

SuDS and Drainage Report

Fen Place Mill, Turners Hill, West Sussex RH10 4QQ

Planning Ref: DM/23/1608

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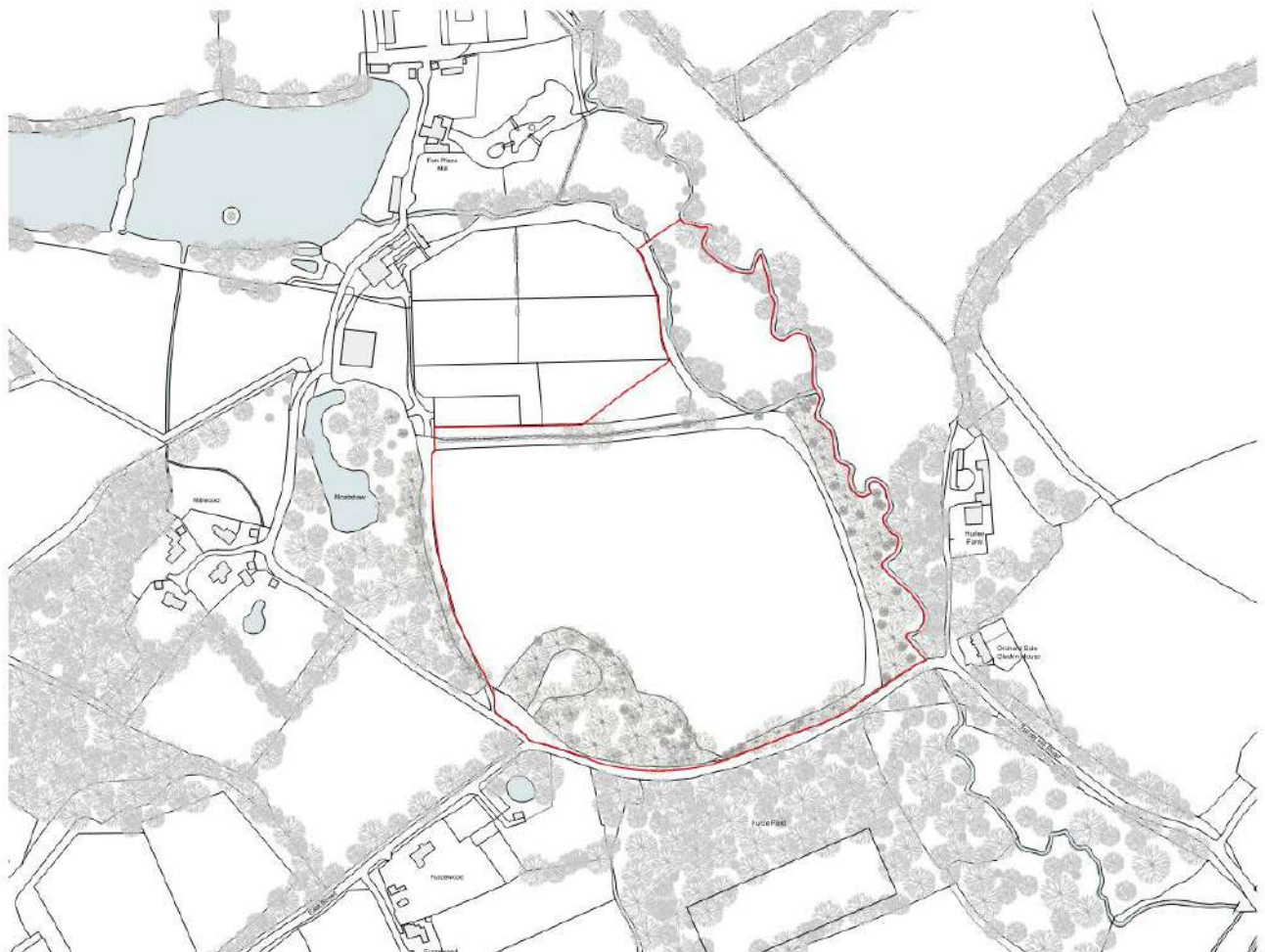
1 Introduction

- 1.1.1 CGS Civils Ltd has been appointed to undertake a drainage strategy report for a proposed development at Land Adj Fen Place Mill in Turners Hill, West Sussex.
- 1.1.2 The proposed development will consist of the construction of a single dwelling.
- 1.1.3 The proposed development is located as OS Grid Reference TQ 36353 36389, what3words lightbulb.eradicate.huddle and has the post code RH10 4QQ.
- 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 18th April 2024, with the planning reference: DM/23/1608. 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).
 - Details of a management and maintenance plan for the drainage scheme
 - 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.
 - Foul Water Drainage
- 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

2 The Site

- 2.1.1 The proposed site currently consists of an undeveloped field in the land located to the south of Fen Place Mill in Turners Hill. The total site encompasses an area of 5.4 Ha, with the topography falling from west to east towards the River Medway to the east of the site with recorded ground levels falling from 101.0m AOD to 86.7m AOD.
- 2.1.2 The proposed development will consist of the construction of a single dwelling which will be served by a new access road, and will result in a total of 2181m² of impermeable areas; of which, 1414m² will be constructed from the proposed access.

Fig 1. Site Location



3 Executive Summary:

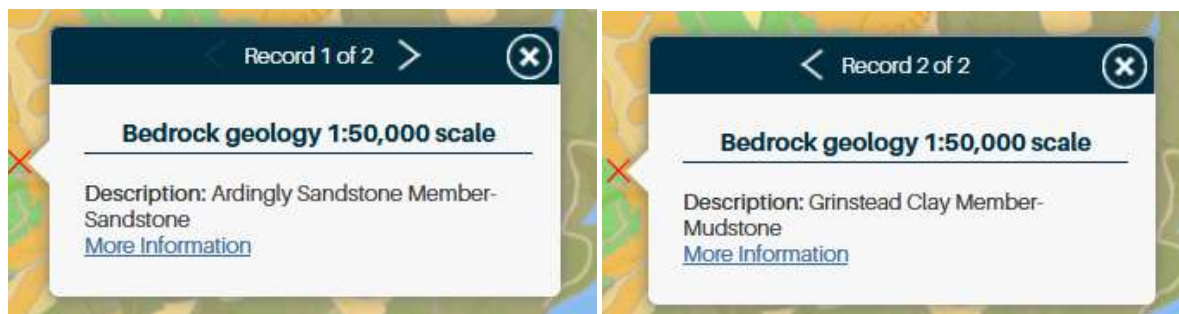
- 3.1.1 The proposed development will consist of the construction of a single dwelling and associated access.
- 3.1.2 The underlying geology is noted to be comprised of Clay and Sandstone, with on site testing confirming Clay to a depth of 1.00mbgl. Onsite infiltration testing failed, and a groundwater level of 1.3mbgl was recorded in Trial Pit 4 which is located to the south east of the site.
- 3.1.3 It is therefore proposed that all surface water runoff is discharged into the River Medway which is located along the eastern boundary of the plot. The discharge rate is to be restricted to 1.6l/s corresponding to the greenfield runoff rate of the site, the proposed network will make use of a detention basin and the sub-base of a permeable access road in order to cater for the 1 in 100-year storm +45% Climate Change Allowance (CCA) +10% Urban Creep.
- 3.1.4 The foul water is to be treated on site via a new package treatment plant, which is to then discharge into the River Medway alongside the surface water discharge.

4 Site Geology

4.1 British Geological Survey information

- 4.1.1 Data from the British Geological Survey shows an expected bedrock geology of Ardingly Sandstone Member. Superficial deposits comprising are expected to be comprised of Grinstead Clay Member.
- 4.1.2 The BGS holds records of historical boreholes in the vicinity of the site which may give some insight into the underlying geology.
- Borehole TQ33NE45 (Located approx. 230m West of the site) – Clay and Siltstone

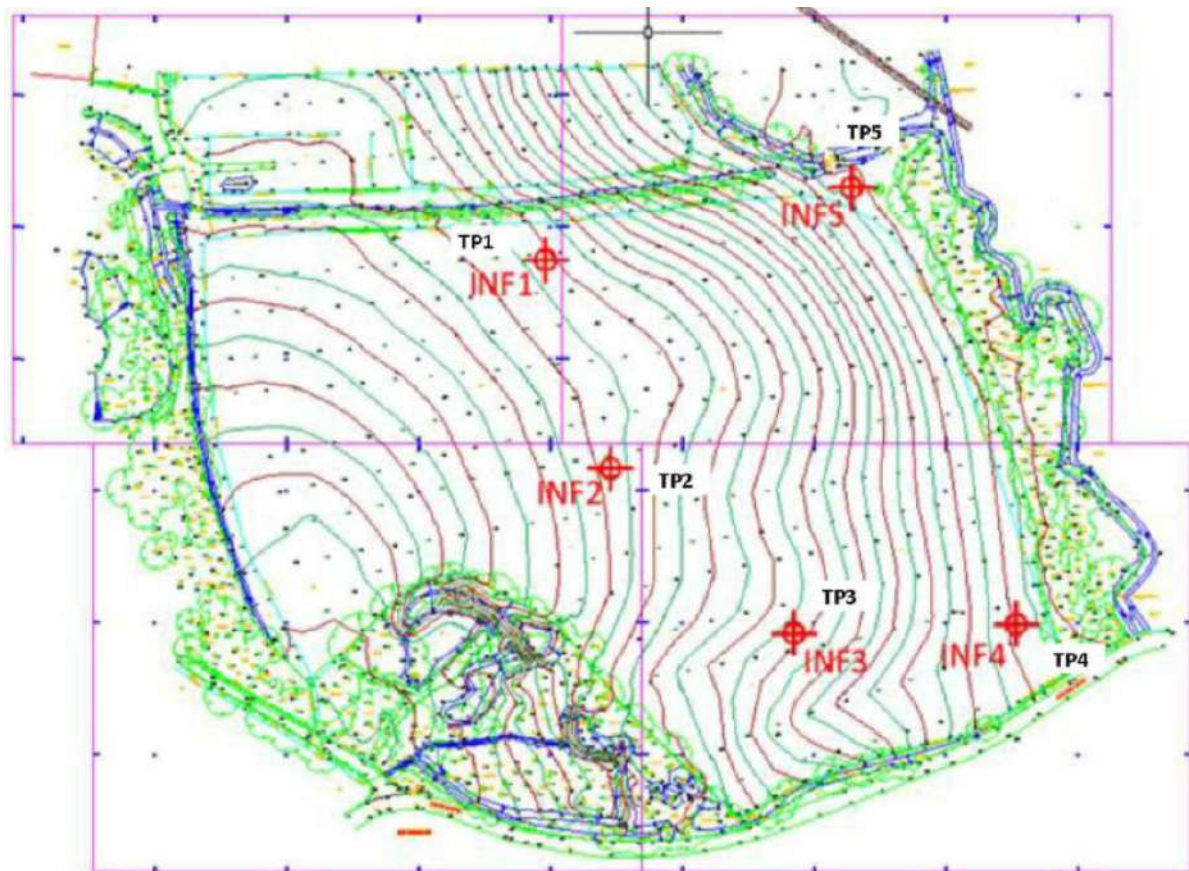
Fig 2. British Geological Survey



4.2 Geological Assessment

- 4.2.1 Ground and Water Ltd carried out exploratory works on behalf of Elliot Wood in 2023. The scope of works consisted of the excavation of trial pits and undertaking of infiltration testing to BRE365. During excavations, it was confirmed that the underlying geology is comprised of Clay and Sandstone.
- 4.2.2 The soakaway testing failed to achieve compliance with BRE365 and therefore, the tests are considered a failure. Additionally during excavation of the trial pits, groundwater was encountered within TP4 at 1.3mbgl.
- 4.2.3 The use of infiltration features have been deemed not viable and an alternative means of surface water discharge is to be sought.
- 4.2.4 Boreholes logs can be found in **Appendix D**.

Fig 3. Trial Pit Locations



5 Existing Drainage

- 5.1.1 The site is currently undeveloped and there is no known drainage infrastructure present on site. Southern water sewer records do not indicate any nearby public sewers.
- 5.1.2 It is noted that the River Medway lies to the east of the site and is considered to be a viable discharge location for surface water runoff.

Fig 4. Existing watercourse



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	Interception has been provided in the form of rainwater harvesting and permeable paving. The detention basin and proposed swales will provide a degree of interception and will infiltrate where possible.
Infiltration to ground	Discharge to ground via infiltration confirmed not possible due to failure of infiltration testing to BRE365.
To Watercourse	Discharge to River Medway in the east. Discharge rate to be restricted to Q_{BAR} of 1.6l/s.
To Surface Water Sewer	None nearby
To Other Sewer	None nearby

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
	10
	30 + 45%
	100 + 45%

Table 3. Flow Control Settings

Flow Control Settings:	
Design head (m)	1.420
Discharge rate (l/s)	1.6
Hydro-Brake Product Number:	CTL-SHE-0057-1700-1420-1700

Table 4. Storage Settings

Storage Settings:	
Detention Basin	Base Coefficient (m/hr): 0.0000
	Side Coefficient (m/hr): 0.0000
	Factor of Safety: 2
	Porosity: 100%
	Time to Half Empty (mins): -
Tanked Permeable Paving	Base Coefficient (m/hr): 0.0000
	Side Coefficient (m/hr): 0.0000
	Factor of Safety: 2
	Porosity: 30%
	Time to Half Empty (mins): -

6.3 Surface Water Drainage

- 6.3.1 Onsite infiltration testing undertaken by others failed to produce a meaningful rate to comply with BRE365. As such, an alternative discharge location should be sought.
- 6.3.2 The site is sited to the west of the River Medway which has been determined to be a viable discharge location for surface water runoff. It is therefore proposed that all surface water runoff is to discharge into the River Medway at a restricted discharge rate of 1.7l/s, which is the site's calculated Q_{BAR} .
- 6.3.3 Surface water runoff from roof areas are to be captured by a positive drainage network prior to discharging into the River Medway. The site will make use of a detention basin in order to cater for the 1 in 100-year storm +45% CCA +10% Urban Creep.
- 6.3.4 Conveyance Swales are also to be incorporated into the design, with swales being sited on either side of the access road in order to capture any overland flows whilst providing treatment and a degree of infiltration. A long swale is proposed to be installed across the site which will intercept overland flows from the higher levels of the site and divert these away from the proposed dwelling; the swale is also to be the discharge location for the surface water network and will connect into a proposed pond on site that is to be connected into the River Medway.
- 6.3.5 The inclusion of these Open SuDS features will not only provide storage for storm events, but will also provide interception, water quality, bio-diversity and amenity benefits.
- 6.3.6 The access road is to be constructed from a Type-B configuration which will allow for infiltration of runoff into sub-soils where possible, however, during more extreme events the runoff will overflow into the rest of the surface water network and the permeable sub-base will act as blanket attenuation.
- 6.3.7 The dwelling will also have a large rainwater harvesting tank installed which can be utilised for the re-use of water within the property and external areas.
- 6.3.8 Hydraulic calculations have been carried out which can be found at **Appendix C**. It should be noted that a 10% urban creep has been applied to the roof areas of the dwelling only. This is included within the hydraulic calculations as additional area, which is highlighted within the impermeable areas plan in **Appendix B**.

Table 3. Greenfield Runoff Calculations

Storm return period without CCA	Greenfield runoff rate (l/s)	Proposed Discharge Rate (l/s)	Difference (l/s)
Q_{BAR}	1.6	1.6	+ 0.0
1	1.4	1.6	+ 0.2
10	2.3	1.6	- 0.7
30	3.1	1.6	- 1.5
100	4.0	1.6	- 2.4

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 Fen Place Mill responds to these requirements.

Standard	Requirement	Project response
1	Runoff destinations	Rainwater harvesting has been included. Infiltration testing is considered to not be viable. Surface water runoff to discharge into River Medway.
2	Management of everyday rainfall	Rainfall is managed close to source by rainwater harvesting, detention basin, swales and permeable paving, reducing routine runoff from the site.
3	Management of extreme rainfall and flooding	Roof drainage is directed towards an outfall into the River Medway. The network will make use of storage features sized for the 1 in 100-year 45% climate change storm with 10% urban creep. Any exceedance routes are directed away from habitable areas and towards the River Medway.
4	Water quality	Runoff from roofs and parking areas is treated through the SuDS management train. Permeable paving and bio-retention 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. Open SuDS features are utilised in the form of swales and detention basins, these provide amenity benefits.
6	Biodiversity	Open SuDS features are utilised in the form of swales and detention basins, these provide biodiversity benefits.
7	Construction, operation, maintenance and structural integrity	The proposed SuDS components are conventional, buildable and maintainable. Long-term maintenance is addressed within the maintenance schedule and the design respects monitored groundwater levels.

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 in the form detention basin and swales which will provide infiltration where possible and rainwater harvesting.
2	Management train close to source	Varying SuDS features are used together; permeable surfacing and open SuDS features will provide as much infiltration as possible with the inclusion of rainwater re-use further reducing volume at 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, groundwater conditions and the proposed access road arrangement.
5	Site layout informed by drainage	The access road and driveway has been assessed separately to roof area drainage due to the small degree of infiltration provided. The networks will connect in more extreme storm events. Drainage serving these features have been designed as separate features to reflect this.
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.
8	Early engagement with the authority	The report format and supporting evidence are intended to support 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 26.3 Indicative SuDS mitigation indices for discharges to surface waters			
Type of SuDS Components	Mitigation Indices		
	TSS	Metals	Hydrocarbons
Filter Strip	0.4	0.4	0.5
Filter Drain	0.4	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention System	0.8	0.8	0.8
Permeable Pavement	0.7	0.6	0.7
Detention Basin	0.5	0.5	0.6
Pond	0.7	0.7	0.5
Wetland	0.8	0.8	0.8
Proprietary treatment systems	These must demonstrate that they can address each of the contaminant types to acceptable levels for 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	Surface water	Table 26.3	Permeable Pavement	0.5	0.4	0.4
				Mitigation Indices (Table 26.3 / Table 26.4)		
				0.7	0.6	0.7
Residential Roof	Surface water	Table 26.3	Detention Basin	Hazard Index (Table 26.2)		
				Total Suspended Solids (TSS)	Metals	Hydrocarbons
				0.2	0.2	0.05
				Mitigation Indices (Table 26.3 / Table 26.4)		
				0.5	0.5	0.6

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, resultant treated effluent is to then discharged into the River Medway alongside the surface water runoff.
- 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 and associated access.
- 8.1.2 The Surface Water will discharge to the River Medway at a restricted rate of 1.6l/s. The proposed network will make use of a tanked permeable paving and a detention basin in order 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 prior to the discharge of treated effluent into River Medway.
- 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.
- 8.1.5 A separate, site-specific Maintenance and Management Document as been prepares and is also appended to this report for ease of reference.

9 Appendices

9.1 Appendix A – Site Plan



1. Proposed courtyard garden
2. Proposed orchard
3. Proposed PV panels
4. Proposed driveway
5. Proposed improved scrub woodland (broadleaf woodland + native shrub planting)
6. Proposed woodland shaw (broadleaf woodland + native shrub planting)
7. Proposed ditch to driveway
8. Proposed pond
9. Proposed attenuation pond
10. Proposed wetland grass meadow
11. Proposed lowland meadow
12. Proposed specimen broadleaf tree
13. Proposed specimen riparian tree

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Description
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Rev
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Job No
309

Project
Meadowbank House

Title
Proposed Site Plan

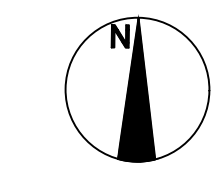
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Status
Planning



Key

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— Curtilage Boundary

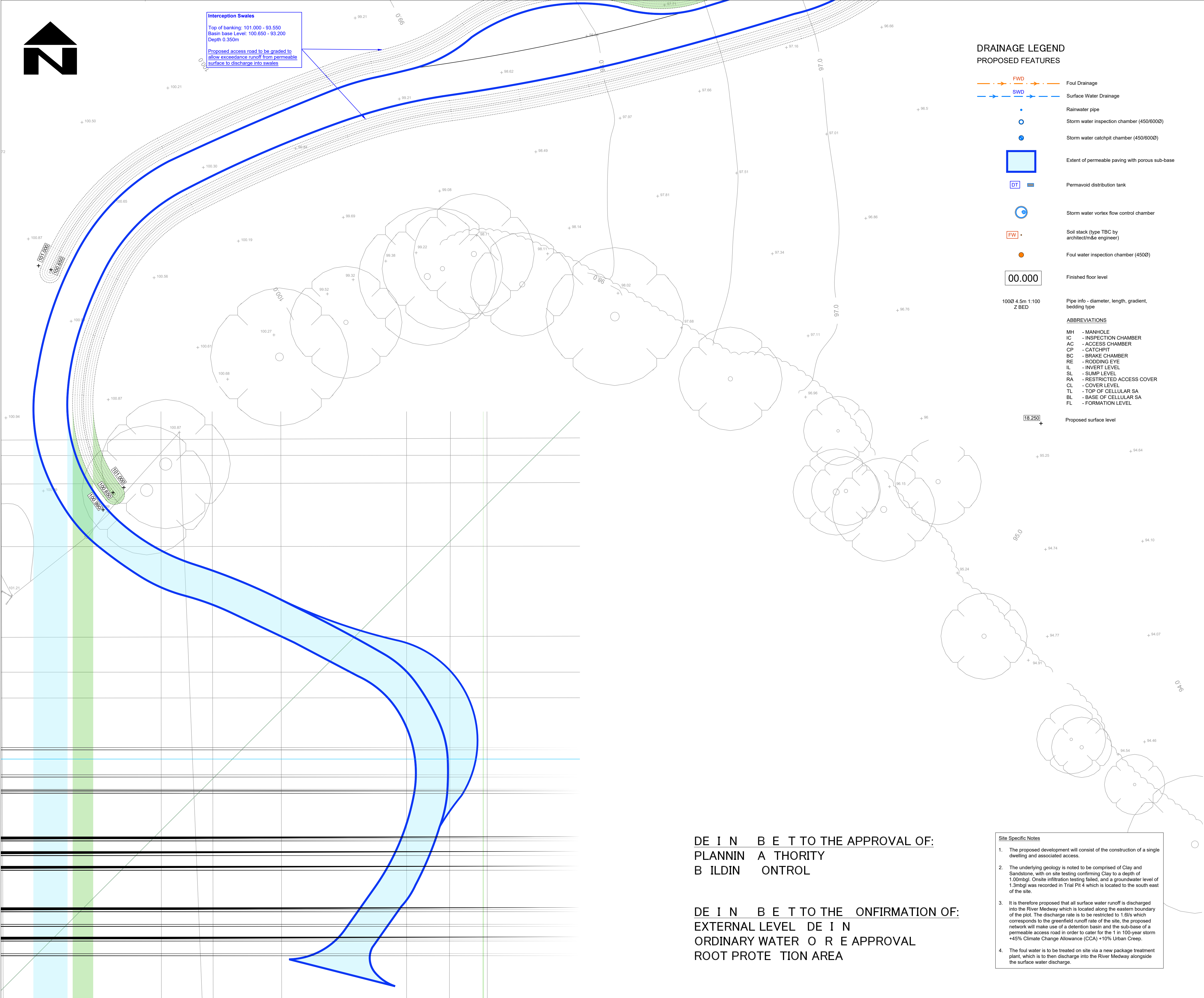
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9.2 **Appendix B – Drainage Layout**



DRAINAGE LEGEND
PROPOSED FEATURES

- FWD Foul Drainage
- SWD Surface Water Drainage
- Rainwater pipe
- Storm water inspection chamber (450/600)
- Storm water catchpit chamber (450/600)
- Extent of permeable paving with porous sub-base
- DT Permeable distribution tank
- Storm water vortex flow control chamber
- Soil stack (type TBC by architect/m&e engineer)
- Foul water inspection chamber (4500)
- Finished floor level
- 1000 4.5m 1:100 Z BED
- Pipe info - diameter, length, gradient, bedding type
- Proposed surface level

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

STANDARD DRAINAGE NOTES

- DO NOT SCALE FROM THIS DRAWING. REFER TO FIGURED DIMENSIONS ONLY. THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE.
- 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.
- BEFORE COMMENCING CONSTRUCTION THE CONTRACTOR MUST CHECK THE INVERT LEVELS OF EXISTING SEWERS TO WHICH CONNECTIONS ARE MADE. IN ADDITION THE CONTRACTOR MUST LOCATE AND DETERMINE INVERT LEVELS OF THE EXISTING SPURS TO WHICH CONNECTIONS ARE PROPOSED. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER IMMEDIATELY, PRIOR TO CONSTRUCTION.
- 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 295 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.
- IF ANY SUB SOIL DRAINAGE SYSTEMS ARE UNCOVERED DURING THE WORKS CONTACT THE ENGINEER FOR INSTRUCTIONS. SUB SOIL DRAINS ARE TO BE DIVERTED AROUND NEW WORKS AND CONNECTED INTO THE SURFACE WATER.
- NO PRIVATE AREAS ARE TO DRAIN ONTO ADOPTABLE AREAS AND VICE VERSA.
- ALL EXISTING MANHOLE COVER'S, GULLIES, ETC. ARE TO BE RAISED/LOWERED TO SUIT NEW LEVELS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THE LOCATION AND DEPTH OF ALL EXISTING SERVICES AND UTILITIES THAT MAY BE PRESENT.
- 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:
 - 'A15' IN ALL LANDSCAPED AREAS AND ON FOOTPATHS
 - 'B125' IN ALL DRIVEWAYS
 - 'C250' IN PRIVATE PARKING AREAS
 - 'D400' IN CARRIAGEWAY/ACCESS ROAD

Prefix to drawing numbers shall signify the following:-

PL = PLANNING	Shall not be used for contract or construction purposes
P = PRELIMINARY	Shall not be used for contract or construction purposes
T = TENDER	Shall not be used for construction purposes
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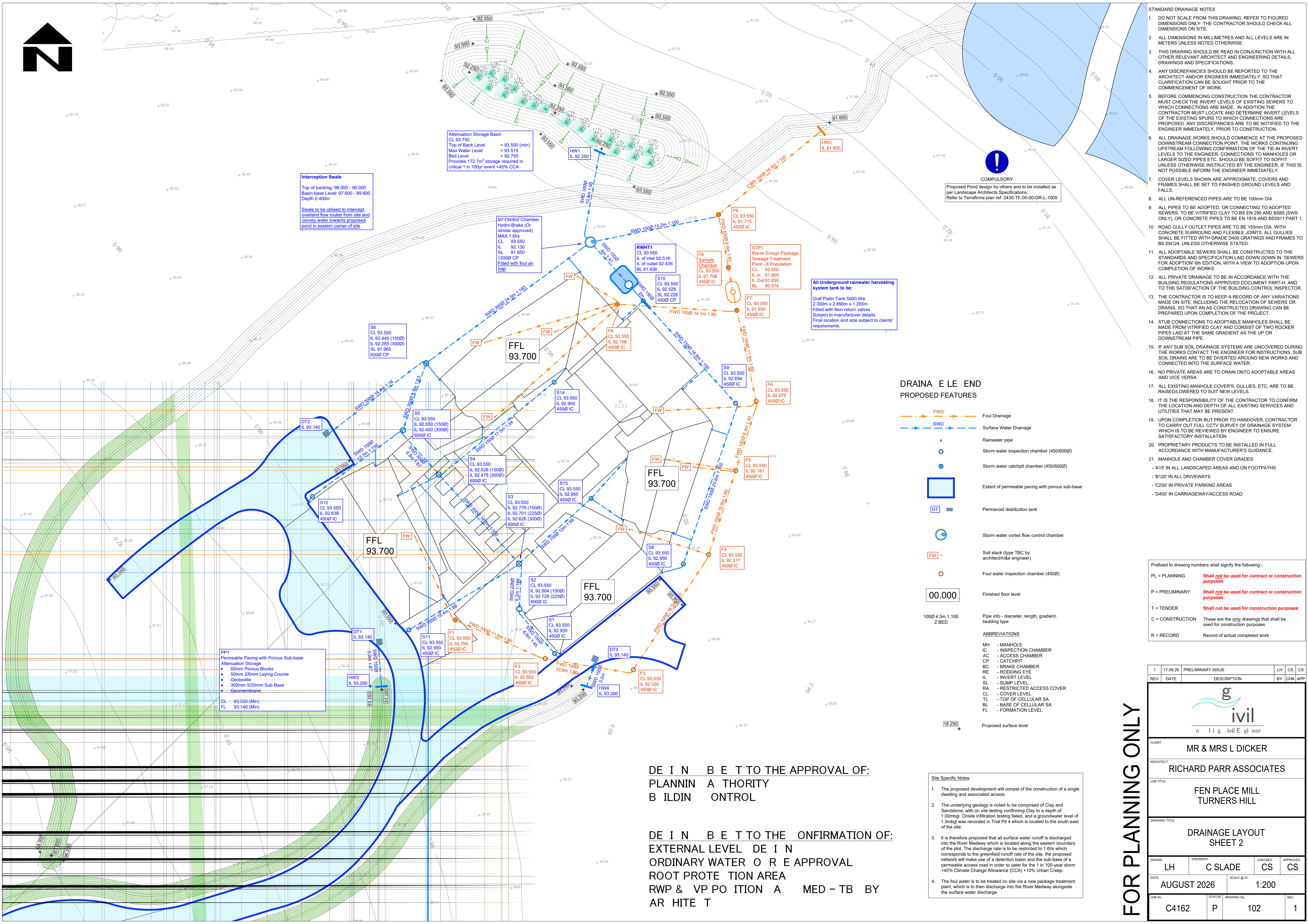
1	17.08.26	PRELIMINARY ISSUE	LH	CS	CS
REV	DATE	DESCRIPTION	BY	CHK	APP
CLIENT MR & MRS L DICKER					
ARCHITECT RICHARD PARR ASSOCIATES					
JOB TITLE FEN PLACE MILL TURNERS HILL					
DRAWING TITLE DRAINAGE LAYOUT SHEET 1					
DRAWN LH	ENGINEER C SLADE	CHECKED CS	APPROVED CS		
DATE AUGUST 2026	SCALE @ A1		1:200		
JOB No. C4162	STATUS P	DRAWING No. 101	REV. 1		

FOR PLANNING ONLY

DE I N B E T TO THE APPROVAL OF:
PLANNING AUTHORITY
BUILDING CONTROL

DE I N B E T TO THE CONFIRMATION OF:
EXTERNAL LEVEL DESIGN
ORDINARY WATER ORDER APPROVAL
ROOT PROTECTION AREA

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 - 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.
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 - 'A15' IN ALL LANDSCAPED AREAS AND ON FOOTPATHS
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DRAINAGE ELEMENT PROPOSED FEATURES

- FWD Foul Drainage
- SWD Surface Water Drainage
- Rainwater pipe
- Storm water inspection chamber (450/600)
- Storm water catchpit chamber (450/600)
- Extent of permeable paving with porous sub-base
- DT Permeable distribution tank
- Storm water vortex flow control chamber
- Soil stack (type TBC by architect/m&e engineer)
- Foul water inspection chamber (450)
- Finished floor level
- Pipe info - diameter, length, gradient, bedding type
- 1000 4.5m 1:100 Z BED
- Proposed surface level

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
- TL - TOP OF CELLULAR SA
- BL - BASE OF CELLULAR SA
- FL - FORMATION LEVEL

Site Specific Notes

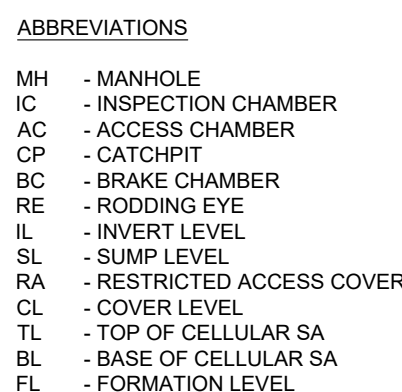
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DESIGNED BY: [Name] TO THE APPROVAL OF: [Name]
PLANNING AUTHORITY
BUILDING CONTROL

DESIGNED BY: [Name] TO THE CONFIRMATION OF: [Name]
EXTERNAL LEVEL DESIGN
ORDINARY WATER ORDER APPROVAL
ROOT PROTECTION AREA
RWP & VAPOR PROTECTION AREA
MEDICAL TREATMENT BY
ARCHITECT

FOR PLANNING ONLY

1	17.08.26	PRELIMINARY ISSUE	LH	CS	CS
REV	DATE	DESCRIPTION	BY	CHK	APP
CLIENT	MR & MRS L DICKER				
ARCHITECT	RICHARD PARR ASSOCIATES				
JOB TITLE	FEN PLACE MILL TURNERS HILL				
DRAWING TITLE	DRAINAGE LAYOUT SHEET 2				
DRAWN	LH	ENGINEER	C SLADE	CHECKED	CS
DATE	AUGUST 2026		SCALE @ A1		1:200
JOB No.	C4162	STATUS	P	DRAWING No.	102
REV.	1				



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Proposed surface level 

A topographic map segment showing a contour line labeled 93.55. The map includes a grid and a green triangle symbol.

			Attenuation
			CL 93.750

Provides critical 1 in

445 (1500)

S5
CL 03.550

6000 IC

1000
1:87

+ 95.82					
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no



ARCHITECT

JOB TITLE
FEN PLACE MILL

DRAINAGE LAYOUT
SHEET 3

DRAWN	ENGINEER	CHECKED	APPROVED
LH	C SLADE	CS	CS

AUGUST 2020		1.200	
JOB No.	STATUS	DRAWING No.	REV.

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DE I N B E T TO THE ONFIRMATION OF:
EXTERNAL LEVEL DE I N
ORDINARY WATER O R E APPROVAL
ROOT PROTE TION AREA

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g ivil o l i g i v i l E g i e e r					
CLIENT			MR & MRS L DICKER		
ARCHITECT			RICHARD PARR ASSOCIATES		
JOB TITLE			FEN PLACE MILL TURNERS HILL		
DRAWING TITLE			IMPERMEABLE AREAS & OVERLAND FLOW ROUTE PLAN		
DRAWN	ENGINEER	CHECKED	APPROVED		
LH	C SLADE	CS	CS		
DATE	AUGUST 2026	SCALE @ A1	1:500		
JOB No.	C4162	STATUS	P	DRAWING No.	401
				REV.	1

FOR PLANNING ONLY

Parking Area 1414.4m² or 0.14 Ha
10% Urban Creep not applicable

Total Roof Area:
767.2m² or 0.077 Ha
With 10% Urban Creep:
843.9m² or 0.084 Ha

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)	0.500
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		

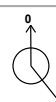
Nodes

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)
S1	0.014	5.00	93.550	Manhole	Adoptable	300	536384.288	136376.173	0.600	92.950
S2	0.014	5.00	93.550	Manhole	Adoptable	450	536379.920	136381.668	0.821	92.729
S3	0.014	5.00	93.550	Manhole	Adoptable	450	536379.889	136387.265	0.924	92.626
S4	0.014	5.00	93.550	Manhole	Adoptable	450	536369.993	136398.270	1.072	92.478
S5	0.014	5.00	93.550	Manhole	Adoptable	450	536365.549	136403.726	1.150	92.400
S6	0.154	5.00	93.550	Manhole	Adoptable	450	536368.417	136412.015	1.285	92.265
S7			93.550	Manhole	Adoptable	1200	536388.708	136426.954	1.420	92.130
PP1		5.00	93.550	Manhole	Adoptable	150	536356.488	136403.394	0.410	93.140

Links (Input)

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
1.000	S1	S2	7.020	92.950	92.804	0.146	48.1	150
1.001	S2	S3	5.597	92.729	92.701	0.028	199.9	225
1.002	S3	S4	14.800	92.626	92.478	0.148	100.0	300
1.003	S4	S5	7.037	92.478	92.400	0.078	90.2	300
1.004	S5	S6	8.771	92.400	92.265	0.135	65.0	300
1.005	S6	S7	25.197	92.265	92.130	0.135	186.6	300
2.000	PP1	S6	14.718	93.140	92.265	0.875	16.8	300

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	MH Type	Connections	Link	IL (m)	Dia (mm)	Link Type	
S1	536384.288	136376.173	93.550	0.600	300	Adoptable		0	1.000	92.950	150	Circular
S2	536379.920	136381.668	93.550	0.821	450	Adoptable		1	1.000	92.804	150	Circular
S3	536379.889	136387.265	93.550	0.924	450	Adoptable		0	1.001	92.729	225	Circular
S4	536369.993	136398.270	93.550	1.072	450	Adoptable		1	1.002	92.478	300	Circular
S5	536365.549	136403.726	93.550	1.150	450	Adoptable		0	1.003	92.400	300	Circular
								1	1.003	92.400	300	Circular
								0	1.004	92.400	300	Circular

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	MH Type	Connections	Link	IL (m)	Dia (mm)	Link Type	
S6	536368.417	136412.015	93.550	1.285	450	Adoptable		1	2.000	92.265	300	Circular
								2	1.004	92.265	300	Circular
								0	1.005	92.265	300	Circular
S7	536388.708	136426.954	93.550	1.420	1200	Adoptable		1	1.005	92.130	300	Circular
PP1	536356.488	136403.394	93.550	0.410	150	Adoptable		0	2.000	93.140	300	Circular

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	x	1 year (l/s)	1.4
Rainfall Events	Singular	Drain Down Time (mins)	240	10 year (l/s)	2.3
Summer CV	1.000	Additional Storage (m³/ha)	0.0	30 year (l/s)	3.1
Winter CV	1.000	Starting Level (m)		100 year (l/s)	4.0
Analysis Speed	Normal	Check Discharge Rate(s)	✓	Check Discharge Volume	x

Storm Durations

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	45	0	0
10	0	0	0	100	45	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	QBar/QMed conversion factor	1.111	QBar	1.6
Greenfield Method	FEH	Growth Factor 1 year	0.85	Q 1 year (l/s)	1.4
Positively Drained Area (ha)	0.218	Growth Factor 10 year	1.45	Q 10 year (l/s)	2.3
SAAR (mm)	891	Growth Factor 30 year	1.95	Q 30 year (l/s)	3.1
Host	1	Growth Factor 100 year	2.48	Q 100 year (l/s)	4.0
BFIHost	0.415	Betterment (%)	0		
Region	1	QMed	1.4		

Node S7 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	92.130	Product Number	CTL-SHE-0055-1600-1420-1600
Design Depth (m)	1.420	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.6	Min Node Diameter (mm)	1200

Node PP1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	93.140	Slope (1:X)	9999.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.300
Safety Factor	2.0	Width (m)	31.600	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node S7 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	92.250
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	75.0	75.0	0.750	160.0	164.6

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	92.977	0.027	1.7	0.0019	0.0000	OK
15 minute summer	S2	10	92.778	0.049	3.4	0.0077	0.0000	OK
15 minute summer	S3	10	92.670	0.044	5.0	0.0069	0.0000	OK
15 minute summer	S4	10	92.529	0.051	6.7	0.0082	0.0000	OK
360 minute summer	S5	304	92.517	0.117	2.5	0.0187	0.0000	OK
360 minute summer	S6	304	92.517	0.252	8.5	0.0400	0.0000	OK
360 minute summer	S7	304	92.518	0.388	8.0	24.6307	0.0000	OK
15 minute summer	PP1	1	93.140	0.000	0.0	0.0000	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	1.7	0.805	0.065	0.0147	
15 minute summer	S2	1.001	S3	3.3	0.557	0.091	0.0336	
15 minute summer	S3	1.002	S4	5.0	0.701	0.045	0.1058	
15 minute summer	S4	1.003	S5	6.6	0.852	0.057	0.0549	
360 minute summer	S5	1.004	S6	2.5	0.334	0.018	0.3890	
360 minute summer	S6	1.005	S7	8.0	0.199	0.099	1.6827	
360 minute summer	S7	Hydro-Brake®		1.2				40.4
15 minute summer	PP1	2.000	S6	0.0	0.000	0.000	0.1908	

Results for 10 year Critical Storm Duration. Lowest mass balance: 99.60%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	92.998	0.048	5.0	0.0034	0.0000	OK
360 minute winter	S2	352	92.875	0.146	1.4	0.0232	0.0000	OK
360 minute winter	S3	352	92.875	0.249	2.1	0.0396	0.0000	OK
480 minute summer	S4	472	92.876	0.398	3.6	0.0633	0.0000	SURCHARGED
360 minute winter	S5	352	92.874	0.474	3.5	0.0754	0.0000	SURCHARGED
360 minute winter	S6	352	92.873	0.608	11.9	0.0966	0.0000	SURCHARGED
360 minute winter	S7	352	92.872	0.742	10.8	69.3849	0.0000	OK
15 minute summer	PP1	1	93.140	0.000	0.0	0.0000	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	5.0	1.082	0.193	0.0323	
360 minute winter	S2	1.001	S3	1.4	0.436	0.038	0.1684	
360 minute winter	S3	1.002	S4	2.1	0.545	0.019	0.9837	
480 minute summer	S4	1.003	S5	3.3	0.605	0.029	0.4955	
360 minute winter	S5	1.004	S6	4.6	0.295	0.033	0.6176	
360 minute winter	S6	1.005	S7	10.8	0.224	0.133	1.7744	
360 minute winter	S7	Hydro-Brake®		1.2				40.5
15 minute summer	PP1	2.000	S6	0.0	0.000	0.000	0.5182	

Results for 30 year +45% CC Critical Storm Duration. Lowest mass balance: 98.80%

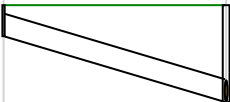
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	S1	585	93.295	0.345	0.9	0.0245	0.0000	FLOOD RISK
600 minute winter	S2	585	93.294	0.565	1.8	0.0899	0.0000	FLOOD RISK
600 minute winter	S3	585	93.295	0.669	2.6	0.1064	0.0000	FLOOD RISK
600 minute winter	S4	585	93.293	0.815	3.5	0.1296	0.0000	FLOOD RISK
600 minute winter	S5	585	93.295	0.895	4.2	0.1423	0.0000	FLOOD RISK
600 minute winter	S6	585	93.293	1.028	13.8	0.1635	0.0000	FLOOD RISK
600 minute winter	S7	585	93.294	1.164	13.6	136.4622	0.0000	OK
600 minute winter	PP1	585	93.293	0.153	3.6	14.4972	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	S1	1.000	S2	0.9	0.650	0.035	0.1236	
600 minute winter	S2	1.001	S3	1.7	0.438	0.047	0.2226	
600 minute winter	S3	1.002	S4	2.6	0.480	0.023	1.0422	
600 minute winter	S4	1.003	S5	3.3	0.520	0.028	0.4955	
600 minute winter	S5	1.004	S6	4.2	0.308	0.030	0.6176	
600 minute winter	S6	1.005	S7	13.6	0.193	0.167	1.7744	
600 minute winter	S7	Hydro-Brake®		1.5				65.3
600 minute winter	PP1	2.000	S6	-3.6	-0.083	-0.013	0.7849	

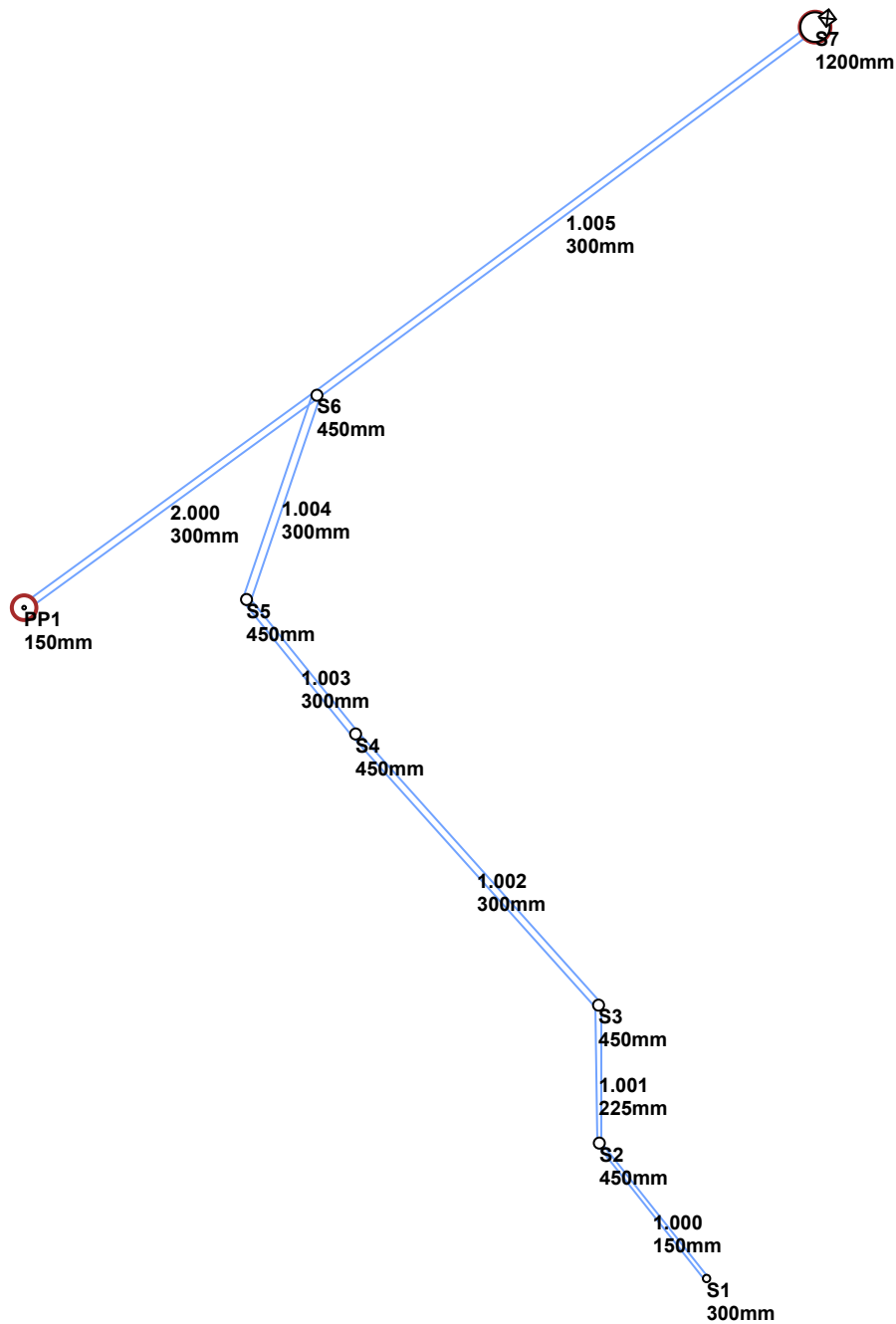
Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 98.63%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	11	93.545	0.595	12.1	0.0422	0.0000	FLOOD RISK
720 minute winter	S2	705	93.520	0.791	1.9	0.1257	0.0000	FLOOD RISK
720 minute winter	S3	705	93.520	0.894	2.9	0.1421	0.0000	FLOOD RISK
1440 minute winter	S4	1350	93.521	1.043	2.3	0.1658	0.0000	FLOOD RISK
720 minute winter	S5	690	93.519	1.119	5.5	0.1779	0.0000	FLOOD RISK
720 minute winter	S6	690	93.519	1.254	15.2	0.1994	0.0000	FLOOD RISK
720 minute winter	S7	705	93.519	1.389	15.1	172.7637	0.0000	OK
720 minute winter	PP1	690	93.519	0.379	6.8	28.4454	0.0000	FLOOD RISK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	12.6	1.249	0.489	0.1236	
720 minute winter	S2	1.001	S3	2.0	0.421	0.054	0.2226	
720 minute winter	S3	1.002	S4	2.7	0.479	0.025	1.0422	
1440 minute winter	S4	1.003	S5	3.0	0.463	0.026	0.4955	
720 minute winter	S5	1.004	S6	4.6	0.304	0.033	0.6176	
720 minute winter	S6	1.005	S7	15.1	0.214	0.186	1.7744	
720 minute winter	S7	Hydro-Brake®		1.6				78.7
720 minute winter	PP1	2.000	S6	-6.8	-0.154	-0.025	1.0364	

Node Name	S1	S2	S3	S4	S5	S6	S7



Node Name	PP1	S6
A4 drawing Hor Scale 500 Ver Scale 100 Datum (m) 82.000		
	2.000	
	300mm	
	16.8	
	93.550	93.550
	93.140	92.265
	14.718	



9.4 **Appendix D – Borehole Logs**

LOCATION
TURNERS HILL - EAST GRINSTEAD

DATE
10th Nov 1987

TRIALPIT:2

DESCRIPTION	REDUCED LEVEL m	DEPTH m	LEGEND	SAMPLE		THICKNESS m	SPT	REMARKS
				TYPE	DEPTH			
HARDCORE FILL		0.00				0.60		Ground water ran through FILL
Firm brown CLAY		0.60						
		1.00		U38	1.00	0.80		--741 /2 / 1.00
Stiff grey brown CLAY		1.40				0.70		
		2.10		U38	2.20			--741 /2 / 2.20
Hard grey laminated SILTSTONE						1.00		
		3.10		B	3.00			--741 /2 / 3.00



TERRAMECH INVESTIGATIONS LIMITED
183 LONG LANE TILEHURST READING

REMARKS :

U100 = 100mm dia. UNDISTURBED SAMPLE
D = SMALL DISTURBED SAMPLE
SPT = STANDARD PENETRATION TEST

U38 = 38mm dia. UNDISTURBED SAMPLE
B = BULK SAMPLE
W = WATER SAMPLE
CPT = CONE PENETRATION TEST

Page 3

LOCATION

TURNERS HILL - EAST GRINSTEAD

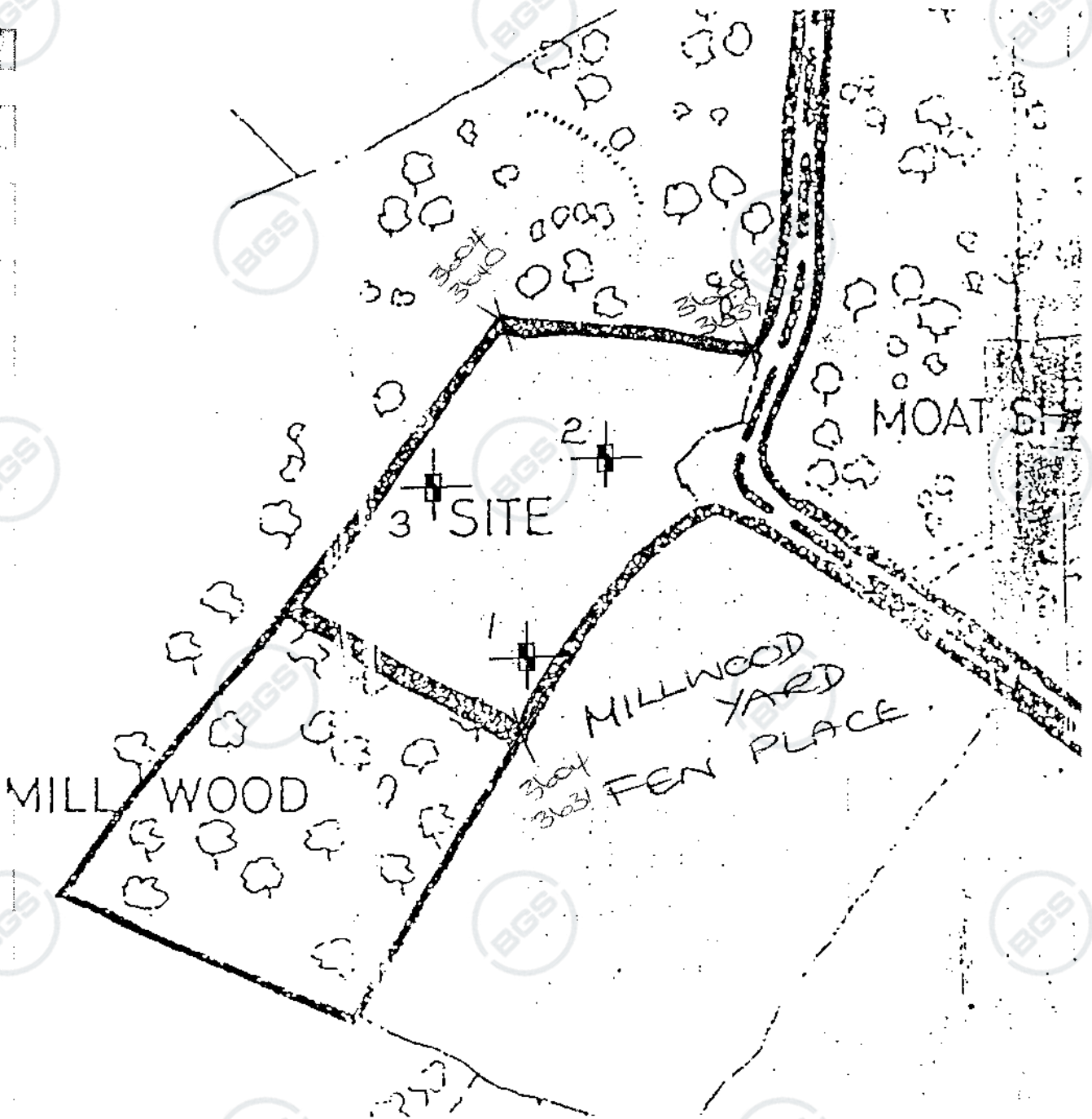
DATE

10th Nov 1987

TRIALPIT LAYOUT

TO CORNER

TRIALPIT LAYOUT





Trial Pit Log

Project Name: Land to the north of Turners Hill Road

Client: Elliott Wood

Date: 14/03/2023

Location: Crawley RH10 4QQ

Contractor: G&W

Project No. : GWPR5283

Crew Name:

Equipment:

Location Number
TP1

Location Type
TP

Level

Logged By

Scale
1:25

Page Number
Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	D		0.15			TOPSOIL: Brown CLAY.	1
								Brown CLAY. (GRINSTEAD CLAY MEMBER).	
		0.50	D		0.40			Light brown, mottled grey slightly sandy CLAY. Sand is fine. (GRINSTEAD CLAY MEMBER).	
		0.80	D						
		1.00	D		1.00			Light brown clayey fine SAND. (ARDINGLY SANDSTONE MEMBER).	
					1.30			End of Borehole at 1.300m	2
									3
									4
									5

Dimensions		Trench Support and Comment				Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks		Date	Rate	Remarks

Remarks

No Groundwater recorded.



Trial Pit Log

Project Name: Land to the north of Turners Hill Road

Client: Elliott Wood

Date: 14/03/2023

Location: Crawley RH10 4QQ

Contractor: G&W

Project No. : GWPR5283

Crew Name:

Equipment:

Location Number
TP2

Location Type
TP

Level

Logged By

Scale
1:25

Page Number
Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	D		0.15			TOPSOIL: brown CLAY.	1 -
								Brown CLAY. (GRINSTEAD CLAY MEMBER).	
		0.50	D						
		0.80	D						
		1.00	D						
		1.50	D		1.40 1.50		Brown gravelly CLAY. Gravel is fine to medium sub-angular to rounded. (GRINSTEAD CLAY MEMBER). End of Borehole at 1.500m		3 -
									4 -
									5 -

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

No Groundwater recorded.





Date: 14/03/2023

Contractor: G&W

Equipment:

Page Number
Sheet 1 of 1

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks



Trial Pit Log

Project Name: Land to the north of Turners Hill Road		Client: Elliott Wood		Date: 14/03/2023	
Location: Crawley RH10 4QQ		Contractor: G&W			
Project No. : GWPR5283		Crew Name:		Equipment:	
Location Number TP4	Location Type TP	Level	Logged By	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	D		0.15 0.30			TOPSOIL: Brown CLAY. Brown mottled grey slightly sandy CLAY. Sand is fine. (GRINSTEAD CLAY MEMBER). Light brown, mottled grey very sandy CLAY. Sand is fine. (GRINSTEAD CLAY MEMBER).	
		0.50	D						
		0.80	D						
		1.00	D		1.00			Brown clayey fine SAND. (ARDINGLY SANDSTONE MEMBER)	1
					1.30			End of Borehole at 1.300m	
									2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks Groundwater recorded at 1.30m bgl.	
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Trial Pit Log

Project Name: Land to the north of Turners Hill Road		Client: Elliott Wood		Date: 14/03/2023	
Location: Crawley RH10 4QQ		Contractor: G&W			
Project No. : GWPR5283		Crew Name:		Equipment:	
Location Number TP5	Location Type TP	Level	Logged By	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	D		0.15			TOPSOIL: Brown CLAY.	
		0.50	D					Orange, brown slightly clayey fine SAND. Thin band of yellow fine Sand at 1.80m bgl. (ARDINGLY SANDSTONE MEMBER)	
		0.80	D						
		1.00	D						
		1.50	D						
					1.90			End of Borehole at 1.900m	

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks No Groundwater recorded.	
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