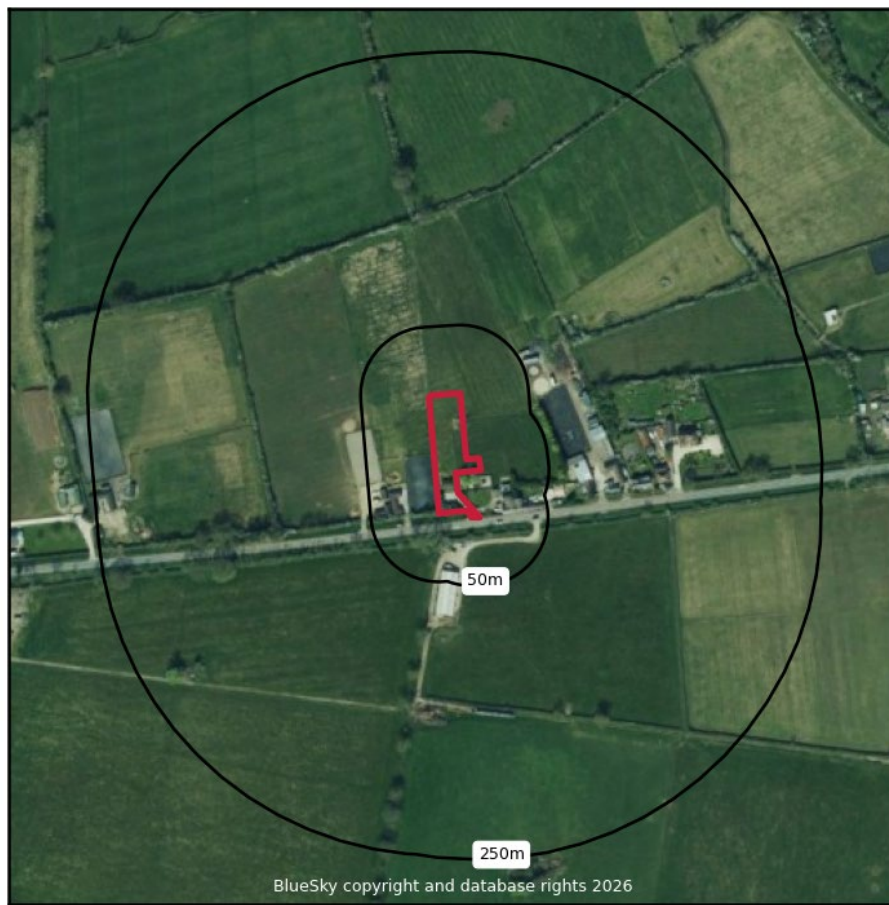


Sustainable Drainage Assessment

Discharge to Watercourse

The proposed Sustainable Drainage Scheme (SuDS) strategy is comprised of permeable paving to attenuate surface water runoff during the 1 in 100 plus 40% climate change event.

Surface water will continue to discharge via the existing connection to the surface water course, subject to confirmation from the Local Authority and the incorporation of SuDS.



Report prepared for

MKL Groundworks Ltd

Site Address

46 Malmesbury Road

Leigh

Swindon

SN6 6RH

Date

10/04/2026

Site Area

1951 m²

Grid Reference

405391, 191358

Report Status

FINAL

Report Reference

90854R1

SuDSmart Plus

Version Control

Report Version	Date	Report Author	Report Checker & Reviewer
90854R1	10/04/2026	Emilia Doncic Project Consultant	David South Principal Consultant

1. Executive summary

This report assesses the feasibility of a range of Sustainable Drainage Scheme (SuDS) options in support of the Site development process. A SuDS strategy is proposed to ensure surface water runoff can be managed effectively over the lifetime of the development.

SuDS suitability

Risk	Issue	Result
Runoff destination feasibility	Priority 1: rainwater collected for non-potable use	No
	Priority 2: infiltration to ground	Low
	Priority 3: discharge to an above ground surface water body	High
	Priority 4: discharge to surface water sewer	Low
	Priority 5: discharge to combined sewer	Low
Flooding	What is the river (fluvial) and/or tidal flood risk at the Site?	Very Low
	What is the surface water (pluvial) flood risk at the Site?	Very Low to High
	What is the groundwater flood risk at the Site?	Negligible
Pollution	Is the groundwater a protected resource?	Yes
	Is the surface water feature a protected resource?	N/A

Summary of existing and proposed development

The Site is currently used within an agricultural capacity. At present there is a single building and stables in the south of the Site, with associated access. The remainder of the Site is comprised of softstanding.

Development proposals comprise the construction of a new agricultural building in the centre of the Site along with proposed hardstanding, a new menage in the north of the Site along with a new stable in the south and the repositioning of the existing building.

National Standard 1: Runoff Destinations

Priority 1: collection for non-potable use

In line with DEFRA's national guidance, the potential for the collection of rainwater for non-potable use across the proposed development has been considered.

Given the absence of proposed landscaped or vegetated areas, there is limited scope for the collection and re-use of rainwater within the proposed development. As such, rainwater harvesting is not considered to be feasible. Note: it is understood that surrounding land is under Client ownership and therefore there may be potential for rainwater collection and re-use off-Site.

Priority 2: infiltration to ground

GeoSmart's SuDS Infiltration Potential (SD50) map indicates that the Site has a Low potential for infiltration, primarily due to the anticipated low permeability of the underlying geology (mudstone). Infiltration to ground is therefore unlikely to be feasible.

Priority 3: discharge to above ground surface water body

Ordnance Survey (OS) mapping indicates that there are no surface water features within 100 m of the Site. However, according to information provided by the Client, surface water runoff from the existing development currently discharges to a ditch located on the edge of the highway to the south of the Site.

Priority 4 and 5: discharge to surface water or combined sewer

The asset location plan included in Appendix C confirms that there are no public surface water or combined sewers within the vicinity of the Site that could feasibly be discharged to. As such, discharge to sewer is not considered to be feasible.

Runoff rate and attenuation requirements

Discharging off-Site requires 176.12 m³ of attenuation to be provided to ensure there is no flooding within the development in all storm events up to and including the 1 in 100 year including a 40% allowance for climate change. This volume is subject to the discharge rate being restricted to 1 l/s (as close to the equivalent Greenfield 1 in 100 year rate as possible, without increasing the potential for blockages).

Proposed SuDS strategy

SuDS features comprised of permeable paving are proposed to attenuate a minimum of 180.77 m³ of surface water runoff.

The proposed SuDS strategy would ensure surface water runoff is stored on-Site in SuDS features for the 1 in 100 year event including a 40% allowance for climate change and will not cause flooding to the proposed development in accordance with DEFRA's national standards for SuDS (2025).

SuDS & drainage network maintenance

The management and maintenance of the SuDS features, in line with the details and schedules outlined in Section 10 of this report, will be undertaken by contractors appointed by the owners and occupiers of the new agricultural buildings.

Recommendations / Next steps

Where the underlying ground conditions are not conducive to infiltration, the condition and capacity of the surface watercourse should be confirmed and permission should be obtained from the Local Council for proposed outfalls and any other permits required.

2. Proposed SuDS strategy

The most suitable SuDS options are outlined below and a SuDS strategy schematic is shown overleaf. Supporting information is provided in subsequent sections.

Table 1. Proposed SuDS type, features, discharge location and rate restriction

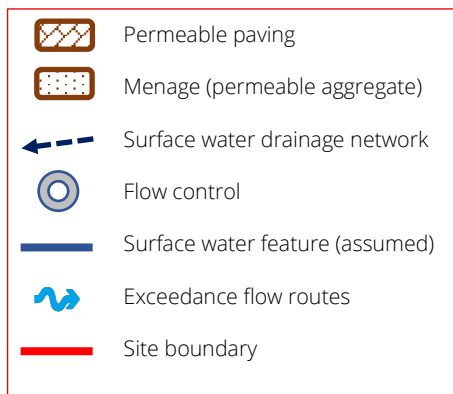
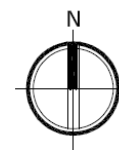
SuDS type	Source control (interception) and attenuation SuDS.
SuDS features	Permeable paving.
Discharge location	Surface water feature.
Discharge rate	1 l/s*.

As close to the Greenfield 1 in 100 year rate as possible, without increasing the risk of blockage.

Table 2. Proposed SuDS sizing (dimensions) and attenuation volumes

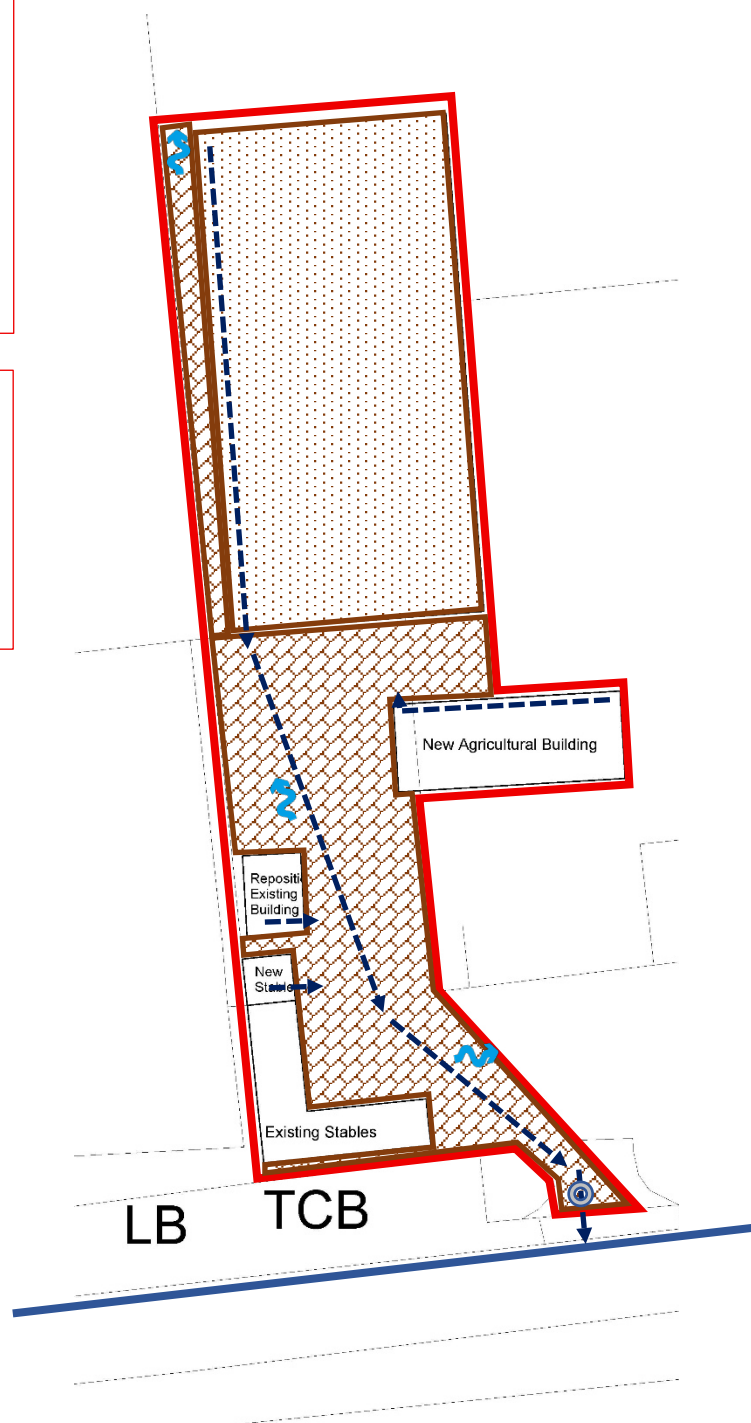
Permeable paving	A 913 m ² area of lined permeable paving (underlain with a Type 3 aggregate material with a 30% porosity) within the proposed driveway areas to a depth of 0.65 m would provide c. 178.04 m ³ of attenuation.
Total attenuation provided	178.04 m³
Total attenuation required	176.12 m³
Freeboard storage provided	1.92 m³

Figure 1. Proposed SuDS scheme layout



Surface water from the proposed menage and agricultural buildings should be conveyed into the permeable paving for discharge to the nearby surface water feature.

Exceedance flows are directed towards non-essential areas on Site.



Schematic is not to scale

3. National & local policy context

National Guidance

DEFRA – National standards for sustainable drainage systems (SuDS) (2025)

Standard 1: runoff destinations

A ‘SuDS approach’ shall be adopted to address the management of surface water by the development and where it should be discharged. Runoff shall be treated as a resource and managed in a way that avoids negative impacts of the development on flood risk, the morphology and water quality of receiving waters and the associated ecology.

Runoff from the development shall be discharged to the following final destinations, to the maximum extent practicable, in accordance with the below hierarchy:

- priority 1: collected for non-potable use
- priority 2: infiltrated to ground
- priority 3: discharged to an above ground surface water body
- priority 4: discharged to a surface water sewer, or another piped surface water drainage system
- priority 5: discharged to a combined sewer

Note 1: priority 1 is the highest priority and priority 5 is the lowest.

Note 2: for the purposes of this standard, a combined sewer is a sewer intended to receive both foul sewage and surface runoff and does not include a sewer intended to receive only foul sewage, even if it has the capacity to accommodate additional flows or has an element of surface water in it already.

To utilise a lesser priority final destination, appropriate evidence shall be provided that demonstrates all higher priority final destinations have been utilised to the maximum extent practicable. Higher cost alone shall not be a reason to utilise lower priority final destinations.

Where more than one final destination is utilised, each final destination’s ability to accept runoff shall be maximised in order of priority.

Standard 2: management of everyday rainfall (interception)

Apply a ‘SuDS approach’ so that at least the first 5mm of rainfall for the majority of rainfall events does not result in runoff from the site to surface waters or piped drainage systems.

Evidence shall be provided that the approach to managing runoff from ‘everyday’ rainfall has been developed alongside and in support of the management of runoff quality (standard 4) and the delivery of amenity and biodiversity benefits (standards 5 and 6).

Standard 3: management of extreme rainfall and flooding

A 'SuDS approach' shall be adopted to address the management of development runoff during extreme rainfall, including allowances for climate change and urban creep to:

- protect people and property on the development from flooding of the surface water drainage system
- mitigate any increased flood risk to people and property adjacent to or downstream of the development
- protect the receiving water body from morphological damage or minimise the impact on sewer capacity

When discharging to an infiltration feature, the system shall be appropriately sized to accommodate the design event based on ground conditions and contributing areas.

When discharging to an above ground surface water body, sewer or other piped drainage system, the surface water runoff (rate and volume) for the 1% annual exceedance probability (AEP) event shall be controlled to ensure the runoff from the development does not increase flood risk elsewhere.

When discharging to an above ground surface water body, sewer or other piped drainage system, the surface water runoff rate for the 50% AEP event shall be controlled to ensure development runoff from an event of this magnitude has no negative impact.

Any flooding from the surface water drainage system for events up to the 1% AEP event shall be managed within the development.

Any flooding from off-site sources for the 1% AEP event should be managed on site or safely routed through the site, ensuring any downstream risks are not increased compared to the pre-development scenario.

The risks (both on and off the development) associated with flooding from the surface water drainage system for exceedance events greater than the 1% AEP event shall be appropriately managed.

Standard 4: water quality

Apply a 'SuDS approach' that protects surface waters, groundwater and coastal waters by managing the quality of the surface water runoff to adequately address water quality risks from the development.

The proposed SuDS management train(s) shall be based on a robust water quality risk assessment, appropriate to the pollution hazard and sensitivity of receiving waters, reflecting industry recognised guidance or other quantitative assessment as agreed with the approving body and permitting requirements.

Standard 5: amenity

A 'SuDS approach' shall be adopted that maximises benefits for amenity through the creation of multi-functional places and landscapes.

Standard 6: biodiversity

A 'SuDS approach' shall be adopted to ensure the surface water drainage system maximises biodiversity benefits throughout the development lifecycle.

The surface water drainage system shall add biodiversity value by:

- creating diverse, self-sustaining, resilient local ecosystems which contribute to net gains in biodiversity
- supporting and promoting natural local habitat and species, for example, through local nature recovery strategies (LNRS)
- contributing to the delivery of local biodiversity strategies
- contributing to habitat connectivity

Standard 7: design of drainage for construction, operation, maintenance, decommissioning and structural integrity

A 'SuDS approach' shall be adopted to ensure that surface water drainage systems are designed so they can be easily and safely constructed, operated and maintained taking account of the need to minimise negative impacts on natural resources and the environment.

The designer shall provide a management and maintenance plan that supports the design objectives detailed in standards 1 to 6 and ensures the performance of the surface water drainage system with regards to runoff destinations, everyday and extreme rainfall, water quality, amenity and biodiversity is maintained throughout the lifetime of the development.

Surface water drainage design shall examine for the likelihood and consequences of potential failure scenarios that may occur during the operation phase and safely manage the associated risks.

The surface water drainage system shall be designed to ensure structural integrity of all components under anticipated loading conditions for the design life of the development so that it does not affect the structural integrity of any existing or proposed components within, or adjacent to, the development.

Urban creep

Within developments an urban creep uplift factor shall be applied by adding a percentage increase to the calculated area of the impermeable area within the property curtilages. This shall be 10% for all developments unless there are no external private permeable spaces, for example, flats and apartments, when it shall be 0%.

Ministry of Housing, Communities & Local Government – National Planning Practice Guidance: Flood risk assessments: climate change allowances (2022)

The Peak rainfall intensity allowances section provides advice on the increased rainfall effects on river levels and land and urban drainage systems. As of May 2022, the applicable climate change allowance is defined by specific Management Catchment for the 1 in 30 ($\geq 3.3\%$ AEP) and 1 in 100 (< 3.3 to 1% AEP) year event.

As the Site is located within the Gloucestershire and the Vale Management Catchment the following climate change allowances are applicable.

Table 3. Gloucestershire and the Vale Management Catchment peak rainfall allowances

Gloucestershire and the Vale Management Catchment	3.3% Annual exceedance rainfall event		1% Annual exceedance rainfall event	
	2050s	2070s	2050s	2070s
Central	20%	25%	20%	25%
Upper end	35%	35%	40%	40%

The drainage system should be designed to make sure there is no increase in the rate of runoff discharged from the Site for the upper end allowance.

Where on-Site flooding for the upper end allowance presents a significant flood hazard (for example, depths and velocities of surface water runoff cause a significant danger to people), you will need to take further mitigation measures to protect people and property (for example, raising finished floor levels). As a minimum, there should be no significant flood hazard to people from on-Site flooding for the central allowance.

Local policy

Wiltshire Council Level 1 Strategic Flood Risk Assessment (JBA Consulting, 2024).

9.6 Sustainable Drainage Systems (SuDS)

It is essential that developers consider sustainable drainage at an early stage of the development process – ideally at the design brief or master-planning stage. This will assist with the delivery of well designed, appropriate and effective SuDS. Proposals should also comply with the key SuDS principles (the four pillars of SuDS design - Figure 9-1 of the SFRA) enabling solutions that deliver multiple long-term benefits. These principles are:

- **Quantity:** should be able to cope with the quantity of water generated by the development at the agreed rate and volume with due consideration for climate change via a micro catchment-based approach. Where frequency of flood risk, steepness of topography or permeability of geology has a significant impact on the volume or rate of surface water being discharged from a site, the LLFA should be contacted, as a review of the greenfield runoff rate to be achieved may be needed.
- **Quality:** should utilise SuDS features in a “treatment train” that will have the effect of adequately treating the water before infiltration or passing it on to a subsequent water body.
- **Amenity:** should integrate greenery or water features to improve the visual characteristics of the area. These can be incorporated within “open space” or “green corridors” within the site and designed with a view to performing a multifunctional purpose.
- **Biodiversity:** should include a range of natural features such as plants, trees and other vegetation which will provide additional filtration of surface water runoff. These can be designed to complement and improve the ecology of the area.

There are a number of ways in which SuDS can be designed to meet surface water quantity, climate change resilience, water quality, biodiversity and amenity goals. Given this flexibility, SuDS are generally capable of overcoming or working alongside various constraints affecting a site, such as restrictions on infiltration, without detriment to achieving these goals.

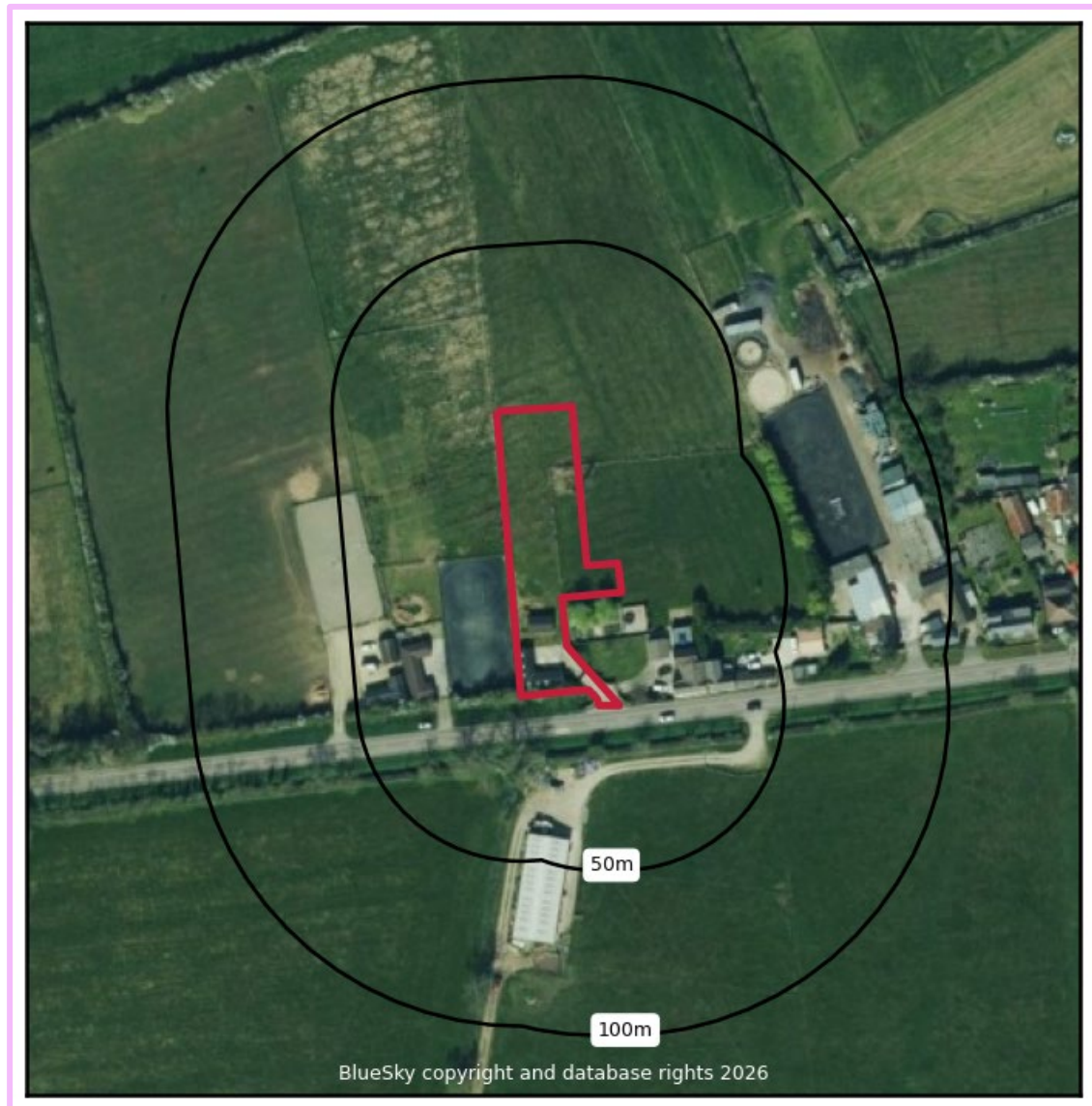
SuDS must be considered at the outset and during preparation of the initial conceptual site layout to ensure that enough land is given to design spaces that will be an asset to the development as opposed to an ineffective afterthought. For SuDS to work effectively appropriate techniques should be selected based on the objectives for drainage and the site-specific constraints. It is recommended that on all developments source control is implemented as the first stage of a management train allowing for improvements in water quality and reducing or eliminating runoff from smaller, more frequent, rainfall events.

All new major development proposals should ensure that sustainable drainage systems for management of run-off are put in place. The developer is responsible for ensuring the design, construction and future/ongoing maintenance of such a scheme is carefully and clearly defined, and a clear and comprehensive understanding of the existing catchment hydrological processes and existing drainage arrangements is essential.

4. Site analysis

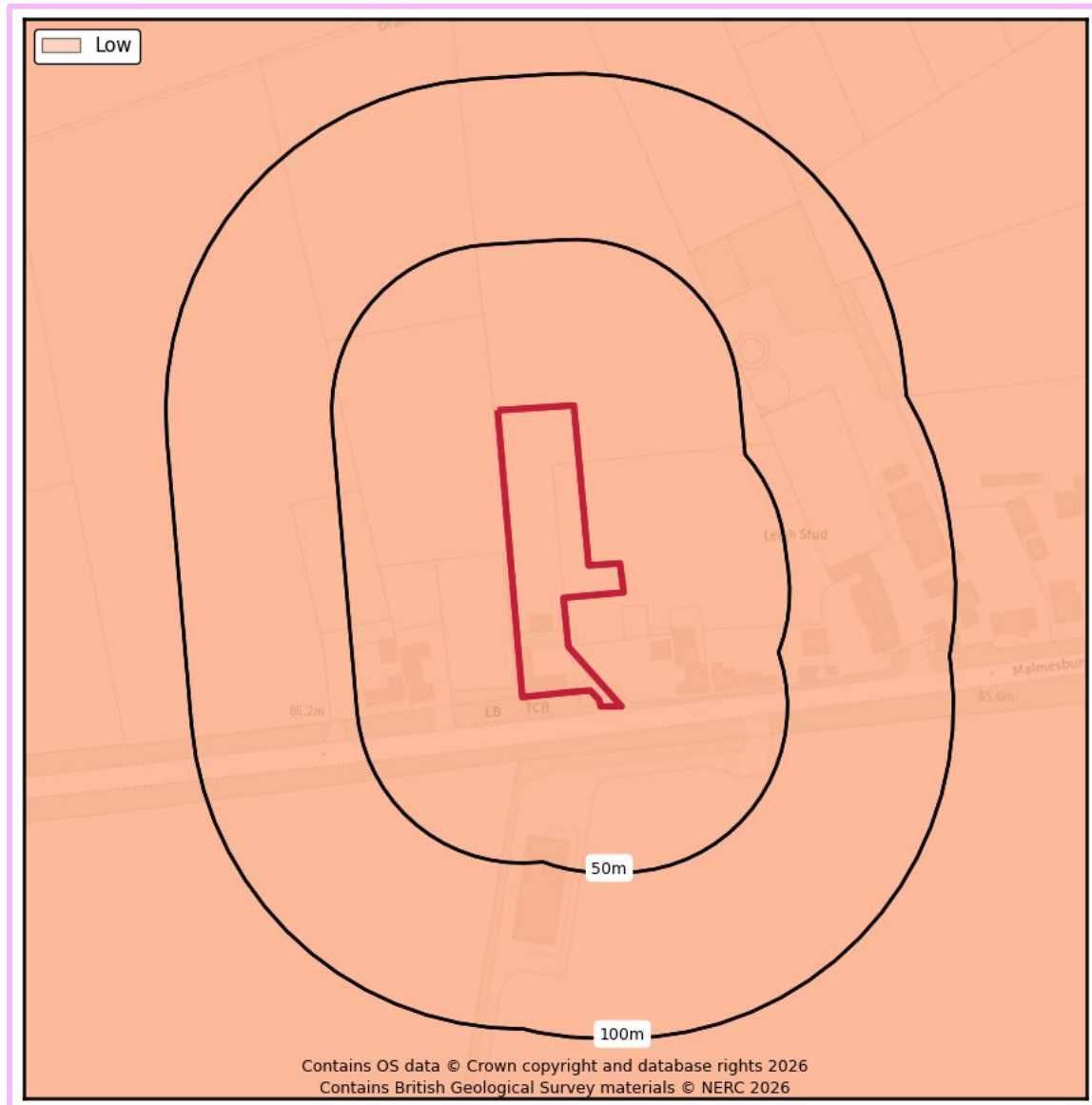
Site location

Figure 2. Aerial Imagery (Bluesky, 2026)



Infiltration suitability

Figure 3. SuDS infiltration suitability (SD50) map (GeoSmart, 2026)

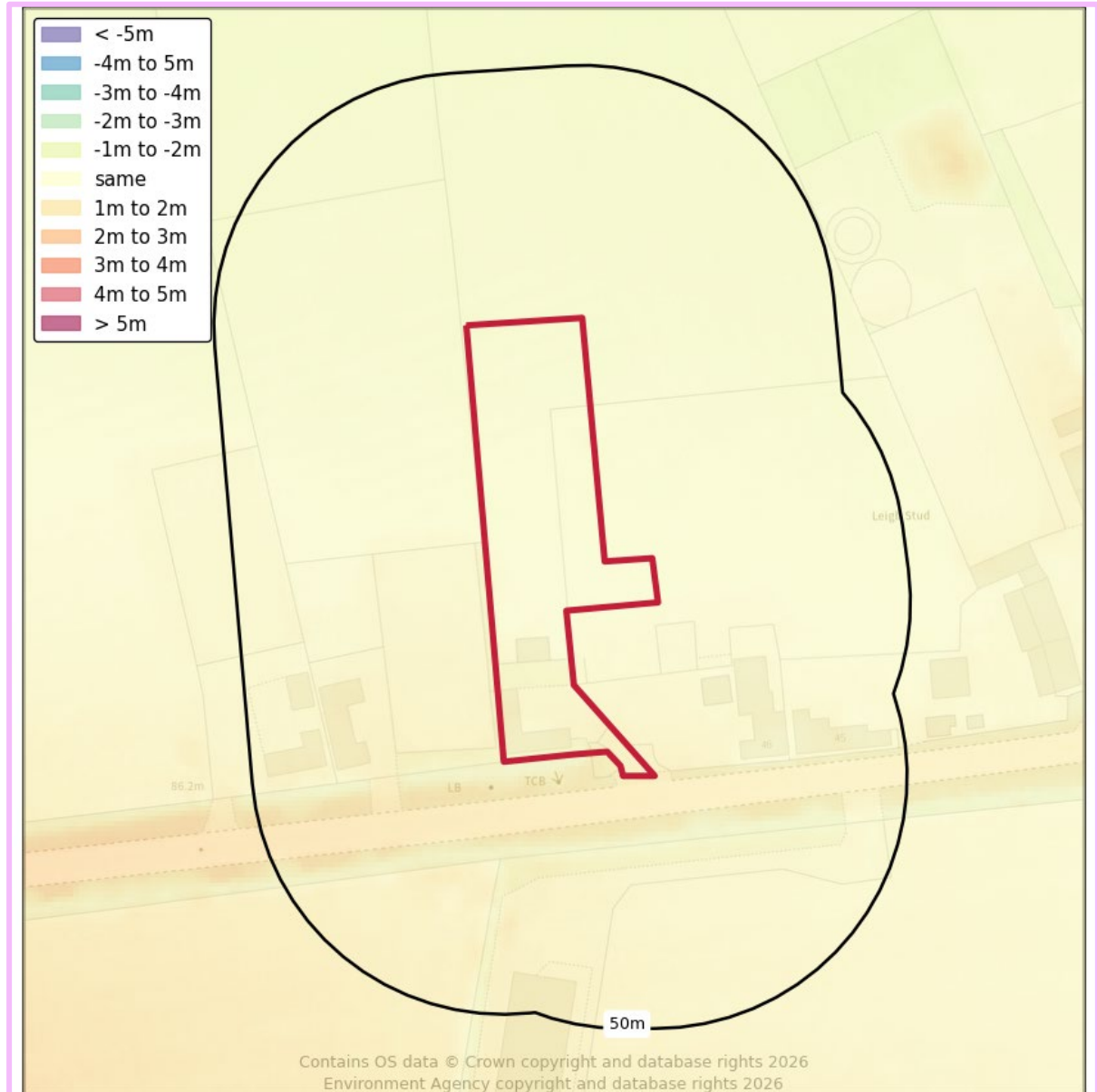


According to GeoSmart's SD50 mapping, there is a Low potential for infiltration SuDS across the Site. It is likely that the underlying geology at the Site has low permeability which would limit the effectiveness of a proposed infiltration SuDS scheme.

As such, infiltration is not considered to be feasible and is not proposed.

Topography

Figure 4. Site topography (GeoSmart, 2026)



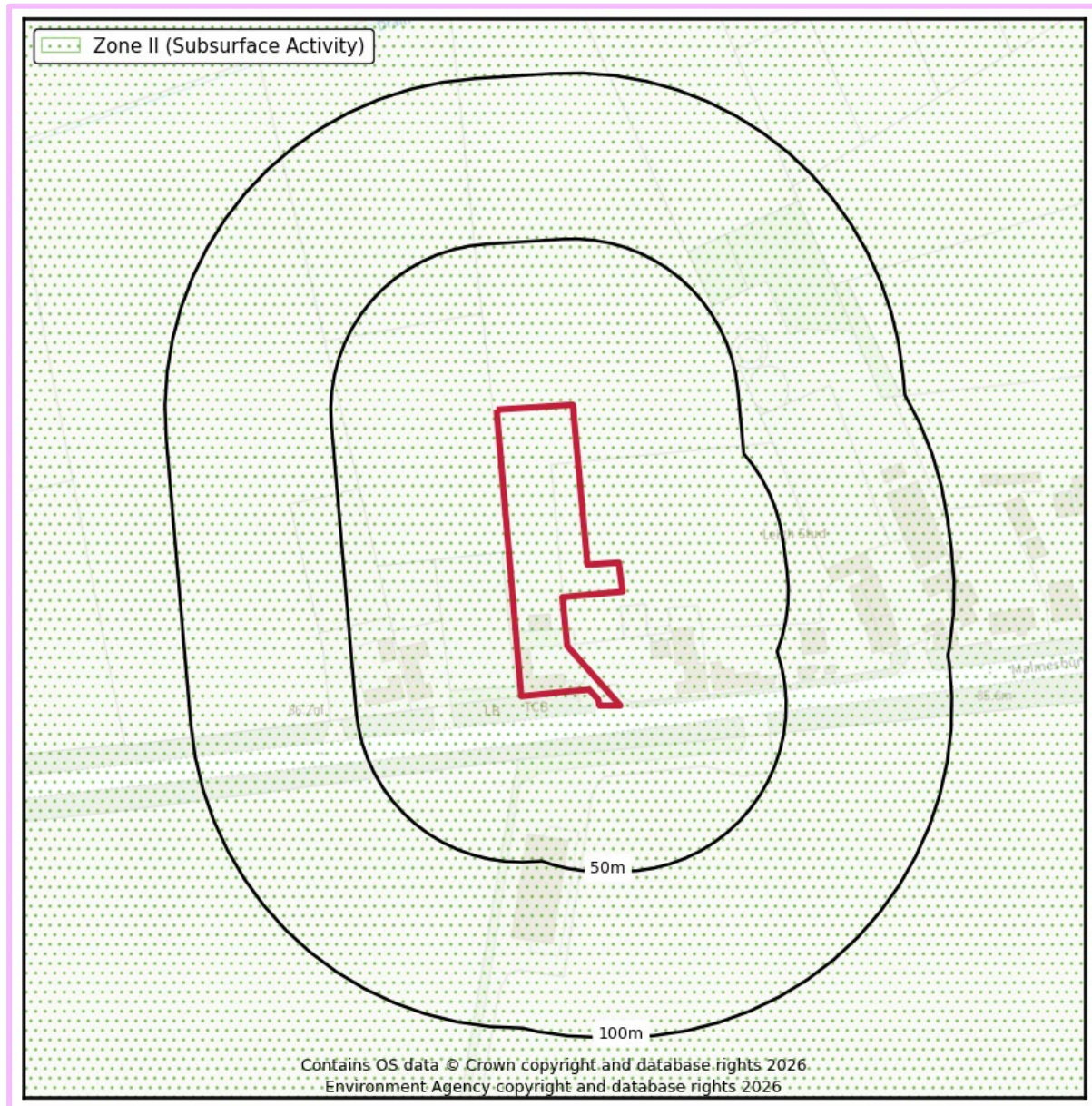
According to a review of the LiDAR DTM5 elevation data for the prevailing area, the ground levels within the vicinity of the Site are typically relatively level.

The topography on-Site typically falls to the north, with ground levels ranging from 84.79 to 85.74 mAOD. This is based on EA elevation data obtained for the Site to a 1 m resolution with a vertical accuracy of ± 150 mm.

Further analysis could be undertaken by visiting the Site or by collecting additional topographic survey data to provide further confirmation of ground levels.

Land designations

Figure 5. Source protection zone map (EA, 2026)

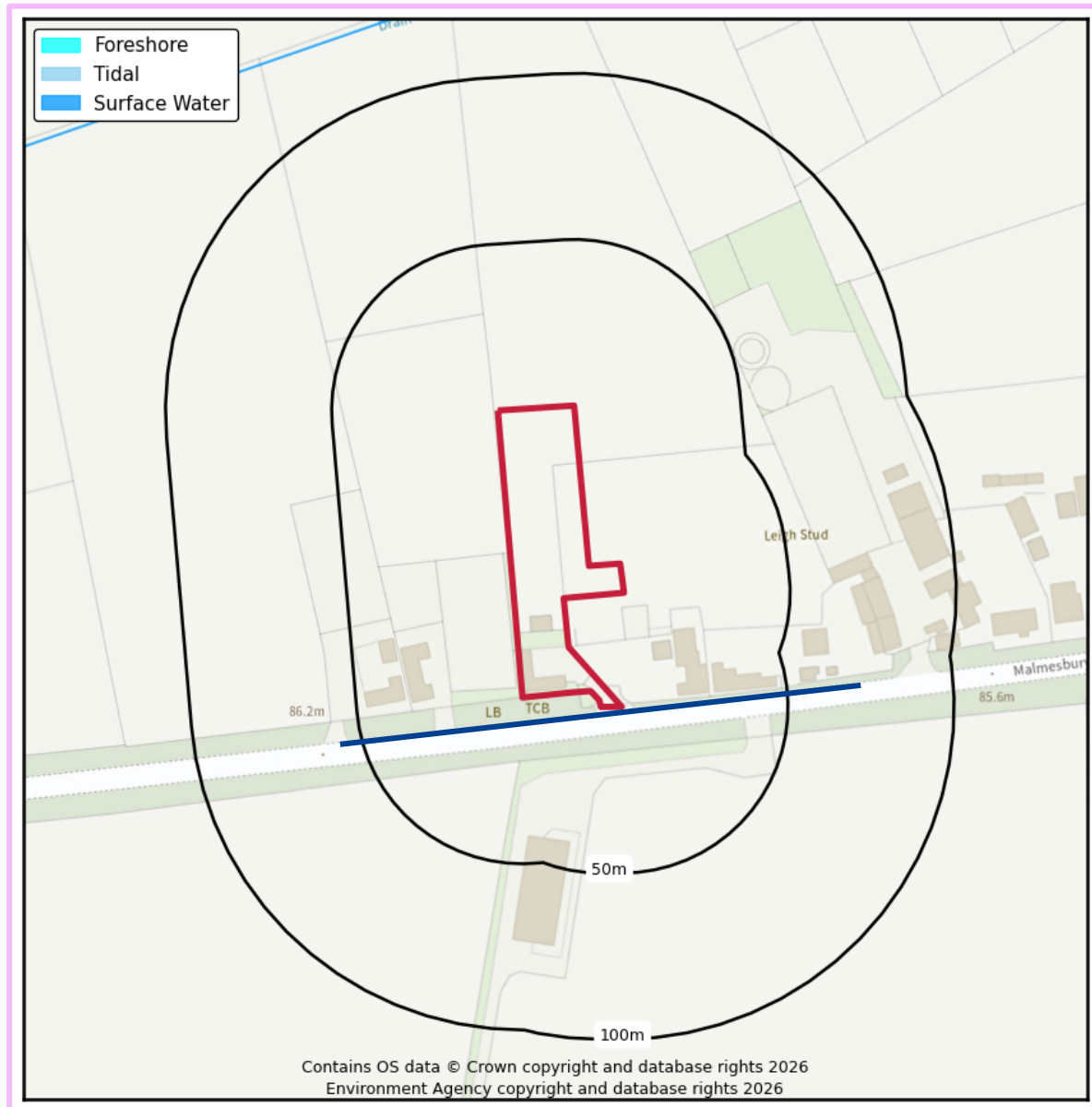


According to DEFRA's Magic Map, the Site lies within an outer groundwater Source Protection Zone (SPZ II). The mapping also confirms that the Site is not within 250m of a SSSI or SPA.

If further analysis is required, this would involve a review of Site specific contaminated land data. If hazards are identified, it is recommended that the Local Authority and the Environment Agency are contacted to confirm the susceptibility of any SPZs within the wider area.

Surface water features

Figure 6. Surface water features map (EA, 2026)



Ordnance Survey (OS) mapping indicates that there are no surface water features within 100 m of the Site. However, according to information provided by the Client, surface water runoff from the existing development currently discharges to a ditch located on the edge of the highway to the south of the Site.

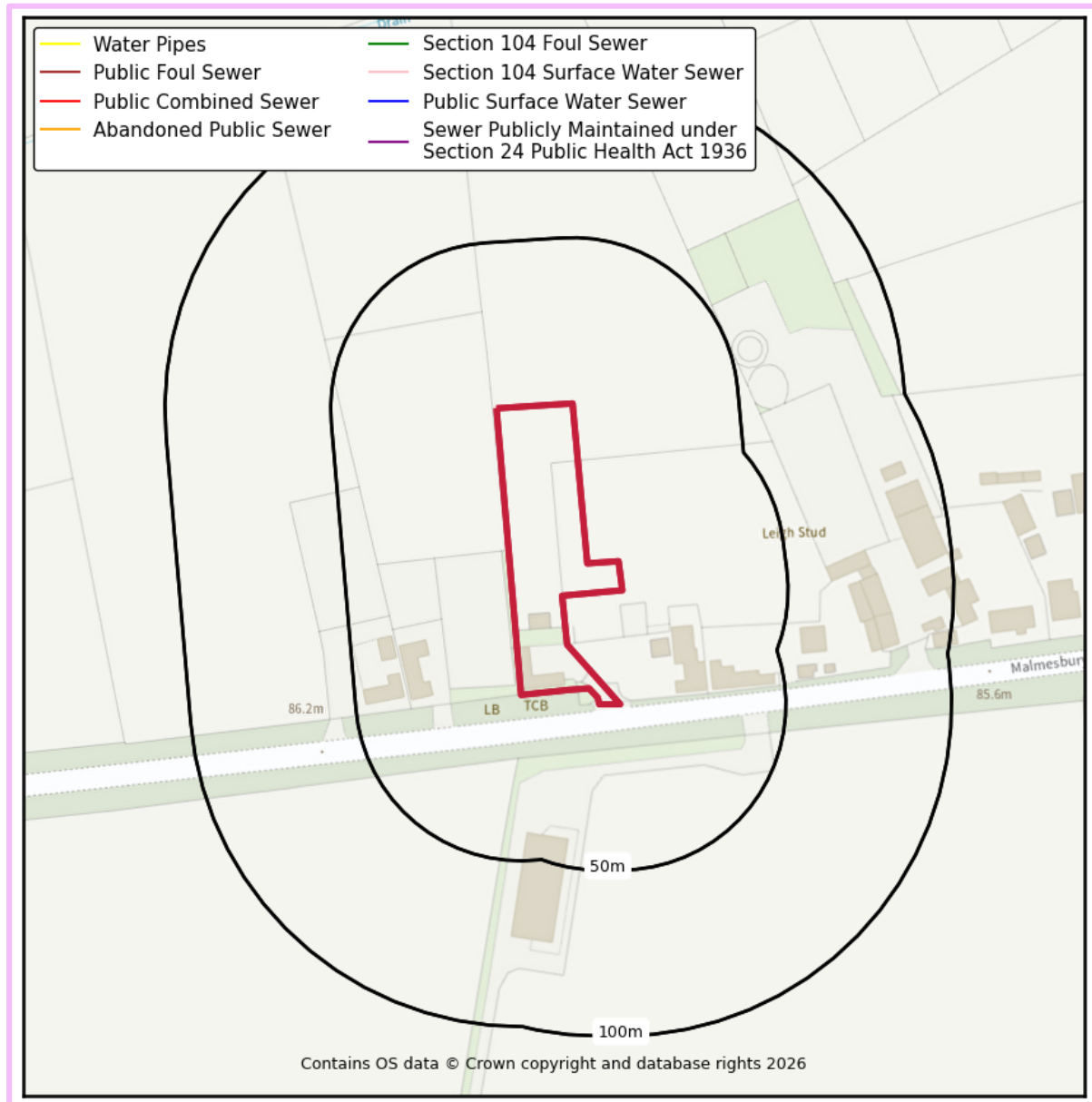
The feature is located adjacent to the Site boundary; therefore, it should be considered as a potential discharge destination.

Further discussions should be held with the regulators to agree a suitable discharge route and any easements required.

Further analysis could be undertaken by visiting the Site or by contacting the Local Council and the Environment Agency (EA) to confirm the presence, location and condition of any mapped or potentially unmapped surface water features.

Sewer features

Figure 7. Sewer features map (OS & Thames Water, 2026)

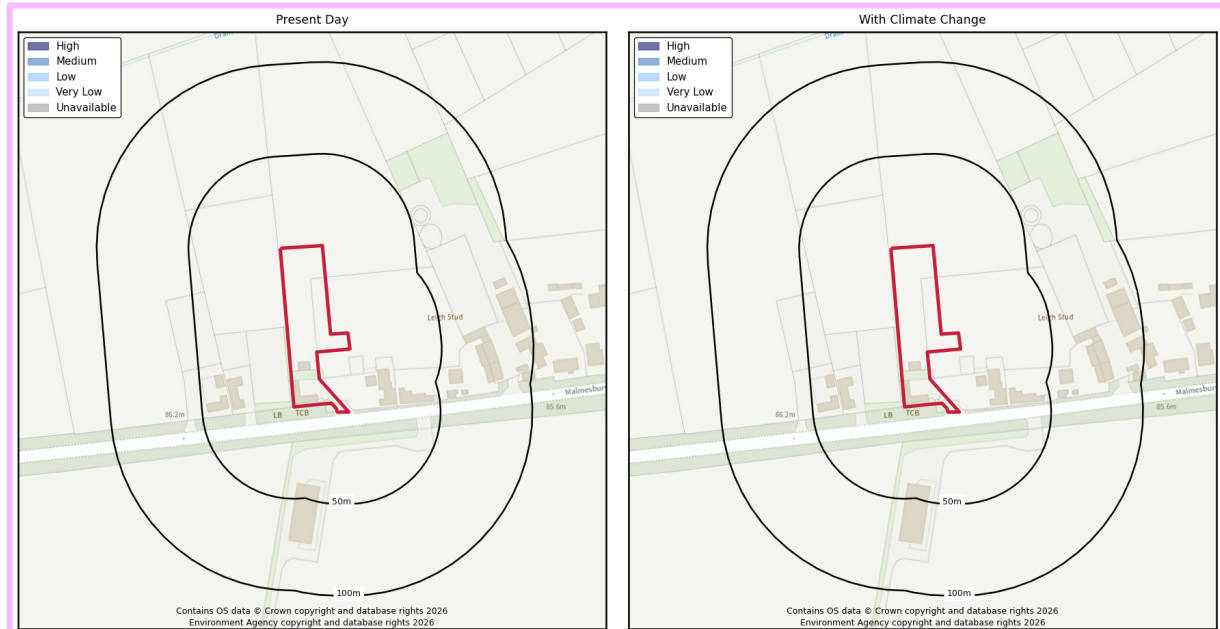


According to the Thames Water asset location plan obtained for the Site (Appendix C), there are no public surface water sewer or combined sewers located within the vicinity of the Site.

Further analysis of the connections and condition of the public surface water drainage system should be undertaken by carrying out a CCTV survey or by contacting the drainage provider or the Local Council to confirm the presence, location and condition of the sewer. Consultation with the drainage provider would also be required to determine that sufficient capacity is available to accept the proposed discharge, and to gain permission to connect if required.

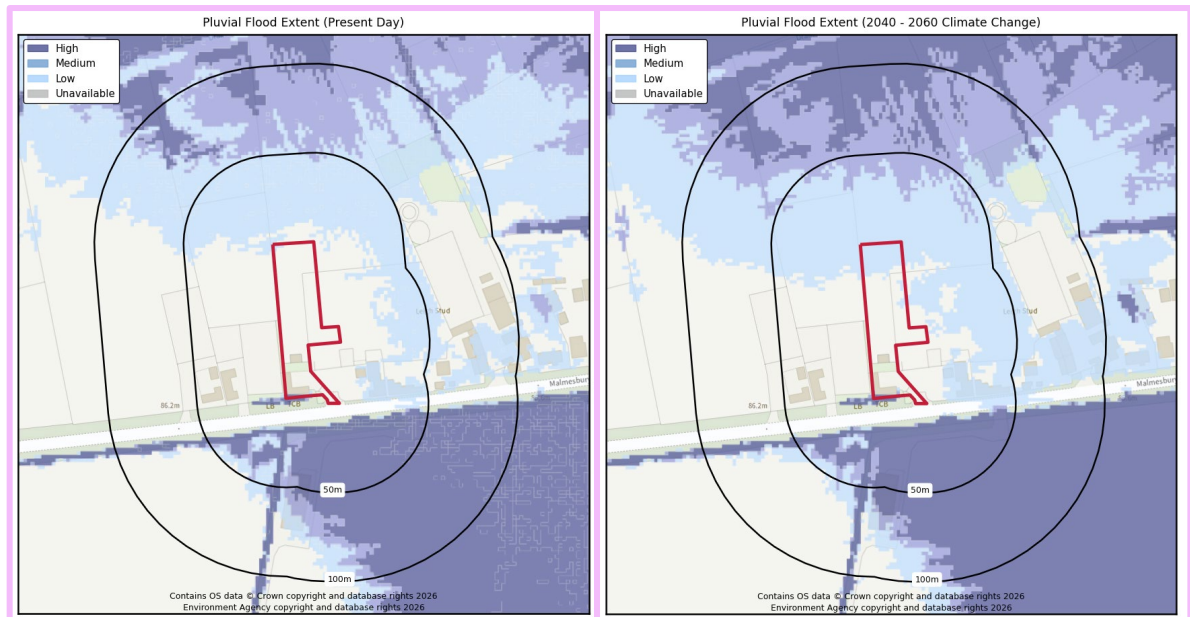
Flood risk

Figure 8. Risk of flooding from rivers & sea map (EA, 2026)



According to the EA's Risk of Flooding from Rivers and the Sea (RoFRS) map, the Site has a Very Low risk of flooding from fluvial or coastal flooding during both the present day and climate change (2036 to 2069) scenarios, with less than 0.1% annual probability of flooding. Therefore, the SuDS design is unlikely to be affected.

Figure 9. Risk of surface water flooding map (EA, 2026)

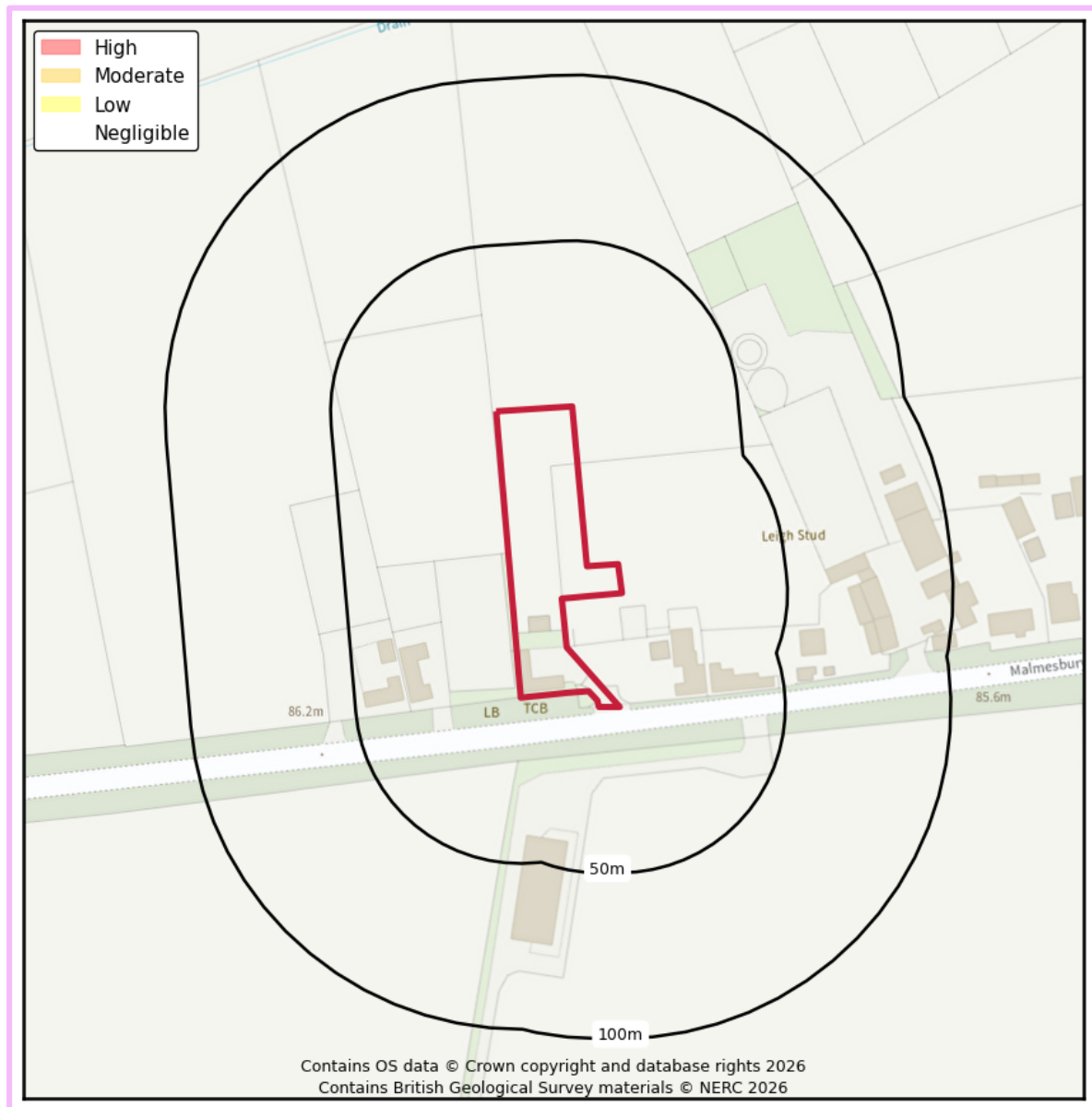


The EA's Risk of Flooding from Surface Water (RoFSW) mapping confirms the Site is considered to be at Very Low to High risk of surface water flooding during both the present day and climate change (2050s) scenarios. It is noted, however, that only a modest area along the southern site boundary is at High risk of pluvial flooding.

The above map shows the extent of flooding during the >3.3% annual probability (AEP) (1 in 30 year – High risk), 3.3 – 1% AEP (1 in 100 year – Medium risk) and 1 – 0.1% AEP (1 in 1000 year – Low risk) events. This confirms there are areas where flooding could occur in the 1 in 30 year, 1 in 100 year and 1 in 1000 year events during the present day and climate change scenarios. Flooding in these areas may constrain certain types of SuDS features being used.

Further analysis could be undertaken by contacting the Local Council and the Environment Agency to confirm the pluvial flood risk, flood depths and velocities where applicable.

Figure 10. Groundwater flood risk (GW5) map (GeoSmart, 2026)



GeoSmart's Groundwater Flood Risk Screening (GW5) map confirms the Site has a Negligible risk of groundwater flooding during a 1% annual probability (1 in 100 year) event.

5. Site context

Site information

The purpose of this report is to assess the potential for disposing of surface water through a Sustainable Drainage System (SuDS) for the site of 46 Malmesbury Road, Leigh, Swindon, SN6 6RH ('the Site'). The Site is located within a setting of predominantly rural / agricultural land use.

Development

The Site is currently used within an agricultural capacity. At present there is a single building and stables in the south of the Site, with associated access. The remainder of the Site is comprised of softstanding.

Development proposals comprise the construction of a new agricultural building in the centre of the Site along with proposed hardstanding, a new menage in the north of the Site along with a new stable in the south and the repositioning of the existing building. Site plans and drawings are provided in Appendix A.

Geology, permeability, and thickness

British Geological Survey (BGS) national superficial and bedrock geology mapping confirms the geological formations underlying the Site; each formation may have a range of permeabilities.

Table 4. Site Geology

Geology present on-Site		Likely to be permeable?
Superficial geology (Figure 11)	No underlying superficial geology	X
Bedrock geology (Figure 12)	Oxford Clay Formation (OXC) – mudstone	X

According to a review of the BGS borehole database (BGS, 2026), the nearest available borehole record mapped within the same geological strata as the Site (ref: SU09SW34) is located c. 385 m to the west at an elevation of 87.95 mAOD (estimated using LiDAR).

It should be noted that the borehole was drilled a reasonable distance (>250 m) from the Site and therefore is unlikely to be fully representative of the underlying Site conditions; however, it has been included for completion in the absence of more relevant data.

A summary of the geological strata encountered by the borehole is provided within the table overleaf:

Table 5. Summary of BGS borehole information

Strata encountered	BGS borehole SU09SW34	
	Depth to base of stratum (m bgl)	Strata composition
Oxford Clay Formation	3.05	Brown clay
	19.81	Blue clay
	>24.38 (base of borehole)	Shale

Figure 11. Superficial Geology (BGS, 2026)

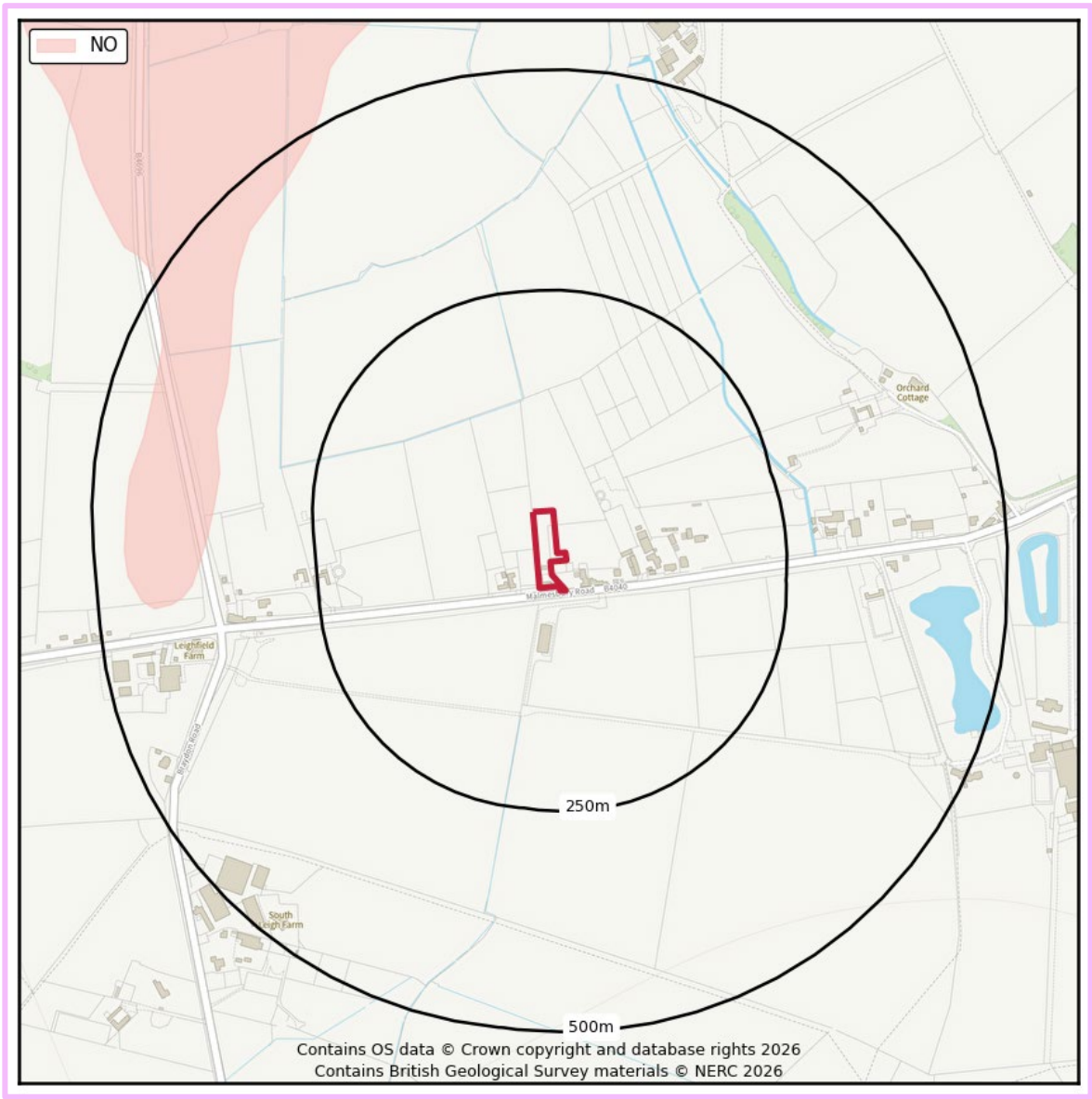
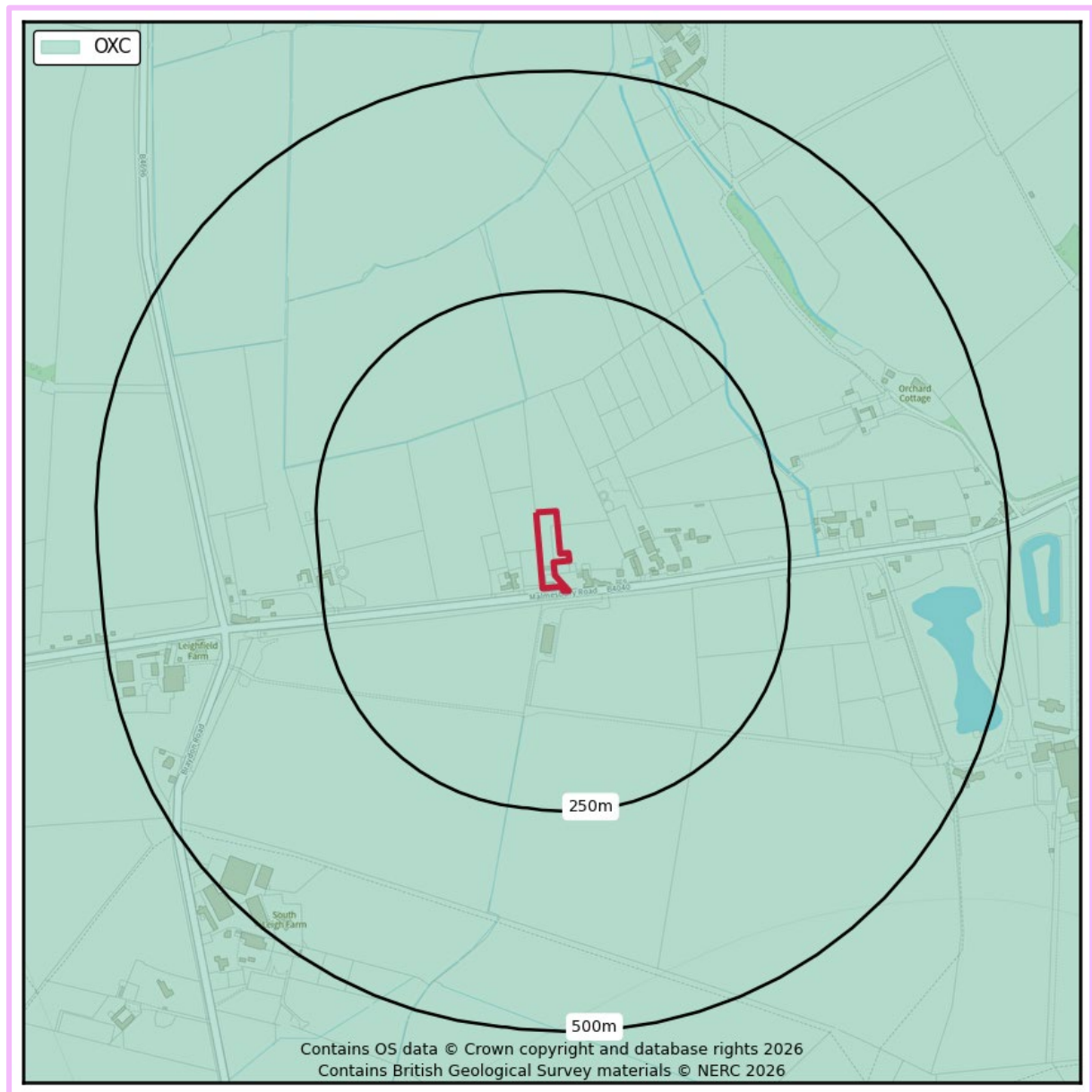


Figure 12. Bedrock Geology (BGS, 2026)



Depth to groundwater

The SuDS system should be designed to operate in periods of extreme groundwater levels.

Borehole ref: SU09SW34 did not encounter groundwater to its maximum depth of 24.38 m bgl on an unknown date, subject to seasonal variations.

Ground conditions

Infiltration SuDS features are not proposed at the Site; therefore, a detailed investigation into the ground conditions is not required.

Water quality

The Site lies within an SPZ, however infiltration features are not proposed; therefore, for the purposes of the sustainable drainage assessment further consideration of the historical land uses (and any associated contamination risks) is not considered necessary.

6. Runoff destination

National Standard 1: runoff destinations

Options for the destination for the runoff generated on-Site have been assessed in line with the prioritisation set out in DEFRA's national standards for sustainable drainage systems (2025).

Priority 1: Collection for non-potable use

An assessment of the potential for rainwater collection and re-use across the proposed development has been undertaken, which confirms that there is the potential for the provision of rainwater harvesting measures at the Site. Captured water could be used to water vegetation in order to provide additional amenity and biodiversity benefits.

Priority 2: Discharge to ground

According to GeoSmart's SD50 screening data, the Site has Low potential for infiltration. Based on the available hydrogeological information (Section 5) the permeability of the underlying strata is unlikely to be sufficient to accommodate focused infiltration SuDS features.

Infiltration SuDS are not proposed for the Site due to the identified low permeability of the underlying geology.

Priority 3: Discharge to above ground surface water body

Ordnance Survey (OS) mapping indicates that there are no surface water features within 100 m of the Site. However, according to information provided by the Client, surface water runoff from the existing development currently discharges to a ditch located on the edge of the highway to the south of the Site.

Access would need to be arranged, and the outfall would be subject to river level and flood conditions. A flow control device would be required to limit peak discharge rates to the maximum selected rate as indicated in Section 7, along with the appropriate attenuation storage volume.

Priority 4 and 5: Discharge to surface water or combined sewer

According to the Thames Water asset location plan obtained for the Site (Appendix C), there are no public surface water or combined sewers within the vicinity of the Site.

Due to the significant distance to the nearest public sewer, discharge of runoff to surface water sewer is not considered to be feasible for the Site and is not proposed.

7. Storage, volume and peak flow rate

Urban creep

According to Paragraph 3.3 of the DEFRA National standards for SuDS, urban creep should be taken into account as part of the SuDS design. Urban creep accounts for the potential for impermeable areas to increase over the lifespan of a development, such as extensions to proposed building footprints and increases in patio areas.

As the development proposals comprise the erection of new agricultural buildings (including hardstanding) with no permeable spaces, no Urban Creep uplift factor is required to be applied to the impermeable surface area and as such the standard proposed impermeable area has been utilised within the calculations.

Surface water runoff

An increase in impermeable areas on-Site will result in greater rainfall runoff. A reduction in runoff will help mitigate flood risk both on and off-Site.

Table 6. Change in impermeable area associated with the development

Total Site area	1951 m ²
Impermeable area (and as a percentage of the total area of the proposed development footprint of 1951 m ²)	
Pre-development	Post-development
285 m ² (15%)	1951 m ² (100%)
Impermeable land use: existing building, hardstanding and stables Permeable land use: landscaped areas	New impermeable land use: new menage, proposed hardstanding*, barn, stable as well as existing hardstanding and relocated building New permeable land use: n/a

*Please note, while these areas will be utilised for SuDS, for the calculations these areas will be classed as impermeable in order to assess the potential run-off volumes and rates for the Site post- development and the potential holding capability of the proposed SuDS features.

Table 7. Storage requirements for the proposed development (discharge of runoff to watercourse)

Attenuation scenario		Attenuation required (m ³)	Explanation	
Discharge runoff to watercourse	1 in 30 year	79.61	Attenuation required to ensure surface water runoff is attenuated in all storm events up to and including the 1 in 30 year (8 hour, Critical Storm Duration) event*. Flooding of the Site of 32.94 m³ should be contained within permeable landscaped areas within the Site to ensure no flooding of internal areas during the 1 in 100 year storm event.	A further 63.57 m³ should be managed within overland flow routes to ensure there is no increase in flood risk in all events up to the 1 in 100 year including 40% allowance for climate change.
	1 in 100 year	112.55	Attenuation required to ensure surface water runoff is attenuated in all storm events up to and including the 1 in 100 year (10 hour, Critical Storm Duration) event*.	
	1 in 100 year including 40% CC	176.12	Attenuation required to ensure surface water runoff is attenuated in all storm events up to and including the 1 in 100 year (16 hour, Critical Storm Duration) event including a 40% allowance for climate change*.	

*See Appendix B for associated runoff and discharge calculations. Subject to discharge rates being limited to 1 l/s (as close to the equivalent Greenfield 1 in 100 year rate as possible, without increasing the potential for blockages).

Peak discharge rates

The peak discharge rate is the maximum flow rate at which surface water runoff leaves the Site during a particular storm event, without considering the impact of any mitigation such as storage, infiltration or flow control. Proposed discharge rates (with mitigation) should be no greater than existing rates for all corresponding storm events. If all runoff is disposed of via infiltration, there will be no discharge off-Site.

The table below presents peak discharge rates for a range of storm events used to assess the impact of the proposed development and select the maximum permitted discharge rate.

Table 8. Peak discharge rates associated with the development

Rainfall event	Greenfield runoff rates (l/s)	Existing runoff rates ¹ (l/s)	Potential runoff rates without attenuation (l/s)	Potential minus existing (l/s)
QBAR	0.38	N/A	N/A	N/A

Rainfall event	Greenfield runoff rates (l/s)	Existing runoff rates¹ (l/s)	Potential runoff rates without attenuation (l/s)	Potential minus existing (l/s)
6 hour 1 in 1 year	0.32	0.88	2.18	1.30
6 hour 1 in 10 year	0.62	1.43	3.48	2.05
6 hour 1 in 30 year	0.85	1.87	4.64	2.78
6 hour 1 in 100 year	1.21	2.40	5.98	3.57
6 hour 1 in 100 year + 20% CC	N/A	N/A	7.17	4.77
6 hour 1 in 100 year + 40% CC	N/A	N/A	8.37	5.96

1 Assumes 100% runoff from impermeable surfaces. Assumes Greenfield runoff from permeable surfaces calculated using the loH124 method.

Relevant national, regional and local planning policy has been consulted in Section 3 to determine restrictions on runoff from previously developed and greenfield sites. In some cases, greenfield rates may be requested, but in practice it is difficult to restrict discharge rates at any one control point to less than 1 l/s, without increasing the risk of any potential blockages occurring in the drainage network.

Total discharge volumes

The table below presents discharge volumes for a range of storm events used to assess the impact of the proposed development and calculate the required storage volumes.

Table 9. Total discharge volumes associated with the development

Rainfall event	Greenfield runoff volume (m ³)	Existing runoff volume ² (m ³)	Potential runoff volume without attenuation (m ³)	Potential minus existing (m ³)
QBAR	14.99	N/A	N/A	N/A
6 hour 1 in 1 year	14.10	18.91	47.01	28.10
6 hour 1 in 10 year	23.40	30.97	75.21	44.24
6 hour 1 in 30 year	30.09	40.35	100.31	59.96
6 hour 1 in 100 year	38.73	51.92	129.08	77.16
6 hour 1 in 100 year + 20% CC	N/A	N/A	154.90	102.98
6 hour 1 in 100 year + 40% CC	N/A	N/A	180.72	128.80

² Assumes 100% runoff from impermeable surfaces. Assumes Greenfield runoff from permeable surfaces, as calculated using the loH124 method.

Critical storm duration and volume requirements

Storage volumes for a range of return periods including the 1 in 30 year, 1 in 100 year and 1 in 100 year plus climate change (40%) events have been calculated to assess the impact of the proposed development. The required storage volumes for attenuation features have been calculated for the critical storm durations, limited to a maximum discharge rate of 1 l/s (as close to the equivalent Greenfield 1 in 100 year rate as possible, without increasing the potential for blockages).

Table 10. Critical Storm Duration and Attenuation volume requirements

Return Period	Runoff rate restriction (l/s)	Critical Storm Duration (hr)	Attenuation volume required (m ³)
1 in 30 year	1	8	79.61
1 in 100 year	1	10	112.55
1 in 100 year including a 40% climate change	1	16	176.12

8. Water quality

A key requirement of any SuDS system is that it protects the receiving water body from the risk of pollution. This can be effectively managed by an appropriate “train” or sequence of SuDS components that are connected in series. The frequent and short duration rainfall events are those that are most loaded with potential contaminants (silts, fines, heavy metals and various organic and inorganic contaminants). Therefore, the first 5-10 mm of rainfall (first flush) should be adequately treated with SuDS.

The minimum number of treatment stages will depend on the sensitivity of the receiving water body and the potential hazard associated with the proposed development SuDS Manual (CIRIA, 2015). The proposed development is Low hazard (runoff from other roofs, car parking and road). The Site lies within an SPZ and therefore additional treatment stages may be required.

Table 11. Pollution hazard indices for different land use classifications

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydro-carbons
Residential roofs	Very Low	0.2	0.2	0.05
Other roofs (typically commercial/industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads and non-residential car parking within infrequent change (i.e. less than 300 traffic movements/day)	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (e.g. hospitals, retail), all roads except low traffic roads and trunk roads/motorways	Medium	0.7	0.6	0.7
Sites with heavy pollution (e.g. haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, storage, used or manufactured: industrial sites; trunk roads and motorways	High	0.8	0.8	0.9

Table 12. Indicative SuDS mitigation indices for discharges to surface waters

Type of SuDS component	Mitigation indices		
	TSS	Metals	Hydrocarbons
Filter strip	0.4	0.4	0.5
Filter drain	0.4	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond	0.7	0.7	0.5
Wetland	0.8	0.8	0.8
Proprietary treatment systems	These must demonstrate that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area		

As indicated within Tables 11 and 12, the proposed permeable paving would provide sufficient mitigation indices to treat the Low pollution hazard associated with the Site use.

9. Proposed SuDS strategy

Sustainable drainage systems

DEFRA's national standards for SuDS require the below ground drainage systems to have the capacity to accommodate at least the 1 in 30 year event and to manage the 1 in 100 year event without flooding of on-site buildings and substations. All runoff should be managed on-Site though for the 1 in 100 year event, accounting for the maximum impacts of climate change to ensure flood risk is not increased to third-parties.

A surface water drainage strategy (summarised in Section 2 of this report) includes the following SuDS features to intercept, attenuate and treat surface water runoff.

SuDS Strategy:

Infiltration to ground is not achievable at the Site. Therefore, surface water runoff will be managed within SuDS features and discharged to the water feature identified.

Table 13. Proposed SuDS type, features, discharge location and rate restriction

SuDS type	Source control (interception) and attenuation SuDS.
SuDS features	Permeable paving.
Discharge location	Surface water feature.
Discharge rate	1 l/s*.

*As close to the Greenfield 1 in 100 year rate as possible, without increasing the risk of blockage.

Table 14. Proposed SuDS sizing (dimensions) and attenuation volumes

Permeable surfacing	A 913 m ² area of lined permeable surfacing (paving and menage) (underlain with a Type 3 aggregate material with a 30% porosity) to a depth of 0.65 m would provide c. 178.04 m ³ of attenuation.
Total attenuation provided	178.04 m³
Total attenuation required	176.12 m³
Freeboard storage provided	1.92 m³

Permeable surfacing

Lined permeable surfacing is proposed for all hardstanding areas and underneath the menage to intercept runoff. Suitable aggregate materials (angular gravels with suitable grading as per CIRIA, 2015) will improve water quality due to their filtration capacity and usually work to a 30% porosity. Surfacing could also implement an impermeable liner close to the building or create a separate compartment within the permeable sub-base close to the building to further divert attenuated water away from building foundations.

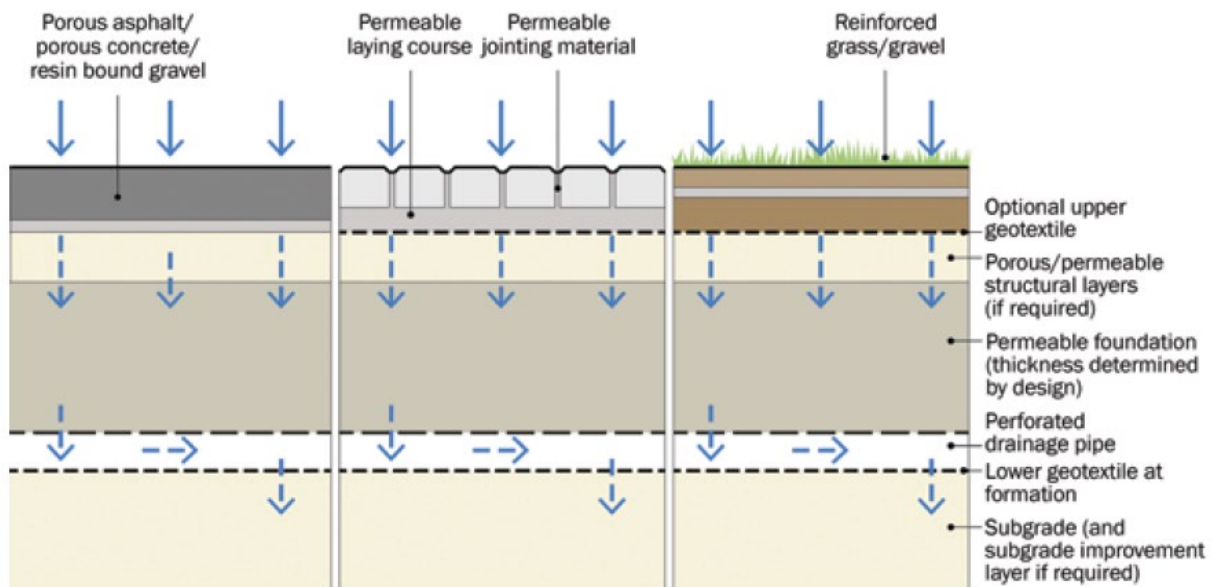


Figure 20.13 of the CIRIA SuDS Manual (C753) (2015)

Flow control devices and systems

Hydrobrake Flow control systems can be used to reduce the runoff rate from the Site. These are usually a device used for controlling water flow into a connecting feature, such as a sewer, to a specific attenuation performance. The design consists of an intake, a volute and an outlet and the configuration is critical to ensure discharge control. For drainage areas which are less than 3 ha, outlet throttle diameters would have to be small (<150mm diameter) to achieve outflow rates which could result in blockage. For most SuDS features, a flow control device will comprise a fixed orifice or a throttle such as a short pipe.

Drainage protection devices

A non-return flap valve is recommended for outflow pipes to reduce the risk of backflow from the channel during a large scale rainfall event.

Exceedance flows

Exceedance flow routes are included within the proposed SuDS drainage layout. Where possible, exceedance flows should be directed into non-essential areas of the Site such as the hardstanding. The SuDS system recommended for the Site should provide enough storage that this method would only be utilised during a worst-case scenario.

10. SuDS maintenance

Regular maintenance is essential to ensure effective operation of the SuDS features over the intended lifespan of the proposed development. The SuDS Manual (C753) (CIRIA, 2015) provides a maintenance schedule for SuDS with details of the necessary required actions as shown in the Table below.

Table 15. SuDS operation and recommended maintenance requirements

Asset type	Maintenance schedule (and frequency)
Permeable pavements	Regular maintenance: - Brushing and vacuuming (three times per year). - Trimming any roots and surrounding grass and weeds that may be causing blockages (annually or as required). Monitoring: - Initial inspection (monthly). - Inspect for poor performance and inspection chambers (annually).
Hydro-Brake Flow Control	Low amounts of maintenance required as there are no moving parts within the Hydro-Brake® Flow Control. Initial monthly inspection at the manhole once the construction phase is over. If blockages occur they normally do so at the intake. Hydro-Brake® Flow Controls are fitted with a pivoting by-pass door, which allows the manhole chamber to be drained down should blockages occur. Inspection should be undertaken annually or when a storm event occurs.
Underground drainage pipe network	Regular maintenance: - Remove sediment and debris from pre-treatment devices and floor of inspection tube or chamber (annually). - Cleaning of gutters and any filters on downpipes (annually). - Trimming any roots that may be causing blockages (annually or as required). Monitoring: - Inspect silt traps and note rate of sediment accumulation (monthly in the first year and then annually).

Health and safety considerations for SuDS

GeoSmart reports may include outline strategies or designs to support with development plans. Any drawings or advice provided do not comprise any form of detailed design. Implementation of any conceptual scheme options may constitute 'Construction Work' as defined by CDM Regulations (2015).

The CDM Regulations place specific Health and Safety duties on those commissioning, planning and undertaking construction works. If you are uncertain what this means you should seek the advice of your architect, builder or other competent professional.

GeoSmart does not provide health and safety advisory services but we are required to advise you of your general responsibilities under CDM (visit <http://geosmartinfo.co.uk/knowledge-hub/cdm-2015/> for more information).

Please remember that detailed design work should be undertaken by a competent professional who might be your engineer, architect, builder or another competent party.

11. Background information

GeoSmart SuDS Infiltration Suitability Map (SD50)

The GeoSmart SuDS Infiltration Suitability Map (SD50) screens the suitability for infiltration drainage in different parts of the Site and indicates where further assessment is recommended. In producing the SuDS Infiltration Suitability Map (SD50), GeoSmart used data from the British Geological Survey on groundwater levels, geology and permeability to screen for areas where infiltration SuDS may be suitable. The map classifies areas into 3 categories of High, Medium and Low suitability for infiltration SuDS. This can then be used in conjunction with additional data on Site constraints to give recommendations for SuDS design and further investigation.

The primary constraint on infiltration potential is the minimum permeability of the underlying material and in some cases the range in permeability may be considerable, ranging down to low. The map classifies these areas as moderate infiltration suitability requiring further investigation. In cases where the thickness of the receiving permeable horizon is less than 1.5 meters then additional Site investigation is recommended. If the Site is at risk of groundwater flooding for up to the 1% annual occurrence the map classifies these areas as moderate infiltration suitability requiring further investigation.

The GeoSmart SuDS Infiltration Suitability Map (SD50) is a national screening tool for infiltration SuDS techniques but a Site specific assessment should be used before final detailed design is undertaken. Further information on the GeoSmart SuDS Infiltration Suitability Map (SD50) is available at geosmartinfo.co.uk.

How was surface water runoff estimated from the Site?

In accordance with the SuDS Manual (C753) (CIRIA, 2015), the Greenfield runoff from the Site has been calculated using the IoH124 method and is assumed representative of the runoff generated on the undeveloped surfaces that are affected by the proposed development. The method used for calculating the runoff complies with the NPPF (2024). For the impermeable surfaces, it has been assumed that 100% runoff will occur (calculations provided in Appendix B). Rainfall data is derived from the Flood Estimation Handbook (FEH), developed by NERC (2009). Only areas affected by the proposed development are considered in the flow and volume calculations. Permeable areas that remain unchanged are not included in the calculations as it is assumed these will not be actively drained and attenuated.

What is the peak discharge rate?

An estimation of peak runoff flow rate and volume is required to calculate infiltration, storage and discharge requirements. The peak discharge rate is the maximum flow rate at which surface water runoff leaves the Site during a particular storm event, without considering the impact of any mitigation such as storage, infiltration or flow control. Proposed discharge rates (with mitigation) should be no greater than existing rates for all corresponding storm events. If all runoff will be disposed of via infiltration there will be no discharge off-Site. Discharging all flow from Site at the existing 1 in 100 event would increase flood risk during smaller events. Flow restriction is generally required to limit the final discharge from Site during all events as a basic minimum to the green field QBAR rate. A more complex flow restriction which varies the final discharge rate from the Site depending on the storm event will reduce the volume of storage required on-Site. Drainage to infiltration SuDS is subtracted from the total discharge off-Site to achieve a beneficial net effect.

What is the total discharge volume?

The total discharge volume is calculated on the basis of the surface water runoff that has the potential to leave the Site as a result of the assumed 6 hour duration design storm event. The runoff is related to the underlying soil conditions, impermeable cover, rainfall intensity and duration of the storm event. The total volume generated by the current Site is compared to the potential total volume from the developed Site (not taking into consideration any mitigation). The difference provides the minimum total volume that will need to be stored and infiltrated on-Site or released at a controlled rate. Guidance indicates that the total discharge volume should never exceed the runoff volume from the development Site prior to redevelopment for that event and should be as close as is reasonably practicable to the Greenfield runoff volume.

12. Additional Products

The following table includes a list of additional products by GeoSmart:

Additional GeoSmart Products		
✓	Additional assessment: 	The FloodSmart Report range provides clear and pragmatic advice regarding the nature and potential significance of flood hazards which may be present at a Site. Our consultants assess available data to determine the level of risk based on professional judgement and years of experience. Please contact info@geosmartinfo.co.uk for further information.
✓	Additional assessment: 	Provides a robust desk-based assessment of potential contaminated land issues, taking into account the regulatory perspective. Our EnviroSmart reports are designed to be the most cost effective solution for planning conditions. Each report is individually prepared by a highly experienced consultant conversant with Local Authority requirements. Ideal for pre-planning or for addressing planning conditions for small developments. Can also be used for land transactions. Please contact info@geosmartinfo.co.uk for further information.

13. References and glossary

British Geological Survey [BGS] (2026). GeoIndex Onshore. Accessed from: <https://www.bgs.ac.uk/map-viewers/geoindex-onshore/> on 02/04/26.

Building Research Establishment [BRE] (2016). Digest 365, Soakaway design.

CEH (2026). Online FEH web service Depth/duration/frequency modelling using the FEH 2022 model. Accessed from: <https://fehweb.ceh.ac.uk/> on 02/04/26.

CIRIA (2015). The SuDS manual (C753).

Department for Environment, Food and Rural Affairs [DEFRA] (2025). National standards for sustainable drainage systems (SuDS).

Environment Agency [EA] (2026). MagicMap. Accessed from: <https://magic.defra.gov.uk/MagicMap.html> on 02/04/26.

GeoSmart (2026). GeoSmart GW5 Version 2.4.

HM Government (2010). The building regulations 2010 Part H drainage and waste disposal (2015 edition).

JBA Consulting (2024). Wiltshire Level 1 Strategic Flood Risk Assessment. Accessed from: <https://www.wiltshire.gov.uk/sfra> on 02/04/26.

LASOO (2015). Practice Guidance, Local Authority SuDS Officer Organisation.

Ministry of Housing, Communities & Local Government (2024). National Planning Policy Framework (NPPF).

Ministry of Housing, Communities & Local Government (2025). National Planning Policy Guidance (NPPG).

Thames Water (2026). Asset Location Plan. Ref: 2026_5308426

Glossary

General terms

Attenuation	Reduction of peak flow and increased duration of a flow event.
Combined sewer	A sewer designed to carry foul sewage and surface water in the same pipe.
Detention basin	A vegetated depression, normally is dry except after storm events, constructed to store water temporarily to attenuate flows. May allow infiltration of water to the ground.
Evapotranspiration	The process by which the Earth's surface or soil loses moisture by evaporation of water and by uptake and then transpiration from plants.
FEH	Flood Estimation Handbook, produced by Centre for Ecology and Hydrology, Wallingford (formerly the Institute of Hydrology).
Filter drain or trench	A linear drain consisting of a trench filled with a permeable material, often with a perforated pipe in the base of the trench to assist drainage, to store and conduct water, but may also be designed to permit infiltration.
First flush	The initial runoff from a site or catchment following the start of a rainfall event. As runoff travels over a catchment it will collect or dissolve pollutants, and the "first flush" portion of the flow may be the most contaminated as a result. This is especially the case for intense storms and in small or more uniform catchments. In larger or more complex catchments pollution.
Flood plain	Land adjacent to a watercourse that would be subject to repeated flooding under natural conditions (see Environment Agency's Policy and practice for the protection of flood plains for a fuller definition).
Greenfield runoff	This is the surface water runoff regime from a site before development, or the existing site conditions for brownfield redevelopment sites.
Impermeable surface	An artificial non-porous surface that generates a surface water runoff after rainfall.
Permeability	A measure of the ease with which a fluid can flow through a porous medium. It depends on the physical properties of the medium, for example grain size, porosity and pore shape.
Runoff	Water flow over the ground surface to the drainage system. This occurs if the ground is impermeable, is saturated or if rainfall is particularly intense.
Sewerage undertaker	This is a collective term relating to the statutory undertaking of water companies that are responsible for sewerage and sewage disposal including surface water from roofs and yards of premises.
Soakaway	A subsurface structure into which surface water is conveyed to allow infiltration into the ground.

Source Protection Zone (SPZ) **Areas where groundwater supplies are at risk from potentially polluting activities and accidental releases of pollutants. They are a policy tool used to control activities close to water supplies intended for human consumption.**

Treatment **Improving the quality of water by physical, chemical and/or biological means.**

The terms included in this glossary have been taken from CIRIA (2015) guidance.

Data sources

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Bedrock & Superficial Geology	Contains British Geological Survey materials © NERC 2026 Ordnance Survey data © Crown copyright and database right 2026
Flood Risk (RoFRS/Pluvial/Surface Water Features/SPZ)	Environment Agency copyright and database rights 2026 Ordnance Survey data © Crown copyright and database right 2026
Flood Risk (Groundwater) and SuDS infiltration suitability (SD50)	GeoSmart, BGS & OS GW5 (v2.4) Map (GeoSmart, 2026) Contains British Geological Survey materials © NERC 2026 Ordnance Survey data © Crown copyright and database right 2026
Sewer Location	Contains Ordnance Survey data © Crown copyright and database right 2026 Contains Thames Water asset location search data 2026
Topographic Data	OS LiDAR/EA Contains Ordnance Survey data © Crown copyright and database right 2026 Environment Agency copyright and database rights 2026

14. Appendices

Appendix A

Site plans

Location Plan

SCALE :
1 : 1250

@ A4

DATE :
30/01/2026



Cherry Tree House
Client: Mr M Pockett & Miss K Hancoz

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Drain

Leigh Stud

86.2m

LB TCB

46

45

44

MALMESBURY ROAD

85.6m

Existing Block Plan

SCALE :
1 : 500 @ A4

DATE :
30/01/2026



Cherry Tree House

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Existing
Building

Existing Concrete

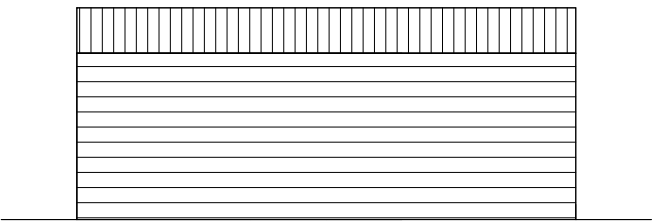
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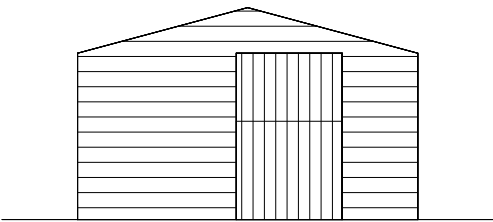
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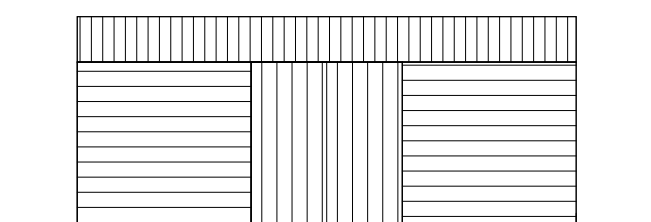
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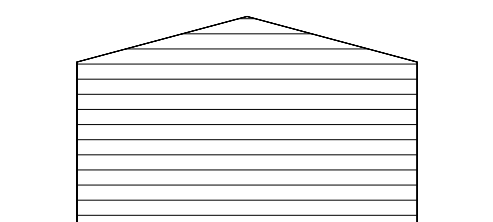
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South Elevation

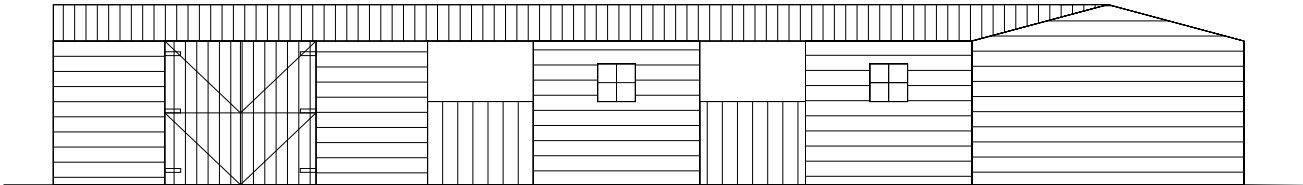


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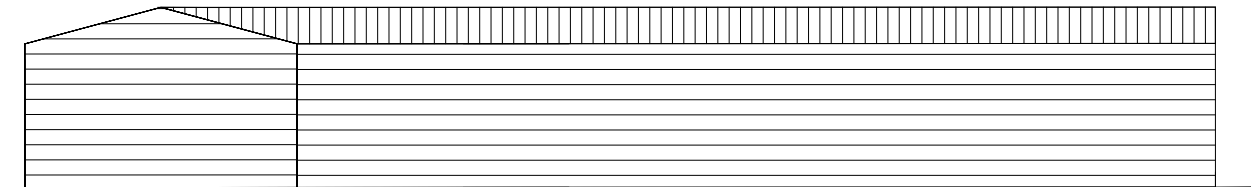


Existing Building

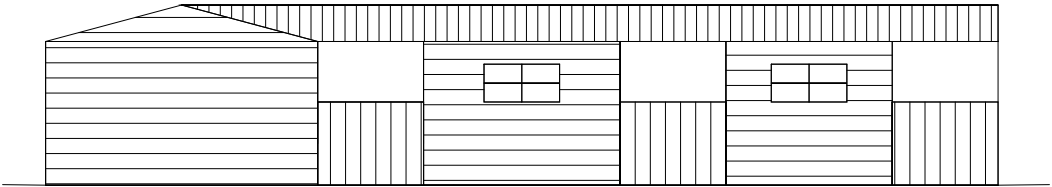
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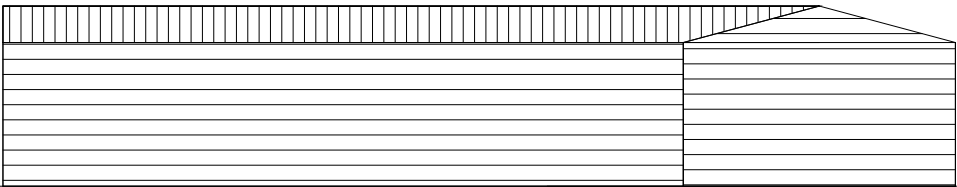
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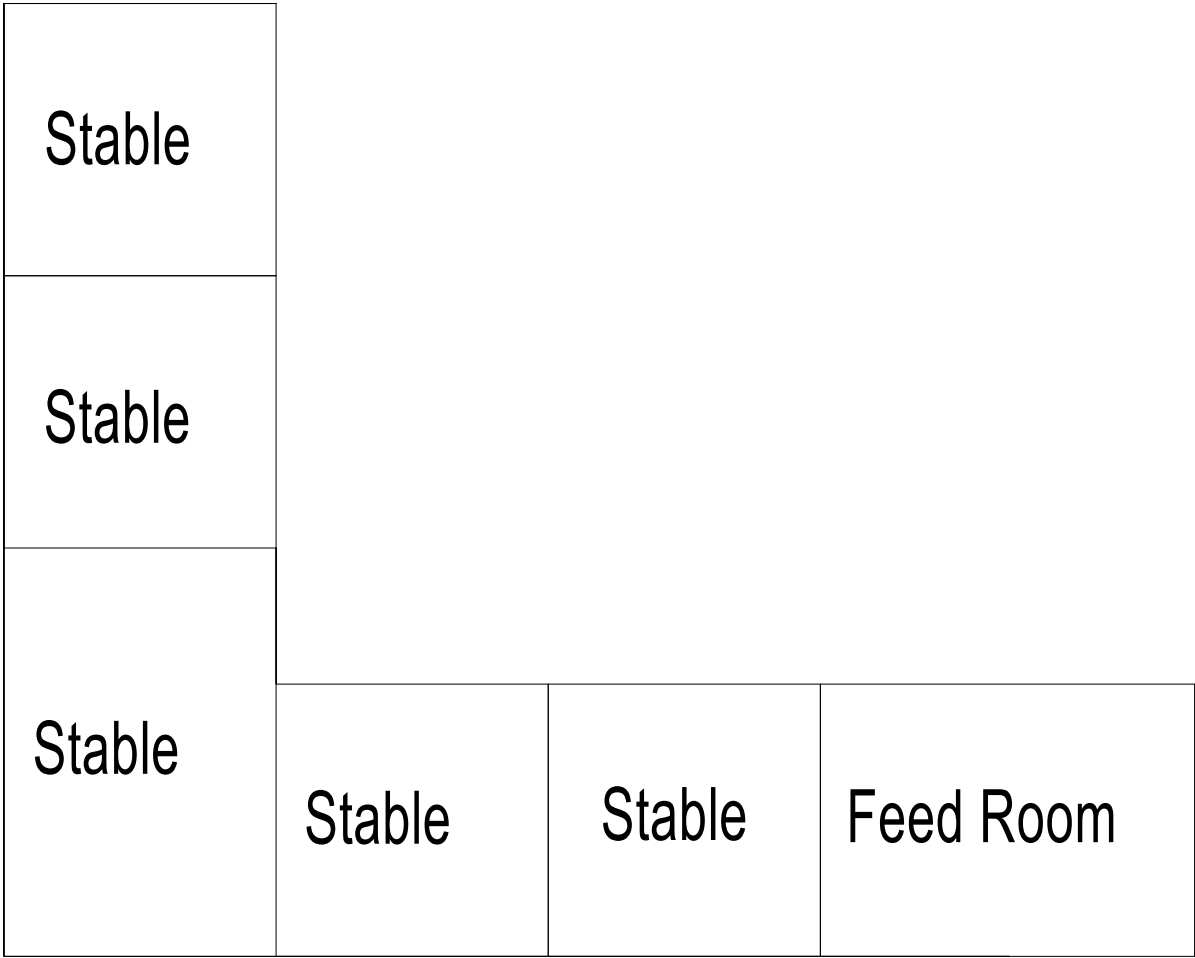
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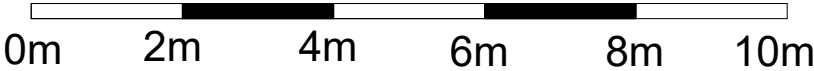
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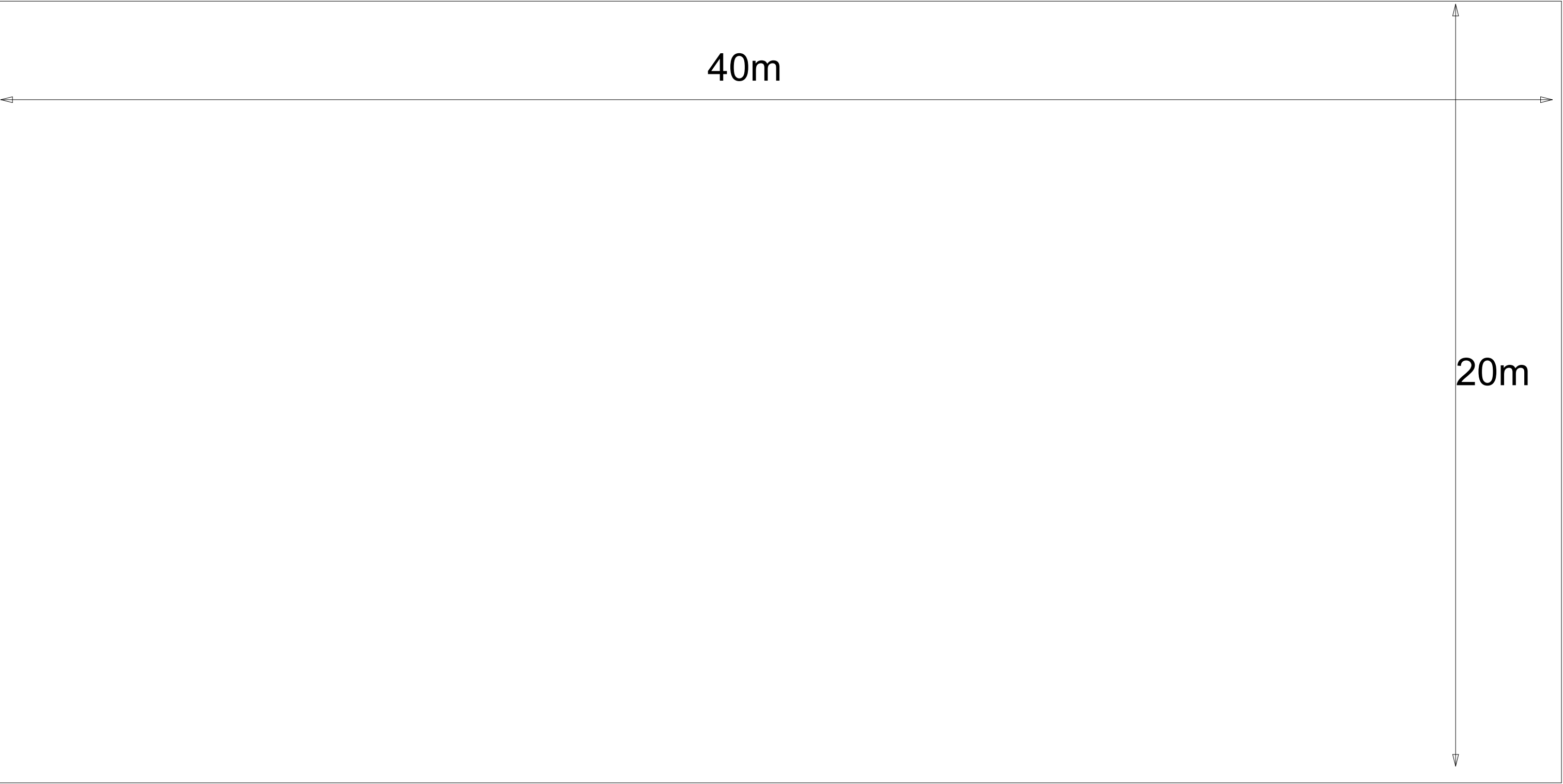
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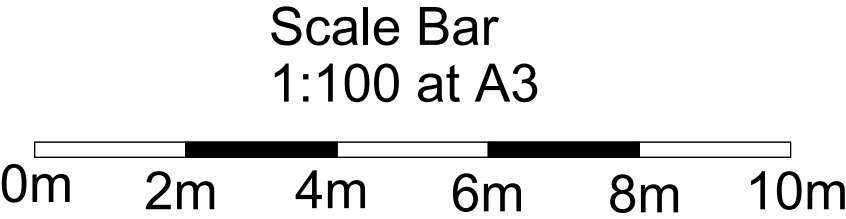
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Client: Mr M Pockett & Miss K Hancox
Site: Cherry Tree House
Date: February 2026
Scale: 1:100 at A3



← N



Title: Menage - Proposed Floor Plan
Client: Mr M Pockett & Miss K Hancox
Site: Cherry Tree House
Date: February 2026
Scale: 1:100 at A3



Proposed Block Plan

SCALE :
1 : 500 @ A4

DATE :
30/01/2026

Cherry Tree House



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New Menage

Proposed Hardstanding

New Agricultural Building

Repositioned
Existing
Building

New
Stable

Existing Concrete

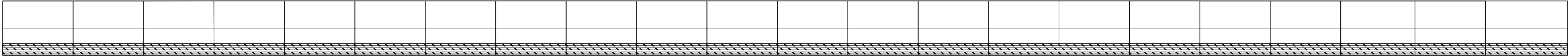
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LB TCB

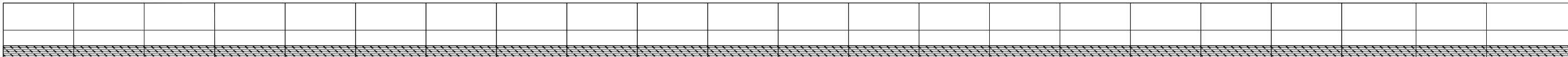
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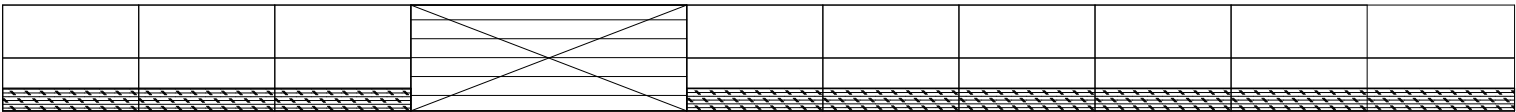
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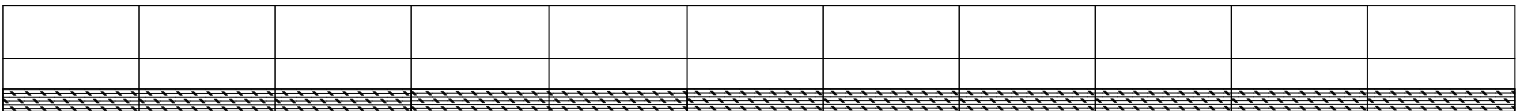
East Elevation



South Elevation



North Elevation



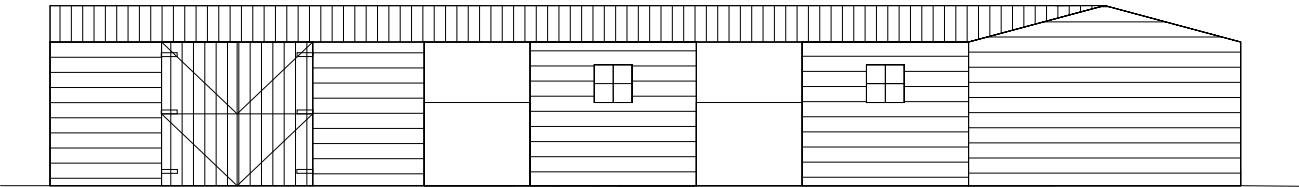
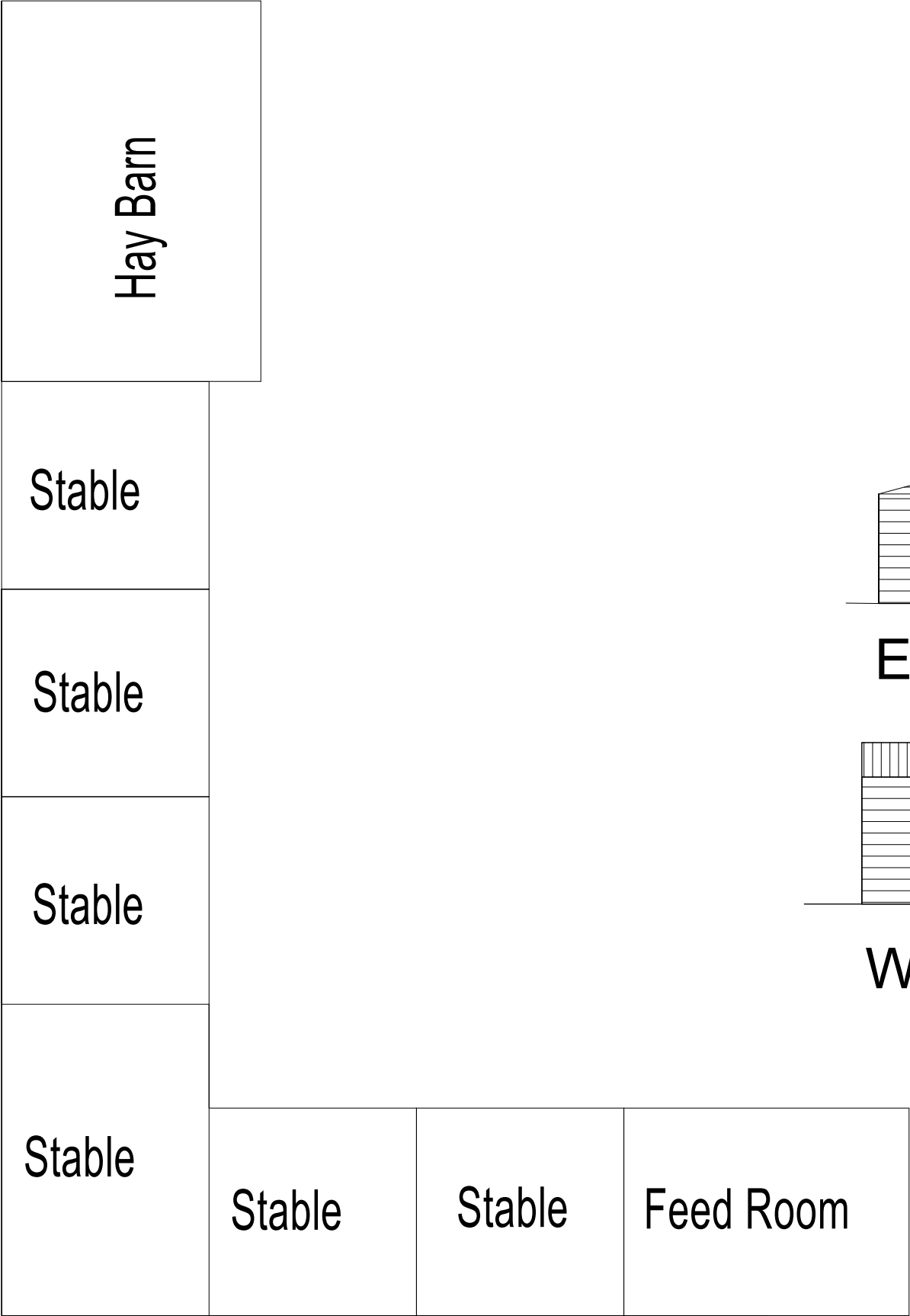
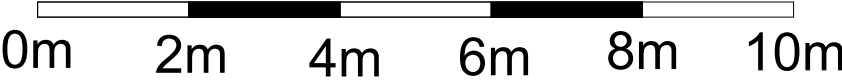
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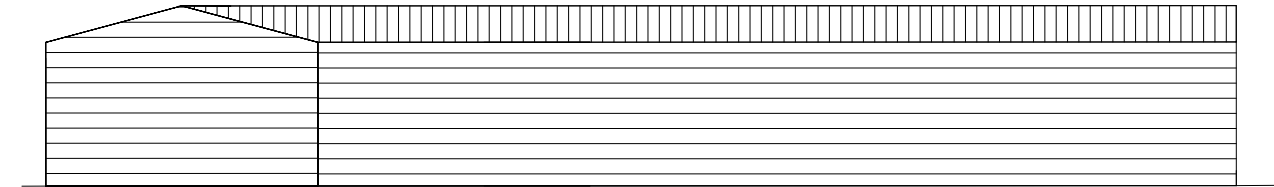
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Site: Cherry Tree House
Date: February 2026
Scale: 1:100 at A3

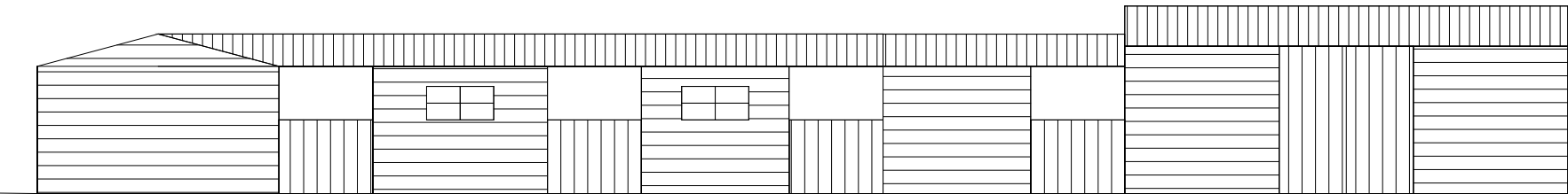
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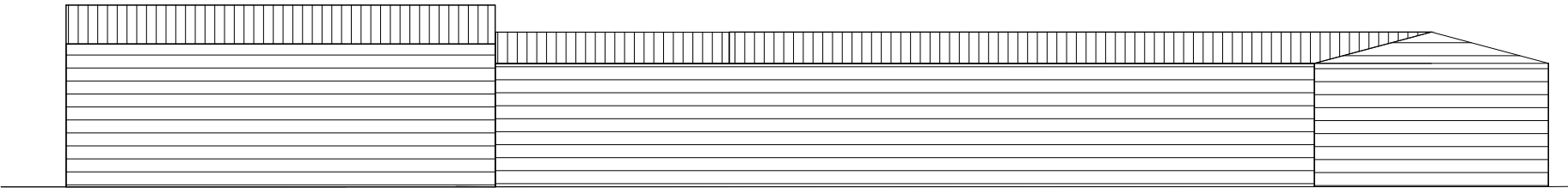
North Elevation



South Elevation



East Elevation



West Elevation

Title: Stables & Existing Building
Proposed Elevations and Floor Plan
Client: Mr M Pockett & Miss K
Hancox Site: Cherry Tree House
Date: February 2026
Scale: 1:100 at A3

Appendix B

Rainfall runoff calculations

Input parameters for run-off calculations	
Country	England
Total site area	1950.51 m^2
Area proposed for development	1950.51 m^2
Current permeable ground cover	1665.637 m^2
Current impermeable ground cover	284.873 m^2
Proposed permeable ground cover	0 m^2
Proposed impermeable ground cover	1950.51 m^2
Urban Creep Allowance	0%
Final impermeable ground cover	1950.51 m^2
SPR	0.3
SAAR	741 mm
Region	6
Climate change factor	40%
Discharge Rate (l/s)	1.0
Run-off coefficient	100%

Current impermeable area as % of total	15%
Proposed impermeable area as % of total	100%
Change in permeable area (m2)	-1666
Change in impermeable area (m2)	1666
Change in impermeable area as % of total	85%

Rainfall event	Greenfield run-off rates (l/s)	Existing run-off rates(l/s)	Potential run-off rates without attenuation (l/s)	Potential minus exisiting (l/s)
QBAR	0.38	N/A	N/A	N/A
6 hour 1 in 1 year	0.32	0.88	2.18	1.30
6 hour 1 in 10 year	0.62	1.43	3.48	2.05
6 hour 1 in 30 year	0.85	1.87	4.64	2.78
6 hour 1 in 100 year	1.21	2.40	5.98	3.57
6 hour 1 in 100 year + 20% CC	N/A	N/A	7.17	4.77
6 hour 1 in 100 year + 40% CC	N/A	N/A	8.37	5.96

Rainfall event	Greenfield run-off volume (m ³)	Existing run-off volume (m ³)	Potential run-off volume without attenuation (m ³)	Potential minus existing (m ³)
QBAR	14.99	N/A	N/A	N/A
6 hour 1 in 1 year	14.10	18.91	47.01	28.10
6 hour 1 in 10 year	23.40	30.97	75.21	44.24
6 hour 1 in 30 year	30.09	40.35	100.31	59.96
6 hour 1 in 100 year	38.73	51.92	129.08	77.16
6 hour 1 in 100 year + 20% CC	N/A	N/A	154.90	102.98
6 hour 1 in 100 year + 40% CC	N/A	N/A	180.72	128.80

Return Period	Runoff rate restriction (l/s)	Critical Storm Duration (hr)	Attenuation Volume Required (m ³)	Volume required above previous return period
1 in 30 year	1.00	8	79.61	N/A
6 hour 1 in 100 year	1.00	10	112.55	32.94
6 hour 1 in 100 year + 40% CC	1.00	16	176.12	63.57

Appendix C

Thames Water Asset Location Plan

Geosmart Information Ltd
Suite 9-111st FloorOld Bank Bu
SHREWSBURY
SY1 1HU

Search address supplied 46
Malmesbury Road
Leigh
Swindon
SN6 6RH

Your reference 90854

Our reference ALS/ALS Standard/2026_5308426

Search date 30 March 2026

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: 46, Malmesbury Road, Leigh, Swindon, SN6 6RH

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

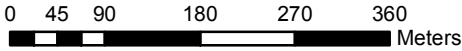
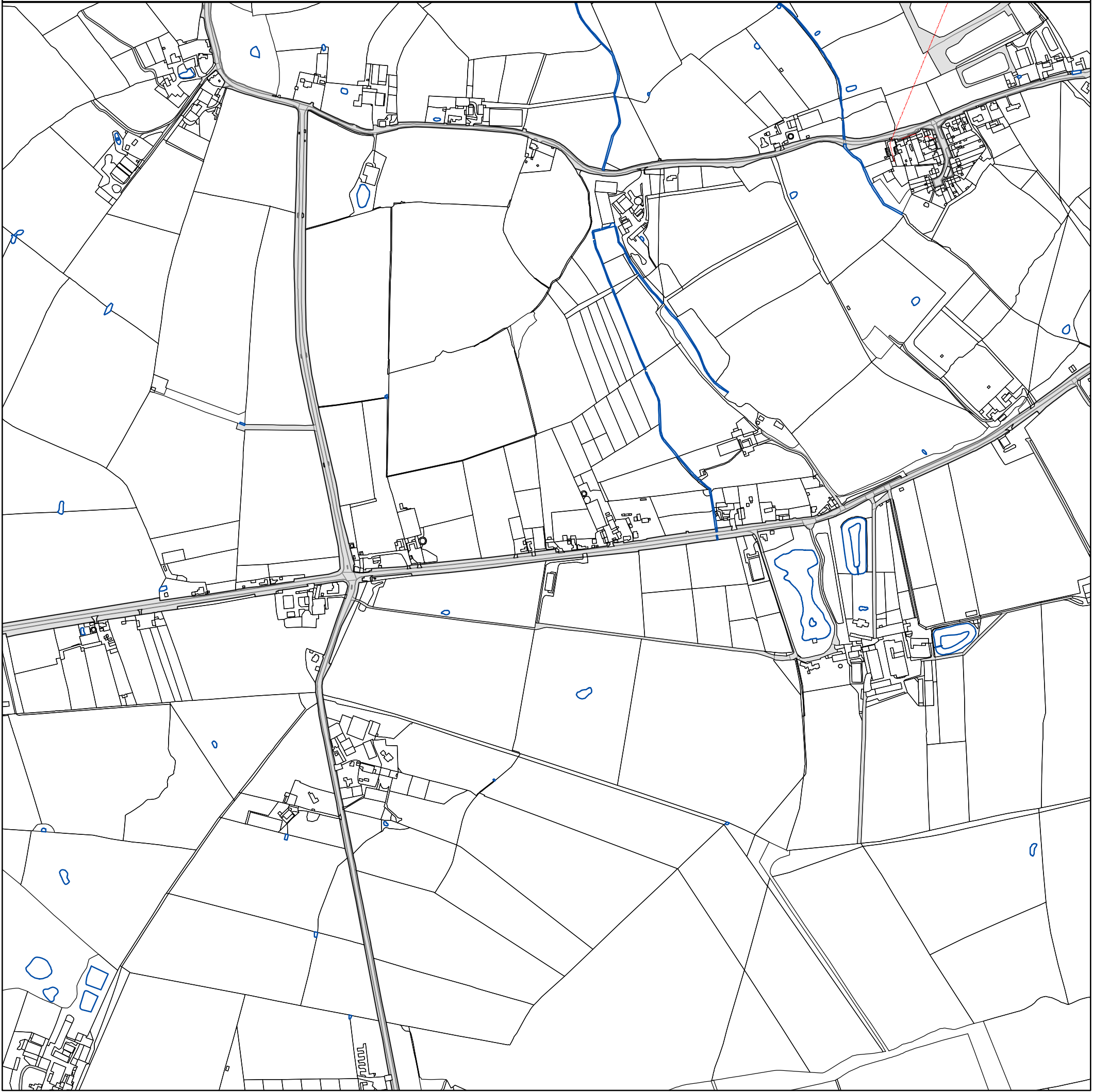


The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 405386,191380
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. 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
n/a	n/a	n/a
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: SAshok1
Print Date: 30/03/2026
Map Centre: 405385,191353
Grid Reference: SU0591SW

Comments:

ALS/ALS Standard/2026_5308426

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

REFERENCE	COVER LEVEL	INVERT LEVEL
011C		
011B		
011E		

REFERENCE	COVER LEVEL	INVERT LEVEL
011A		
011D		
011F		



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 405386, 191380.

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.

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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.

Disclaimer

This report has been prepared by GeoSmart in its professional capacity as soil, groundwater, flood risk and drainage specialists, with reasonable skill, care and diligence within the agreed scope and terms of contract and taking account of the manpower and resources devoted to it by agreement with its client and is provided by GeoSmart solely for the internal use of its client.

The advice and opinions in this report should be read and relied on only in the context of the report as a whole, taking account of the terms of reference agreed with the client. The findings are based on the information made available to GeoSmart at the date of the report (and will have been assumed to be correct) and on current UK standards, codes, technology and practices as at that time. They do not purport to include any manner of legal advice or opinion. New information or changes in conditions and regulatory requirements may occur in future, which will change the conclusions presented here.

This report is confidential to the client. The client may submit the report to regulatory bodies, where appropriate. Should the client wish to release this report to any other third party for that party's reliance, GeoSmart may, by prior written agreement, agree to such release, provided that it is acknowledged that GeoSmart accepts no responsibility of any nature to any third party to whom this report or any part thereof is made known. GeoSmart accepts no responsibility for any loss or damage incurred as a result, and the third party does not acquire any rights whatsoever, contractual or otherwise, against GeoSmart except as expressly agreed with GeoSmart in writing.

For full T&Cs see <http://geosmartinfo.co.uk/terms-conditions>

Further information

Information on confidence levels and ways to improve this report can be provided for any location on written request to info@geosmart.co.uk or via our website. Updates to our model are ongoing and additional information is being collated from several sources to improve the database and allow increased confidence in the findings. Further information on groundwater levels and flooding are being incorporated in the model to enable improved accuracy to be achieved in future versions of the map. Please contact us if you would like to join our User Group and help with feedback on infiltration SuDS and mapping suggestion.

Important consumer protection information

This search has been produced by GeoSmart Information Limited, Suite 9-11, 1st Floor, Old Bank Buildings, Bellstone, Shrewsbury, SY1 1HU.

Tel: 01743 298 100

Email: info@geosmartinfo.co.uk

GeoSmart Information Limited is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

The Search Code:

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom.
- sets out minimum standards which firms compiling and selling search reports have to meet.
- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals.
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.
- By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's core principles

Firms which subscribe to the Search Code will:

- display the Search Code logo prominently on their search reports.
- act with integrity and carry out work with due skill, care and diligence.
- at all times maintain adequate and appropriate insurance to protect consumers.
- conduct business in an honest, fair and professional manner.
- handle complaints speedily and fairly.
- ensure that products and services comply with industry registration rules and standards and relevant laws.
- monitor their compliance with the Code.

Complaints

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award up to £5,000 to you if the Ombudsman finds that you have suffered actual financial loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the Code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs contact details:

The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP
Tel: 01722 333306
Fax: 01722 332296
Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk.

Please ask your search provider if you would like a copy of the search code

Complaints procedure

GeoSmart Information Limited is registered with the Property Codes Compliance Board as a subscriber to the Search Code. A key commitment under the Code is that firms will handle any complaints both speedily and fairly. If you want to make a complaint, we will:

- Acknowledge it within 5 working days of receipt.
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt.
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time.
- Provide a final response, in writing, at the latest within 40 working days of receipt.
- Liaise, at your request, with anyone acting formally on your behalf.

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk.

We will co-operate fully with the Ombudsman during an investigation and comply with his final decision. Complaints should be sent to:

Liz Lloyd

Finance Manager

GeoSmart Information Limited

Suite 9-11, 1st Floor,

Old Bank Buildings,

Bellstone, Shrewsbury, SY1 1HU

Tel: 01743 298 100

support@geosmartinfo.co.uk

15. Terms and conditions, CDM regulations and data limitations

Terms and conditions can be found on our website:

<http://geosmartinfo.co.uk/terms-conditions/>

CDM regulations can be found on our website:

<http://geosmartinfo.co.uk/knowledge-hub/cdm-2015/>

Data use and limitations can be found on our website:

<http://geosmartinfo.co.uk/data-limitations/>