



7 July 2025

BCM Wilson Hill
The Old Dairy
Winchester Hill
Sutton Scotney
Hants
SO21 3NZ

✉ 54 Common Lane
Titchfield, Hants,
PO14 4BU

☎ 07717 759149
🌐 www.aquacallidus.co.uk

FAO: Harry Parkinson

Ref: 24188

Barn Conversion at Gibbeshaven Farm, Furnace Farm Road, Felbridge Drainage Proposals

Dear Sirs

Permeability testing was undertaken at the site of the drainage field and soakaway, and determined permeability of 7.5×10^{-6} m/sec (44.33 secs/mm) . A copy of your test results is attached

Surface Water

It is proposed that roof runoff will drain to a soakaway. The calculations for this are attached.

The use comprises low risk surface water pollution hazards. The attached water quality assessment confirms the proposed drainage will provide sufficient treatment. A catch pit is specified upstream of the soakaway to intercept sediment.

The drainage will be of private status and should accord with building regulations standards. ICs are generally located within soft private landscape areas or pedestrian paths, and generic preformed PPICs complying with Building Regulations would be suitable given the private status of the network. The proposed drainage layout is shown on drawing ACC24188-01.

A SUDS O&M schedule is attached.

Foul Water

The proposed dwellings are remote from the public sewer and it is proposed to convey effluent to a treatment plant with discharge to ground. FW will drain by conventional gravity FW drain network to the treatment plant. The network arrangement is shown on drawing ACC24188-01. The treatment plant shall accord with EN12566-Part 3 for packaged wastewater treatment plants and the requirements of the Building Regulations for a 7 person (7P) capacity plant size.

Based on the information you provided about the location of the existing farmhouse effluent discharge location the new barn discharge is within 50m of this so a permit application will need to be made to the Environment Agency. Whilst have a shred drainage field between the farmhouse and barn would overcome this, it is apparent that there is not enough space at the proposed drainage field location for an amalgamated drainage field. The new discharge will would not meet the General Binding Rules due to the proximity of the existing farmhouse discharge.

Unless noted otherwise foul drains are to be 100mm DN. ICs are generally located within soft private landscape areas or pedestrian paths, and generic preformed PPICs complying with Building Regulations would be suitable given the private status of the network. The construction and the drains and chambers shall be to Building Regulations standard specifications.

Wastewater Treatment Plant Operation and Maintenance:

It is a requirement of Environment Permits that a competent person/organisation is contracted to undertake the maintenance and inspection of the treatment plant.

Yours Sincerely,

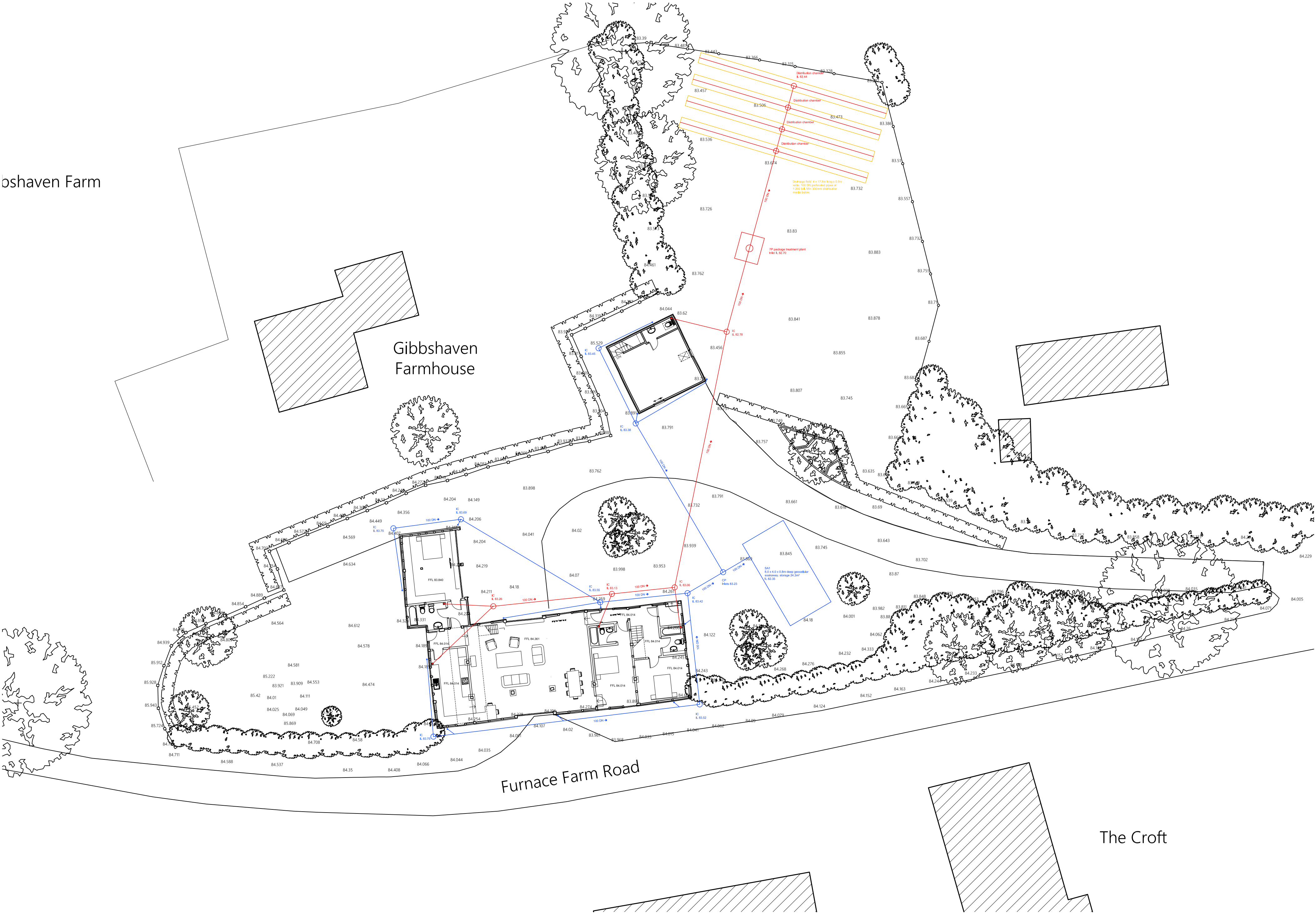
Aqua Callidus Consulting Ltd

Andy Traves

Enc. Permeability test results
ACC241888-01
Drainage field calculations

Soakaway calculations
Water quality calculations
SUDS O&M
DET-0005
DET-0007
DET-0009
DET-0200
DET-0201
DET-0202
DET-0301
DET-0310

HOLE REFERENCE							
D1-At proposed site of drainage field. Depth at bottom of proposed invert 600mm							
D2-At proposed site of sewage treatment plant. Depth at bottom of proposed plant 2200mm							
D3-Adjacent to the new electricy sub station. Depth at bottom of proposed invert 600mm							
Refer to drawing attached for clarity							
RESULTS	1.35 -WET HOLE	TIME (MINS)	TIME (MINS)	TIME (MINS)	AVERAGE	VP	
D1	DONE	90	100	100	96.66	38.66	
D2	DONE	120	130	130	126.66	50.66	
D3	DONE	80	80	90	83.33	33.33	
TESTS ALL CARRIED OUT DURING APRIL 2025-A VERY DRY MONTH							
OBVIOUSLY THE TRIALS WERE NOT MONITORED MINUTE BY MINUTE SO DRAINAGE TIME ESTIMATED BETWEEN CHECKING							



Rev.	Amendment	Date	Original Sheet Size A1 (841 x 594)		Project		
			0 10 mm 50		Gibbshaven Barn		
					Furnace Farm Road		
					Felbridge		
			54 Common Lane		Subject		
			Titchfield		Drainage layout		
			Hants				
			RG14 4BU				
			07717 759149				
			Scale	Project No.	Drawing No.	Sheet No.	Revision
			1:200	24188	ACC-24188-01	na	-

Site Ref

Gibbeshaven Barn

British Water Flows and Loads (4th ed) Population & Field Footprint Calculator (residential)

Catchment

new 5 bed dwelling

New units

RESIDENTIAL

	persons	No. of	
1 bedroom	3	0	0
2 bedroom	4	0	0
3 bedroom	5	0	0
4 bedroom	6	0	0
5 bedroom	7	1	7
6 bedroom	8	0	0
7 bedroom	9	0	0
		1	7

Total no of dwellings

1

Population

7

Population factor

(PF=1 for 1-12, PF=0.9 for 13-25, PF=0.8 for 26-50)
for >50 use PF= 1 (default =0.8)

DESIGN POPULATION

7

P_{design}

Existing units

RESIDENTIAL

	persons	No. of	
1 bedroom	3	0	0
2 bedroom	4	0	0
3 bedroom	5	0	0
4 bedroom	6	0	0
5 bedroom	7	0	0
6 bedroom	8	0	0
7 bedroom	9	0	0
		0	0

Septic tank or treatment plant?

Treatment plant

Design daily volume

1.05

m³/day

If discharging to ground design V_p
within allowable V_p range

44.66

secs/mm

(To be in the range 15-100)

Footprint coefficient

0.20

0.25 for septic tanks, 0.20 for treatment plants

Required drainage field footprint = P_{design} × V_p × coefficient : 7 × 44.66 × 0.2 =

62.524 m²

Septic tank/treatment plant location:

Not closer than 7m to any habitable rooms

Not further than 30m from service tanker parking

Drainage field/mound location:

Not closer than 15m to buildings

Not closer than 10m to a watercourse

Drainage field/mound Building Regulations requirements:

Minimum 250mm soil cover (untrafficked/unpaved unless agreed otherwise with BCO)

Geotextile over infiltration media to BS EN ISO 10319 min 200mm laps

Minimum 50mm infiltration media over infiltration pipes

Project No.: 24188
Project Title: Gibbeshaven Barn

Drainage blanket/CGA pavement or 2D planar infiltration (R156)

Site Location: Felbridge Catchment ID: roofs
r = 0.35 (range 0.12 to 0.45)
Drained Area = 260 m² Infiltration Area = 32 m²
Design storm 1 in = 100 year
Runoff volume uplift = 45 % for climate change
Urban Creep allowance = 10 % uplift to Drained Area

Site Considerations

Where determined, what is the depth to highest seasonal groundwater level (GWL) from surface: 5.00 m
Is the infiltration far enough from drainage mounds/fields or other soakaways etc to avoid impact? Yes
What Source Protection Zone (SPZ) is the proposed soakaway located in? None
What is known and proposed about potential contaminated ground on the site? EA/LPA accept infiltration

Technical Assessment

Consequence of failure = 1-No inconvenience
Measured Soil Filtration Rate = 7.50E-06 m/s
Design Soil Filtration Rate = 5.00E-06 m/s
Storage media thickness = 0.800 m
Effective net porosity = 95 %
Depth of cover over media = 0.60 m

Storm Duration	5 min	10 min	15 min	30 min	1 hr	2 hr	4 hr	6 hr	10 hr	24 hr
(secs)	300	600	900	1800	3600	7200	14400	21600	36000	86400
r= 0.35 Value Z1	0.36	0.51	0.62	0.79	1.00	1.22	1.50	1.69	1.95	2.48
Rainfall M5 (mm)	7.1	10.1	12.3	15.7	20.0	24.5	29.9	33.8	38.9	49.6
M100/M5 gf Value Z2	1.84	1.91	1.95	2.00	2.03	2.01	1.97	1.94	1.90	1.81
Rainfall M100 (mm)	13.1	19.4	24.0	31.4	40.6	49.2	59.0	65.6	73.9	89.9
With CC & UC uplift (mm)	20.3	30.0	37.2	48.7	62.9	76.3	91.4	101.6	114.6	139.4
RUNOFF (m ³)	5.29	7.81	9.68	12.65	16.36	19.83	23.77	26.42	29.79	36.24
Infilt capacity (m ³)	0.05	0.10	0.14	0.29	0.58	1.15	2.30	3.46	5.76	13.82
INFILTRATED (m ³)	0.05	0.10	0.14	0.29	0.58	1.15	2.30	3.46	5.76	13.82
Req'd STORAGE (m ³)	5.24	7.71	9.53	12.36	15.79	18.68	21.46	22.96	24.03	22.42
	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass

TOTAL STORAGE AVAILABLE 24.32 m³
Time to drain full to half full = 20.9 hours

Overall Assessment

Media base elevation above seasonal high GWL 3.60 m meets GP3
Will the soakaway drain from full to half full in 24 hours or less? Yes pass
Does the soakaway provide sufficient storage? Yes pass

Date: 07/07/2025

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Site Ref

Gibbeshaven Barn

SuDS Water Quality Management CIRIA C753 Ch26

Simple Index Approach

Catchment

roofs

Is discharge to: SPZ1? **N** Drinking Water Protection Area? **N**

Is site in close proximity to an area with sensitive environmental designation?

N

if so how close?

m

Is an additional treatment component required due to sensitivity?

Y

Land Use

roofs-residential

Hazard

very low

TSS index	Metals index	HydroCar index
0.2	0.2	0.05

**2 residential roofs remove gross solids and sediments*

Treatments

To surface water discharge **N**

Component

- N/A
- N/A
- N/A

mitigation index

X1 N/A

Enhanced mitigation index

Residual pollution index

TSS MIndex	Metals MIndex	HydroCa MIndex	factor
0	0	0	1.00
0	0	0	0.50
0	0	0	0.50
0	0	0	
0	0	0	1.00
0	0	0	
0.2	0.2	0.05	

Land Use

roofs-residential

Hazard

very low

TSS index	Metals index	HydroCar index
0.2	0.2	0.05

residual

**2 residential roofs remove gross solids and sediments*

Treatments

To groundwater discharge **Y**

Infiltration surface

- catch pit & leaf guard
- Soil only

Final residual pollution index

TSS MIndex	Metals MIndex	HydroCa MIndex	factor
0.2	0.2	0.05	1.00
0.4	0.3	0.3	0.50
0	0	0	

Is a groundwater risk screening required?

N

Notes:

Infiltration pipes minimum 100mm DN, slots to base of minimum 1,000mm² per linear m, pipes shall be in a looped configuration at max 2,000mm spacing and no more than 1,000mm to field edge at max 1/200 grade.

Infiltration media over around and below pipe with minimum 300mm below pipe of 20-50mm clean stone.

Filter sand bed minimum 600mm if required.

Max pipe depth 1.0m

SUDS operation and maintenance - general

There are three categories on maintenance activities:

Regular maintenance consists of basic tasks done on a frequent and predictable schedule, including vegetation management, litter and debris removal, and inspections.

Occasional maintenance comprises tasks that are likely to be required periodically, but on a much less frequent and predictable basis than the routine tasks (sediment removal is an example). The table below summarises the likely maintenance activities required for each SUDS component and specific maintenance activities is given in the following sections.

Remedial maintenance comprises intermittent tasks that may be required to rectify faults associated with the system. Where remedial work is found to be necessary, it is likely to be due to site-specific characteristics or unforeseen events, and as such timings are difficult to predict. Remedial maintenance items can comprise items such as:

- inlet/outlet repairs
- erosion repairs
- reinstatement or realignment of edgings, barriers, rip-rap or other erosion control
- infiltration surface rehabilitation
- replacement of blocked filter fabrics
- construction stage sediment removal (although this activity should have been undertaken before the maintenance contract)
- system rehabilitation immediately following a pollution event.

O&M activity	SUDS component												
	Pond	Wetland	Detention basin	Infiltration basin	Soakaway	Infiltration trench	Filter trench	Modular storage	Pervious pavements	Swale/bioretention/greenroofs	Filter strip	Sand filter	Pre-treatment systems
Regular maintenance													
Inspection	■	■	■	■	■	■	■	■	■	■	■	■	■
Litter/debris removal	■	■	■	■	□	■	■	□	■	■	■	■	■
Grass cutting	■	■	■	■	□	■	■	□	□	■	■	□	□
Wee/invasive plant control	□	□	□	□		□	□		□	□	□	□	□
Shrub management	□	□	□	□					□	□	□		□
Shoreline vegetation management	■	■	□										□
Aquatic vegetation management	■	■	□										□
Occasional maintenance													
Sediment management *	■	■	■	■	■	■	■	■	■	■	■	■	■
Vegetation/plant replacement	□	□	□	□						□	□		□
Vacuum sweeping and brushing									■				
Remedial maintenance													
Structure rehabilitation/repair	□	□	□	□	□	□	□	□	□	□	□	□	□
Infiltration surface reconditioning				□	□	□	□		□	□	□	□	

■ will be required

□ may be required

* sediment to be collected upstream of the main device

GENERAL MAINTENANCE

Litter/debris removal

This is an integral part of SUDS maintenance and reduces the risks of inlet and outlet blockages, retains amenity value and minimises pollution risks. High litter removal frequencies may be required at high profile commercial/retail parks where aesthetics are a major driver.

Grass cutting

It is recommended that grass cutting be minimised around SUDS facilities, apart from swales and filter strips and structural embankments where a height of 100–150 mm is recommended to prevent the plants falling over, or “lodging”, when water flows across the surface. In general, allowing grass to grow tends to enhance water quality performance. Short grass around a wet system such as pond or wetland provides an ideal habitat for nuisance species such as geese; allowing the grass to grow is an effective means of discouraging them. Grass around wet pond or wetland systems should not be cut to the edge of the permanent water. Grass cutting is an activity undertaken primarily to enhance the perceived aesthetics of the facility. The frequency of cutting will tend to depend on surrounding land uses, and public requirements. Therefore, grass cutting should be done as infrequently as possible, recognising the aesthetic concerns of local residents. However, grass around inlet and outlet infrastructure should be trimmed closely to reduce risks to system performance. If a manicured, parkland effect is required, then cutting will need to be undertaken more regularly than for meadow type grass areas, which aim to maximise habitat and biodiversity potential.

Weed/invasive plant control

Weeds are generally defined as vegetation types that are unwanted in a particular area. For SUDS, weeds are often alien or invasive species, which do not enhance the technical performance or aesthetic value of the system, or non-native species and the spread of which is undesirable. In some places, weeding has to be done by hand to prevent the destruction of surrounding vegetation (hand weeding should generally be required only during the first year, ie during plant establishment). However, over grassed surfaces, mowing can be an effective management measure. The use of herbicides and pesticides should be prohibited since they cause water quality deterioration. The use of fertilisers should also be limited or prohibited to minimise nutrient loadings which are damaging to water bodies.

Shrub management

Shrubs tend to be densely planted and are likely to require weeding at the base, especially during the first year to ensure that they get enough water. Shrubs should be selected so they can grow to their maximum natural height without pruning.

Aquatic/shoreline vegetation management

Aquatic plant aftercare in the first 1–3 years may be required to ensure establishment of planted vegetation and control nuisance weeds/invasive plants. Once established, the build-up of dead vegetation from previous seasons should be removed at convenient intervals to reduce organic silt accumulation (eg every three years and at the end of landscape contract periods).

Emergent vegetation may need to be harvested every 5–10 years to maintain flood attenuation volumes, optimise water quality treatment potential and ensure fresh growth, although this is often not required. Care should be taken to avoid nesting birds during the breeding season and to avoid great crested newt and water vole habitats. The typical window for this activity is towards the end of the growing season (September and October). As vegetation matures, plant height may also become a safety issue in residential areas.

Where emergent vegetation is managed, up to 25 per cent can be removed by cutting at 100 mm above soil level using shearing action machinery. Up to 25 per cent of submerged vegetation can be cut and raked out at any one time, using approved rakes, grabs or other techniques, depending on whether clay or waterproof membranes are present. Aquatic vegetation arisings should be stacked close to the water's edge for 48 hours to de-water and allow wildlife to return to the SUDS feature. They should then be removed to wildlife piles, compost heaps or off site before decomposition, rotting or damage to existing vegetation can occur.

Algae removal may be undertaken for aesthetic purposes during the first 3–5 years of a pond/wetland's life. The growth of algae, which is considered by some to be visually intrusive, is encouraged by nutrients introduced into the water body. This situation should settle down once upstream construction activities are complete.

Management of green waste

Appropriate methods should be implemented to dispose of green waste, including

- The development of wildlife piles
- On- or off-site composting
- Disposal to landfill

REMEDIAL MAINTENANCE

Structure rehabilitation/repair

There will come a time with most SUDS techniques when a major overhaul of the system is required to remove clogged filters, geotextiles, gravel etc. This will typically be between 10 and 25 years, depending on the technique and factors such as the type of catchment and sediment load. For example the use of geotextiles close to the surface in pervious surfaces traps the majority of sediment in a relatively easily accessible location. Reconstruction of the surface layer and bedding layer is all that is required, rather than reconstruction of the whole pavement depth.

Major overhaul is most likely to be required on techniques that rely on filtration through soils or aggregates, such as sand filters and infiltration devices. Other SUDS techniques are unlikely to need major overhaul if routine maintenance is undertaken as required (for example ponds and wetlands).

Rehabilitation activities for each SUDS component are described on the following tables.

Infiltration surface rehabilitation

In the event that grassed surface permeability has reduced, there are a number of landscape techniques that can be used to open the surface to encourage infiltration. Such activities are not commonplace and are likely to be required only in circumstances where silt has not been effectively managed upstream.

1. Scarifying to remove “thatch”. Thatch is a tightly intermingled organic layer of dead and living shoots, stems and roots, developing between the zone of green vegetation and the soil surface. Scarifying with tractor-drawn or self-propelled equipment to a depth of at least 50 mm breaks up silt deposits, removes dead grass and other organic matter and relieves compaction of the soil surface.
2. Spiking or tining the soil, using aerating equipment to encourage water percolation. This is particularly effective if followed by top dressing with a medium to fine sand, and is best undertaken when the soil is moist. Spiking or tining with tractor drawn or self-propelled equipment penetrates and perforates soil layers to a depth of at least 100 mm (at 100 mm centres) and allows the entry of air, water, nutrients and top dressing materials.
3. As a last resort, it may be necessary to remove and replace the grass and topsoil by:
 - removing accumulated silt and (subject to a toxicity test) applying to land or dispose of to landfill
 - removing damaged turf which should be composted
 - cultivating remaining topsoil to required levels
 - re turfing (using turf of a quality and appearance to match existing) or reseeded (to BS 7370: Part 3, Clause 12.6 (BSI, 1991) using seed to match existing turf) area to required levels. It may be necessary to supply and fix fully biodegradable coir blanket to protect seeded soil. Turf and seeded areas should be top dressed with fine sieved topsoil to BS 3882 (BSI, 1994) to achieve final design levels. Watering will be required to promote successful germination and/or establishment.

Water butts operation and maintenance

Maintenance schedule	Required action	Frequency
Regular maintenance	Cleaning of tank, inlets, outlets, gutters, withdrawal devices and roof drain filters of silts and other debris..	Annually (or following poor performance).
Occasional maintenance	Replacement of any filters.	As required
Remedial actions	Repair of erosion damage, or damage to tank.	As required
Monitoring	Inspection of the tank for debris and sediment build up.	Annually (or following poor performance).
	Inspection of inlets, outlets and withdrawal devices.	Annually (or following poor performance).
	Inspection of areas receiving overflow, for evidence of erosion.	After extreme storms.
	Inspection of roof drain filters	Annually (or following poor performance).

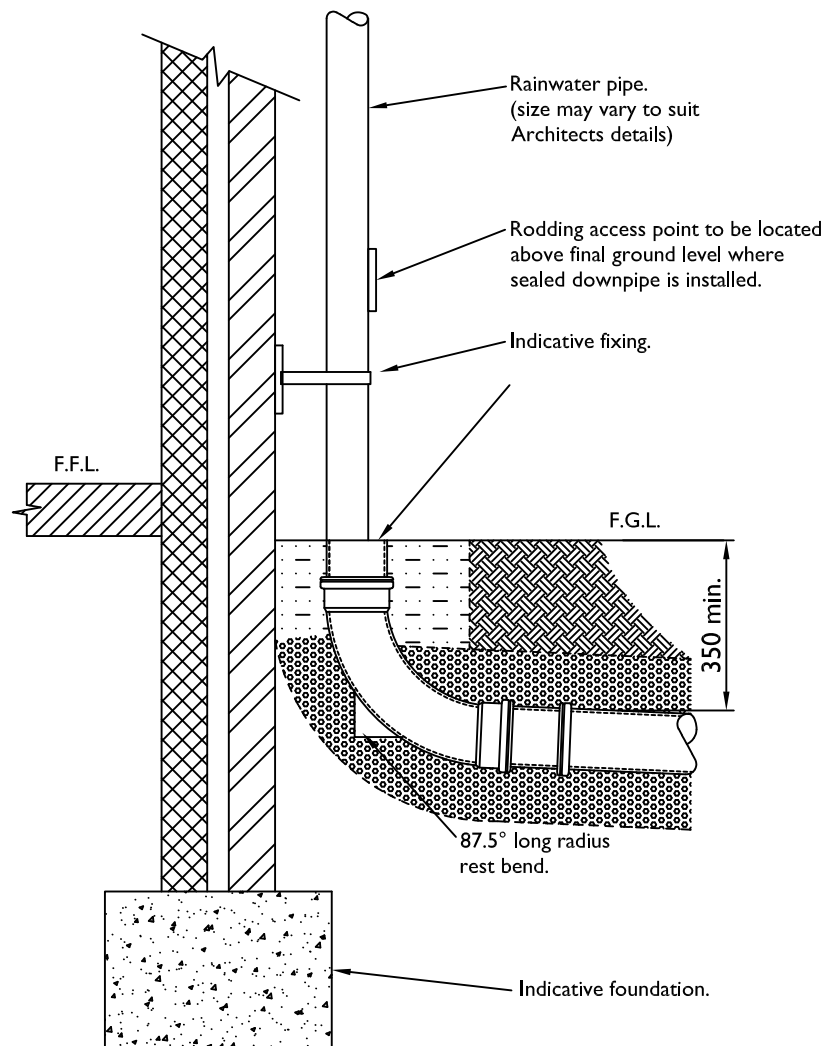
Soakaway operation and maintenance

Maintenance schedule	Required action	Frequency
Regular maintenance	Remove sediment and debris from pre-treatment devices and floor of inspection tube or chamber.	Annually
	Cleaning of gutters and any filters on downpipes.	Annually
	Trimming any roots that may be causing blockages	Annually (or as required)
Occasional maintenance	-	-
Remedial actions	Reconstruct soakaway and/or replace or clean void fill, if performance deteriorates or failure occurs.	As required
	Replacement of clogged geotextile	As required
Monitoring	Inspect silt traps and note rate of sediment accumulation.	Monthly in the first year and then annually.
	Check soakaway to ensure emptying is occurring.	Annually

Maintenance will usually be carried out manually, although a suction tanker can be used for sediment/debris removal for large systems or in public environments.

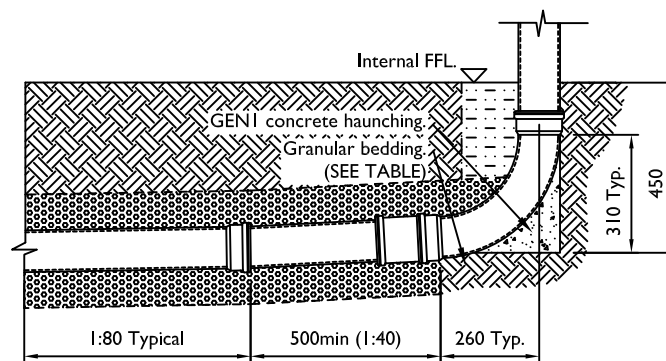
Modular systems operation and maintenance

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



DETAIL OF RAINWATER PIPE
(Scale 1:20)

Original Sheet Size A4 (297 x 210)		Project		
0 10 mm 50 				
 52 Common Lane Titchfield Hants PO14 4BU 07717 759149		Subject		
		RWP connection		
Scale	Project No.	Drawing No.	Sheet No.	Revision
As stated		DET-0005	na	-



DETAIL OF FOUL REST BEND

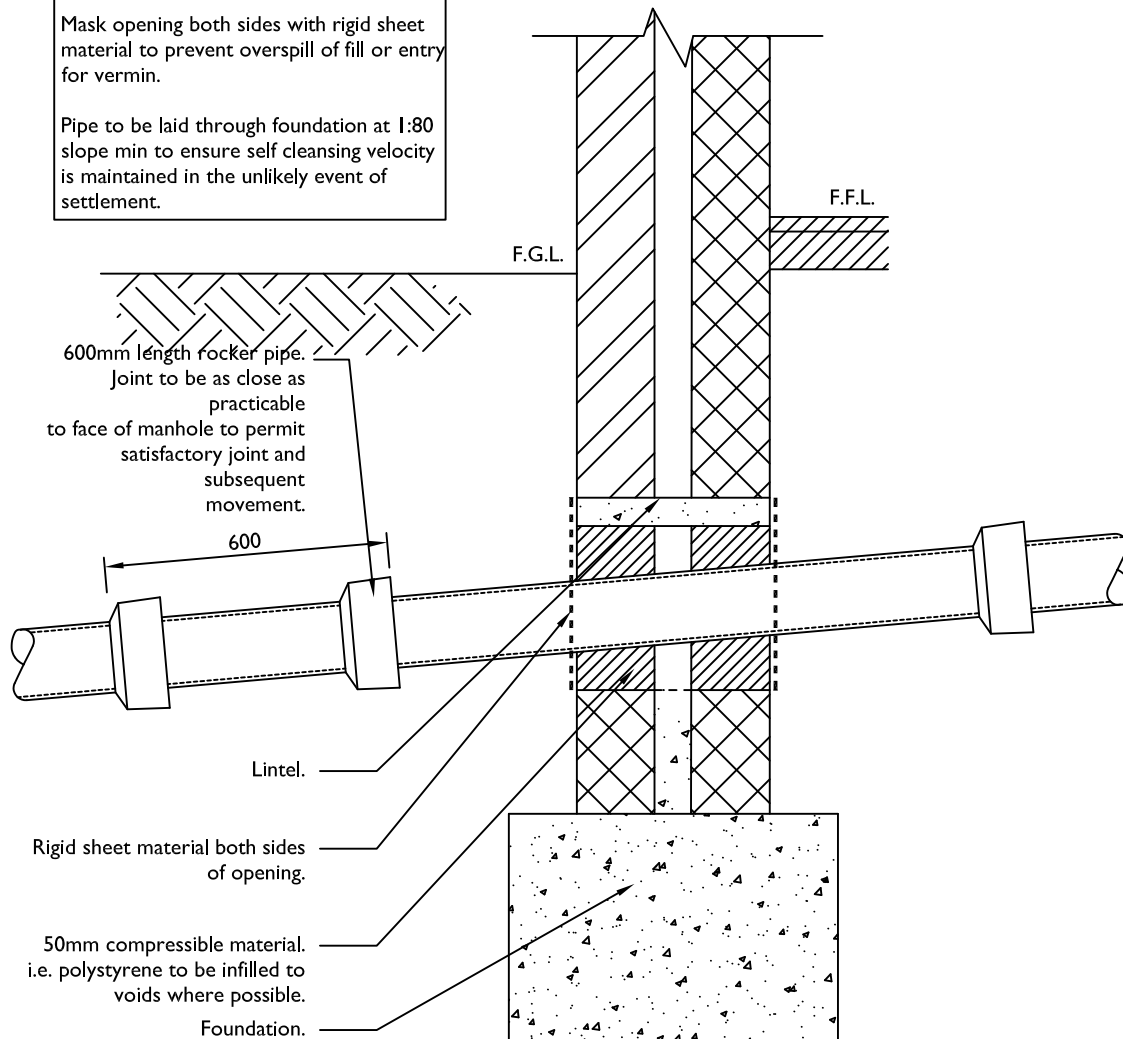
(Scale 1:20)

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 52 Common Lane Titchfield Hants PO14 4BU 07717 759149		Subject		
		Foul rest bend		
Scale	Project No.	Drawing No.	Sheet No.	Revision
As stated		DET-0007	na	-

Arched or lintelled opening to give 50mm min clearance all around the pipe.

Mask opening both sides with rigid sheet material to prevent overspill of fill or entry for vermin.

Pipe to be laid through foundation at 1:80 slope min to ensure self cleansing velocity is maintained in the unlikely event of settlement.



TYPICAL SECTION DETAILING PIPE 'SLEEVE' THROUGH LINTEL OPENING

(Scale 1:20)

Original Sheet Size A4 (297 x 210)

0 10 mm 50



52 Common Lane
Titchfield
Hants
PO14 4BU
07717 759149

Project

Subject

Foundation Lintel

Scale	Project No.	Drawing No.	Sheet No.	Revision
As stated		DET-0009	na	-

TABLE (i)

Diameter of largest pipe in manhole (mm)	Internal diameter of manhole (mm)
Less than 375	1200 (1050 where depth to soffit is 1.35m to 1.5m)
375 - 700	1500
750- 900	1800
Greater than 900	Consult Undertaker/Engineer's Specification

TABLE (ii)

Pipe Diameter (mm)	Rocker Pipe Length (mm)
150 - 600	600
601 - 750	1000
> 750	1250

TABLE (iii)

MH Location	Cover Grade	Test Load
Non-trafficked/ Pedestrian areas	A15	15
Private drives	B125	125
Parking courts	C250	250
Carriageway	D400	400
Airfields/Dockyards	E600	600
Airfields/Dockyards	F900	900

TABLE (iv)

NRSWA Road Category	Description	Minimum Frame Depth (mm)
I	Trunk roads and dual carriageways	150
II	All other 'A' roads	150
III	Bus Services	150
IV	All other roads except residential cul-de-sacs	150
	Residential cul-de-sacs	100

STEP IRONS (v)

- Steps for manholes and other chambers shall be Type D Class I, complying with the requirements of BS EN 13101: 2002.
- Precast concrete manhole pattern step irons at 300mm centres vertically and staggered 300mm horizontally between centres.
- Unprotected aluminium steps should not be permitted for adoptable applications.
- Plastic encapsulated steps are subject to undertaker's requirements/approval.

LADDERS (vi)

- Mild steel ladders for vertical fixing shall comply with the relevant provision of BS 4211, class A and PD 970.
- After fabrication, mild steel ladders shall be hot dip galvanised in accordance with BS EN ISO 1461:2009.
- Stainless steel ladders for vertical fixing shall be fabricated from Grade 316S31 steel complying with BS 970: Part 1 and BS EN 10084, 10085, 10087, 10095, 10250, 10029, 10048, 10051, 10258, 10259.
- GRP ladders shall be manufactured to the relevant requirements of BS EN 131, and from glass-reinforced polyester using an appropriate resin for the ladder location. Undirectional reinforcement shall be provided in the GRP matrix to maximise the strength of the product.

HIGH STRENGTH TOPPING (vii)

- High-strength concrete topping shall be produced, laid and finished in accordance with the relevant provisions of BS 8204: Part 2 and the following approximate proportions by weight shall be used: 1 part cement, 1 part natural sand and 2 parts single sized coarse aggregate.

RECESSED COVERS (viii)

- Where inspection chamber is located in areas of block paving it shall be fitted with a recessed cover to accommodate paving blocks.

PRE-CAST CONCRETE PRODUCTS (x)

- Products shall comply with the relevant provisions of BS 5911: Part 2, 200 & 230.

MANHOLE COVERS & FRAMES (ix)

- Manhole cover and frames shall comply with the relevant provisions of BS EN 124, BS 7903 and Highway Agency Guidance Document HA 104/02. They shall be of a non-rocking design which does not rely on the use of cushion inserts.
- All manhole covers shall be the non-ventilating type and shall have closed keyways.
- Refer to TABLE (iv) for frame depths.
- Refer to Manhole Schedule/Drainage Drawing for cover grades.

Original Sheet Size A4 (297 x 210)

0 10 mm 50



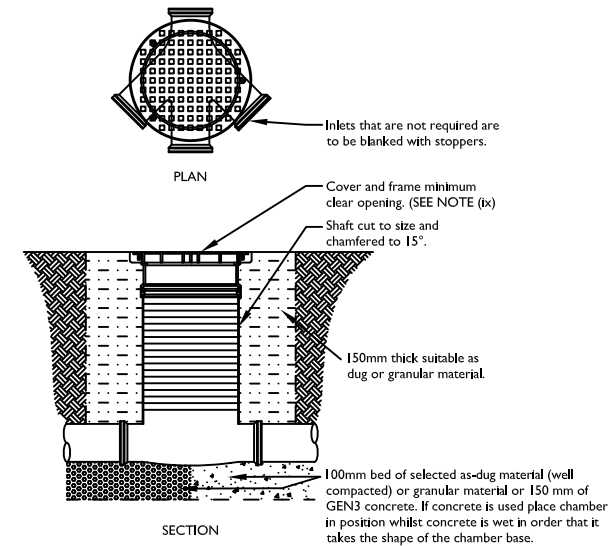

52 Common Lane
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Project

Subject

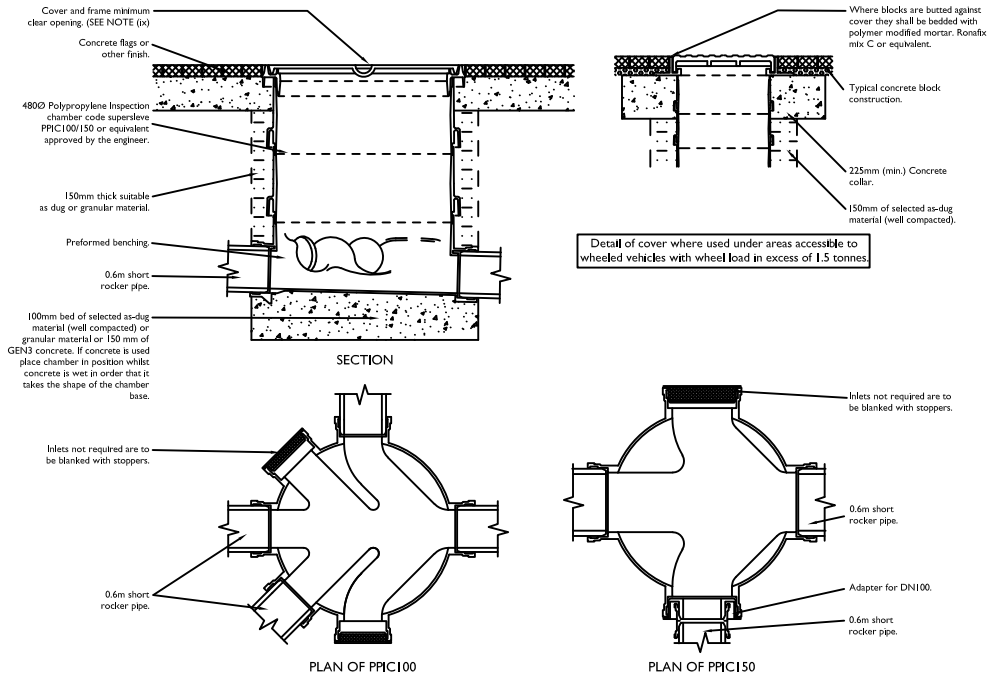
Manhole and chamber notes

Scale	Project No.	Drawing No.	Sheet No.	Revision
As stated		DET-0200	na	-



POLYPROPYLENE SHALLOW INSPECTION CHAMBER DETAIL (250Ø)
(Scale 1:20)

Depth to invert of less than 600mm.



POLYPROPYLENE INSPECTION CHAMBER DETAIL (480Ø)
(Scale 1:10)

Depth to invert of less than 930mm.
Depth to Invert with concrete collar of less than 1.0m.

Original Sheet Size A4 (297 x 210)



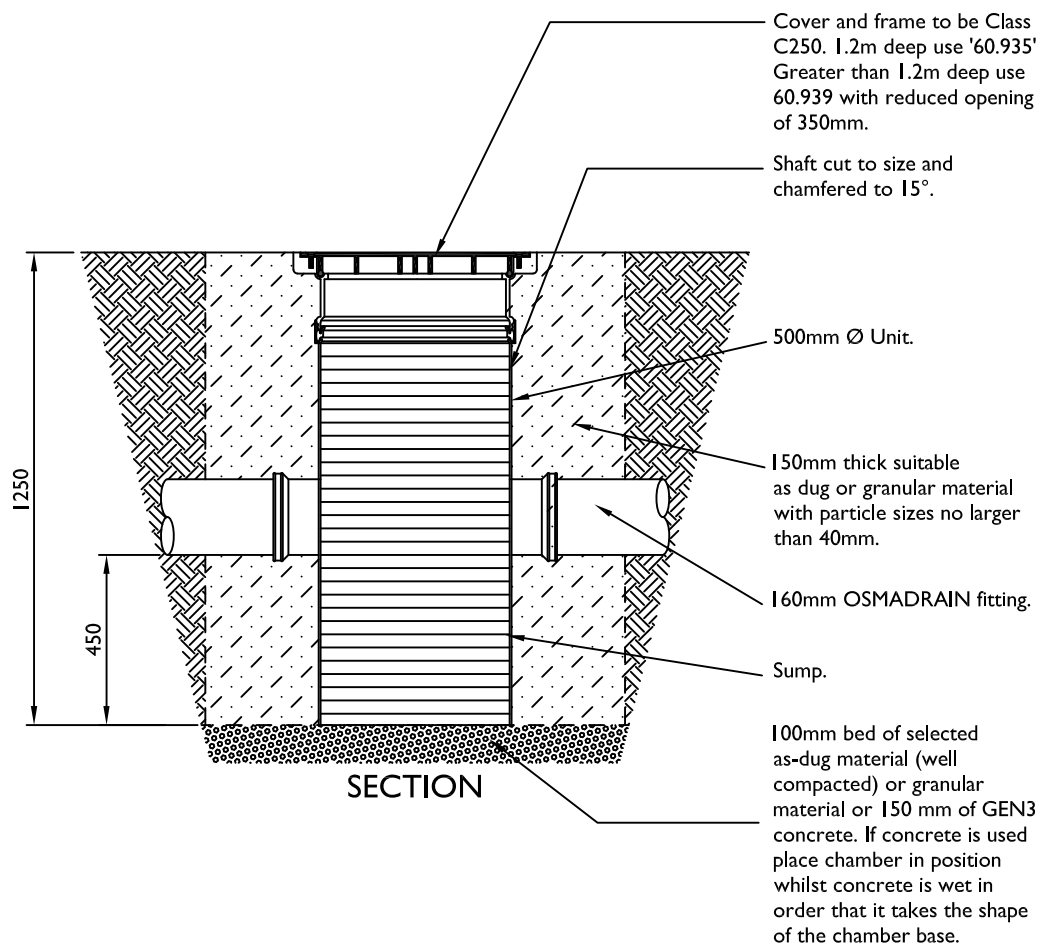
52 Common Lane
Titchfield
Hants
PO14 4BU
07717 759149

Project

Subject

**PPIC
250mm & 480mm DN**

Scale	Project No.	Drawing No.	Sheet No.	Revision
As stated		DET-0201	na	-



POLYPROPYLENE SHALLOW SILT TRAP DETAIL

(500Ø)

(Scale 1:20)

Depth to invert 1.25m (standard unit)
Silt Traps installed greater than single unit depth to be extended using Wavin inspection chamber shaft units.

Original Sheet Size A4 (297 x 210)

0 10 mm 50



52 Common Lane
Titchfield
Hants
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Project

Subject

Polypropylene Catch Pit
500mm DN

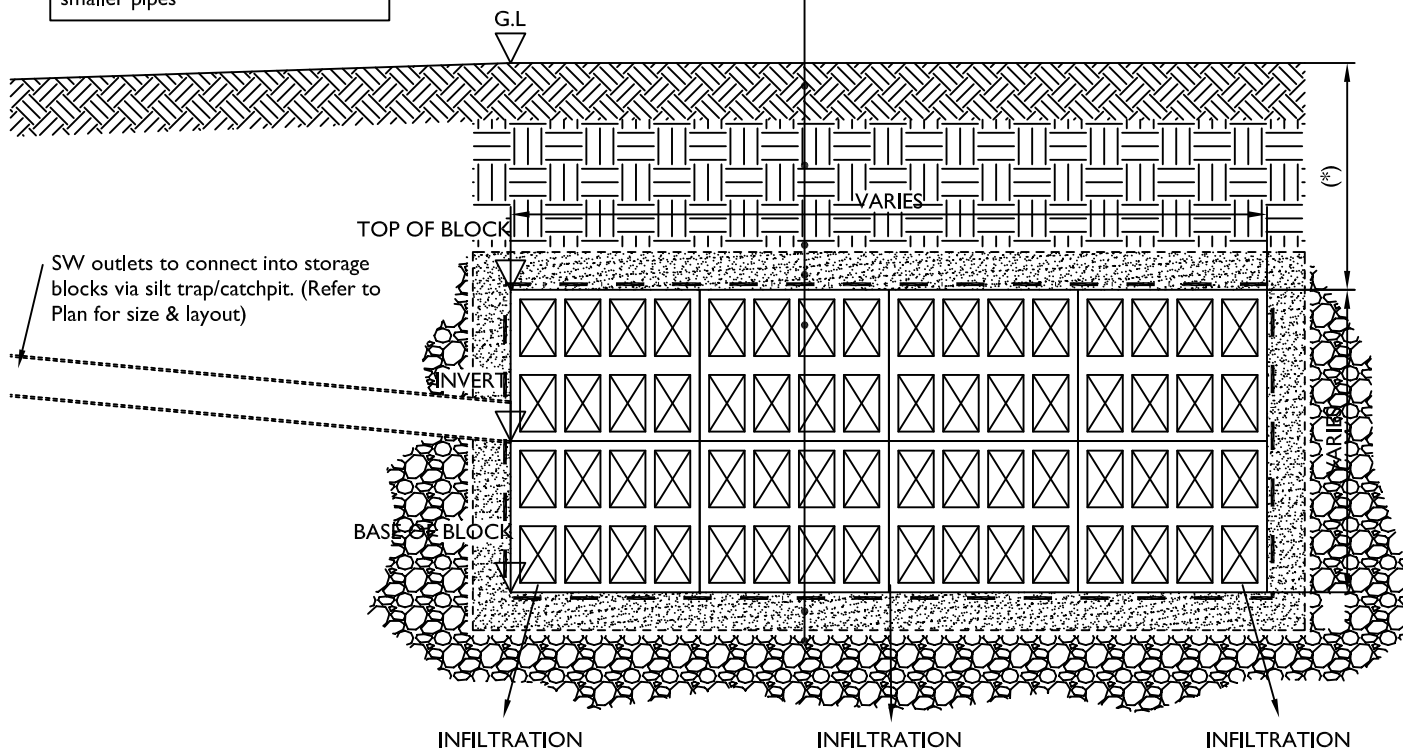
Scale	Project No.	Drawing No.	Sheet No.	Revision
As stated		DET-0202	na	-

(*) Minimum cover requirements:
UNTRAFFICKED = 500mm
TRAFFICKED = 700mm

Installations requiring reductions on these figures will require further assessment for protection by Engineer prior to installation.

Pre-formed sockets on the Aquacells take a 160mm Ø pipe. An Osmadrain reducer is required for smaller pipes

- Surface course: 150mm imported topsoil to BS 3882.
- Sub-base course: 150mm (min) layer of selected clean excavated soil or sub-soil. (Well compacted)
- Geotextile/Membrane: Permeable membrane to be Terram 1500 (180 gram) non-woven material. (Terram Tel: 01495757722)
- Laying course: 100mm coarse sand or non angular granular material base and surround.
- Storage: Aquacell Blocks (Refer to Plan & Sections for arrangement)
- Laying course: 100mm coarse sand or non angular granular material base and surround.
- Geotextile/Membrane: Permeable membrane to be Terram 1500 (180 gram) non-woven material. (Terram Tel: 01495757722)



TYPICAL AQUACELL INSTALLATION (INFILTRATION METHOD)

(Scale 1:20)

Geocellular module geometry varies between suppliers.

If located under trafficked areas the appropriate module grades and minimum cover depths shall accord with manufacturers requirements

If located under trafficked areas the overlying pavement construction shall be to the pavement construction details shown elsewhere

Original Sheet Size A4 (297 x 210)



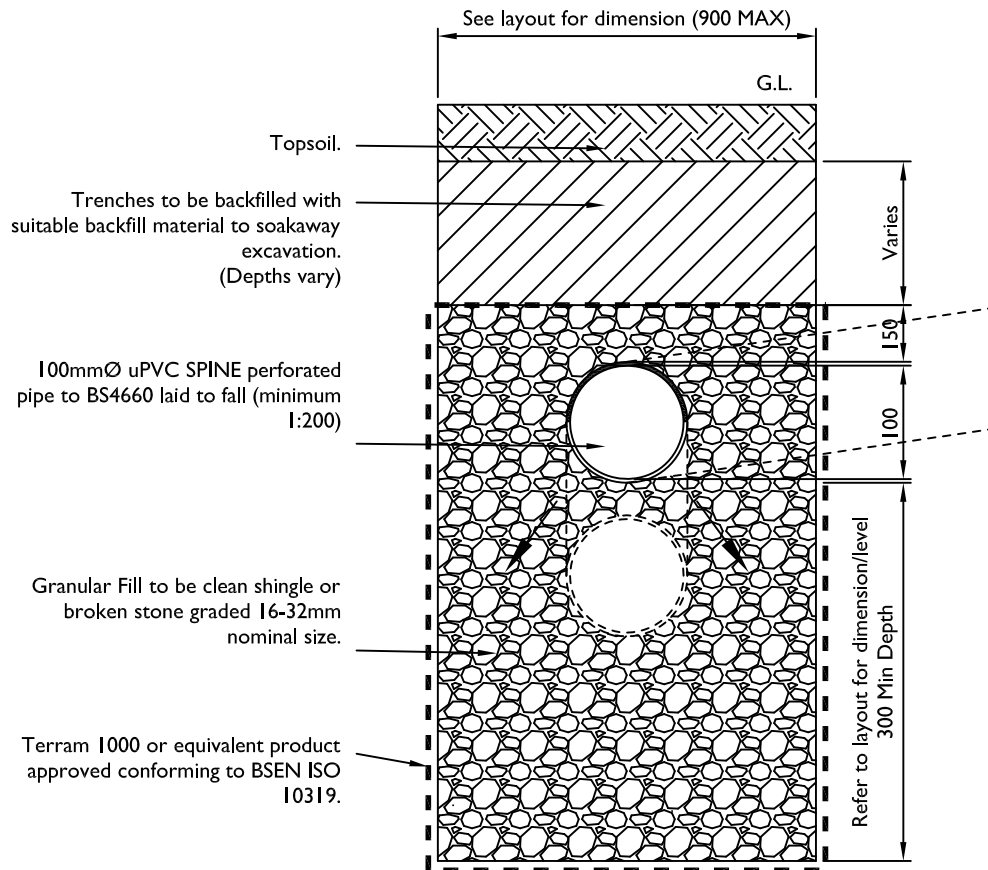
52 Common Lane
Titchfield
Hants
PO14 4BU
07717 759149

Project

Subject

Geocellular soakaway

Scale	Project No.	Drawing No.	Sheet No.	Revision
As stated		DET-0301	na	-



FOUL DRAINAGE FIELD TRENCH

(TREATED FOUL EFFLUENT)

(Scale 1:20)

REFER TO DRAINAGE GA FOR LOCATION
& ARRANGEMENT.

PARALLEL TRENCHES TO BE POSITIONED
WITH A MIN 1000mm GAP.

Original Sheet Size A4 (297 x 210)

0 10 mm 50



52 Common Lane
Titchfield
Hants
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Project

Subject

Effluent Drainage Field Trench

Scale	Project No.	Drawing No.	Sheet No.	Revision
As stated		DET-0310	na	-