

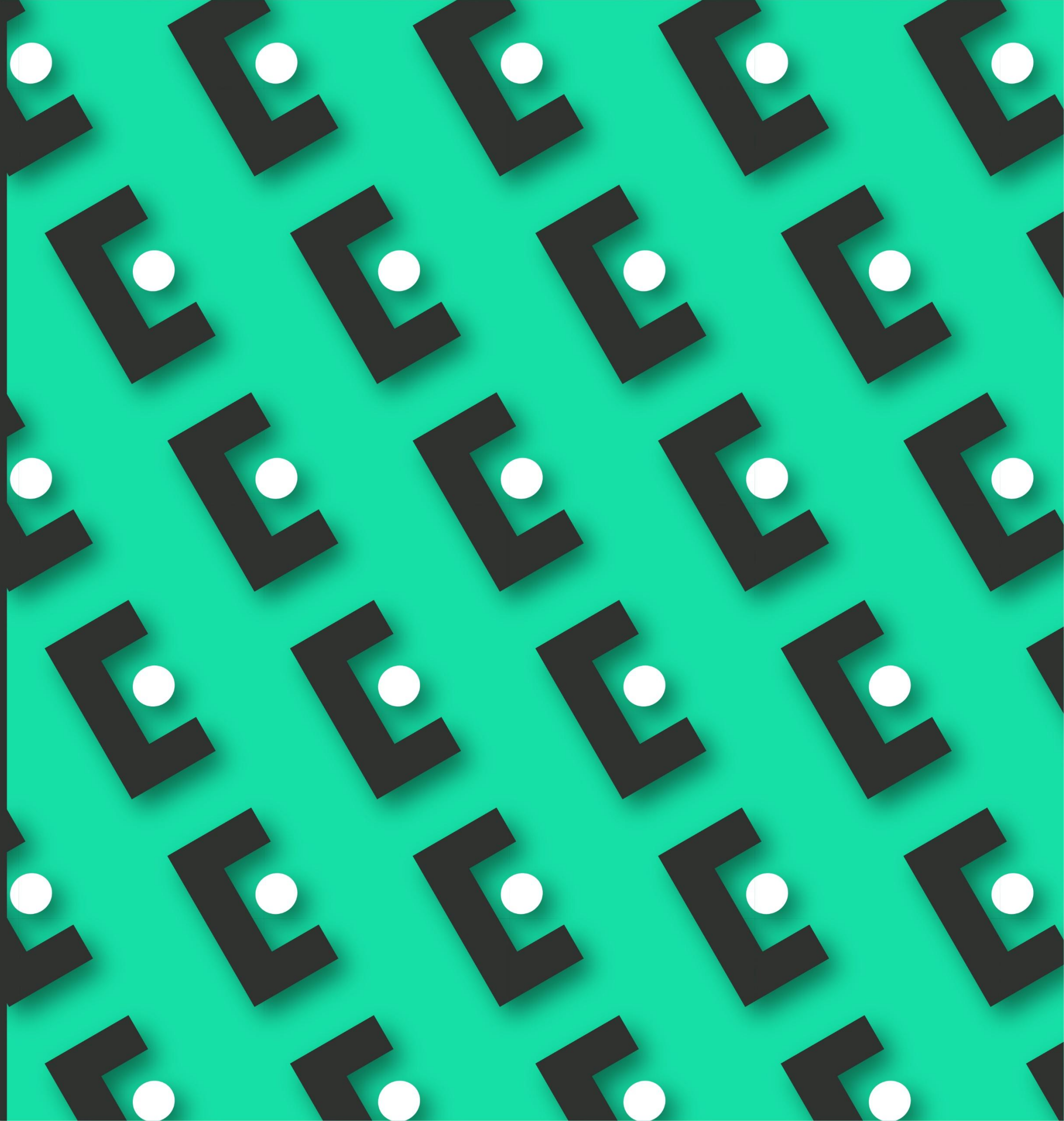


Duckyls Farm Centre

Sustainable Drainage Strategy

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Document Control

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One

Executive Summary

This Sustainable Drainage Strategy has been prepared to support the planning application for the proposed development at Duckyls Farm Centre, West Hoathly, which comprises the construction of a steel-framed wood workshop and an agricultural barn. The report outlines the site's existing drainage and hydrological conditions, identifies relevant policy requirements, and sets out a Sustainable Drainage System (SuDS) that provides a robust, sustainable, and proportionate approach to managing surface water.

The development site extends to approximately 0.4 hectares within the wider Farm Centre, located in the High Weald Area of Outstanding Natural Beauty. The land naturally drains eastwards across farmland and pasture towards a network of ditches and streams which form the early headwaters of the River Medway. There are no public sewers serving the site. Calculations of greenfield runoff rates established a Q_{bar} of 0.45 litres per second, which is used as the discharge restriction for all storm events up to and including the 1 in 100-year event with a 40% climate change allowance.

The proposed SuDS strategy combines several complementary measures to manage surface water as close to source as possible. Runoff from building roofs will be directed to rain gardens before discharging to a below-ground active attenuation tank. This tank serves the dual purpose of providing attenuation and rainwater harvesting, with harvested water reused for WC flushing, irrigation, and wash-down. New hard landscaping will be constructed with pervious paving, mimicking existing greenfield drainage, and the controlled discharge from the site will connect to the adjacent pond and ditch system that feeds into the Medway catchment.

Exceedance flows in the event of a blockage or extreme rainfall event are expected to surcharge from manholes and follow natural greenfield pathways eastwards across farmland before being intercepted by existing ditches. This exceedance route poses no risk to property or infrastructure. Pollution prevention measures have been assessed using the CIRIA SuDS Manual's Simple Index Approach and confirm that the proposed treatment train is sufficient to mitigate risks associated with the development. A detailed maintenance schedule has been prepared for all SuDS components, with responsibility for their ongoing management resting with the site owner following construction.

Two

Introduction

This Sustainable Drainage Report has been prepared to support the planning application for the construction of 2 no. buildings – a steel frames wood workshop and an agricultural barn at Duckyls Farm Centre, Selsfield Road, West Hoathly RH19 4QY.

This report presents a comprehensive sustainable drainage strategy for the development site, setting out the existing conditions, relevant policy framework, and a detailed design approach that ensures surface water runoff is managed as close to source as possible whilst providing water quantity, water quality, amenity and biodiversity enhancements.

Three

Site Context

3.1 Site Location

Duckyls Farm Centre, hereinafter referred to as the “Site” is located within the administrative area of Mid Sussex District Council (MSDC).

Duckyls Farm Centre is located at Selsfield Road, within the West Hoathly civil parish and the jurisdiction of Mid Sussex District Council. The site occupies a semi-rural location on the outskirts of the village of West Hoathly, enveloped by woodland areas such as Rocks Wood and Bird's Eye Wood, and lies approximately 3.8 miles southwest of East Grinstead town centre.

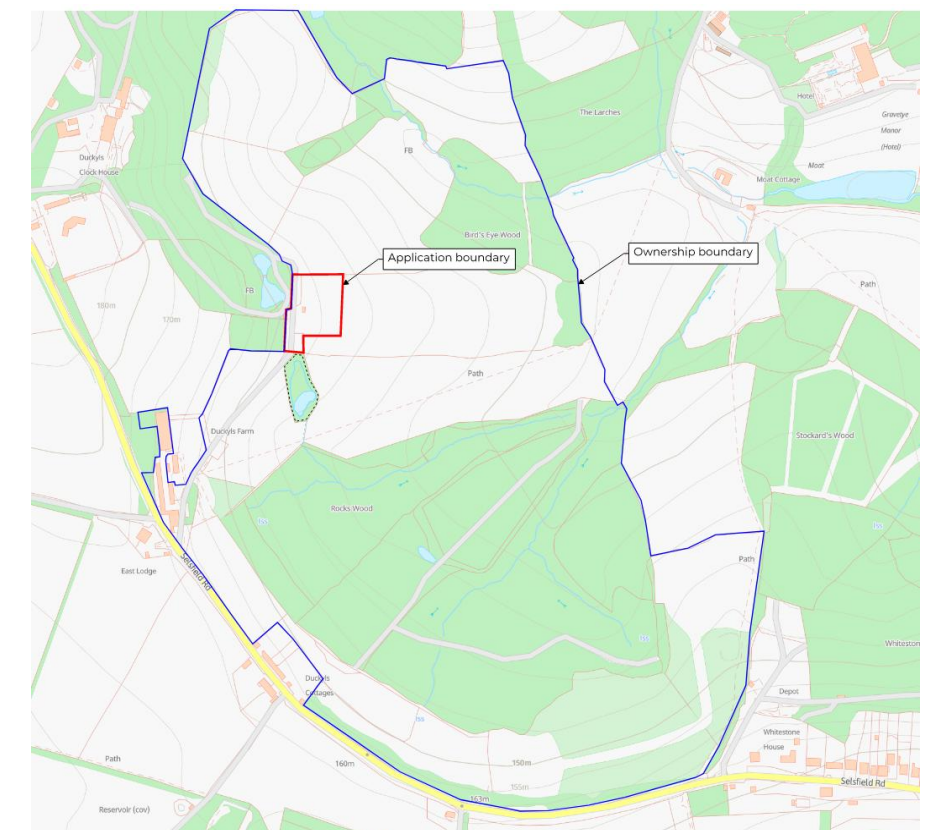


Figure 1: Site Location © Open Street Map

The Farm Centre as a whole encompasses an area of approximately 36.52 hectares. The development Site occupies a small element of the overall Farm Centre, located at the end of the existing agricultural track that runs through the middle of the centre, the development Site encompasses an area of approximately 0.4 hectares and is centred on Ordnance Survey grid reference 535520E, 133733N.

The Lead Local Flood Authority (LLFA), responsible for all flood risk matters that do not relate directly to designated Main Rivers, is West Sussex County Council (WSCC).

The site lies within the countryside and the High Weald Area of Outstanding Natural Beauty (AONB).

3.2 The Existing Site

As existing the Site area comprises of a small horticultural area and polytunnel. An existing large oak tree sits centrally in the northern half of the Site area which is proposed to be retained.



Figure 2: Existing Site Layout © Google Earth

3.3 Existing Topography

The existing site topography slopes significantly from west to east. Levels on the western edge of the site area around 148.000m AOD and slope down to around 141.000m AOD at the eastern edge of the Site.

The variation in site levels is illustrated by the isopachyte shown in Figure 3.

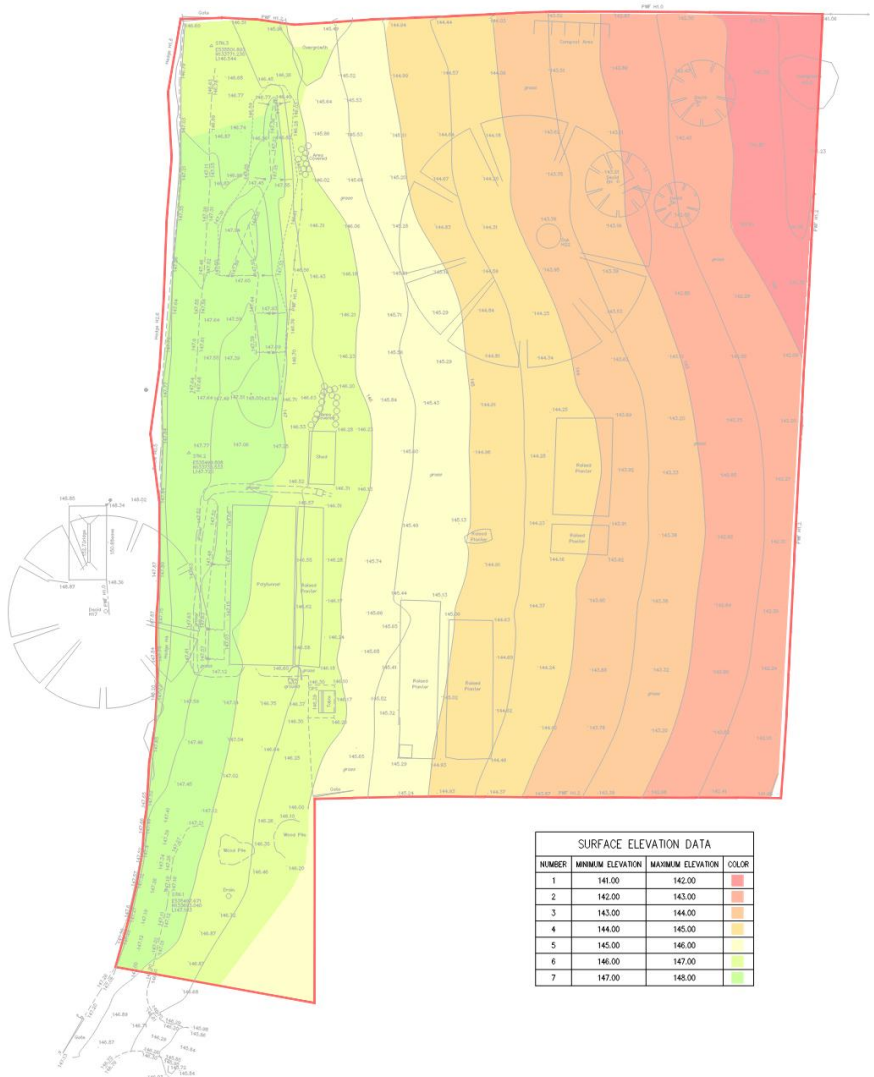


Figure 3: Existing Site Level Isopachyte

3.4 Underlying Geology & Hydrology

Site specific ground investigation works have not been undertaken to date. However, BGS mapping indicates that the site is underlain by a Bedrock geology of Wadhurst Clay with no superficial deposits.

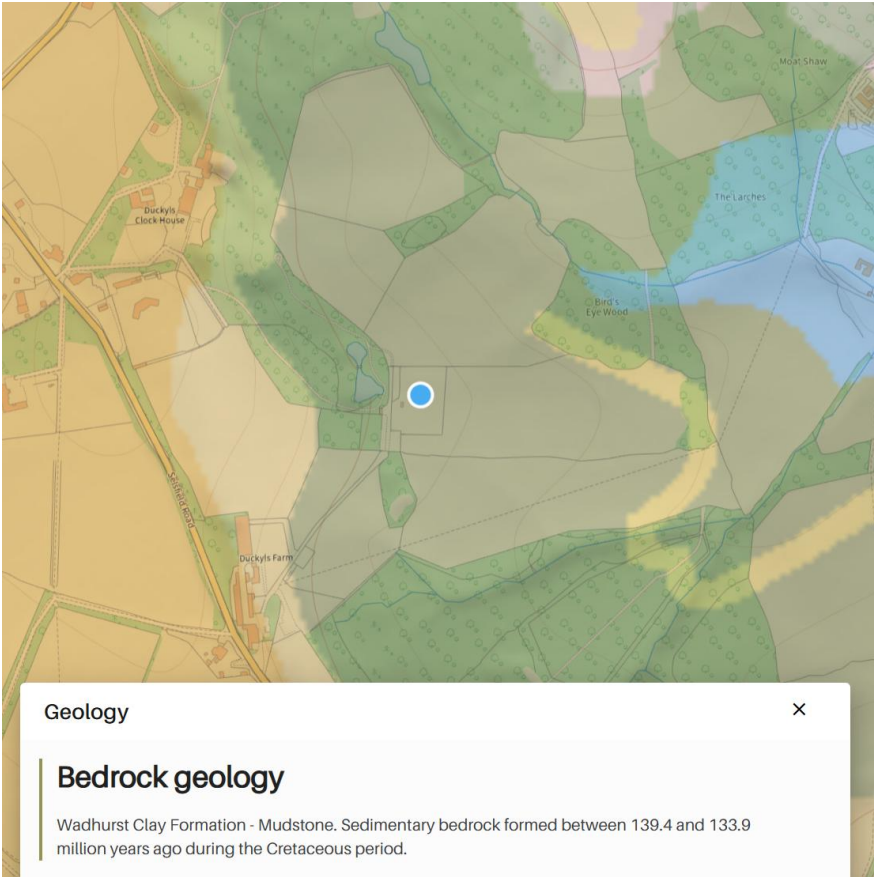


Figure 4: Site Geology © BGS

The closest water body to the Site is the existing ponds to the east and south of the site. These drain via a local ditches and streams, which merges into the Medway near Mill Place Mill on its right bank. In turn, this forms part of the early headwaters feeding the River Medway, originating just a few miles southwest at Turners Hill. Sketch numbered **2250038-EWP-ZZ-EX-SK-CV-0001** provided in **Appendix A** of this report illustrates the hydrological setting of the site and its connectivity to the Main River network.

The Site is not located in a Source Protection Zone (SPZ) area as identified on DEFRA's Magic Map.

Four

Existing Drainage

4.1 Public Sewers

No public sewers existing in the vicinity of the site.

4.2 Watercourses

Duckyls Farm Centre lies within the Upper Medway catchment, nestled in the High Weald's sandstone and clay-dominated terrain.

The site drains via overland-flow streams, which merge into the Medway near Mill Place Mill on its right bank. In turn, this forms part of the early headwaters feeding the River Medway, originating just a few miles southwest at Turners Hill.

Figure 5 which is presented in full within in **Appendix A** of this report illustrates the hydrological setting of the site and its connectivity to the Main River network.

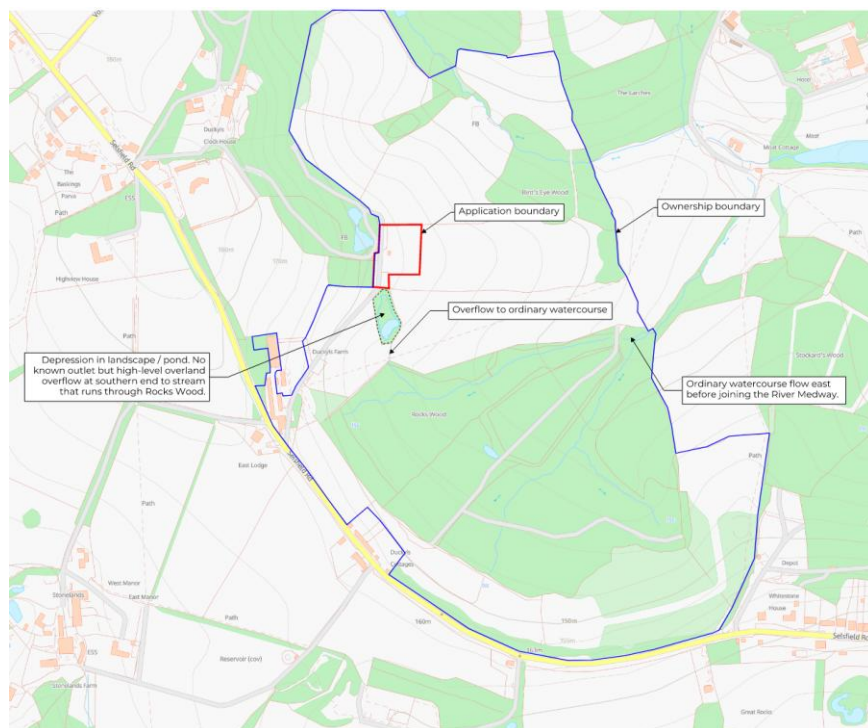


Figure 5: Hydrological setting of the site and its connectivity to the Main River network

Five

The Proposed Development

The proposed development involves the construction of 2 no. buildings – a steel frames wood workshop and an agricultural barn.

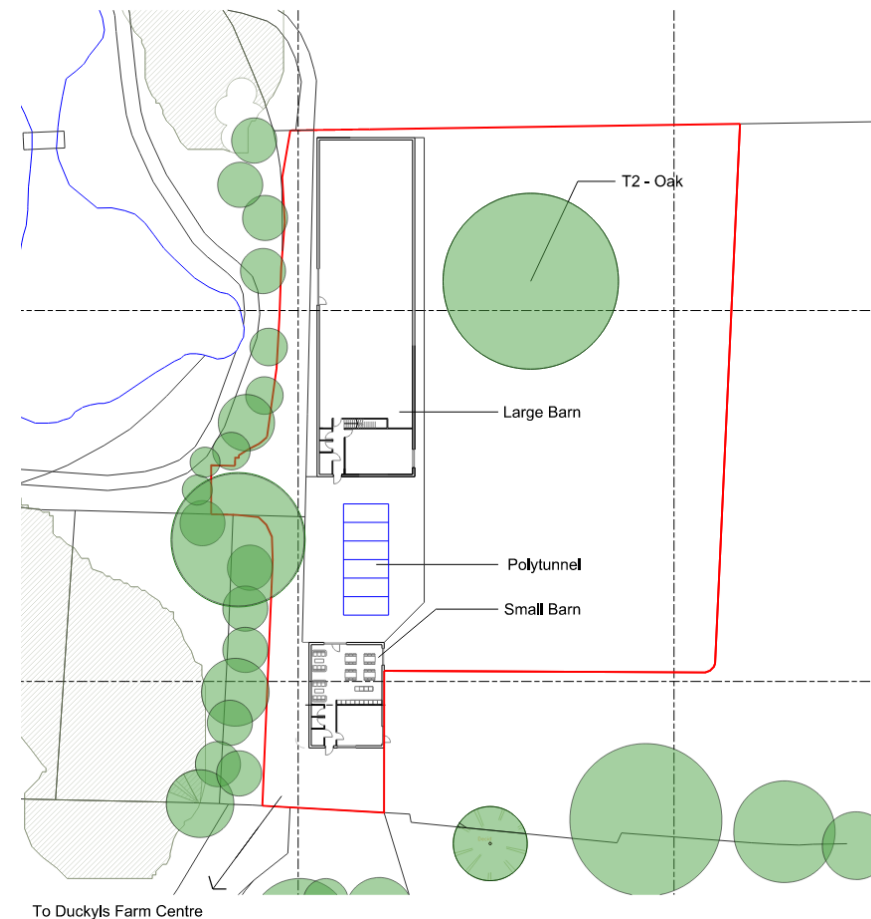


Figure 6: Proposed Site Plan

Please refer to the Architects Design and Access Statement (DAS) for further details.

Six

Proposed SuDS Strategy

6.1 Policy

The following documents have been reviewed in the preparation of this sustainable drainage strategy:

6.1.1 National Policy

- National Planning Policy Framework (NPPF), December 2024.
- Planning Practice Guidance (PPG) — Flood risk and coastal change, August 2022.
- National Standards / Non-statutory technical standards for SuDS, July 2025.
- CIRIA — The SuDS Manual (C753), December 2015.

6.1.2 Regional Policy

- West Sussex County Council — LLFA guidance & SuDS design guidance, July 2025.

6.1.3 Local Policies

- Mid Sussex District Plan / Local Plan, March 2018.
- Mid Sussex Strategic Flood Risk Assessment (Level 1 & Level 2 / SFRA), August 2024.
- Mid Sussex Council — Flood Risk & Drainage for Planning, July 2025.

Both Mid Sussex District Council and West Sussex County Council policies call for proposed developments to restrict their peak surface water discharge rate to the greenfield rate for all storm events up to and including the 1 in 100-year plus climate change storm event.

6.2 Climate Change Allowance

Climate change allowances for surface water design are based on UK Government's Environment Agency guidance (Flood Risk Assessments: climate change allowances). An extract from this guidance is presented in Figure 7.

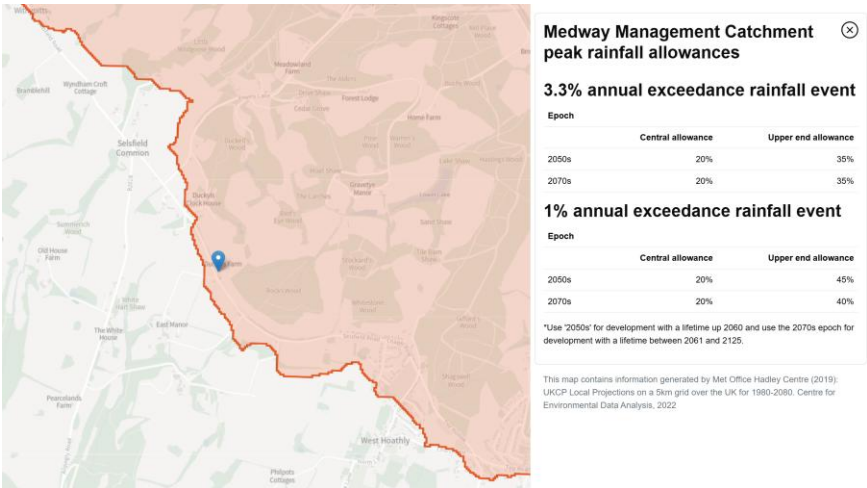


Figure 7: Site-specific extract of Flood Risk Assessments: climate change allowances map

The proposed development will have a design life of at least 50-years, placing it in the 2070s epoch.

Using the upper-end peak rainfall intensity uplift for the Medway management catchment and the 2070s epoch, in compliance with Mid Sussex District Council and LLFA expectations the climate change allowance for the 1% AEP is 40%.

6.3 Proposed Catchments

Table 1 provides a breakdown of the proposed surface water catchment areas.

Table 1: Proposed surface water catchments

Catchment	Area (m²)
Existing passively drained access track retained	285
Existing passively drained polytunnel retained	89
Proposed roof area	725
Proposed passively drained hard landscaping	320
TOTAL	1,419

As you will see from **Table 1**, despite a built area of 1,419m², positively drained built elements total 725m².

285m² of existing unbound pervious access track and 89m² of existing polytunnel will be retained as existing. The existing access track and polytunnel drain passively, either infiltrating slowly into the underlying clay or by following overland greenfield run-off routes in more extreme storm events. 320m² of proposed hard landscaping will be constructed with pervious unbound surfacing material, mimicking the pre-developed greenfield state and draining in the same passive manner as the retained existing access track and polytunnel.

6.4 Greenfield Run-Off Rates

The HR Wallingford online tool has been used to calculate the greenfield runoff rates for the positively drained area.

Table 2: Greenfield run-off rates

Storm Event	Greenfield Rate
1 in 1-year	0.40l/s
1 in 2-year	0.40l/s
Qbar	0.45l/s
1 in 30-year	1.00/s
1 in 100-year	1.40l/s

The SuDS Manual sets out two approaches for managing flows and volumes from a development site.

The 1st approach (Approach 1) requires that flows discharged from the site attenuation storage are controlled at a rate equivalent to the runoff from a Greenfield site for a 1 in 1-year storm event (whenever a 1 in 1-year rainfall event occurs), up to the equivalent runoff from a Greenfield site for a 1 in 100-year storm event (whenever a 1 in 100-year rainfall event occurs) – termed “flow matching”. Greenfield runoff rates are generally 3-4 times greater for the 1 in 100-year rainfall event when compared to the 1 in 1 year rainfall event. To capitalise on the use of the 1 in 100-year Greenfield runoff allowance, long term storage must be provided. This is where a specified volume of water is held on site for a longer period in comparison to the attenuated storage volume.

The 2nd approach (Approach 2) requires that flows from the attenuation storage are controlled at the Qbar rate, for all rainfall events up to and including the 1 in 100-year storm event.

When adopting Approach 2, the benefit of the reduction in discharge rates during events in excess of Qbar will offset the negative impact that this increase in volume may have. However, if Approach 1 “flow matching” is used to manage discharge rates from a site then such benefits will not be gained. As a result, it will be necessary to provide additional mitigation for the impact of increased volumes of water leaving the site. This is achieved through the use of online long-term storage. Where ground conditions allow, infiltration should be used to manage discharge of the low term storage volume, if not piped discharge should be considered but discharge of the long-term storage should be limited back to no greater than 2l/s/ha.

Provision of long-term storage is not always be achievable – due to spatial constraints of the site or due to the size of the catchment. It is for this reason that Approach 2 exists.

6.5 Proposed Peak Surface Water Discharge Rate

In the case of Duckyls Farm, it is proposed to restrict all storm events up to and including the 1 in 100-year event + 40% climate change to the Qbar rate of 0.45l/s as it is not possible to provide long term storage.

6.6 Proposed SuDS Strategy

An evaluation of suitable SuDS techniques has been conducted to identify the most appropriate measures for achieving the discharge rate proposed and the four pillars of SuDS.

It is proposed that the SuDS strategy will utilise a combination of:

- Pervious paving;
- Rain gardens;
- Below ground attenuation tanks; and
- rainwater harvesting

to deliver a comprehensive treatment train that manages surface water as close to source as possible.

Figure 8 illustrates an outline schematic of the proposed SuDS strategy.

Run-off from the roofs of the new buildings will be directed to proposed rain gardens before discharging to a below-ground *active attenuation tank*. The active attenuation tank serves a dual purpose: it functions both as an attenuation system for managing surface water run-off and as a rainwater harvesting facility supplying water for WC flushing, irrigation, and wash-down.

Unlike a conventional attenuation tank, which begins discharging at a controlled rate as soon as water enters, the active system holds the water in the attenuation tank for re-use. The systems control panel monitors weather patterns and manages storage within the attenuation tank proactively. Incoming run-off is retained in the tank, with a dedicated safety margin maintained for flood resilience, and the stored water can then be drawn off for reuse.

In the event rainfall is forecast, the control system pre-emptively creates capacity within the tank by releasing water downstream and discharging offsite at Q_{bar} during dry weather. This ensures the system is prepared to receive the next storm event without increasing pressure on downstream watercourses.

The benefits of this approach are threefold:

- **Efficiency:** Combining attenuation and harvesting avoids the need for a separate rainwater reuse facility, reducing capital expenditure.
- **Resilience:** A large reservoir of water is available for reuse, with the system actively managing capacity in anticipation of rainfall.
- **Environmental protection:** Any necessary drain-down occurs in dry conditions, preventing additional flows at times when watercourses are already under pressure.

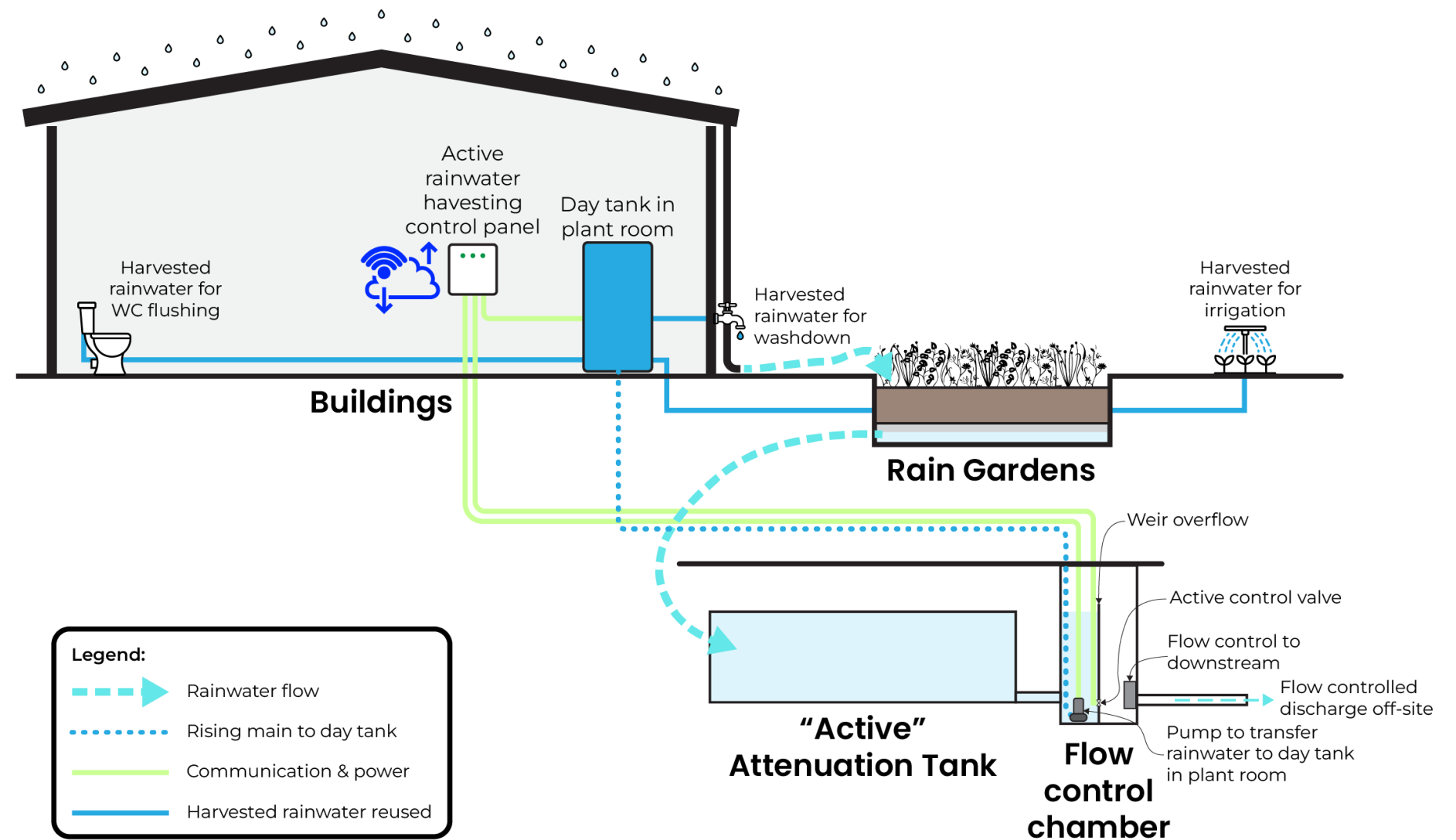


Figure 8: Outline schematic of the proposed SuDS strategy.

6.7 Drainage Hierarchy

The drainage hierarchy establishes the order of preference for managing rainwater. Whilst it was originally set out in Approved Document H of the Building Regulations (2015 edition, last amended 2016) – specifically Part H3 (rainwater drainage). The hierarchy is echoed in other policy and best-practice guidance such as:

- NPPF (National Planning Policy Framework, para 167–169) – prioritises sustainable drainage.
- Defra’s Non-Statutory Technical Standards for SuDS (2015) – reinforces the same approach.
- CIRIA SuDS Manual (C753, 2015) – gives detailed guidance on applying the hierarchy.
- West Sussex County Council — LLFA guidance & SuDS design guidance, July 2025.

The drainage hierarchy is set out below and it is evaluated in the context of the proposed development in **Table 3**.

1. **Reuse** – Store for later use.
2. **Infiltration** – Into the ground, e.g. soakaways, permeable paving (where ground conditions allow).
3. **Surface water features** – Attenuate in ponds, basins, wetlands.
4. **Storage tanks** – Attenuate in sealed systems for gradual release.
5. **Watercourse discharge** – Direct discharge to a river, ditch, or stream.
6. **Surface water sewer** – Only if other options are not reasonably practicable.

Table 3: SuDS evaluation table

SuDS technique	Included?	Comment
Rainwater reuse	Y	Rainwater will be reused through the active attenuation tank for WC flushing, irrigation and wash down.
Infiltration devices	Y	285m ² of existing unbound pervious access track and 89m ² of existing polytunnel will be retained as existing. The existing access track and polytunnel drain passively, either infiltrating slowly into the underlying clay or by following overland greenfield run-off routes in more extreme storm events. 320m ² of proposed hard landscaping will be constructed with pervious unbound surfacing material, mimicking the pre-developed greenfield state and draining in the same passive manner as the retained existing access track and polytunnel.
Surface water features	Y	Rain gardens are proposed to receive run-off from roof catchments.
Storage tanks	Y	An active attenuation tank is proposed for attenuation and rainwater harvesting storage.
Watercourse discharge	Y	It is proposed to discharge to the adjacent existing pond which in turn overflows into a ditch. This ditch is part of a network of ditches which merge into the River Medway near Mill Place Mill on its right bank. In turn, this ditch forms part of the early headwaters feeding the River Medway, originating just a few miles southwest at Turners Hill.
Surface water sewer	N	No surface water sewers or drains are accessible from the Site.

6.8 Sustainable Drainage Strategy Design

The proposed sustainable drainage design is detailed in **Appendix B**.

Infodrainage has been used to model the hydraulic performance of the proposed sustainable drainage system using FEH rainfall data and a runoff coefficient (Cv) of 1.0 for the roof area.

Details of the modelled networks and simulation results are contained within **Appendix C**, and a summary of critical peak discharge rates is provided in **Table 5**.

6.9 Proposed Surface Water Run-Off Rate

The proposed sustainable drainage system provides sufficient attenuation to cater for up to and including the 1 in 100-year + 40% climate change event.

It is considered that the proposed sustainable drainage strategy represents a practical and proportionate response to the site’s drainage requirements and aligns with national, regional and local guidance and policy.

Table 4: Proposed post-development surface water run-off rates (FEH)

Storm Event	Proposed post-development run-off rate
1 in 2-year	0.3l/s
1 in 30-year	0.4l/s
1 in 100-year	0.4l/s
1 in 100-year + 40% CC	0.5l/s (rounded up from 0.45l/s)

6.10 Exceedance Routes

In the event of a blockage or a storm event that exceeds the design capacity of the sustainable drainage system, surface water is anticipated to surcharge from manholes and flow overland in a easterly direction. This exceedance route follows the natural greenfield pathway across farmland and pasture, before being intercepted by existing ditches and watercourses that form the early headwaters of the River Medway. No property or infrastructure is at risk along this route.

6.11 Temporary Drainage for the Construction Phase

It is anticipated that the ground works, including the below ground drainage pipework and attenuation tank will be constructed prior to any buildings. As the proposed buildings are constructed and made weather tight, either the permanent or temporary rainwater goods will be used to direct rainwater into the below ground drainage network.

The attenuation tank could be used during construction to manage run-off from the buildings, provided it is emptied an, inspected and cleaned regularly and prior to handover.

If the attenuation tank is to be used, the outfall should be capped off and a temporary submersible pump should be used by the contractor intermittently to discharge the rainwater to the downstream network. Managing the outfall in this manner will provide opportunity to manage the rate and timing of discharge and go to ensure accidental spillages or contamination from construction does not inadvertently discharge downstream.

The raingardens should not be constructed our used until the final stages of construction to avoid damage or contamination. Temporary drainage requirements for the construction phase will require early contractor input to detail how surface water will be managed during construction. It is recommended that this be set as a pre-commencement condition to be obtained in advance of works starting on site.

6.12 Proposed Foul Water Drainage Strategy

Please refer to EGY’s Foul Sewage Assessment document for details of the proposed foul water drainage strategy.

Seven

Pollution Prevention

Pollution control and treatment has been developed in line with the recommendations and guidance within the CIRIA SuDS Manual C753.

The Simple Index Approach has been used to evaluate the site’s pollution hazards and proposed mitigation. The Simple Index Approach assigns pollution indices to different land use classifications and mitigation indices to SuDS elements. Depending on whether surface water is being discharged to the ground or to surface waters, the mitigation indices can be used to provide a total mitigation index which is equal to or higher than the pollution hazard index.

The below ground drainage network ultimately discharges to a watercourse. Pollution hazard indices for land usage have been evaluated in accordance with the CIRIA SuDS Manual – refer to **Table 5**.

Table 5: Pollution hazard indices for various land uses (taken from the SuDS Manual Table 26.2)

Land use	Total suspended solids (TSS)	Metals	Hydro-carbons	Typical Risk
Non-residential roofs	0.3	0.4	0.2	Low
Low traffic roads / carparks (<300 traffic movements per day)	0.5	0.4	0.4	Medium

Mitigation indices for the proposed SuDS solutions discharging to surface waters (the raingardens receiving roof water) are shown in **Table 6**.

Table 6: SuDS mitigation indices for discharge to surface waters (taken from the SuDS Manual Table 26.3)

SuDS component	TSS	Metals	Hydro-carbons
Bioretention system	0.8	0.8	0.8

Mitigation indices for the proposed SuDS solutions discharging to groundwater (the passively drained existing and proposed hardstanding areas) are shown in **Table 7**.

Table 7: SuDS mitigation indices for discharge to groundwater (taken from the SuDS Manual Table 26.4)

SuDS component	TSS	Metals	Hydro-carbons
Permeable pavement underlain by soil	0.7	0.6	0.7

By comparing **Table 5** with **Table 6**, it can be seen that the mitigation indices for bioretention systems (the proposed rain gardens) exceeds the hazard indices for non-residential roofs discharging to surface waters.

Similarly, comparing **Table 5** with **Table 7**, it can be seen that the mitigation indices for permeable paving (the existing and proposed passively drained pervious paving) exceeds the hazard indices for low traffic roads / carparks discharging to groundwater.

Based on the simple index approach, it is considered that the proposed sustainable drainage strategy provides a suitable treatment train for the land use prior to the downstream receptor.

Eight

Operation & Maintenance Requirements

During the construction phase of the development, the responsibility for the maintenance of SuDS lies with the Contractor. Post-construction, all proposed drainage within the site is to be private (i.e. does not lie on public land) therefore all SuDS will be maintained by the site owner for the lifetime of the development.

The drainage system should be regularly inspected and maintained to ensure that it is kept clear of silt and debris. Permanent inspection records should be kept by the site owner or management company, recording any previous issues and future work to be carried out.

There are three categories of maintenance activities, as follows:

- Regular maintenance (including inspections and monitoring)
- Occasional maintenance
- Remedial maintenance

The sections below summarise the proposed schedule of maintenance for each SuDS element in accordance with the CIRA SuDS Manual.

Rainwater harvesting

The general performance of rainwater harvesting systems is listed below.

- Peak flow reduction: Good
- Volume reduction: Medium
- Water quality treatment: Medium
- Amenity potential: Good
- Biodiversity potential: Good

General maintenance requirements for rainwater harvesting systems are listed in **Table 8**. There are wide differences in the extent of maintenance required for different systems and manufacturers guidelines should always be followed.

Table 8: Rainwater harvesting system maintenance schedule

Maintenance Schedule	Required Action	Frequency
Regular maintenance	Cleaning of tank, inlets, outlets, gutters, withdrawal devices and roof drain filters of silts and other debris.	Annually (or following poor performance)
	Replacement of any filters.	As required.
Remedial actions	Repair of erosion damage, or damage to tank.	As required.
	Pump repairs.	As required.
Monitoring	Inspection of the tank for debris and sediment build up.	Annually (or following poor performance)
	Inspection of inlets, outlets and withdrawal devices	Annually (or following poor performance)
	Inspection of areas receiving overflow, for evidence of erosion.	Annually (or following poor performance)
	Inspection of any pumps – check function and wiring.	Annually.
	Inspection of roof drain filters.	Annually (or following poor performance)

Rain gardens

The general performance of rain gardens is listed below.

- Peak flow reduction: Good
- Volume reduction: Medium
- Water quality treatment: Medium
- Amenity potential: Good
- Biodiversity potential: Good

Maintenance requirements for rain gardens are listed in **Table 9**.

Table 9: Rain garden maintenance schedule

Maintenance Schedule	Required Action	Frequency
Regular maintenance	Litter and debris removal	Monthly
	Grass cutting – to retain grass height within specified design range	Monthly (during growing season), or as required
	Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
Occasional maintenance	Check for poor vegetation growth due to lack of sunlight or dropping of leaf litter, and cut back adjacent vegetation where possible	Annually
	Re-seed areas of poor vegetation growth.	Annually, or if bare soil is exposed over 10% or more of the filter strip area
	Alter plant types to better suit conditions, if required	
Remedial actions	Repair erosion or other damage by re-turfing or reseeding	As required.
	Re-level uneven surfaces and reinstate design levels	As required.
	Scarify and spike topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction of the soil surface	As required.
	Remove build up of sediment on upstream gravel trench,	As required.

	flow spreader or at top of filter strip	
	Remove and dispose of oils or petrol residues using safe standard practices	As required.
Monitoring	Inspect filter strip surface to identify evidence of erosion, compaction, ponding, sedimentation, and contamination (e.g. oils)	Half yearly.
	Check flow spreader and filter strip surface for even gradients	Half yearly.
	Inspect gravel diaphragm trench upstream of filter strip for clogging	Half yearly.
	Inspect silt accumulation rates and establish appropriate removal frequencies	Half yearly.

Pervious paving

The general performance of pervious paving is listed below.

- Peak flow reduction: Good
- Volume reduction: Good
- Water quality treatment: Good
- Amenity potential: Poor
- Biodiversity potential: Poor

Maintenance requirements for pervious paving are listed in **Table 10**.

Table 10: Pervious paving maintenance schedule

Maintenance Schedule	Required Action	Frequency
Regular maintenance	Brushing and vacuuming.	Three times/year at end of winter, mid-summer, after autumn leaf fall, or as required based on site-specific observations of clogging or manufacturers' recommendations.
Occasional maintenance	Stabilise and mow contributing and adjacent areas.	As required.
	Removal of weeds.	As required.
Remedial actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving.	As required.
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users.	As required.
	Rehabilitation of surface and upper sub-structure.	As required (if infiltration performance is reduced as a result of significant clogging).

Monitoring	Initial inspection.	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth. If required take remedial action.	3-monthly, 48 h after large storms.
	Inspect silt accumulation rates and establish appropriate brushing frequencies.	Annually.
	Monitor chambers.	inspection Annually.

Geocellular / Modular systems

The general performance of geocellular / modular systems is listed below.

- Peak flow reduction: Good
- Volume reduction: Poor (storage only), Good with infiltration
- Water quality treatment: Poor
- Amenity potential: Poor
- Biodiversity potential: Poor

Maintenance requirements for geocellular /modular systems are listed in **Table 11**.

Table 11: Geocellular / modular systems maintenance schedule

Maintenance Schedule	Required Action	Frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then six monthly
	Debris removal from catchment surface (where may cause risks to performance)	Monthly
	Where rainfall infiltrates into blocks from above, check surface of filter for blockage by silt, algae or other matter. Remove and replace surface infiltration medium as necessary.	Monthly (and large storms)
	Remove sediment from pre-treatment structures	Annually, or as required
Remedial actions	Repair/rehabilitation of inlets, outlet, overflows and vents	As required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually after storms and large

Drainage pipes, silt traps and catchpits

Maintenance Schedule	Required Action	Frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then six monthly
	Debris removal from catchment surface and chambers (where may cause risks to performance)	Monthly
	Inspection of manholes, silt traps and catchpits to assess silt accumulation	Monthly (and large storms)
	Removal of accumulated silt from silt trap and catchpit sumps	Annually, or as required
Remedial actions	Repair/rehabilitation of inlets, outlet, overflows and vents	As required
	Cleaning/jetting of pipework if silt/debris is building up in system	As required
Monitoring	Inspect/check all inlets, outlets, and overflows to ensure that they are in good condition and operating as designed.	Annually after storms and large

NOTE: Manhole covers can be heavy and suitable lifting equipment/ procedures should be used. Where possible, personnel should not enter manholes to carry out maintenance.

Gullies and linear drains

Inspection and removal of debris from silt trap every 3 months, preferably after leaf fall in the autumn. (Timeframe can be adjusted to suit actual site conditions.) Charge water trap where necessary.

Unusual / unresolved problems

If the drainage system is still holding water following cleaning with a jetter, or the jetting of the system removes excessive amounts of debris this may indicate greater issues within the system. A CCTV survey is likely to be required and further advice should be sought from a drainage engineer.

The following are specific indicators which may trigger intervention:

- Witnessing waterlogged areas / standing or stagnant water / poorly drained areas, indicative of a blockage
- Removal of fallen leaves and debris particularly in autumn months
- Significant storm events are typically classed as MET Office weather alert Amber and above.

Nine

Conclusion

The Sustainable Drainage Strategy for Duckyls Farm Centre demonstrates that the proposed development can be delivered in a manner that is both environmentally responsible and fully compliant with national, regional, and local planning policy. By limiting runoff to the established greenfield Qbar rate, employing a treatment train of rain gardens, pervious paving, and an active attenuation tank with rainwater harvesting, the scheme ensures that surface water is managed sustainably whilst providing water quantity, water quality, amenity and biodiversity enhancements.

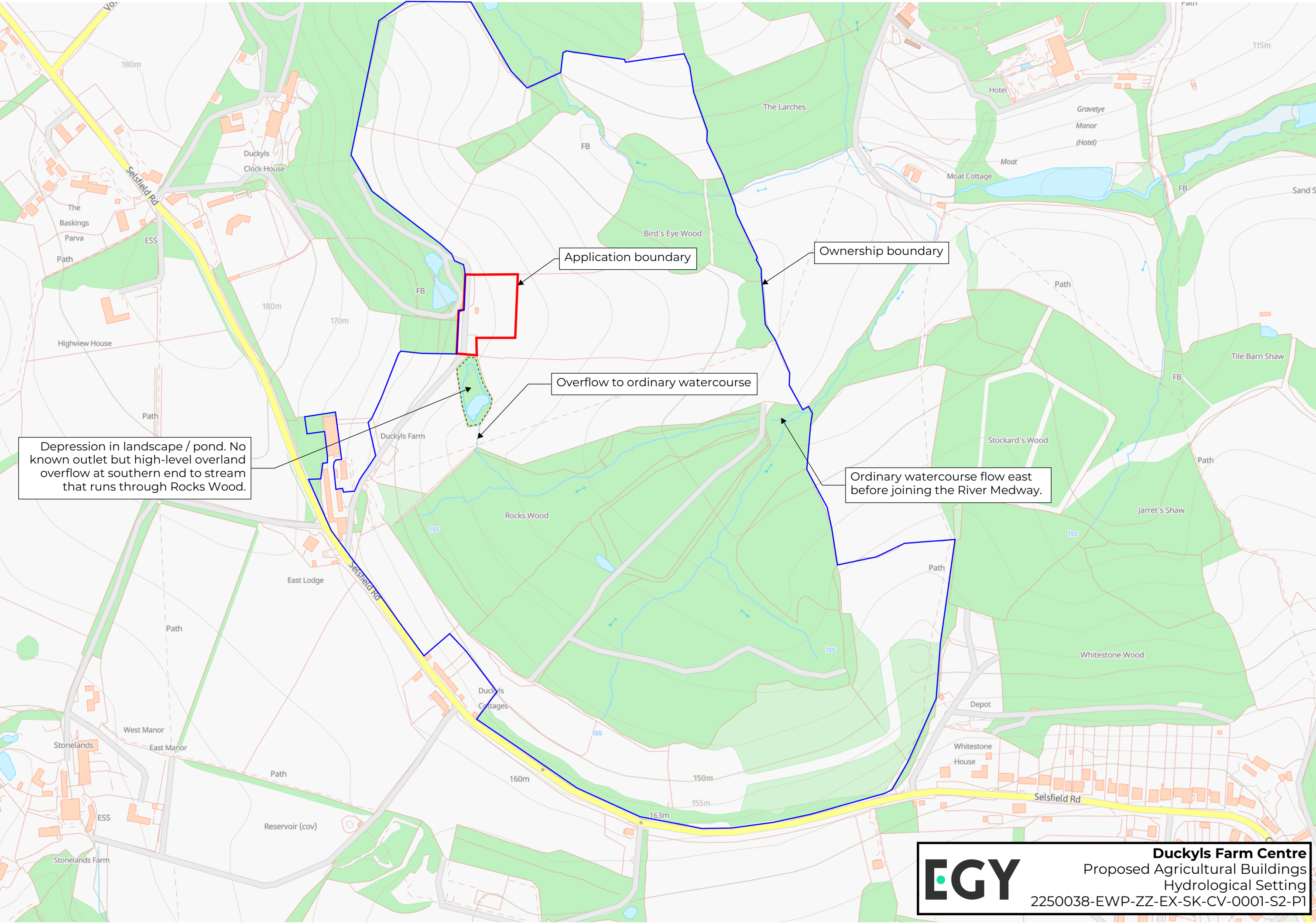
Exceedance has been carefully considered, with flows directed along natural greenfield pathways that avoid any risk to people, property, or infrastructure. Pollution risk has been addressed in accordance with the CIRIA SuDS Manual, confirming that water quality objectives are met. A comprehensive operation and maintenance plan has been set out to ensure the long-term performance of the system, with responsibility placed on the site owner post-construction.

The strategy provides a robust and proportionate response to the drainage needs of the site. It enhances resilience to climate change, safeguards local watercourses, and contributes positively to the wider environmental setting. On this basis, it is concluded that surface water arising from the proposed development can be managed effectively without increasing flood risk either on-site or elsewhere within the catchment.



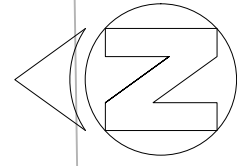
Appendices

Appendix A – Hydrological Setting Sketch



Duckyls Farm Centre
Proposed Agricultural Buildings
Hydrological Setting
2250038-EWP-ZZ-EX-SK-CV-0001-S2-P1

Appendix B – Proposed SuDS Strategy



This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
All drawings to be printed in colour.
Do not scale from this drawing.

NOT FOR CONSTRUCTION

Legend

- Site boundary
- Proposed building
- Soft landscaping
- Proposed foul water manhole
- Proposed surface water manhole
- Flow control chamber
- Proposed foul water drain
- Proposed surface water drain
- Proposed vent pipe
- Proposed ACO M200D No 10.0 surface water linear channel drain
- Proposed ACO M150D No 0.0 linear channel foul drain
- Foul drop point
- Rainwater pipe
- ACO SuDS overflow gully
- Surface water attenuation tank
- Proposed rain garden
- Existing passively drained unbound surfacing
- Proposed passively drained unbound surfacing

Rain Garden 1 & 2

- Ponding Area**
- CL 147.500
 - Surface 147.200
 - Surface area 18m²
 - Side slopes 1:3
 - Slope 0%
- Filtration Layers**
- 400mm thk. engineered rain garden soil.
 - 150mm thk. 4/20mm CGA
 - 100Ø fully perforated pipe laid at 146.650 as an underdrain.
 - ACO SuDS overflow gully set with a CL 147.400 to be installed.

Tank 1 & 2

- CL 147.500
- SL 146.350
- IL 145.350
- 2.5m(W)x12m(L)x1m(H)
- Wrapped in a impermeable membrane with fully welded seams.
- Both tanks to be connected and controlled by active attenuation module for dual purpose attenuation and rainwater harvesting.

P01	17.09.25	PD	KT	Issued for planning
Rev	Date	By	Chk	Description

EGY

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Project

Ducklys Farm
Selsfield Road,
East Grinstead,
RH19 4QY.

Drawing Title

Proposed Below
Ground Drainage

Drawing Scale	Date	Drawn By
1:200@A1	Sept 2025	PD

Design Phase	Status	Revision
For Information	S2	P01

[Project]-[Origin]-[Function]-[Spatial]-[Form]-[Discipline]-[No.]
2250038-EGY-ZZ-EX-DR-CV-1000

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
All drawings to be printed in colour.
Do not scale from this drawing.

NOT FOR CONSTRUCTION

- Notes
- The manhole schedule is to be read in conjunction with the below ground drainage specification, below ground typical drainage detail drawings and the below ground drainage general arrangement drawings.
 - All cover levels shown are approximate and are to suit the final ground or building levels.
 - Manhole covers in block paved areas are to be recessed unless noted otherwise.
 - All internal manhole covers are to be non-ventilating and double sealed.
 - All external foul and combined water manhole covers in footpaths and paved areas (other than roads) are to be non-ventilating and single sealed unless noted otherwise.
 - All external surface water manhole covers are to be non-ventilating unless noted otherwise.
 - All manhole covers are to be installed square to paving, kerb lines or buildings.
 - All covers are to be in accordance with the requirements of building regulations.
 - For adopted drainage, manhole covers are to be in accordance with the requirements of the DCC or specific water authority requirement.
 - Inspection chambers are to have a reduced access piece when the depth is greater than 1.2m to the base of the chamber.

FW MANHOLE SCHEDULE									
Manhole	Chamber Type	Cover Level (m)	Depth	Chamber Size	Eastings	Northings	Clear Opening	Cover Grade	Comments
FW1	PPIC	CL = 147.500 INV IN = 146.900 INV IN = 146.900 INV IN = 146.850 INV OUT = 146.850	0.650	450ø	535500.780	133727.978	450x450	E600	
FW2	PPIC	CL = 147.500 INV IN = 146.370 INV OUT = 145.450	2.050	450ø	535500.780	133690.165	450x450	D400	Backdrop on incoming connection Fitted with a reduced access collar
FW3	PPIC	CL = 147.500 INV IN = 146.790 INV IN = 146.740 INV IN = 146.790 INV IN = 146.790 INV OUT = 145.450	2.050	450ø	535502.869	133690.508	450x450	D400	Backdrops on all incoming connections Fitted with a reduced access collar
FW4	PPIC	CL = 145.755 INV IN = 145.200 INV IN = 145.250 INV OUT = 145.200	0.555	450ø	535504.886	133679.351	450x450	E600	
FW5	PPIC	CL = 145.555 INV IN = 145.050 INV OUT = 145.050	0.505	450ø	535506.397	133672.984	450x450	D400	Sampling chamber
FW6	PPIC	CL = 147.500 INV IN = 146.840 INV OUT = 146.790	0.710	450ø	535500.780	133736.256	450x450	E600	
FW7	PPIC	CL = 146.600 INV IN = 145.790 INV OUT = 145.740	0.860	450ø	535500.780	133776.017	450x450	E600	

SW MANHOLE SCHEDULE									
Manhole	Chamber Type	Cover Level (m)	Depth	Chamber Size	Eastings	Northings	Clear Opening	Cover Grade	Comments
SW1	PCC	CL = 147.500 SUMP LEVEL OF MANHOLE = 145.100 INV IN = 146.600 INV OUT = 145.400	2.400	1200ø	535503.577	133724.959	600x600	D400	Catchpit – 300mm sump
SW2	PCC	CL = 147.500 SUMP LEVEL OF MANHOLE = 145.100 INV IN = 146.600 INV OUT = 145.400	2.400	1200ø	535515.819	133724.959	600x600	D400	Catchpit – 300mm sump
SW3	PCC	CL = 147.500 SUMP LEVEL OF MANHOLE = 145.020 INV IN = 145.320 INV OUT = 145.320	2.480	1200ø	535514.776	133706.871	600x600	D400	Catchpit – 300mm sump
SW4	PCC	CL = 147.500 SUMP LEVEL OF MANHOLE = 144.830 INV IN = 145.130 INV IN = 145.320 INV OUT = 145.130	2.670	1200ø	535503.276	133707.088	600x600	D400	Flow control chamber Hydro-brake Ref: SHE-0030-4500-1000-4500 Design depth: 1.0m Design flow: 0.45l/s
SW5	PCC	CL = 147.500 SUMP LEVEL OF MANHOLE = 144.770 INV IN = 145.070 INV OUT = 145.070	2.730	1200ø	535499.746	133707.118	600x600	E600	Catchpit – 300mm sump
SW6	PCC	CL = 145.950 SUMP LEVEL OF MANHOLE = 144.330 INV IN = 144.530 INV OUT = 144.630	1.620	1200ø	535499.720	133674.886	600x600	D400	Catchpit – 300mm sump

P01	17.09.25	PD	KT	Issued for planning	
Rev	Date	By	Chk	Description	



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Project

Duckyls Farm
Selsfield Road,
East Grinstead,
RH19 4QY.

Drawing Title

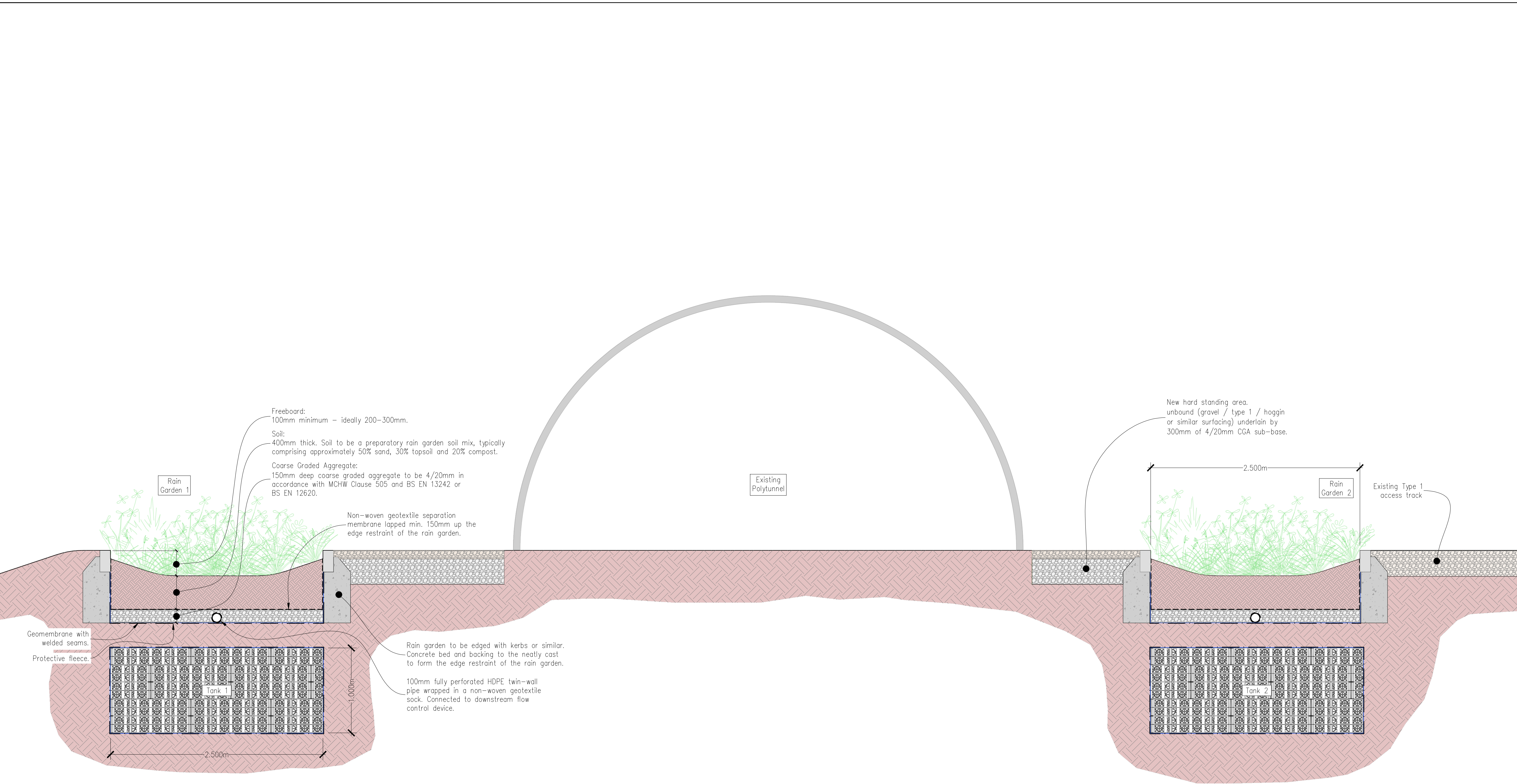
Proposed Below
Ground Drainage

Manhole Schedule

Drawing Scale	Date	Drawn By
NTS@A1	Sept 2025	PD

Design Phase	Status	Revision
For Information	S2	P01

[Project]-[Origin]-[Function]-[Spatial]-[Form]-[Discipline]-[No.]
2250038-EGY-ZZ-EX-DR-CV-1100



This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications. All drawings to be printed in colour. Do not scale from this drawing.

NOT FOR CONSTRUCTION

- Notes
- All dimensions are in millimeters unless stated otherwise. This drawing should not be scaled.
 - This drawing should be read in conjunction with the below ground drainage drawing(s) and manhole schedule(s).
 - This drawing should be read in conjunction with all relevant Architect's, Engineer's and Services Engineer's specifications and drawings.
 - All drainage shall be constructed in accordance with the relevant provisions of current Building Regulations, BS EN 752, BS EN 12056 and Sewers for Adoption as appropriate.
 - Pre-cast concrete products shall comply with the relevant provisions of BS 5911: Part 2, 200 & 230.
 - Details surrounding proprietary products and systems are indicative only. Contractor to ensure all systems are installed strictly in accordance with the manufactures details.
 - Manhole cover frames shall be bedded on a gauged class 1 (3:1) sand/cement mortar to clause 2402 of SHW – mortar designation (i), and between 2 and 4 courses of engineering brickwork class 'b' to BS EN 771-1:2011 or precast concrete adjusting units – corbelling to be no more than 30mm per course.
 - Manholes < 3m deep shall be installed with type d class 1 steps, complying with the requirements of BS EN 13101:2002.
 - Manholes > 3m deep shall be installed with an appropriate fixed ladder complying with the requirements of BS EN 14396:2004.
 - Where rigid pipes are used, a flexible joint shall be provided as close as is feasible to the outside face of any structure into which a pipe is built, within 150mm for pipe diameters less than 300mm. The design of the joints shall be compatible with any subsequent movement. Rocker pipe lengths shall be in accordance with Table 1, unless stated otherwise.
- | Nominal Diameter (mm) | Effective Length (m) |
|-----------------------|----------------------|
| 150 – 600 | 0.6 |
| 600 – 750 | 1.0 |
| over 750 | 1.25 |
11. Insitu concrete base and surround shall be class 'GEN3' in accordance with 'BRE Special Digest 1 – Concrete in Aggressive Ground' and the requirement of 'Sewers for Adoption'.

P01	17.09.25	PD	KT	Issued for planning
Rev	Date	By	Chk	Description



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Project

Duckyls Farm
Selsfield Road,
East Grinstead,
RH19 4QY.

Drawing Title

Detail A – A

Drawing Scale	Date	Drawn By
1:25@A1	Sept 2025	PD

Design Phase	Status	Revision
For Information	S2	P01

[Project]–[Origin]–[Function]–[Spatial]–[Form]–[Discipline]–[No.]
2250038–EGY–ZZ–EX–DT–CV–3000

Appendix C – Proposed InfoDrainage Modelling

Duckyls Farm Centre: Proposed Sustainable Drainage System Network Details & Simulation Results	Date: 11/09/2025		
	Designed by: PD	Checked by: KT	Approved By: KT
Report Details: Type: Inflows Storm Phase: Phase	The EGY Collective Limited:		



1/2 Small barn

Type : Catchment Area

Area (ha)	0.007
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100



1/2 Small barn (1)

Type : Catchment Area

Area (ha)	0.007
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100



1/2 long barn

Type : Catchment Area

Area (ha)	0.029
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100



1/2 long barn (1)

Type : Catchment Area

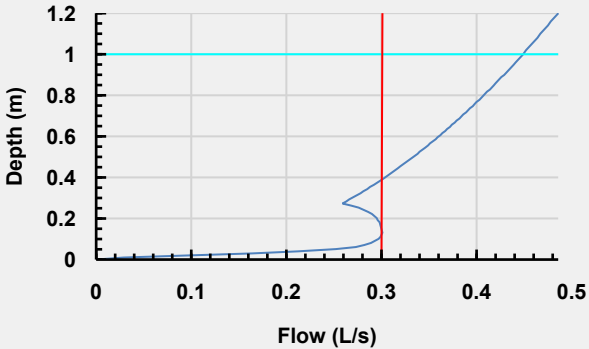
Area (ha)	0.029
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Duckyls Farm Centre: Proposed Sustainable Drainage System Network Details & Simulation Results	Date: 11/09/2025		
	Designed by: PD	Checked by: KT	Approved By: KT
	Report Details: Type: Junctions Storm Phase: Phase		
The EGY Collective Limited:			

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SW2	Outlet	Pipe (3)	Free Discharge
SW3	Outlet	Pipe	Free Discharge
SW4	Outlet	Pipe (1)	Hydro-Brake®
	Invert Level (m)	145.130	
	Design Depth (m)	1.000	
	Design Flow (L/s)	0.45	
	Objective	Minimise Upstream Storage Requirements	
	Application	Surface Water Only	
	Sump Available	☒	
	Unit Reference	SHE-0030-4500-1000-4500	
			
SW5	Outlet	Pipe (2)	Free Discharge
SW1	Outlet	Pipe (5)	Free Discharge

Duckyls Farm Centre: Proposed Sustainable Drainage System Network Details & Simulation Results	Date: 11/09/2025		
	Designed by: PD	Checked by: KT	Approved By: KT
Report Details: Type: Stormwater Controls Storm Phase: Phase	The EGY Collective Limited:		



RG 1

Type : Bioretention

Ponding Area

Exceedance Level (m)	147.500
Depth (m)	0.300
Base Level (m)	147.200
Top Area (m²)	45.00
Side Slope (1:X)	3.00
Base Area (m²)	18.00
Freeboard (mm)	0
Porosity (%)	100
Length (m)	15.000
Long. Slope (1:X)	0.00
Filtration Rate (m/hr)	50.0
Friction Scheme	Manning's n
n	0.03
Total Volume (m³)	11.700

Filter Area

Base Level (m)	146.650
----------------	---------

Filtration Layers

Use	Name	Filtration Layer Depth (mm)	Porosity (%)	Conductivity (m/hr)	Soil Type
☒	Soil	400	20	50.0	Soil Type
	Storage	150	30	250.0	

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	1/2 long barn
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	1/2 Small barn
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (7)
Outlet Type	Free Discharge

Duckyls Farm Centre: Proposed Sustainable Drainage System Network Details & Simulation Results	Date: 11/09/2025			
	Designed by: PD	Checked by: KT	Approved By: KT	
	Report Details: Type: Stormwater Controls Storm Phase: Phase			
The EGY Collective Limited:				

Advanced

Ponding Area

Base Perimeter (m)	32.400
Top Perimeter (m)	36.000



RG2

Type : Bioretention

Ponding Area

Exceedance Level (m)	147.500
Depth (m)	0.300
Base Level (m)	147.200
Top Area (m²)	45.00
Side Slope (1:X)	3.00
Base Area (m²)	18.00
Freeboard (mm)	0
Porosity (%)	100
Length (m)	15.000
Long. Slope (1:X)	0.00
Filtration Rate (m/hr)	50.0
Friction Scheme	Manning's n
n	0.03
Total Volume (m³)	11.700

Filter Area

Base Level (m)	146.650
----------------	---------

Filtration Layers

Use	Name	Filtration Layer Depth (mm)	Porosity (%)	Conductivity (m/hr)	Soil Type
☒	Soil	400	20	50.0	Soil Type
	Storage	150	30	250.0	

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	1/2 long barn (1)
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	1/2 Small barn (1)
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Duckyls Farm Centre: Proposed Sustainable Drainage System Network Details & Simulation Results	Date: 11/09/2025			
	Designed by:	Checked by:	Approved By:	
	PD	KT	KT	
Report Details: Type: Stormwater Controls Storm Phase: Phase	The EGY Collective Limited:			

Outlets	
---------	--

Outlet	
Outgoing Connection	Pipe (8)
Outlet Type	Free Discharge

Advanced	
----------	--

Ponding Area	
Base Perimeter (m)	32.400
Top Perimeter (m)	36.000

Duckyls Farm Centre: Proposed Sustainable Drainage System Network Details & Simulation Results	Date: 11/09/2025		
	Designed by: PD	Checked by: KT	Approved By: KT
Report Details: Type: Stormwater Controls Storm Phase: Phase	The EGY Collective Limited:		



TANK 1

Type : Cellular Storage

Dimensions

Exceedance Level (m)	147.500
Depth (m)	1.000
Base Level (m)	145.350
Number of Crates Long	24
Number of Crates Wide	5
Number of Crates High	2
Porosity (%)	95
Crate Length (m)	0.5
Crate Width (m)	0.5
Crate Height (m)	0.5
Total Volume (m³)	29.650

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (3)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (4)
Outlet Type	Free Discharge

Duckyls Farm Centre: Proposed Sustainable Drainage System Network Details & Simulation Results	Date: 11/09/2025		
	Designed by: PD	Checked by: KT	Approved By: KT
	Report Details: Type: Stormwater Controls Storm Phase: Phase		
The EGY Collective Limited:			

EGY

TANK 2

Type : Cellular Storage

Dimensions

Exceedance Level (m)	147.500
Depth (m)	1.000
Base Level (m)	145.350
Number of Crates Long	24
Number of Crates Wide	5
Number of Crates High	2
Porosity (%)	95
Crate Length (m)	0.5
Crate Width (m)	0.5
Crate Height (m)	0.5
Total Volume (m³)	29.650

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (5)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (6)
Outlet Type	Free Discharge

Duckyls Farm Centre: Proposed Sustainable Drainage System Network Details & Simulation Results	Date: 11/09/2025		
	Designed by: PD	Checked by: KT	Approved By: KT
	The EGY Collective Limited:		
Report Details: Type: Manhole Schedule Storm Phase: Phase			

Name	Cover Level (m) Invert Level (m)	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)		Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
SW2	147.500 145.400	Diameter / Length: 1.200	{1} Pipe (7)	Pipe	146.600	Diam/Width:100	Manhole
E:535515.828	2.100						
N:133724.954			{a} Pipe (3)	Pipe	145.400	Diam/Width:100	Not Applicable
SW3	147.500 145.320	Diameter / Length: 1.200	{1} Pipe (4)	Pipe	145.320	Diam/Width:100	Manhole
E:535514.778	2.180						
N:133706.859			{a} Pipe	Pipe	145.320	Diam/Width:100	Not Applicable
SW4	147.500 145.130	Diameter / Length: 1.200	{1} Pipe	Pipe	145.130	Diam/Width:100	Manhole
E:535503.280	2.370		{2} Pipe (6)	Pipe	145.320	Diam/Width:100	
N:133707.073			{a} Pipe (1)	Pipe	145.130	Diam/Width:100	Not Applicable
SW5	147.500 145.070	Diameter / Length: 1.200	{1} Pipe (1)	Pipe	145.070	Diam/Width:100	Manhole
E:535499.746	2.430						
N:133707.109			{a} Pipe (2)	Pipe	145.070	Diam/Width:100	Not Applicable
SW1	147.500 145.400	Diameter / Length: 1.200	{1} Pipe (8)	Pipe	146.600	Diam/Width:100	Manhole
E:535503.570	2.100						
N:133724.964			{a} Pipe (5)	Pipe	145.400	Diam/Width:100	Not Applicable

Duckyls Farm Centre: Proposed Sustainable Drainage System Network Details & Simulation Results	Date: 11/09/2025			
	Designed by:	Checked by:	Approved By:	
	PD	KT	KT	
Report Details: Type: Manhole Schedule Storm Phase: Phase	The EGY Collective Limited:			

Name	Cover Level (m) Invert Level (m)	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)		Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
SW6	145.950 144.530	Diameter / Length: 1.200	{1} Pipe (2)	Pipe	144.530	Diam/Width: 100	Manhole
E:535499.733	1.420						
N:133674.888							Not Applicable

Duckyls Farm Centre: Proposed Sustainable Drainage System Network Details & Simulation Results	Date: 11/09/2025		
	Designed by: PD	Checked by: KT	Approved By: KT
	Report Details: Type: Inflow Summary Storm Phase: Phase		
The EGY Collective Limited:			

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
1/2 long barn	RG 1		Time of Concentration	0.029	100	0	100	0.029
1/2 long barn (1)	RG2		Time of Concentration	0.029	100	0	100	0.029
1/2 Small barn	RG 1		Time of Concentration	0.007	100	0	100	0.007
1/2 Small barn (1)	RG2		Time of Concentration	0.007	100	0	100	0.007
TOTAL		0.0		0.072				0.072

Duckyls Farm Centre: Proposed Sustainable Drainage System Network Details & Simulation Results	Date: 11/09/2025			
	Designed by:	Checked by:	Approved By:	
	PD	KT	KT	
Report Details: Type: Network Design Criteria Storm Phase: Phase	The EGY Collective Limited:			

Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

Pipe Options

Lock Slope Options	None
Design Options	Minimise Excavation
Design Level	Level Soffits
Min. Cover Depth (m)	1.200
Min. Slope (1:X)	500.00
Max. Slope (1:X)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	☐
Reduce Channel Depths	☐

Manhole Options

Apply Offset	☐
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Duckyls Farm Centre: Proposed Sustainable Drainage System Network Details & Simulation Results	Date: 11/09/2025		
	Designed by: PD	Checked by: KT	Approved By: KT
	Report Details: Type: Connections Summary Storm Phase: Phase		
The EGY Collective Limited:			



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FEH: 2 years: +0 %: 60 mins: Summer	Pipe	SW3	SW4	147.500	145.466	0.100	0.843	0.2	0.17	1.4	Surcharged
Pipe (1)	FEH: 2 years: +0 %: 960 mins: Winter	Pipe	SW4	SW5	147.500	145.600	0.014	28.189	0.5	0.04	0.3	Surcharged
Pipe (2)	FEH: 2 years: +0 %: 360 mins: Summer	Pipe	SW5	SW6	147.500	145.084	0.014	10.656	0.5	0.04	0.3	OK
Pipe (3)	FEH: 2 years: +0 %: 30 mins: Summer	Pipe	SW2	TANK 1	147.500	145.474	0.056	2.873	1.3	0.9	4.9	OK
Pipe (4)	FEH: 2 years: +0 %: 60 mins: Summer	Pipe	TANK 1	SW3	147.500	145.466	0.100	1.046	0.7	0.27	1.5	Surcharged
Pipe (5)	FEH: 2 years: +0 %: 30 mins: Summer	Pipe	SW1	TANK 2	147.500	145.466	0.056	2.887	1.5	0.72	4.9	OK
Pipe (6)	FEH: 2 years: +0 %: 60 mins: Summer	Pipe	TANK 2	SW4	147.500	145.466	0.100	1.052	0.4	0.3	1.1	Surcharged
Pipe (7)	FEH: 2 years: +0 %: 30 mins: Summer	Pipe	RG 1	SW2	147.500	147.230	0.072	2.914	0.8	0.82	5.0	Surcharged
Pipe (8)	FEH: 2 years: +0 %: 30 mins: Summer	Pipe	RG2	SW1	147.500	147.230	0.071	2.926	0.8	0.8	5.0	Surcharged

Duckyls Farm Centre: Proposed Sustainable Drainage System Network Details & Simulation Results	Date: 11/09/2025		
	Designed by: PD	Checked by: KT	Approved By: KT
Report Details: Type: Connections Summary Storm Phase: Phase	The EGY Collective Limited:		



FEH: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FEH: 30 years: +0 %: 120 mins: Winter	Pipe	SW3	SW4	147.500	145.764	0.100	2.190	0.3	0.13	1.0	Surcharged
Pipe (1)	FEH: 30 years: +0 %: 960 mins: Winter	Pipe	SW4	SW5	147.500	145.883	0.016	36.190	0.5	0.05	0.4	Surcharged
Pipe (2)	FEH: 30 years: +0 %: 960 mins: Winter	Pipe	SW5	SW6	147.500	145.085	0.015	36.163	0.5	0.05	0.4	OK
Pipe (3)	FEH: 30 years: +0 %: 15 mins: Winter	Pipe	SW2	TANK 1	147.500	145.626	0.100	5.586	1.4	1.43	7.8	Surcharged
Pipe (4)	FEH: 30 years: +0 %: 120 mins: Winter	Pipe	TANK 1	SW3	147.500	145.764	0.100	2.716	0.6	0.19	1.1	Surcharged
Pipe (5)	FEH: 30 years: +0 %: 15 mins: Winter	Pipe	SW1	TANK 2	147.500	145.584	0.100	5.604	1.8	1.16	8.0	Surcharged
Pipe (6)	FEH: 30 years: +0 %: 30 mins: Winter	Pipe	TANK 2	SW4	147.500	145.606	0.100	0.923	0.3	0.25	0.9	Surcharged
Pipe (7)	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	RG 1	SW2	147.500	147.288	0.100	5.760	1.0	1.29	7.8	Surcharged
Pipe (8)	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	RG2	SW1	147.500	147.287	0.100	5.768	1.0	1.28	8.0	Surcharged

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Report Details: Type: Connections Summary Storm Phase: Phase		The EGY Collective Limited:		



FEH: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FEH: 100 years: +0 %: 60 mins: Winter	Pipe	SW3	SW4	147.500	145.808	0.100	1.151	0.2	0.24	1.9	Surcharged
Pipe (1)	FEH: 100 years: +0 %: 1440 mins: Winter	Pipe	SW4	SW5	147.500	146.080	0.016	59.103	0.5	0.06	0.4	Surcharged
Pipe (2)	FEH: 100 years: +0 %: 1440 mins: Winter	Pipe	SW5	SW6	147.500	145.086	0.016	59.076	0.5	0.06	0.4	OK
Pipe (3)	FEH: 100 years: +0 %: 15 mins: Winter	Pipe	SW2	TANK 1	147.500	145.637	0.100	7.393	1.3	1.43	7.8	Surcharged
Pipe (4)	FEH: 100 years: +0 %: 60 mins: Winter	Pipe	TANK 1	SW3	147.500	145.809	0.100	1.750	0.7	0.37	2.1	Surcharged
Pipe (5)	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	SW1	TANK 2	147.500	145.606	0.100	7.409	1.6	1.17	8.0	Surcharged
Pipe (6)	FEH: 100 years: +0 %: 60 mins: Winter	Pipe	TANK 2	SW4	147.500	145.808	0.100	1.774	0.5	0.42	1.5	Surcharged
Pipe (7)	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	RG 1	SW2	147.500	147.342	0.100	7.635	1.0	1.29	7.8	Surcharged
Pipe (8)	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	RG2	SW1	147.500	147.341	0.100	7.644	1.0	1.28	8.0	Surcharged

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	The EGY Collective Limited:		
Report Details: Type: Connections Summary Storm Phase: Phase			



FEH: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FEH: 100 years: +40 %: 30 mins: Summer	Pipe	SW3	SW4	147.500	145.854	0.100	0.587	0.3	0.28	2.2	Surcharged
Pipe (1)	FEH: 100 years: +40 %: 1440 mins: Winter	Pipe	SW4	SW5	147.500	146.800	0.017	69.515	0.5	0.06	0.5	Surcharged
Pipe (2)	FEH: 100 years: +40 %: 480 mins: Summer	Pipe	SW5	SW6	147.500	145.087	0.017	23.095	0.6	0.06	0.5	OK
Pipe (3)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW2	TANK 1	147.500	145.795	0.100	10.173	1.2	1.43	7.8	Surcharged
Pipe (4)	FEH: 100 years: +40 %: 30 mins: Winter	Pipe	TANK 1	SW3	147.500	145.854	0.100	1.260	0.7	0.5	2.8	Surcharged
Pipe (5)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SW1	TANK 2	147.500	145.767	0.100	10.411	1.4	1.16	7.9	Surcharged
Pipe (6)	FEH: 100 years: +40 %: 30 mins: Winter	Pipe	TANK 2	SW4	147.500	145.855	0.100	1.294	0.5	0.64	2.3	Surcharged
Pipe (7)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	RG 1	SW2	147.500	147.433	0.100	10.664	1.0	1.29	7.8	Surcharged
Pipe (8)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	RG2	SW1	147.500	147.431	0.100	10.857	1.0	1.28	8.0	Surcharged

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