13
0501	54.23	52.58
3702	60.41	58.25
0002		
5603	45.3	42.96
6604	45.18	43.47
4605	45	43.59
7903	43.66	41.03
4601	46.29	44.72
2501	49.26	46.97
3601	47.16	45.85
6602	45.2	43.54
921C		
6652	45.2	44.15
6650	45.17	43.96
2502	48.84	
6702		
6801		
7802		
5703		
5701		
3102	43.38	41.72
411B		
4602	45.77	43.49
591D		
591E		
371B		
481A		
481C		
471A		
481F		
581C		
871A		
6902	43.77	41.29
4001	43.365	41.325
7904	43.93	40.12
9701	43.466	42.106
4701	43.894	42.514
791A		
6905	43.785	40.625
904A	43.841	40.201
5803	43.804	41.354
921B		
771A		
971C		
971B		
581A		
571A		
601B		
481J		
481I		
691B		
501B		
501A		
0902		
0102		
9302		
301A		
821C		
721A		
411E		
661A		



Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

	Foul Sewer: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
	Surface Water Sewer: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.
	Combined Sewer: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
	Storm Sewer
	Sludge Sewer
	Foul Trunk Sewer
	Surface Trunk Sewer
	Combined Trunk Sewer
	Foul Rising Main
	Surface Water Rising Main
	Combined Rising Main
	Vacuum
	Thames Water Proposed
	Vent Pipe
	Gallery

Other Sewer Types (Not operated and maintained by Thames Water)

	Sewer
	Culverted Watercourse
	Proposed
	Decommissioned Sewer
	Content of this drainage network is currently unknown
	Ownership of this drainage network is currently unknown

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plan are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

	Air Valve		Meter
	Dam Chase		Vent
	Fitting		

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

	Ancillary		Drop Pipe
	Control Valve		Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol. Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

	Inlet		Outfall
	Undefined End		

Other Symbols

Symbols used on maps which do not fall under other general categories.

	Change of Characteristic Indicator		Public / Private Pumping Station
	Invert Level		Summit

Areas

Lines denoting areas of underground surveys, etc.

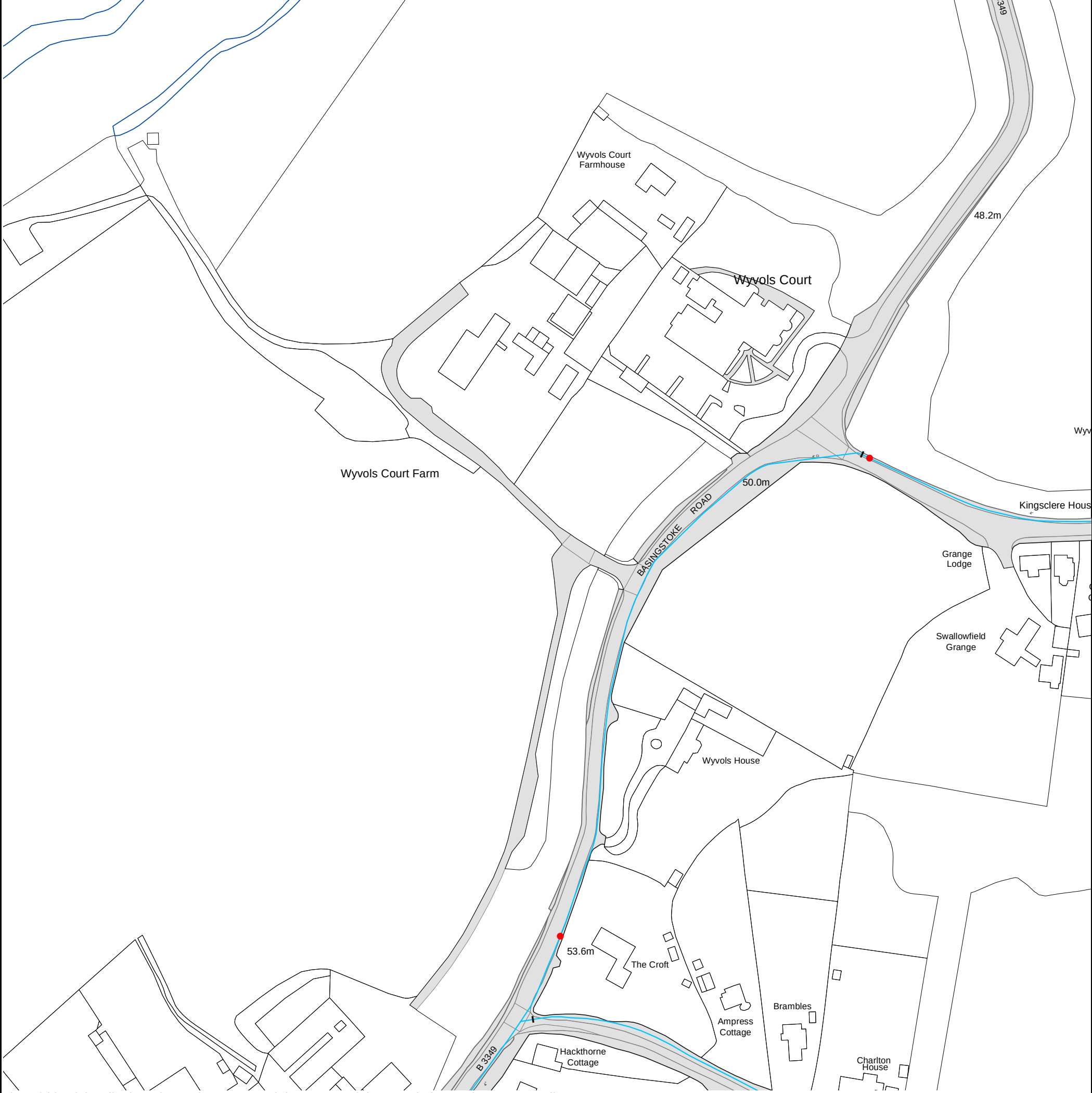
	Agreement
	Chamber
	Operational Site

Ducts or Crossings

	Casement	Ducts may contain high voltage cables. Please check with Thames Water.
	Conduit Bridge	
	Subway	
	Tunnel	

5) 'na' or '0' on a manhole indicates that data is unavailable.

6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 472036, 164760.
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map (2024) with the Sanction of the controller of H.M. Stationery Office, License no. AC0000849556 Crown Copyright Reserved.



Asset Location Search - Water Key

Water Pipes (Operated & Maintained by Thames Water)

- 4"** **Distribution Main:** The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.
- 16"** **Trunk Main:** A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.
- 3" SUPPLY** **Supply Main:** A supply main indicates that the water main is used as a supply for a single property or group of properties.
- 3" FIRE** **Fire Main:** Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.
- 3" METERED** **Metered Pipe:** A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.
- Transmission Tunnel:** A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.
- Proposed Main:** A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

PIPE DIAMETER	DEPTH BELOW GROUND
Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 8")
600mm and bigger (24" plus)	1200mm (4')

Valves

- General Purpose Valve
- Air Valve
- Pressure Control Valve
- Customer Valve

Hydrants

- Single Hydrant

Meters

- Meter

End Items

Symbol indicating what happens at the end of a water main.

- Blank Flange
- Capped End
- Emptying Pit
- Undefined End
- Manifold
- Customer Supply
- Fire Supply

Operational Sites

- Booster Station
- Other
- Other (Proposed)
- Pumping Station
- Service Reservoir
- Shaft Inspection
- Treatment Works
- Unknown
- Water Tower

Other Symbols

- Data Logger
- Casement:** Ducts may contain high voltage cables. Please check with Thames Water.

Other Water Pipes (Not Operated or Maintained by Thames Water)

- Other Water Company Main:** Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.
- Private Main:** Indicates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.

Sewer Flooding

History Enquiry



Property
Searches

The LK Group

UNIT 29, ETON BUSINESS PARK, E

Search address supplied The St, Swallowfield, Reading
The St
Swallowfield
RG7 1PY

Your reference Wyvols Court Farm FRA251195

Our reference SFH/SFH Standard/2025_5240585

Received date **21 October 2025**

Search date **21 October 2025**



Thames Water Utilities Ltd
Property Searches, Clearwater Court, Vastern Road, Reading RG1 8DB



property.searches@thameswater.co.uk
thameswater.co.uk/propertysearches



0800 009 4540

Sewer Flooding

History Enquiry



Property
Searches

Search address supplied: The St, Swallowfield, Reading, The
St, Swallowfield, RG7 1PY

This search is recommended to check for any sewer flooding at a specific address or area

TWUL are responsible in respect of the following:-

- (i) any negligent or incorrect entry in the records searched;
- (ii) any negligent or incorrect interpretation of the records searched;
- (iii) and any negligent or incorrect recording of that interpretation in the search report
- (iv) compensation payments



Thames Water Utilities Ltd
Property Searches, Clearwater Court, Vastern Road, Reading RG1 8DB



property.searches@thameswater.co.uk
thameswater.co.uk/propertysearches



0800 009 4540

History of Sewer Flooding

Is the requested address or area at risk of flooding due to overloaded public sewers?

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- A sewer is “overloaded” when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- “Internal flooding” from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- “At Risk” properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company’s reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water on Tel: 0800 316 9800 or website www.thameswater.co.uk



Thames Water Utilities Ltd
Property Searches, Clearwater Court, Vastern Road, Reading RG1 8DB



property.searches@thameswater.co.uk
thameswater.co.uk/propertysearches



0800 009 4540

Appendix F – IoH124 Greenfield Runoff Calculations

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	04/02/2026
Calculated by	D Percival
Reference	FRA251195
Model version	2.2.2

Location

Site name	Wyvols Court Farm, Swallowfield
Site location	



Site easting (British National Grid)	471907
Site northing (British National Grid)	164504

Site details

Total site area (ha)	0.178	ha
----------------------	-------	----

Greenfield runoff

Method

Method	IH124		
IH124			
	<u>My value</u>	☐	<u>Map value</u>
SAAR (mm)	661mm		661
How should SPR be derived?	WRAP soil type		
WRAP soil type	4	☐	4
SPR	0.47		
QBar (IH124) (l/s)	0.8l/s		

Growth curve factors

	<u>My value</u>	☐	<u>Map value</u>
Hydrological region	6		6
1 year growth factor	0.85		
2 year growth factor	0.88		
10 year growth factor	1.62		
30 year growth factor	2.3		
100 year growth factor	3.19		
200 year growth factor	3.74		

Results

Method	IH124
Flow rate 1 year (l/s)	0.7l/s
Flow rate 2 year (l/s)	0.7l/s
Flow rate 10 years (l/s)	1.3l/s
Flow rate 30 years (l/s)	1.8l/s
Flow rate 100 years (l/s)	2.6l/s
Flow rate 200 years (l/s)	3.0l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent 'zero' figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.2) developed by HR Wallingford and available at uksuds.com (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at uksuds.com/terms-conditions (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	04/02/2026
Calculated by	D Percival
Reference	FRA251195
Model version	2.2.2

Location

Site name	Wyvols Court Farm, Swallowfield
Site location	



Site easting (British National Grid)	471907
Site northing (British National Grid)	164504

Site details

Total site area (ha)	0.43	ha
----------------------	-----------------------------------	----

Greenfield runoff

Method

Method	IH124		
IH124			
	<u>My value</u>	☐	<u>Map value</u>
SAAR (mm)	661mm		661
How should SPR be derived?	WRAP soil type		
WRAP soil type	4	☐	4
SPR	0.47		
QBar (IH124) (l/s)	1.9l/s		

Growth curve factors

	<u>My value</u>	☐	<u>Map value</u>
Hydrological region	6		6
1 year growth factor	0.85		
2 year growth factor	0.88		
10 year growth factor	1.62		
30 year growth factor	2.3		
100 year growth factor	3.19		
200 year growth factor	3.74		

Results

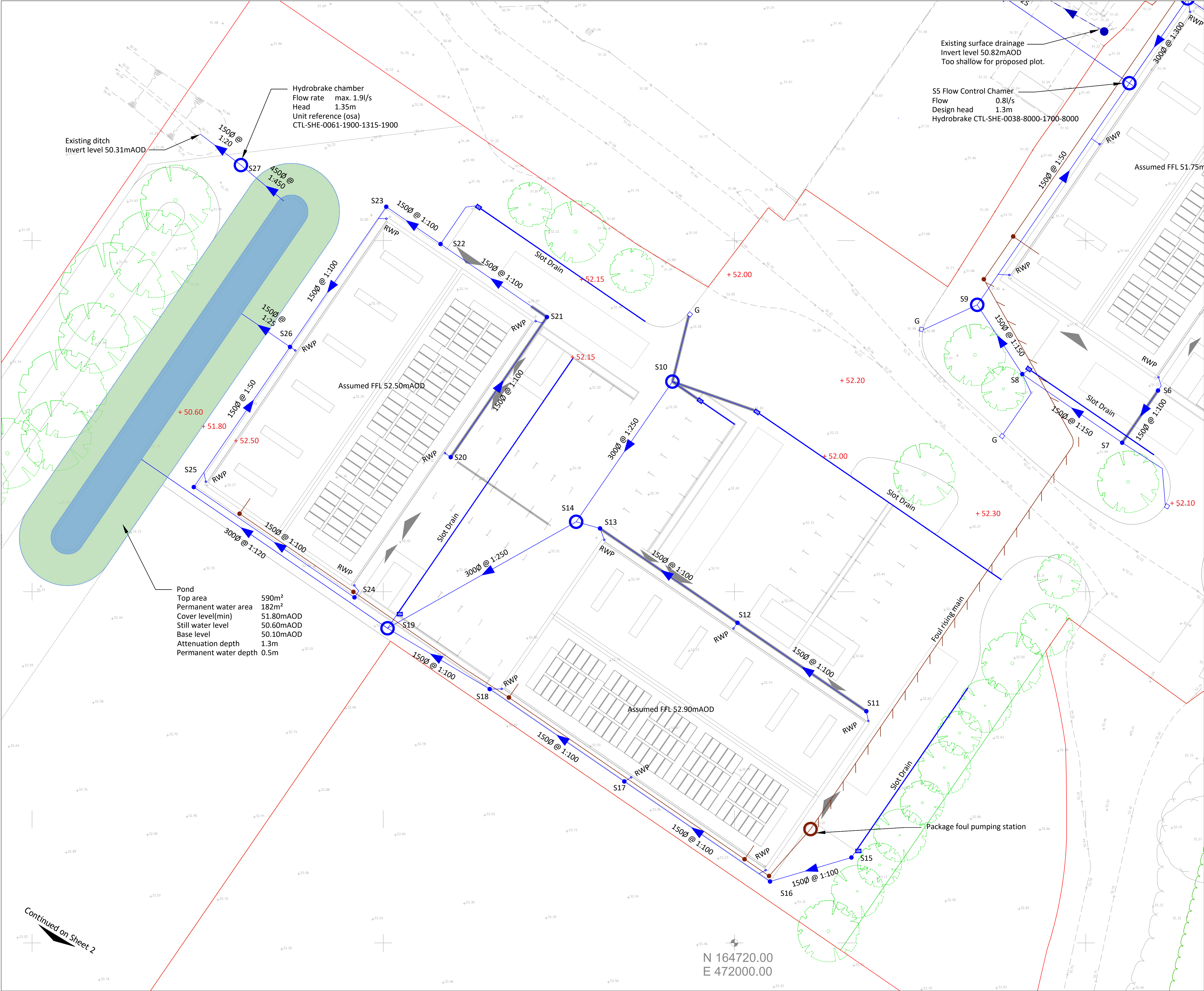
Method	IH124
Flow rate 1 year (l/s)	1.7l/s
Flow rate 2 year (l/s)	1.7l/s
Flow rate 10 years (l/s)	3.1l/s
Flow rate 30 years (l/s)	4.5l/s
Flow rate 100 years (l/s)	6.2l/s
Flow rate 200 years (l/s)	7.3l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent 'zero' figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.2) developed by HR Wallingford and available at uksuds.com (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at uksuds.com/terms-conditions (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

Appendix G – Drainage Strategy



- Copyright © 2025 LK Group Ltd
- Notes
1. Do not scale this drawing.
 2. This drawing is to be read in conjunction with all other project drawings and specifications.
 3. This drawing is for planning purposes only.
 4. All dimensions are in millimetres unless stated otherwise.
 5. Should there be any conflict between the details indicated on this drawing and those indicated on other drawings the Project Engineer shall be informed prior to construction.
 6. Until technical approval has been obtained from the relevant authority, it should be understood that all drawings issued are preliminary and not for construction. Should the contractor commence site work prior to such approval being given, it is entirely at their own risk.
 7. This drawing is for planning purposes only.
 8. All 1000 proposed foul drainage shown are to be laid at a gradient of 1:80 and 1500 are to be laid at of 1:150 unless otherwise stated
 9. All 1500 proposed surface drainage shown are to be laid at a max gradient of 1:150.
 10. Topographical survey and architectural layout based on third party information.
 11. Drawing to be read in conjunction with Causeway Flow design pack.

- Key
- Existing Foul Drainage
 - Existing Surface Drainage
 - Proposed Foul Drainage
 - Proposed Surface Drainage
 - Proposed Surface Drainage with concrete protection
 - Proposed ACO drain w/outlet box
 - Proposed Inspection Chamber
 - Proposed Manhole
 - RWP Rainwater Down Pipe
 - Gully

Pond
Top area 590m²
Permanent water area 182m²
Cover level(min) 51.80m AOD
Still water level 50.60m AOD
Base level 50.10m AOD
Attenuation depth 1.3m
Permanent water depth 0.5m

Hydrobrake chamber
Flow rate max. 1.9l/s
Head 1.35m
Unit reference (osa)
CTL-SHE-0061-1900-1315-1900

Existing surface drainage
Invert level 50.82m AOD
Too shallow for proposed plot.

S5 Flow Control Chamber
Flow 0.8l/s
Design head 1.3m
Hydrobrake CTL-SHE-0038-8000-1700-8000

Continued on Sheet 2

N 164720.00
E 472000.00

P02	Outfall location for Plot 8 amended	20/01/2026
P01	First Issue	19/12/2025
Revision	Details	Date
Project	Wyvols Court Farm Swallowfield, RG7 1QY	
Client	Wyvols Court Farm Limited	
Title	Proposed Drainage Layout Sheet 1 of 2	
Designed	LS	Checked DP Suitability S4
Date	Dec 2025	Scale 1:200 Revision P02
Number	FRA251195-LKG-01-XX-DR-D-0300	

Key

	Existing Foul Drainage
	Existing Surface Drainage
	Proposed Foul Drainage
	Proposed Surface Drainage
	Proposed Surface Drainage with concrete protection
	Proposed ACO drain w/outlet box
	Proposed Inspection Chamber
	Proposed Manhole
	Rainwater Down Pipe
	Gully
	Foul Drainage Point

P02	Outfall location for Plot 8 amended		20/01/2026		
P01	First Issue		19/12/2025		
Revision	Details		Date		
 LK CONSULT					
Project	Wyvols Court Farm Swallowfield, RG7 1QY				
Client	Wyvols Court Farm Limited				
Title	Proposed Drainage Layout Sheet 2 of 2				
Designed	LS	Checked	DP	Suitability	S4
Date	Dec 2025	Scale	1:200	Revision	P02
Number	FRA251195-LKG-01-XX-DR-D-0301				

Appendix H – Causeway Flow Network Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.500
CV	0.750	Preferred Cover Depth (m)	0.600
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
S6	0.009	5.00	51.600	450	472048.239	164782.922	0.750	50.850
S7	0.017	5.00	51.600	450	472044.155	164776.976	0.822	50.778
S8	0.012	5.00	51.600	450	472032.780	164784.787	0.914	50.686
S9	0.009	5.00	51.600	1200	472027.649	164792.684	0.977	50.623
S2	0.019	5.00	51.600	450	472059.470	164799.282	0.750	50.850
S1	0.075	5.00	51.350	600	472084.403	164805.553	0.825	50.525
Attenuation Tank		5.00	51.400	1	472072.532	164818.318	1.300	50.100
S3	0.009	5.00	51.600	1200	472070.159	164814.852	1.850	49.750
S4	0.009	5.00	51.600	1200	472051.609	164827.586	1.650	49.950
S5	0.019	5.00	51.600	1200	472044.979	164817.928	1.702	49.898
SW1			51.000	1200	472025.734	164831.140	1.206	49.794
EX. SW			51.000	1200	472018.202	164851.500	1.340	49.660

Links (Input)

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)	Design Flow (l/s)
1.000	S6	S7	7.213	0.600	50.850	50.778	0.072	100.2	150	5.12	50.0	
1.001	S7	S8	13.799	0.600	50.778	50.686	0.092	150.0	150	5.40	50.0	
1.002	S8	S9	9.418	0.600	50.686	50.623	0.063	150.0	150	5.59	49.6	
1.003	S9	S5	30.620	0.600	50.623	49.973	0.650	47.1	150	5.94	48.2	
2.000	S2	S3	18.886	0.600	50.850	50.662	0.188	100.5	150	5.31	50.0	
3.000	S1	S3	17.011	0.600	50.525	50.050	0.475	35.8	225	5.13	50.0	
4.000	Attenuation Tank	S3	4.201	0.600	50.100	50.050	0.050	84.0	225	5.05	50.0	
2.001	S3	S4	22.500	0.600	50.050	49.950	0.100	225.0	225	5.75	49.0	
2.002	S4	S5	11.715	0.600	49.950	49.898	0.052	225.3	225	5.97	48.1	
1.004	S5	SW1	23.344	0.600	49.898	49.794	0.104	225.0	225	6.42	46.5	1.0
1.005	SW1	EX. SW	21.709	0.600	49.794	49.660	0.134	162.0	225	6.77	45.3	5.0

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	0.750	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	0.840	Additional Storage (m³/ha)	20.0		

Storm Durations

60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	35	0	0
100	40	0	0

Node S5 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	49.898	Product Number	CTL-SHE-0039-8000-1300-8000
Design Depth (m)	1.300	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	0.8	Min Node Diameter (mm)	1200

Node Attenuation Tank Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	50.100
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	156.0	156.0	0.800	156.0	191.4	0.801	0.0	191.4

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S6	34	50.870	0.020	0.7	0.0081	0.0000	OK
60 minute summer	S7	33	50.817	0.039	2.1	0.0221	0.0000	OK
60 minute summer	S8	33	50.735	0.049	3.1	0.0207	0.0000	OK
60 minute summer	S9	33	50.662	0.039	3.8	0.0508	0.0000	OK
60 minute summer	S2	33	50.881	0.031	1.6	0.0205	0.0000	OK
60 minute summer	S1	33	50.566	0.041	6.2	0.0851	0.0000	OK
240 minute winter	Attenuation Tank	236	50.254	0.154	4.9	22.7858	0.0000	OK
60 minute summer	S3	31	50.296	0.246	16.2	0.3066	0.0000	SURCHARGED
60 minute summer	S4	31	50.299	0.349	7.0	0.4333	0.0000	SURCHARGED
60 minute summer	S5	31	50.301	0.403	5.4	0.5455	0.0000	SURCHARGED
1440 minute summer	SW1	1500	49.812	0.018	0.5	0.0206	0.0000	OK
1440 minute summer	EX. SW	1500	49.678	0.018	0.5	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S6	1.000	S7	0.7	0.292	0.039	0.0180	
60 minute summer	S7	1.001	S8	2.1	0.491	0.145	0.0592	
60 minute summer	S8	1.002	S9	3.1	0.722	0.214	0.0405	
60 minute summer	S9	1.003	S5	3.8	0.539	0.145	0.3245	
60 minute summer	S2	2.000	S3	1.6	0.620	0.090	0.0486	
60 minute summer	S1	3.000	S3	6.2	0.607	0.071	0.3791	
60 minute summer	Attenuation Tank	4.000	S3	-18.2	-0.987	-0.321	0.0865	
60 minute summer	S3	2.001	S4	-8.1	0.391	-0.234	0.8948	
60 minute summer	S4	2.002	S5	-6.3	0.185	-0.183	0.4659	
60 minute summer	S5	1.004	SW1	0.5	0.384	0.016	0.0376	
1440 minute summer	SW1	1.005	EX. SW	0.5	0.360	0.013	0.0325	35.9

Results for 30 year +35% CC Critical Storm Duration. Lowest mass balance: 99.10%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S6	33	50.892	0.042	3.0	0.0166	0.0000	OK
60 minute summer	S7	33	50.865	0.087	8.7	0.0496	0.0000	OK
60 minute summer	S8	33	50.802	0.116	12.8	0.0491	0.0000	OK
60 minute summer	S9	34	50.725	0.102	15.7	0.1343	0.0000	OK
60 minute summer	S2	33	50.914	0.064	6.4	0.0429	0.0000	OK
600 minute winter	S1	585	50.724	0.199	3.5	0.4188	0.0000	OK
600 minute winter	Attenuation Tank	585	50.724	0.624	7.5	92.5226	0.0000	SURCHARGED
600 minute winter	S3	585	50.724	0.674	7.6	0.8409	0.0000	SURCHARGED
600 minute winter	S4	585	50.724	0.774	2.8	0.9601	0.0000	SURCHARGED
600 minute winter	S5	585	50.724	0.826	3.1	1.1187	0.0000	SURCHARGED
600 minute winter	SW1	585	49.814	0.020	0.7	0.0226	0.0000	OK
600 minute winter	EX. SW	585	49.680	0.020	0.7	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S6	1.000	S7	3.0	0.417	0.169	0.0524	
60 minute summer	S7	1.001	S8	8.7	0.695	0.603	0.1739	
60 minute summer	S8	1.002	S9	12.7	1.020	0.878	0.1289	
60 minute summer	S9	1.003	S5	15.3	0.932	0.589	0.4651	
60 minute summer	S2	2.000	S3	6.4	0.907	0.361	0.1332	
60 minute summer	S1	3.000	S3	25.4	0.812	0.291	0.4508	
60 minute summer	Attenuation Tank	4.000	S3	-56.8	-1.458	-1.001	0.1671	
60 minute summer	S3	2.001	S4	-23.2	-0.583	-0.673	0.8948	
60 minute summer	S4	2.002	S5	-20.5	-0.515	-0.594	0.4659	
600 minute winter	S5	1.004	SW1	0.7	0.354	0.019	0.0429	
600 minute winter	SW1	1.005	EX. SW	0.7	0.382	0.016	0.0370	28.7

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.11%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	S6	705	51.283	0.433	0.5	0.1728	0.0000	SURCHARGED
720 minute winter	S7	705	51.283	0.505	1.4	0.2893	0.0000	SURCHARGED
720 minute winter	S8	705	51.283	0.597	2.0	0.2519	0.0000	SURCHARGED
720 minute winter	S9	705	51.283	0.660	2.5	0.8678	0.0000	SURCHARGED
720 minute winter	S2	705	51.283	0.433	1.0	0.2883	0.0000	SURCHARGED
720 minute winter	S1	705	51.283	0.758	3.9	1.5924	0.0000	FLOOD RISK
720 minute winter	Attenuation Tank	705	51.283	1.183	8.5	118.6341	0.0000	FLOOD RISK
720 minute winter	S3	705	51.283	1.233	8.6	1.5375	0.0000	SURCHARGED
720 minute winter	S4	705	51.283	1.333	3.3	1.6528	0.0000	SURCHARGED
720 minute winter	S5	705	51.283	1.385	3.5	1.8751	0.0000	SURCHARGED
720 minute winter	SW1	705	49.816	0.022	0.8	0.0252	0.0000	OK
720 minute winter	EX. SW	705	49.682	0.022	0.8	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S6	1.000	S7	3.9	0.429	0.217	0.1270	
60 minute summer	S7	1.001	S8	10.6	0.704	0.736	0.2429	
60 minute summer	S8	1.002	S9	14.5	1.020	1.005	0.1658	
60 minute summer	S9	1.003	S5	17.5	0.992	0.672	0.5391	
60 minute summer	S2	2.000	S3	8.7	0.979	0.491	0.1679	
60 minute summer	S1	3.000	S3	33.9	1.026	0.389	0.5046	
60 minute summer	Attenuation Tank	4.000	S3	-72.1	-1.814	-1.271	0.1671	
60 minute summer	S3	2.001	S4	-27.5	-0.693	-0.799	0.8948	
60 minute summer	S4	2.002	S5	-24.1	-0.606	-0.700	0.4659	
720 minute winter	S5	1.004	SW1	0.8	0.379	0.024	0.0505	
720 minute winter	SW1	1.005	EX. SW	0.8	0.409	0.020	0.0436	35.9

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.500
CV	0.750	Preferred Cover Depth (m)	0.600
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
S11	0.009	5.00	52.750	450	472015.019	164746.392	0.750	52.000
S12	0.019	5.00	52.750	450	472000.341	164756.468	0.927	51.823
S13	0.009	5.00	52.750	450	471984.690	164767.213	1.116	51.634
S10	0.143	5.00	52.200	1200	471992.933	164783.933	1.125	51.075
S14	0.000	5.00	52.750	1200	471981.974	164767.971	1.755	50.995
S15	0.012	5.00	52.750	450	472013.319	164729.727	0.750	52.000
S16	0.009	5.00	52.750	450	472004.055	164726.991	0.846	51.904
S17	0.019	5.00	52.750	450	471987.455	164738.387	1.046	51.704
S18	0.009	5.00	52.750	450	471972.125	164748.911	1.231	51.519
S19	0.068	5.00	52.300	1200	471960.490	164755.833	1.406	50.894
S20	0.019	5.00	52.350	450	471967.685	164775.325	0.750	51.600
S21	0.009	5.00	52.350	450	471978.645	164791.290	0.942	51.408
S22	0.017	5.00	52.350	450	471966.526	164799.609	1.088	51.262
S23	0.009	5.00	52.350	450	471960.343	164803.854	1.163	51.187
S24	0.009	5.00	52.350	450	471956.720	164759.363	0.750	51.600
S25	0.009	5.00	52.350	450	471938.423	164771.925	0.970	51.380
S26	0.002	5.00	52.350	450	471949.383	164787.889	1.355	50.995
Pond	0.059	5.00	51.800		471932.129	164775.302	1.200	50.600
S27	0.000	5.00	51.900	1200	471943.791	164808.598	1.325	50.575
Outfall	0.000		51.500		471939.143	164812.164	1.200	50.300

Links (Input)

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)	Design Flow (l/s)
1.000	S11	S12	17.804	0.600	52.000	51.823	0.177	100.6	150	5.30	50.0	
1.001	S12	S13	18.984	0.600	51.823	51.634	0.189	100.4	150	5.61	49.5	
1.002	S13	S14	2.820	0.600	51.634	51.145	0.489	5.8	150	5.62	49.5	
2.000	S10	S14	19.362	0.600	51.075	50.995	0.080	242.0	300	5.32	50.0	
1.003	S14	S19	24.676	0.600	50.995	50.894	0.101	244.3	300	6.03	47.9	
3.000	S15	S16	9.660	0.600	52.000	51.904	0.096	100.6	150	5.16	50.0	
3.001	S16	S17	20.135	0.600	51.904	51.704	0.200	100.7	150	5.50	50.0	
3.002	S17	S18	18.595	0.600	51.704	51.519	0.185	100.5	150	5.81	48.7	
3.003	S18	S19	13.538	0.600	51.519	51.044	0.475	28.5	150	5.92	48.3	
1.004	S19	Pond	34.400	0.600	50.894	50.600	0.294	117.0	300	6.43	46.5	
4.000	S20	S21	19.365	0.600	51.600	51.408	0.192	100.9	150	5.32	50.0	
4.001	S21	S22	14.700	0.600	51.408	51.262	0.146	100.7	150	5.57	49.7	
4.002	S22	S23	7.500	0.600	51.262	51.187	0.075	100.0	150	5.69	49.2	
4.003	S23	S26	19.365	0.600	51.187	50.995	0.192	100.9	150	6.01	47.9	
5.000	S24	S25	22.194	0.600	51.600	51.380	0.220	100.9	150	5.37	50.0	
5.001	S25	S26	19.364	0.600	51.380	50.995	0.385	50.3	150	5.60	49.6	

Links (Input)

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)	Design Flow (l/s)
4.004	S26	Pond	21.357	0.600	50.995	50.600	0.395	54.1	150	6.27	47.0	
1.005	Pond	S27	6.000	0.600	50.600	50.575	0.025	240.0	300	6.53	46.2	
1.006	S27	Outfall	5.858	0.600	50.585	50.300	0.285	20.6	150	6.57	46.0	5.0

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	0.750	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	0.840	Additional Storage (m³/ha)	20.0		

Storm Durations

60	120	180	240	360	480	600	720	960	1440
----	-----	-----	-----	-----	-----	-----	-----	-----	------

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	35	0	0
100	40	0	0

Node S27 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	50.585	Product Number	CTL-SHE-0061-1900-1315-1900
Design Depth (m)	1.315	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.9	Min Node Diameter (mm)	1200

Node Pond Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	50.600
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	182.0	182.0	1.200	589.0	596.8

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.91%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S11	34	52.020	0.020	0.7	0.0081	0.0000	OK
60 minute summer	S12	33	51.863	0.040	2.3	0.0226	0.0000	OK
60 minute summer	S13	33	51.656	0.022	3.0	0.0070	0.0000	OK
60 minute summer	S10	33	51.160	0.085	11.7	0.3104	0.0000	OK
60 minute summer	S14	33	51.090	0.095	14.7	0.1075	0.0000	OK
60 minute summer	S15	33	52.024	0.024	1.0	0.0116	0.0000	OK
60 minute summer	S16	33	51.935	0.031	1.7	0.0117	0.0000	OK
60 minute summer	S17	33	51.750	0.046	3.3	0.0240	0.0000	OK
60 minute summer	S18	33	51.555	0.036	4.0	0.0109	0.0000	OK
60 minute summer	S19	33	50.996	0.102	24.2	0.2134	0.0000	OK
60 minute summer	S20	33	51.630	0.030	1.6	0.0203	0.0000	OK
60 minute summer	S21	33	51.444	0.036	2.3	0.0127	0.0000	OK
60 minute summer	S22	33	51.311	0.049	3.7	0.0231	0.0000	OK
60 minute summer	S23	33	51.239	0.052	4.4	0.0164	0.0000	OK
60 minute summer	S24	34	51.620	0.020	0.7	0.0081	0.0000	OK
60 minute summer	S25	34	51.404	0.024	1.4	0.0083	0.0000	OK
60 minute summer	S26	34	51.046	0.051	6.0	0.0096	0.0000	OK
480 minute winter	Pond	376	50.869	0.269	8.4	61.3937	0.0000	OK
480 minute winter	S27	376	50.869	0.294	1.6	0.3321	0.0000	SURCHARGED
480 minute winter	Outfall	376	50.321	0.021	1.6	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S11	1.000	S12	0.7	0.283	0.040	0.0460	
60 minute summer	S12	1.001	S13	2.3	0.882	0.130	0.0506	
60 minute summer	S13	1.002	S14	3.0	1.974	0.040	0.0043	
60 minute summer	S10	2.000	S14	11.7	0.662	0.165	0.3428	
60 minute summer	S14	1.003	S19	14.6	0.733	0.207	0.4956	
60 minute summer	S15	3.000	S16	1.0	0.447	0.056	0.0217	
60 minute summer	S16	3.001	S17	1.7	0.473	0.096	0.0727	
60 minute summer	S17	3.002	S18	3.3	0.846	0.185	0.0724	
60 minute summer	S18	3.003	S19	4.0	1.253	0.118	0.0428	
60 minute summer	S19	1.004	Pond	24.2	1.373	0.236	0.6986	
60 minute summer	S20	4.000	S21	1.6	0.548	0.090	0.0566	
60 minute summer	S21	4.001	S22	2.3	0.558	0.130	0.0608	
60 minute summer	S22	4.002	S23	3.7	0.708	0.208	0.0390	
60 minute summer	S23	4.003	S26	4.4	0.822	0.247	0.1031	
60 minute summer	S24	5.000	S25	0.7	0.432	0.040	0.0361	
60 minute summer	S25	5.001	S26	1.4	0.418	0.056	0.0683	
60 minute summer	S26	4.004	Pond	6.0	1.039	0.246	0.2039	
120 minute winter	Pond	1.005	S27	1.6	0.195	0.023	0.3629	
480 minute winter	S27	1.006	Outfall	1.6	1.078	0.040	0.0086	53.7

Results for 30 year +35% CC Critical Storm Duration. Lowest mass balance: 99.63%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S11	33	52.042	0.042	3.0	0.0166	0.0000	OK
60 minute summer	S12	33	51.909	0.086	9.4	0.0490	0.0000	OK
60 minute summer	S13	32	51.675	0.041	12.4	0.0133	0.0000	OK
720 minute winter	S10	705	51.348	0.273	5.7	1.0011	0.0000	OK
720 minute winter	S14	705	51.348	0.353	7.3	0.3987	0.0000	SURCHARGED
60 minute summer	S15	33	52.051	0.051	4.1	0.0244	0.0000	OK
60 minute summer	S16	33	51.970	0.066	7.1	0.0245	0.0000	OK
60 minute summer	S17	33	51.809	0.105	13.5	0.0547	0.0000	OK
60 minute summer	S18	32	51.595	0.076	16.5	0.0231	0.0000	OK
720 minute winter	S19	705	51.348	0.454	12.1	0.9516	0.0000	SURCHARGED
60 minute summer	S20	33	51.663	0.063	6.4	0.0419	0.0000	OK
60 minute summer	S21	35	51.555	0.147	9.4	0.0513	0.0000	OK
60 minute summer	S22	35	51.519	0.257	14.9	0.1212	0.0000	SURCHARGED
60 minute summer	S23	35	51.464	0.277	17.2	0.0869	0.0000	SURCHARGED
60 minute summer	S24	33	51.642	0.042	3.0	0.0166	0.0000	OK
60 minute summer	S25	33	51.430	0.050	6.0	0.0172	0.0000	OK
720 minute winter	S26	705	51.348	0.353	3.2	0.0666	0.0000	SURCHARGED
720 minute winter	Pond	705	51.348	0.748	16.8	231.5634	0.0000	SURCHARGED
720 minute winter	S27	705	51.348	0.773	1.6	0.8738	0.0000	SURCHARGED
180 minute winter	Outfall	80	50.321	0.021	1.6	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S11	1.000	S12	3.0	0.422	0.169	0.1286	
60 minute summer	S12	1.001	S13	9.4	1.319	0.530	0.1367	
60 minute summer	S13	1.002	S14	12.4	2.592	0.166	0.0211	
60 minute summer	S10	2.000	S14	48.0	0.859	0.675	1.1005	
60 minute summer	S14	1.003	S19	60.0	0.975	0.848	1.5266	
60 minute summer	S15	3.000	S16	4.1	0.647	0.232	0.0614	
60 minute summer	S16	3.001	S17	7.1	0.687	0.401	0.2072	
60 minute summer	S17	3.002	S18	13.5	1.221	0.762	0.2048	
60 minute summer	S18	3.003	S19	16.5	1.745	0.494	0.1466	
60 minute summer	S19	1.004	Pond	98.6	1.647	0.960	2.3163	
60 minute summer	S20	4.000	S21	6.4	0.790	0.364	0.2296	
60 minute summer	S21	4.001	S22	9.2	0.734	0.522	0.2581	
60 minute summer	S22	4.002	S23	14.2	0.914	0.803	0.1320	
60 minute summer	S23	4.003	S26	16.1	1.085	0.913	0.3409	
60 minute summer	S24	5.000	S25	3.0	0.660	0.170	0.1011	
60 minute summer	S25	5.001	S26	6.0	0.582	0.239	0.2200	
60 minute summer	S26	4.004	Pond	21.3	1.397	0.881	0.3760	
60 minute winter	Pond	1.005	S27	2.9	0.306	0.041	0.4225	
180 minute winter	S27	1.006	Outfall	1.6	1.078	0.040	0.0086	32.9

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.64%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S11	33	52.049	0.049	4.1	0.0196	0.0000	OK
60 minute summer	S12	32	51.925	0.102	12.8	0.0582	0.0000	OK
60 minute summer	S13	34	51.721	0.087	17.0	0.0279	0.0000	OK
60 minute summer	S10	34	51.745	0.670	65.8	2.4612	0.0000	SURCHARGED
60 minute summer	S14	34	51.664	0.669	77.7	0.7570	0.0000	SURCHARGED
60 minute summer	S15	33	52.060	0.060	5.5	0.0288	0.0000	OK
60 minute summer	S16	33	51.982	0.078	9.6	0.0292	0.0000	OK
60 minute summer	S17	35	51.928	0.224	18.3	0.1169	0.0000	SURCHARGED
60 minute summer	S18	35	51.734	0.215	22.1	0.0657	0.0000	SURCHARGED
960 minute winter	S19	930	51.513	0.619	11.5	1.2981	0.0000	SURCHARGED
60 minute summer	S20	36	52.000	0.400	8.7	0.2661	0.0000	SURCHARGED
60 minute summer	S21	36	51.967	0.559	12.0	0.1957	0.0000	SURCHARGED
60 minute summer	S22	36	51.911	0.649	17.4	0.3062	0.0000	SURCHARGED
60 minute summer	S23	36	51.827	0.640	20.3	0.2011	0.0000	SURCHARGED
60 minute summer	S24	33	51.649	0.049	4.1	0.0196	0.0000	OK
60 minute summer	S25	36	51.592	0.212	8.2	0.0732	0.0000	SURCHARGED
60 minute summer	S26	36	51.566	0.571	26.2	0.1079	0.0000	SURCHARGED
600 minute winter	Pond	600	51.513	0.913	24.1	308.3016	0.0000	FLOOD RISK
600 minute winter	S27	600	51.513	0.938	1.6	1.0606	0.0000	SURCHARGED
600 minute winter	Outfall	600	50.321	0.021	1.6	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S11	1.000	S12	4.1	0.467	0.232	0.1581	
60 minute summer	S12	1.001	S13	12.9	1.375	0.727	0.2159	
60 minute summer	S13	1.002	S14	16.6	2.580	0.222	0.0398	
60 minute summer	S10	2.000	S14	61.5	0.873	0.865	1.3635	
60 minute summer	S14	1.003	S19	77.3	1.098	1.093	1.7377	
60 minute summer	S15	3.000	S16	5.5	0.692	0.311	0.0769	
60 minute summer	S16	3.001	S17	9.6	0.712	0.543	0.2684	
60 minute summer	S17	3.002	S18	18.0	1.254	1.017	0.3274	
60 minute summer	S18	3.003	S19	21.0	1.732	0.628	0.2383	
60 minute summer	S19	1.004	Pond	125.9	1.788	1.226	2.4224	
60 minute summer	S20	4.000	S21	8.1	0.813	0.461	0.3409	
60 minute summer	S21	4.001	S22	10.1	0.737	0.572	0.2588	
60 minute summer	S22	4.002	S23	16.4	0.929	0.921	0.1320	
60 minute summer	S23	4.003	S26	19.3	1.095	1.091	0.3409	
60 minute summer	S24	5.000	S25	4.1	0.718	0.232	0.2457	
60 minute summer	S25	5.001	S26	8.0	0.582	0.318	0.3409	
60 minute summer	S26	4.004	Pond	25.5	1.470	1.053	0.3760	
60 minute winter	Pond	1.005	S27	3.1	0.326	0.043	0.4225	
600 minute winter	S27	1.006	Outfall	1.6	1.085	0.041	0.0087	70.6

Appendix I – References

ⁱ Ministry of Housing, Communities and Local Government, December 2024, “National Planning Policy Framework”.

ⁱⁱ Ministry of Housing Communities and Local Government. “Planning Practice Guidance” Ministry of Housing, Communities and Local Government, February 2024, “Planning practice guidance”.

ⁱⁱⁱ LKC, LKC251507-A1-PRA-Wyvols Court Farm, Swallowfield R0, September 2025, Phase 1 Preliminary Risk Assessment.

^{iv} LKC, October 2025, Phase 2 Geo-Environmental Investigation, Risk Assessment and Outline Remediation Strategy

^v Wokingham Borough Council, JBA, May 2023, Strategic Flood Risk Assessment Level 1.

Based across the UK with
offices in Manchester, Liverpool,
Swindon and Glasgow.

Manchester (Head Office)

Unit 29
Eton Business Park
Eton Hill Rd, Radcliffe
M26 2ZS

0161 763 7200
info@thelkgroup.com

Manchester (Ancoats Office)

84 Silk Street
Ancoats
Manchester
M4 6BJ

0161 763 7200
info@thelkgroup.com

Glasgow

Wright Business Centre
1 Lonmay Road
Glasgow
G33 4EL

0141 773 6269
info@thelkgroup.com

Swindon

39 Bowman House Business Centre
Bowman Court
Whitehill Lane
Royal Wootton Bassett
Swindon
SN4 7DB

01793 987390
info@thelkgroup.com



LK GROUP