

SuDS and Drainage Report

Winterford Farm, Wimland Road, Rusper, West Sussex

Planning Ref: DC/24/1787

Rev: I

Ref: **C4163**

Document Control

Project Number	C4163		
Date	3 rd September 2026	Revision	I
Author	Luke Honeywill	Signature	

Revision History

Date	Revision	Author	Approved
03.09.2026	I	LH	CS

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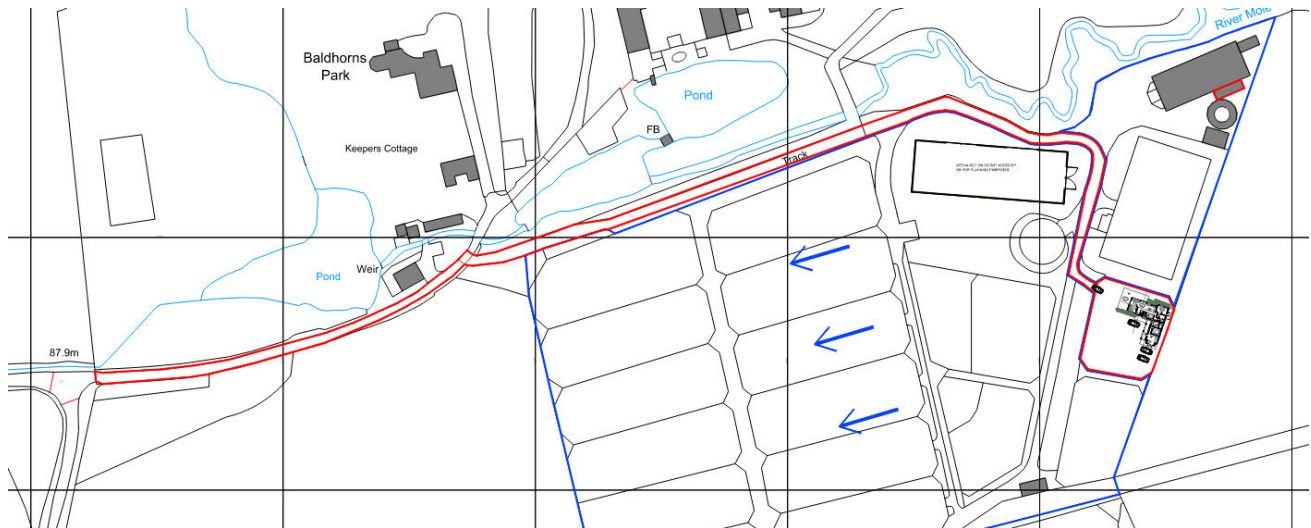
1 Introduction

- 1.1.1 CGS Civils Ltd has been appointed to undertake a drainage strategy report for a proposed development at Winterfold Farm in Rusper, West Sussex.
- 1.1.2 The proposed development will consist of construction of a single dwelling for equestrian workers.
- 1.1.3 The proposed development is located as OS Grid Reference TQ 20635 36063, what3words admires.intrigues.fermented and has the post code RH12 4QU.
- 1.1.4 The purpose of this drainage strategy is to demonstrate how the development area can be satisfactorily drained without increasing flood risk on site and elsewhere, and to clear condition included in decision notice from **05/09/2025**, with the planning reference: **DC/24/1787**. The condition requires the following to be included:
- An assessment into the potential for disposing of surface water by means of Sustainable Drainage System (SuDS).
 - The appropriate Design Storm to be used in the preparation of the drainage design is to be the critical 1 in 100 year return period storm event, plus an allowance of 45% for the predicted effects of climate change and a further 10% for Urban Creep.
- 1.1.5 This document has been prepared with reference to:
- National Planning Policy Framework (NPPF)
 - DEFRA: Sustainable Drainage Systems: Non-Statutory technical standards for sustainable drainage systems
 - DEFRA: National Standards for Sustainable Drainage Systems (SuDS)
 - The SuDS Manual (C753)
 - Building Regulations Document H
 - West Sussex County Council Local Flood Risk Management Strategy

2 The Site

- 2.1.1 The site is currently an undeveloped parcel of land covering 1296m² of area. The topography of the site is noted to fall from south to north/northwest with levels ranging from 90m AOD to 86.55m AOD.
- 2.1.2 The proposed development will consist of the construction of a single dwelling which is to be utilised for equestrian works. The proposed development will result in a total of 377m² of impermeable areas; of which, 233m² will be constructed from a permeable surface, which will freely discharge to ground.

Fig 1. Site Location



3 Executive Summary:

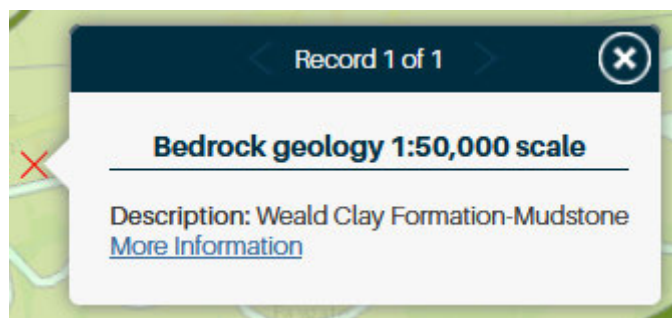
- 3.1.1 The proposed development will consist of the construction of a single dwelling with associated access.
- 3.1.2 The underlying geology is noted to be comprised of Weald Clay. An infiltration test to BRE365 was conducted on site by CGS Civils Ltd. The excavation of the trial pit confirmed the sub-strata to be comprised of Sandy soils, whilst infiltration testing recorded an infiltration rate of $3.33 \times 10^{-5} \text{m/s}$ at 0.6mbgl which confirms the viability of infiltration features.
- 3.1.3 It is proposed that the findings of these tests are further supported by a separate infiltration test to BRE365 within the winter period and winter groundwater monitoring.
- 3.1.4 Surface water runoff will therefore be discharged to ground via infiltration. The runoff from the roof areas is to be captured into a positive drainage network prior to discharging into the permeable sub-base of the access road. The runoff from the hard landscaped areas to freely drain to ground via infiltration.
- 3.1.5 The SuDS features have been designed to cater for the 1 in 100-year storm +45% Climate Change Allowance (CCA) + 10% Urban Creep.
- 3.1.6 The foul water is to be treated on site via a new package treatment plant. The treated effluent runoff will then be discharged into the River Mole to the north of the site.

4 Site Geology

4.1 British Geological Survey information

- 4.1.1 Data from the British Geological Survey shows an expected bedrock geology of Weald Clay Formation. There are no recorded superficial deposits.

Fig 2. British Geological Survey



4.2 Geological Assessment

- 4.2.1 At the time of writing, a full ground investigation has not been carried out on site. However, CGS Civils Ltd have undertaken infiltration testing to BRE365 within a single trial pit on which gave an insight into the strata whilst confirming the viability of infiltration.
- 4.2.2 In August 2026, BRE365 testing was carried out on site at a depth of 0.6mbgl, which corresponds to the depth of the access road formation levels. The test confirmed that the use of infiltration features is viable at shallow depth on site with an infiltration rate of $3.33 \times 10^{-5} \text{m/s}$ being recorded. It is therefore determined that infiltration is a viable means of surface water discharge. It is proposed that the findings of the infiltration test is further supported by a separate test to BRE365 in the winter window and winter groundwater monitoring.

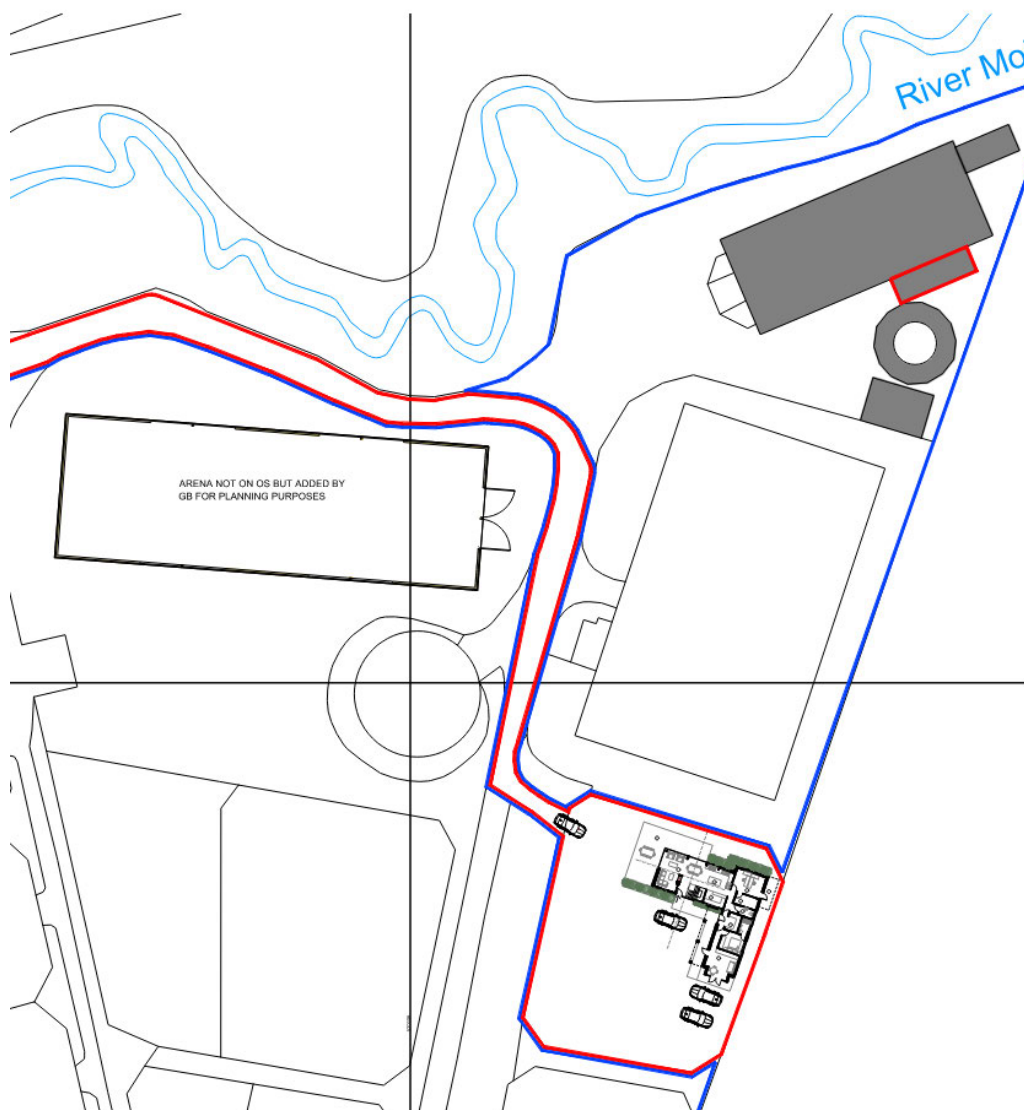
Fig 3. Infiltration Test Photographs



5 Existing Drainage

- 5.1.1 As the site is comprised of an undeveloped area, it is understood that there is no drainage infrastructure present. There are no public Southern Water sewers within the area.
- 5.1.2 The site topographical survey did not identify any evidence of drainage infrastructure near the site, with the surrounding area being used as an equestrian arena and a horse walker, it is understood that these will discharge surface water runoff freely to ground.
- 5.1.3 It is noted that the River Mole is present to the north of the site, which may be a valid alternative discharge location for surface and foul water.

Fig 4. Location of River Mole in reference to site



6 Proposed Drainage Strategy

6.1 SuDS Hierarchy

- 6.1.1 All options for the destination of run-off generated on site have been assessed in the following sequence, in line with the SuDS hierarchy as set out in Building Regulations Part H document and DEFRA's Draft National Standards for SuDS.

Table 1. SuDS Hierarchy

Discharge Destination	Justification
Rainwater Harvesting	Yes – Rainwater harvesting has been included as part of the design.
Interception Features	Bioretention, permeable paving and rainwater harvesting tanks are to be utilised as interception features.
Infiltration to ground	Infiltration has been confirmed to be viable. All surface water runoff is to discharge to ground via infiltration.
To Watercourse	N/A due to above
To Surface Water Sewer	N/A due to above
To Other Sewer	N/A due to above

6.2 Proposed Hydraulic Calculation Specifications:

Table 2. Hydraulic Calculations

Hydraulic Calculations Settings:	
Rainfall Methodology	FEH-22
Volumetric Run-off Coefficient Cv	1
CV Winter and Summer	1.0
Additional Storage (m ³ / ha)	0.0
Maximum Rainfall (mm/hr)	999
Urban Creep	10%
Storm Period and Climate Change Allowances (CCA)	1
	2
	10
	30 + 45%
	100 + 45%

Table 3. Storage Settings

Storage Settings:			
Car Park	PPI	PP2	PP3
	Base Coefficient (m/hr): 0.11988	0.11988	0.11988
	Side Coefficient (m/hr): 0.11988	0.11988	0.11988
	Factor of Safety: 2	2	2
	Porosity: 30%	30%	30%
	Time to Half Empty (mins): 40	10	7

6.3 Surface Water Drainage

- 6.3.1 Based upon the favourable infiltration rates it is proposed that all surface water runoff will discharge into ground via infiltration. All roof areas are to be collected into a positive drainage network prior to being discharge into ground through the permeable sub-base of the parking area.
- 6.3.2 The parking area is to be divided into sections through the incorporation of concrete baffles, allow for the variation in site levels. The road will be construction with a permeable surface course to enable direct infiltration of surface water runoff into the underlying sub-base. Connectivity between the drainage network and the permeable sub-base will be achieved via diffuser tanks, which will facilitate the controlled discharge of runoff into the sub-base layer.
- 6.3.3 It should be noted that some diffuser tanks are located within 5m of the proposed dwelling, however, due to how spread out the infiltration discharges are within the sub-base there is no anticipated impact on the structural integrity of the strata surrounding the foundations of the proposed dwelling and the retaining wall.
- 6.3.4 The dwelling is to be fitted with a rainwater harvesting tank which will allow for the re-use of rainwater within the property. Additionally, the dwelling will be fitted with bio-retention planters which will provide water quality, amenity and biodiversity benefits.
- 6.3.5 Hydraulic calculations can be found in **Appendix C**. It should be noted that a 10% urban creep has been applied to roof areas only and included within the calculations as increased contributing area. This has been highlighted within the impermeable areas plan in **Appendix B**.

7 Compliance with National SuDS Standards and Principles

7.1.1 The current national SuDS standards comprise 7 standards supported by 11 design principles. The tables below summarise how the proposed drainage strategy for Winterfold Farm, Rupser responds to these requirements.

Standard	Requirement	Project response
1	Runoff destinations	Rainwater harvesting has been included. Onsite infiltration testing to BRE365 confirmed infiltration is suitable and it is proposed that all runoff is to discharge to ground.
2	Management of everyday rainfall	Rainfall is managed close to source by rainwater harvesting, bio retention and permeable paving, reducing routine runoff from the site.
3	Management of extreme rainfall and flooding	Roof drainage is directed to infiltration features sized for the 1 in 100-year +45% climate change storm with 10% urban creep. The infiltration-led strategy avoids increasing flood risk elsewhere. Any exceedance routes are directed safely away from habitable areas and towards the road.
4	Water quality	Runoff from roofs and parking areas is treated through the SuDS management train. Permeable paving and infiltration components provide pollutant mitigation in accordance with the simple index approach.
5	Amenity	The drainage strategy uses source control and permeable surfacing integrated within the site layout rather than relying solely on conventional buried drainage. Given the restrictive nature of the site, open SuDS are not considered appropriate. However, the inclusion of SuDS planters will provide amenity benefits.
6	Biodiversity	Given the small nature of the site, it will not be appropriate to utilise open SuDS however, the use of SuDS planters will provide biodiversity benefits.
7	Construction, operation, maintenance and structural integrity	The proposed SuDS components are conventional, buildable and maintainable.

Compliance Table A. Summary of compliance with the 7 national SuDS standards

The proposed drainage design also follows the 11 underpinning principles of the national standards as summarised below.

Principle	Summary	Project response
1	Natural approach to managing water	Surface water is retained and managed on site at source using infiltration in the form of permeable paving and rainwater harvesting.
2	Management train close to source	Varying SuDS features are used together, with re-use and permeable surfacing operating and discharging to source.
3	SuDS approach	The strategy manages runoff quantity, water quality and long-term maintenance in an integrated manner.
4	Early and integrated design	Drainage has been considered alongside site levels, layout, and the proposed access road arrangement.
5	Site layout informed by drainage	Roof area and hard paved runoff have been assessed together, Drainage serving these features have been designed to reflect different levels and infiltration rates.
6	Follow natural drainage routes	The layout allows runoff to be managed in accordance with site topography and infiltration opportunities.
7	Take account of local policy and flood evidence	The design is based on BRE 365 testing, BGS data and current national and local SuDS standards. BRE365 testing in winter and groundwater monitoring should be carried out to further support design.
8	Early engagement with the authority	The report format and supporting evidence are intended to support the planning application.
9	Demonstrate compliance from concept stage	Compliance with the national standards is addressed within this planning-stage drainage strategy rather than deferred entirely to later stages.
10	Show how the standards are met in site design	The report sets out the hierarchy, testing, hydraulic basis, water quality approach in one coordinated document.
11	Consider phasing where relevant	The development is small and not expected to be phased; however, the strategy is capable of being delivered in a single coordinated phase.

Compliance Table B. Summary of compliance with the 11 SuDS design principles

7.2 Water Quality

- 7.2.1 A key requirement of any SuDS system is that it protects the receiving water body from the risk of pollution.
- 7.2.2 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 5-10mm of rainfall should be adequately treated with SuDS.
- 7.2.3 The SuDS Manual (CIRIA C753) describes risks posed to the receiving environment by any proposed drainage discharge.
- 7.2.4 The Manual describes risks posed by the surface water runoff to the receiving environment as a function of:
- The pollution hazard at a particular site (i.e., the pollution source)
 - The effectiveness of SuDS treatment components in reducing levels of pollutants to environmentally acceptable levels
 - The sensitivity of the receiving environment
- 7.2.5 The recommended approaches for water quality risk management are given in the SuDS Manual Table 26.1.

Table 26.1, (SuDS Manual Section E) from SuDS manual. Approaches to Water Quality Risk Management

Design method	Hazard Characterisation	Risk Reduction	
		For Surface Water	For Groundwater
Simple Index Approach	Simple pollution hazard indices based on land use (Table 26.2)	Simple SuDS hazard mitigation indices (Table 26.3)	Simple SuDS hazard mitigation indices (Table 26.4)
Risk Screening	Factors characterising traffic density and extent of infiltration likely to occur (Table 26.5)	N/A	Factors characterising unsaturated soil depth and type, and predominant flow type through the soils (Table 26.5)
Detailed Risk Assessment	Site specific information used to define likely pollutants and their significance	More detailed, component specific performance information used to demonstrate that the proposed SuDS components reduce the hazard to acceptable levels	
Process-based treatment modelling	Time series rainfall used with generic pollution characteristics to determine statistical distributions of likely concentrations and loadings in the runoff	Models that represent the treatment processes in the proposed SuDS components give estimates of reductions in even mean discharge concentrations and total annual load reductions delivered by the system	

- 7.2.6 In accordance with the guidelines above, the Simple Index Approach will be used to determine the water quality requirements for this developments.

7.2.7 Table 26.2 (SuDS Manual Section E) provides hazard classifications that are to be applied to various land uses. The land uses relevant to this development are:

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 (e.g., cul-de-sacs, homezones and general access roads) and non-residential car parking with infrequent change (e.g., schools, offices) i.e., < 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, stored, used or manufactured; industrial sites; trunk roads and motorways	High	0.8	0.8	0.9

7.2.8 To deliver adequate treatment, the selected SuDS components must have a total pollution mitigation index that exceeds the pollution hazard index for each containment type.

Total SuDS mitigation index $\geq$ pollution hazard index

Table 26.2 from SuDS manual. Pollution Hazard Indices for Different Land Use Classifications

Table 26.2 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 (e.g., cul-de-sacs, homezones and general access roads) and non-residential car parking with infrequent change (e.g., schools, offices) i.e., < 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, stored, used or manufactured; industrial sites; trunk roads and motorways	High	0.8	0.8	0.9

7.2.9 The relevant land uses for this development are highlighted.

7.2.10 Table 26.4 (SuDS Manual Section E) provides indicative SuDS mitigation indices for proposed discharges to groundwater.

Table 26.4 Indicative SuDS mitigation indices for discharges to groundwater			
Characteristics of the material overlying the proposed infiltration surface, through which the runoff percolates	TSS	Metals	Hydrocarbons
A layer of dense vegetation underlain by a soil with good containment attenuation potential of at least 300mm in depth	0.6	0.5	0.6
A soil with good contaminant attenuation potential of at least 300mm in depth	0.4	0.3	0.3
Infiltration trench (where a suitable depth of filtration material is included that provides treatment, i.e., graded gravel with sufficient smaller particles but not single size coarse aggregate such as 20mm gravel) underlain by a soil with good contaminant attenuation potential of at least 300mm in depth.	0.4	0.4	0.4
Constructed permeable pavement (where a suitable filtration later is included that provides treatment, and including a geotextile at the base separating the foundation from the subgrade) underlain by a soil with good contaminant attenuation potential of at least 300mm in depth	0.7	0.6	0.7
Bioretention underlain by a soil with good contaminant attenuation potential of at least 300mm in depth	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 inflow concentrations relevant to the contributing drainage area		

Table 4: SuDS mitigation index

Table 4 Mitigation Indices						
Runoff Source	Destination of Runoff	Mitigation Index Source	Type of SuDS Component	Hazard Index (Table 26.2)		
				Total Suspended Solids (TSS)	Metals	Hydrocarbons
Individual driveways, residential car parks and low traffic roads	Ground water	Table 26.4 (for ground waters)	Permeable Pavement	0.5	0.4	0.4
				Mitigation Indices (Table 26.3)		
				0.7	0.6	0.7
Residential Roofs	Ground water	Table 26.4 (for ground waters)	Bioretention System	Hazard Index (Table 26.2)		
				Total Suspended Solids (TSS)	Metals	Hydrocarbons
				0.2	0.2	0.05
				Mitigation Indices (Table 26.3)		
				0.8	0.8	0.8

7.2.11 This analysis has demonstrated that the SuDS components proposed for this development will adequately mitigate any pollution risks identified during the assessment.

7.3 Foul water drainage

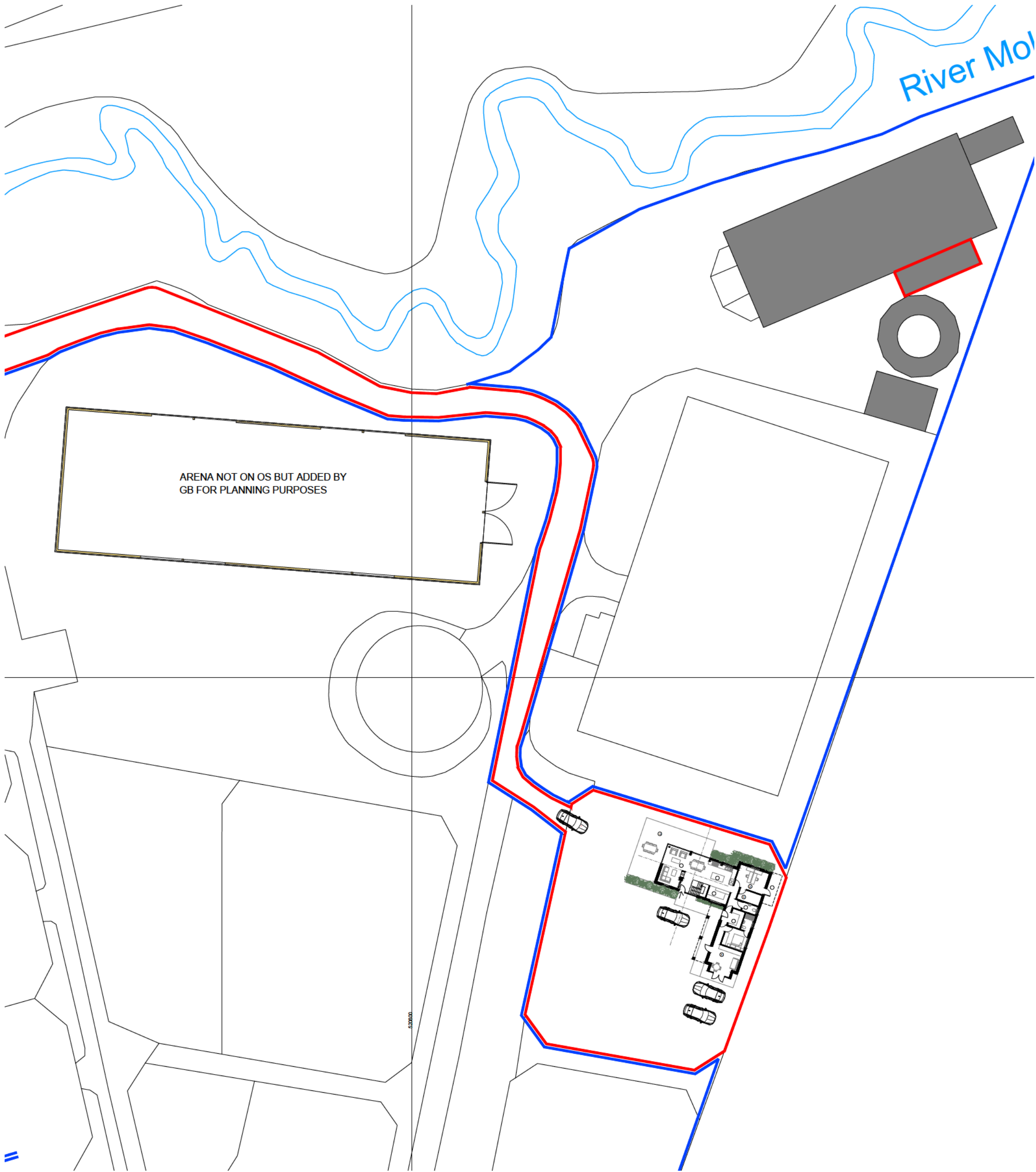
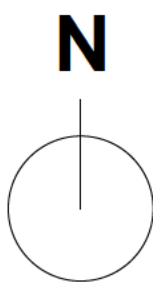
- 7.3.1 The foul water is to be treated on site via a new package treatment plant. The treated effluent runoff will then be discharged into the River Mole to the north of the site.
- 7.3.2 The proposed discharge of treated effluent does not require Environment Agency approval as it adheres to the General Binding Rules for small discharge to surface water. This is because the proposed discharge:
- Is less than 5m³ a day
 - Utilises a sufficient treatment system
 - Is not causing pollution
 - Is not within 500 meters of a protected site
 - Is not within 50m of any other exempt discharge

8 Summary and Conclusions

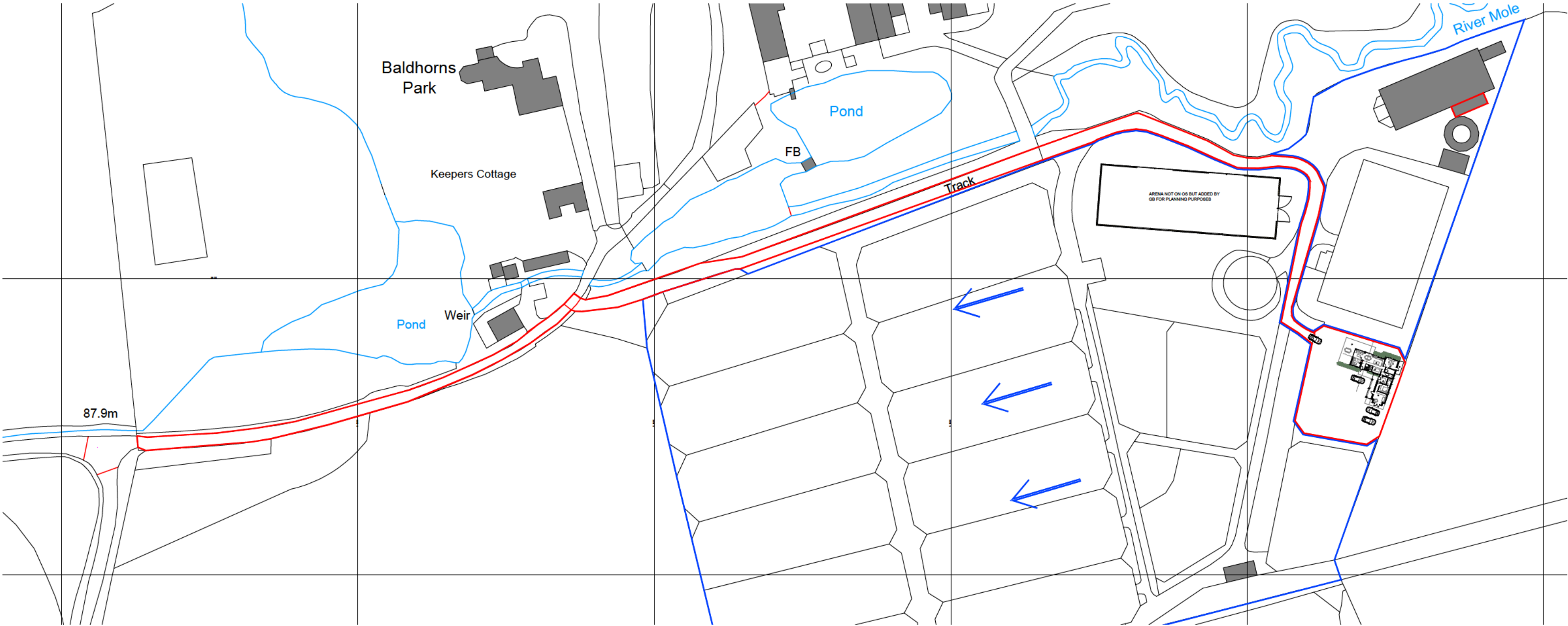
- 8.1.1 CGS Civils has been instructed to produce a Drainage statement under National Planning Policy Framework (NPPF) to support the Planning Application for the construction of a single dwelling for equestrian workers.
- 8.1.2 The Surface Water will discharge to ground via infiltration through the use of permeable paving. The proposed SuDS features have been designed to cater for the 1 in 100-year storm +45% CCA +10% Urban Creep.
- 8.1.3 The foul water is to be treated on site via a new package treatment plant. The treated effluent runoff will then be discharged into the River Mole to the north of the site.
- 8.1.4 This report demonstrates that the foul and surface water drainage measures proposed for this development are suitable and will adequately mitigate the risks identified.

9 Appendices

9.1 Appendix A – Site Plan



SITE BLOCK PLAN - AS PROPOSED
SCALE 1:500 ON AN A1 SHEET



SITE LOCATION PLAN - AS PROPOSED
SCALE 1:1250 ON AN A1 SHEET

A	26.11.24	CS	Red line extended to Wimland Road per HDC request	-
REV.	DATE.	BY.	AMENDMENT.	CHK.

PLANNING


2 Lucas Mews, Paddockhall Road,
Haywards Heath,
West Sussex, RH16 1HE
(01444) 452604
hb@gouldbaxter.co.uk
www.gouldbaxter.co.uk

NOTES:
DO NOT SCALE OFF THIS DRAWING UNLESS FOR PLANNING PURPOSES.
CHECK ALL DIMENSIONS ON SITE BEFORE ANY WORK IS COMMENCED.
ALL GOODS MATERIALS AND WORKMANSHIP MUST CONFORM WITH CURRENT BUILDING REGULATIONS, BRITISH STANDARDS AND CODES OF PRACTICE.
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CLIENT:
Amy Stovold and Simon Staempfli

PROJECT:
New Workers Dwelling
Winterfold Farm
Wimland Road
Rusper
RH12 4QU

DRAWING:
Site Location and Block Plan
As Proposed

DATE: 04.11.2024	SCALE AT A1: Varies	DRAWN BY: CS CHECKED BY: MC
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JOB NO. GH724	DRAWING NO. PL.01	REV. A
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KEY

soft landscape

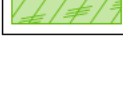
- 

PROPOSED TREE PLANTING - STANDARDS
Standard tree planting proposed. Minimum 400mm depth of specific purpose free draining topsoil to BS 3882:2015 for tree planting [see P.J.C. 1569.002 Landscape Detailed Planting Plan for further details]
- 

PROPOSED MULTI-STEM SPECIMEN TREES & SHRUBS
Multi-stem specimen tree planting proposed. Minimum 400mm depth of specific purpose free draining topsoil to BS 3882:2015 for tree planting [see P.J.C. 1569.002 Landscape Detailed Planting Plan for further details]
- 

PROPOSED TREE PLANTING
PROJECTED CANOPY AT 25 YEARS FROM PLANTING
Proposed canopy radius and canopy m² shown by dashed line. [see P.J.C. 1569.002 Landscape Detailed Planting Plan - Projected Canopy Cover Schedule for further details]
- 

PLANTING BEDS
Native & Ornamental planting to include species of value to wildlife and pollinators. 400mm depth of topsoil shall be provided, with suitable (loosened) subsoil to provide the remainder of the minimum rooting depth. Specific purpose free draining topsoil to BS 3882:2015 for planting [see P.J.C. 1569.002 Landscape Detailed Planting Plan for further details]
- 

HEDGE PLANTING - MIXED SPECIES UK NATIVE HEDGES [horse mix]
Staggered double rows. 5 plants per linear metre for bareroot stock. 4 plants per linear metre for staggered double row container grown stock. 300mm depth of topsoil shall be provided, with suitable (loosened) subsoil to provide the remainder of the minimum rooting depth. Specific purpose free draining topsoil to BS 3882:2015 for planting [see P.J.C. 1569.002 Landscape Detailed Planting Plan for further details]
- 

GRASSWORKS - PROPOSED LANDSCAPE GRASS FLOWERING LAWN
Areas of proposed amenity grass seed mix applied upon a minimum of 150mm depth of specific purpose free draining topsoil to BS 3882:2015. Soil leveled and prepared to a fine tilth prior to turfing. [see P.J.C. 1569.002 Landscape Detailed Planting Plan for further details]
- 

GRASSWORKS - PROPOSED WILDFLOWER TREATMENT - [PRE SEEDED]
Areas of proposed Wildflower Landscape Pro Seeded medium applied. [Wildflower Turf - Meadowscape Pro™ system - Pro-Landscape-34 Mix, made up of 34 UK native wildflowers and grasses, minimum 75% wildflowers] installed upon a minimum of 50mm depth of specific purpose LOW NUTRIENT free draining topsoil to BS 3882:2015. Soil leveled and prepared to a fine tilth prior to medium application. [see P.J.C. 1569.002 Landscape Detailed Planting Plan for further details]

hard landscape

- 

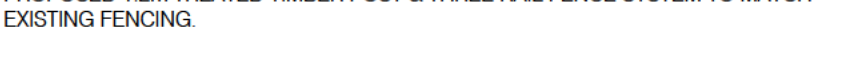
HARD LANDSCAPE - PROPOSED NATURAL STONE PAVING PATHWAYS & TERRACE AREAS [NON-PERMEABLE SURFACE]
Proposed natural limestone in Antique Grey
Build-ups & Specification to project engineers specification & Drainage Engineer Specification
- 

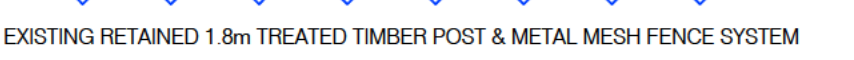
HARD LANDSCAPE - PROPOSED PERMEABLE RESIN BOUND GRAVEL DRIVEWAY - [PERMEABLE]
Proposed resin bound gravel treatment of Blue Marble colour 6mm
Build-ups & Specification to project engineers specification & Drainage Engineer Specification
- 

HARD LANDSCAPE - PROPOSED NATURAL STONE DRIVEWAY EDGE SEAM SETTS
Proposed limestone setts in Midnight Black
Build-ups & Specification to project engineers specification & Drainage Engineer Specification

boundary treatments

- 

PROPOSED 1.2m TREATED TIMBER POST & THREE RAIL FENCE SYSTEM TO MATCH EXISTING FENCING
- 

EXISTING RETAINED 1.8m TREATED TIMBER POST & METAL MESH FENCE SYSTEM
- 

PROPOSED 1.1m STAINLESS STEEL BALUSTRADE SYSTEM WITH TENSIONED STAINLESS STEEL CABLE FILL INSTALLED UPON RETAINING WALL STRUCTURES
- 

EXISTING 1.8m TREATED TIMBER POST & METAL MESH FENCE SYSTEM TO BE REMOVED

All works to conform to
BS 5837:2012 Trees in relation to design, demolition and construction. Plus conforming to arboricultural method statements.
BS 4428:1989 Code of practice for general landscape operations (excluding hard surfaces)
BS 8545:2014 Trees: from nursery to independence in the landscape. Recommendations ASTM D5268 - 13
Standard Specification for Topsoil Used for Landscaping Purposes
NOTE:
This drawing indicates design arrangement only. All works to be undertaken in accordance with best practice and all current BS & Building Regulations.
Use figured dimensions only after checking.
Drawing to be printed and read in colour only

Rev:	Description	Date
Client:	Simon Staempfli (Sussex Equine Hospital)	

Project Name:
Winterfold Farm
Wimland Road
Rusper
Horsham
West Sussex

Drawing title: Proposed Landscape Plan

Drawing no: P.J.C. 1569.001 Rev:

Scale: 1:100 at A1 Date: 19.08.2026

Drawn by: TR Designed by: TR

9.2 **Appendix B – Drainage Layout**



FOR ONTIN ATION EE 416_10
DRAIN A E TRATE Y HEET

EQUESTRIAN ARENA

GRASS

GRASS

GRASS

DRAINAGE LEGEND
PROPOSED FEATURES

- FWD — Surface Water Drainage
— SWD — Concrete Baffle
- Bioretention Planter
Storm water inspection chamber (4500)
Storm water catchpit chamber (4500)
Storm water rodding eye
- Permeable paving with porous sub-base (self-draining)
Permavoid Diffuser Unit
Foul water access chamber (3000)
Foul water inspection chamber (4500)
- 00.000
1000 4.5m 1:100
Z BED
- Pipe info - diameter, length, gradient, bedding type
- ABBREVIATIONS
MH - MANHOLE
IC - INSPECTION CHAMBER
AC - ACCESS CHAMBER
CP - CATCHPIT
BC - BRAKE CHAMBER
RE - RODDING EYE
IL - INVERT LEVEL
SL - SUMP LEVEL
RA - RESTRICTED ACCESS COVER
CL - COVER LEVEL
TL - TOP OF CELLULAR SA
BL - BASE OF CELLULAR SA
FL - FORMATION LEVEL
- 87 400 / 86 820 +
Retaining Wall - Design by others
- Extent of impermeable hard landscaping

- STANDARD DRAINAGE NOTES
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 - ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
 - THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECT AND ENGINEERING DETAILS, DRAWINGS AND SPECIFICATIONS.
 - ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT AND/OR ENGINEER IMMEDIATELY, SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO THE COMMENCEMENT OF WORK.
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 - ALL DRAINAGE WORKS SHOULD COMMENCE AT THE PROPOSED DOWNSTREAM CONNECTION POINT. THE WORKS CONTINUING UPSTREAM FOLLOWING CONFIRMATION OF THE TIE-IN INVERT LEVELS TO THE ENGINEER. CONNECTIONS TO MANHOLES OR LARGER SIZED PIPES ETC. SHOULD BE SOFFIT TO SOFFIT UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, IF THIS IS NOT POSSIBLE INFORM THE ENGINEER IMMEDIATELY.
 - COVER LEVELS SHOWN ARE APPROXIMATE. COVERS AND FRAMES SHALL BE SET TO FINISHED GROUND LEVELS AND FALLS.
 - ALL UN-REFERENCED PIPES ARE TO BE 100mm DIA.
 - ALL PIPES TO BE ADOPTED, OR CONNECTING TO ADOPTED SEWERS, TO BE VITRIFIED CLAY TO BS EN 205 AND BS65 (SWS ONLY), OR CONCRETE PIPES TO BE EN 1916 AND BS5911 PART 1.
 - ROAD GULLY OUTLET PIPES ARE TO BE 150mm DIA. WITH CONCRETE SURROUND AND FLEXIBLE JOINTS. ALL GULLIES SHALL BE FITTED WITH GRADE D400 GRATINGS AND FRAMES TO BS EN124, UNLESS OTHERWISE STATED.
 - ALL ADOPTABLE SEWERS SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATION LAID DOWN IN 'SEWERS FOR ADOPTION' 6th EDITION, WITH A VIEW TO ADOPTION UPON COMPLETION OF WORKS.
 - ALL PRIVATE DRAINAGE TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS APPROVED DOCUMENT PART-H, AND TO THE SATISFACTION OF THE BUILDING CONTROL INSPECTOR.
 - THE CONTRACTOR IS TO KEEP A RECORD OF ANY VARIATIONS MADE ON SITE, INCLUDING THE RELOCATION OF SEWERS OR DRAINS, SO THAT AN AS CONSTRUCTED DRAWING CAN BE PREPARED UPON COMPLETION OF THE PROJECT.
 - STUB CONNECTIONS TO ADOPTABLE MANHOLES SHALL BE MADE FROM VITRIFIED CLAY AND CONSIST OF TWO ROCKER PIPES LAID AT THE SAME GRADIENT AS THE UP OR DOWNSTREAM PIPE.
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 - UPON COMPLETION BUT PRIOR TO HANDOVER, CONTRACTOR TO CARRY OUT FULL CCTV SURVEY OF DRAINAGE SYSTEM WHICH IS TO BE REVIEWED BY ENGINEER TO ENSURE SATISFACTORY INSTALLATION.
 - PROPRIETARY PRODUCTS TO BE INSTALLED IN FULL ACCORDANCE WITH MANUFACTURER'S GUIDANCE.
 - MANHOLE AND CHAMBER COVER GRADES:
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- 'B125' IN ALL DRIVEWAYS
- 'C250' IN PRIVATE PARKING AREAS
- 'D400' IN CARRIAGEWAY/ACCESS ROAD

DE I N B E T TO THE APPROVAL OF:
PLANNIN A THORITY
B ILDIN ONTROL

DE I N B E T TO THE ONFIRMATION OF:
EXTERNAL LEVEL DE I N
RO NDWATER DEPTH

- Site Specific Notes
- The proposed development will consist of the construction of a single dwelling with associated access.
 - The underlying geology is noted to be comprised of Weald Clay. An infiltration test to BRE365 was conducted on site by CGS Civils Ltd. The excavation of the trial pit confirmed the sub-strata to be comprised of Sandy soils, whilst infiltration testing recorded an infiltration rate of 3.33x10-5m/s at 0.6mgl which confirms the viability of infiltration features.
 - It is proposed that the findings of these tests are further supported by a separate infiltration test to BRE365 within the winter period and winter groundwater monitoring.
 - Surface water runoff will therefore be discharged to ground via infiltration. The runoff from the roof areas is to be captured into a positive drainage network prior to discharging into the permeable sub-base of the access road. The runoff from the hard landscaped areas to freely drain to ground via infiltration.
 - The SuDS features have been designed to cater for the 1 in 100-year storm +45% Climate Change Allowance (CCA) + 10% Urban Creep.
 - The foul water is to be treated on site via a new package treatment plant. The treated effluent runoff will then be discharged into the River Mole to the north of the site.

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1	08.09.26	PRELIMINARY ISSUE	LH	CS	CS
REV	DATE	DESCRIPTION	BY	CHK	APP
CLIENT	AMY STOVOID & SIMON STAEMPFLI				
ARCHITECT	GOULD BAXTER				
JOB TITLE	LAND AT WINTERFOLD FARM RUSPER				
DRAWING TITLE	DRAINAGE STRATEGY SHEET 1				
DRAWN	LH	ENGINEER	C SLADE	CHECKED	CS
DATE	SEPTEMBER 2026	SCALE @ A1	1:100	APPROVED	CS
JOB No.	C4163	STATUS	P	DRAWING No.	101
REV.					1

FOR PLANNING ONLY



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- | | |
|------------------|--|
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1	08.09.26	PRELIMINARY ISSUE	LH	CS	CS
REV	DATE	DESCRIPTION	BY	CHK	APP
ivil o l i g i v i l E g i e e r					
CLIENT AMY STOVOLD & SIMON STAEMPFLI					
ARCHITECT GOULD BAXTER					
JOB TITLE LAND AT WINTERFOLD FARM RUSPER					
DRAWING TITLE DRAINAGE STRATEGY SHEET 2					
DRAWN	LH	ENGINEER	C SLADE	CHECKED	CS
DATE	SEPTEMBER 2026	SCALE @ A1	1:100	APPROVED	CS
JOB No.	C4163	STATUS	P	DRAWING No.	102
		REV.			1

DRAINAGE ELEMENTS
PROPOSED FEATURES

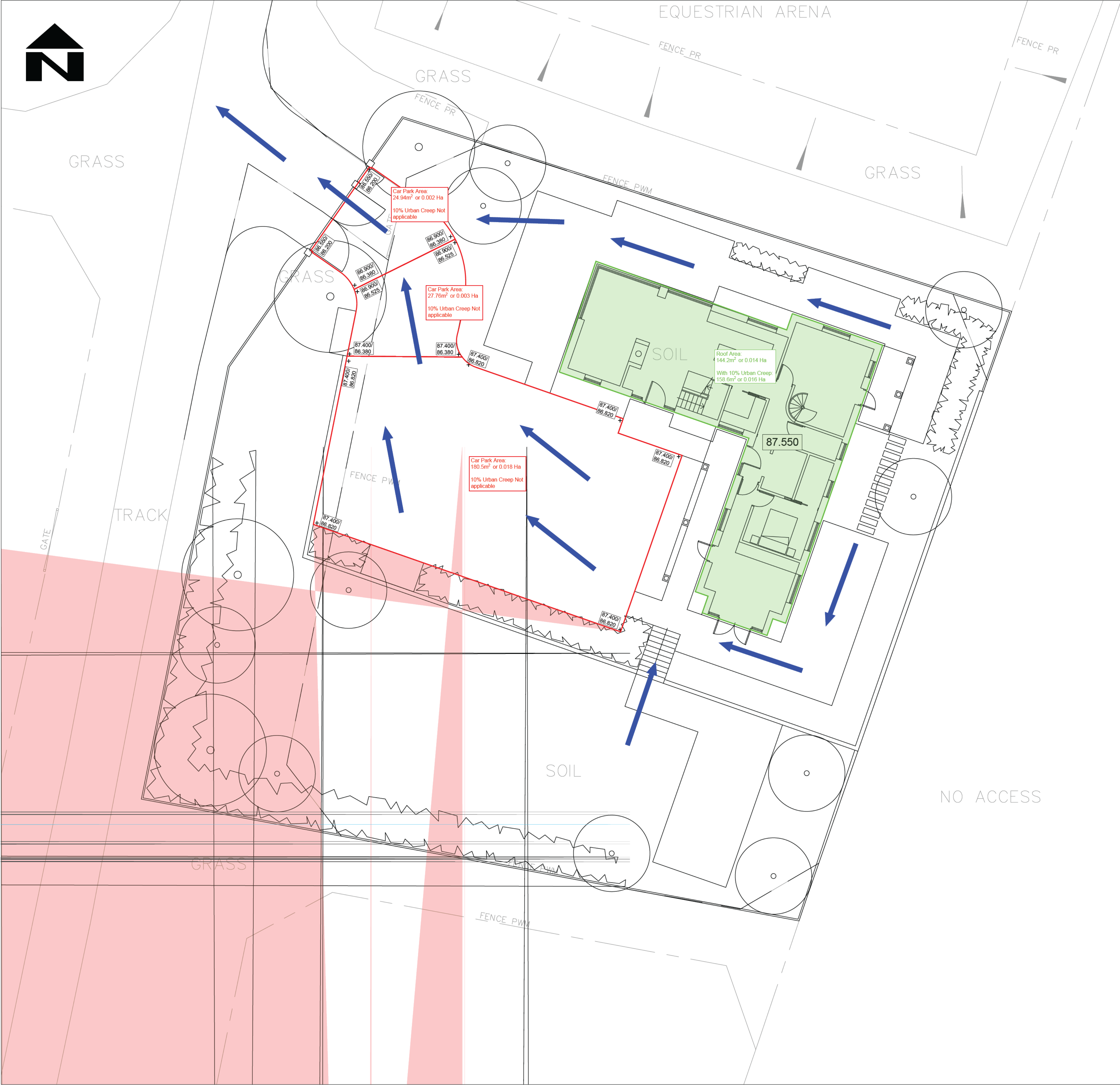
- | | |
|--|---|
| | Foul Drainage |
| | Surface Water Drainage |
| | Concrete Baffle |
| | Bioretention Planter |
| | Storm water inspection chamber (4500) |
| | Storm water catchpit chamber (4500) |
| | Storm water rodding eye |
| | Permeable paving with porous sub-base (self-draining) |
| | Permavoid Diffuser Unit |
| | Foul water access chamber (3000) |
| | Foul water inspection chamber (4500) |
| | Finished floor level - TBC by Architect |
| | Pipe info - diameter, length, gradient, bedding type |
| | ABBREVIATIONS |
| | Proposed surface level / Proposed formation level |
| | Retaining Wall - Design by others |
- Extent of impermeable hard landscaping

DESIGN SUBJECT TO THE APPROVAL OF:
PLANNING AUTHORITY
BUILDING CONTROL

DESIGN SUBJECT TO THE CONFIRMATION OF:
EXTERNAL LEVELS DESIGN
GROUNDWATER DEPTH

FOR CONTINUATION SEE C4163_101
DRAINAGE STRATEGY SHEET 1

PRELIMINARY



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08.09.26		PRELIMINARY ISSUE	LH	CS	CS
REV	DATE	DESCRIPTION	BY	CHK	APP
g ivil o l i g i v i l E g i e e r					
CLIENT AMY STOVOLD & SIMON STAEMPFLI					
ARCHITECT GOULD BAXTER					
JOB TITLE LAND AT WINTERFOLD FARM RUSPER					
DRAWING TITLE IMPERMEABLE AREAS & OVERLAND FLOW ROUTE PLAN					
DRAWN LH		ENGINEER C SLADE		CHECKED CS	APPROVED CS
DATE SEPTEMBER 2026		SCALE @ A1 1:100			
JOB No. C4163		STATUS P	DRAWING No. 401		REV. 1

FOR PLANNING ONLY

9.3 **Appendix C – Surface Water Calculations**

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	0.300
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	999.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Manhole Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
RE2		5.00	87.400	Manhole	Adoptable	100	385.384	-60.686	0.400	87.000
S2	0.008	5.00	87.400	Manhole	Adoptable	300	383.000	-66.587	0.462	86.938
S3	0.008	5.00	87.400	Manhole	Adoptable	450	375.424	-63.943	0.540	86.860
PP1	0.018		87.400	Manhole	Adoptable	100	374.024	-63.454	0.580	86.820
PP2	0.000	5.00	87.400	Manhole	Adoptable	100	363.399	-50.675	0.375	87.025
PP2.1	0.003		86.900	Manhole	Adoptable	100	362.872	-45.895	0.375	86.525
PP3		5.00	86.900	Manhole	Adoptable	100	362.978	-45.843	0.350	86.550
PP3.1	0.002		86.550	Manhole	Adoptable	100	359.797	-42.667	0.350	86.200

Links (Input)

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
1.000	RE2	S2	6.364	87.000	86.938	0.062	102.7	100
1.001	S2	S3	8.024	86.938	86.860	0.078	102.9	100
1.002	S3	PP1	1.483	86.860	86.820	0.040	37.1	100
2.000	PP2	PP2.1	4.809	87.025	86.525	0.500	9.6	100
3.000	PP3	PP3.1	4.495	86.550	86.200	0.350	12.8	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	MH Type	Connections	Link	IL (m)	Dia (mm)	Link Type
RE2	385.384	-60.686	87.400	0.400	100	Adoptable					
S2	383.000	-66.587	87.400	0.462	300	Adoptable		0	1.000	87.000	100 Circular
S3	375.424	-63.943	87.400	0.540	450	Adoptable		1	1.001	86.938	100 Circular
PP1	374.024	-63.454	87.400	0.580	100	Adoptable		1	1.001	86.860	100 Circular
PP2	363.399	-50.675	87.400	0.375	100	Adoptable		1	1.002	86.820	100 Circular
PP2.1								0	2.000	87.025	100 Circular

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	MH Type	Connections	Link	IL (m)	Dia (mm)	Link Type
PP2.1	362.872	-45.895	86.900	0.375	100	Adoptable	1	2.000	86.525	100	Circular
											
PP3	362.978	-45.843	86.900	0.350	100	Adoptable	0	3.000	86.550	100	Circular
											
PP3.1	359.797	-42.667	86.550	0.350	100	Adoptable	1	3.000	86.200	100	Circular
											

Simulation Settings

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

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0	30	0	0	0
2	0	0	0	100	45	0	0
10	0	0	0				

Node PP1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.11988	Invert Level (m)	86.820	Slope (1:X)	9999.0
Side Inf Coefficient (m/hr)	0.11988	Time to half empty (mins)	40	Depth (m)	0.530
Safety Factor	2.0	Width (m)	18.050	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node PP2.1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.11988	Invert Level (m)	86.525	Slope (1:X)	25.0
Side Inf Coefficient (m/hr)	0.11988	Time to half empty (mins)	10	Depth (m)	0.325
Safety Factor	2.0	Width (m)	2.780	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node PP3.1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.11988	Invert Level (m)	86.200	Slope (1:X)	25.0
Side Inf Coefficient (m/hr)	0.11988	Time to half empty (mins)	7	Depth (m)	0.300
Safety Factor	2.0	Width (m)	2.500	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	RE2	1	87.000	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S2	11	86.964	0.026	0.9	0.0019	0.0000	OK
15 minute summer	S3	9	86.898	0.038	1.8	0.0060	0.0000	OK
120 minute summer	PP1	70	86.843	0.023	2.1	1.2159	0.0000	OK
15 minute summer	PP2	1	87.025	0.000	0.0	0.0000	0.0000	OK
30 minute winter	PP2.1	23	86.615	0.090	0.3	0.0775	0.0000	OK
15 minute summer	PP3	1	86.550	0.000	0.0	0.0000	0.0000	OK
180 minute winter	PP3.1	112	86.279	0.079	0.1	0.0512	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	
15 minute summer	RE2	1.000	S2	0.0	0.000	0.000	0.0052	
15 minute summer	S2	1.001	S3	0.9	0.443	0.151	0.0172	
15 minute summer	S3	1.002	PP1	1.8	1.228	0.184	0.0024	
120 minute summer	PP1	Infiltration		1.4				
15 minute summer	PP2	2.000	PP2.1	0.0	0.000	0.000	0.0169	
30 minute winter	PP2.1	Infiltration		0.1				
15 minute summer	PP3	3.000	PP3.1	0.0	0.000	0.000	0.0122	
180 minute winter	PP3.1	Infiltration		0.1				

Results for 2 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	RE2	1	87.000	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S2	10	86.971	0.033	1.4	0.0023	0.0000	OK
15 minute summer	S3	9	86.905	0.045	2.8	0.0071	0.0000	OK
30 minute summer	PP1	22	86.855	0.035	5.4	1.8607	0.0000	OK
15 minute summer	PP2	1	87.025	0.000	0.0	0.0000	0.0000	OK
30 minute summer	PP2.1	22	86.646	0.121	0.5	0.1345	0.0000	OK
15 minute summer	PP3	1	86.550	0.000	0.0	0.0000	0.0000	OK
30 minute winter	PP3.1	23	86.298	0.098	0.3	0.0765	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	
15 minute summer	RE2	1.000	S2	0.0	0.000	0.000	0.0071	
15 minute summer	S2	1.001	S3	1.4	0.500	0.232	0.0225	
15 minute summer	S3	1.002	PP1	2.8	1.322	0.278	0.0034	
30 minute summer	PP1	Infiltration		2.1				
15 minute summer	PP2	2.000	PP2.1	0.0	0.000	0.000	0.0188	
30 minute summer	PP2.1	Infiltration		0.2				
15 minute summer	PP3	3.000	PP3.1	0.0	0.000	0.000	0.0171	
30 minute winter	PP3.1	Infiltration		0.1				

Results for 10 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	RE2	1	87.000	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S2	10	86.987	0.049	2.8	0.0035	0.0000	OK
15 minute summer	S3	10	86.925	0.065	5.6	0.0104	0.0000	OK
30 minute summer	PP1	23	86.892	0.072	10.6	3.8814	0.0000	OK
15 minute summer	PP2	1	87.025	0.000	0.0	0.0000	0.0000	OK
60 minute summer	PP2.1	41	86.715	0.190	0.7	0.3220	0.0000	OK
15 minute summer	PP3	1	86.550	0.000	0.0	0.0000	0.0000	OK
30 minute summer	PP3.1	23	86.358	0.158	0.6	0.1884	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	
15 minute summer	RE2	1.000	S2	0.0	0.000	0.000	0.0122	
15 minute summer	S2	1.001	S3	2.8	0.595	0.463	0.0371	
15 minute summer	S3	1.002	PP1	5.5	1.444	0.553	0.0070	
30 minute summer	PP1	Infiltration		3.1				
15 minute summer	PP2	2.000	PP2.1	0.0	0.000	0.000	0.0188	
60 minute summer	PP2.1	Infiltration		0.3				
15 minute summer	PP3	3.000	PP3.1	0.0	0.000	0.000	0.0176	
30 minute summer	PP3.1	Infiltration		0.2				

Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	RE2	1	87.000	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S2	10	86.996	0.058	3.6	0.0041	0.0000	OK
15 minute summer	S3	10	86.938	0.078	7.2	0.0124	0.0000	OK
60 minute summer	PP1	42	86.923	0.103	10.6	5.5743	0.0000	OK
15 minute summer	PP2	1	87.025	0.000	0.0	0.0000	0.0000	OK
60 minute summer	PP2.1	41	86.755	0.230	0.9	0.4661	0.0000	OK
15 minute summer	PP3	1	86.550	0.000	0.0	0.0000	0.0000	OK
60 minute summer	PP3.1	40	86.392	0.192	0.6	0.2751	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	
15 minute summer	RE2	1.000	S2	0.0	0.000	0.000	0.0149	
15 minute summer	S2	1.001	S3	3.6	0.629	0.598	0.0451	
15 minute summer	S3	1.002	PP1	7.1	1.488	0.712	0.0092	
60 minute summer	PP1	Infiltration		3.1				
15 minute summer	PP2	2.000	PP2.1	0.0	0.000	0.000	0.0188	
60 minute summer	PP2.1	Infiltration		0.3				
15 minute summer	PP3	3.000	PP3.1	0.0	0.000	0.000	0.0176	
60 minute summer	PP3.1	Infiltration		0.2				

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

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	RE2	12	87.140	0.140	1.1	0.0011	0.0000	FLOOD RISK
15 minute summer	S2	12	87.140	0.202	6.6	0.0143	0.0000	FLOOD RISK
30 minute summer	S3	20	87.066	0.206	10.9	0.0328	0.0000	SURCHARGED
60 minute summer	PP1	47	87.053	0.233	18.4	12.5911	0.0000	OK
15 minute summer	PP2	1	87.025	0.000	0.0	0.0000	0.0000	OK
60 minute summer	PP2.1	42	86.867	0.342	1.7	1.0116	0.0000	OK
15 minute summer	PP3	1	86.550	0.000	0.0	0.0000	0.0000	OK
60 minute summer	PP3.1	42	86.486	0.286	1.2	0.5976	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	
15 minute summer	RE2	1.000	S2	-1.1	-0.178	-0.187	0.0498	
15 minute summer	S2	1.001	S3	5.4	0.696	0.915	0.0628	
30 minute summer	S3	1.002	PP1	10.5	1.336	1.048	0.0116	
60 minute summer	PP1	Infiltration			3.2			
15 minute summer	PP2	2.000	PP2.1	0.0	0.000	0.000	0.0188	
60 minute summer	PP2.1	Infiltration			0.5			
15 minute summer	PP3	3.000	PP3.1	0.0	0.000	0.000	0.0176	
60 minute summer	PP3.1	Infiltration			0.3			

9.4 Appendix D – Soakage Test Results

Job: Winterfold Farm, Rusper - Test 1

Infiltration Calculator

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

V_{p75-25} = Effective storage volume between 75% and 25% effective depth

a_{p50} = Internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} = The time for the water level to fall from 75% to 25% effective depth

f = Infiltration rate

Trial pit width	=	0.3
Trial pit depth	=	0.6
Trial pit length	=	1

a_{p50} = 1.08 m/squared

t_{p75-25} = 1800 seconds

V_{p75-25} = 0.09 m/cubed

F = 4.63E-05

Job: Winterfold Farm, Rusper - Test 2

Infiltration Calculator

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

V_{p75-25} = Effective storage volume between 75% and 25% effective depth

a_{p50} = Internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} = The time for the water level to fall from 75% to 25% effective depth

f = Infiltration rate

Trial pit width	=	0.3
Trial pit depth	=	0.6
Trial pit length	=	1

a_{p50} = 1.08 m/squared

t_{p75-25} = 2400 seconds

V_{p75-25} = 0.09 m/cubed

F = 3.47E-05

Job: Winterfold Farm, Rusper - Test 3

Infiltration Calculator

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

V_{p75-25} = Effective storage volume between 75% and 25% effective depth

a_{p50} = Internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} = The time for the water level to fall from 75% to 25% effective depth

f = Infiltration rate

Trial pit width	=	0.3
Trial pit depth	=	0.6
Trial pit length	=	1

a_{p50} = 1.08 m/squared

t_{p75-25} = 2500 seconds

V_{p75-25} = 0.09 m/cubed

F = 3.33E-05