



1 March 2025

Mr & Mrs Wyre
Stroudwood Lane
Upham
Hants
SO32 1HG

✉ 54 Common Lane
Titchfield, Hants,
PO14 4BU

☎ 07717 759149
🌐 www.aquacallidus.co.uk

Ref: 24185

Stroudwood Lane, Upham, Hants Drainage Proposals

Dear Sirs

BGS mapping indicates the site to lie on Clay from the London Clay Formation. Three cycles of permeability testing was undertaken and determined Clay geology and a permeability of 6×10^{-7} m/sec ($v_p = 546$ secs/mm) . A copy of the results is attached. The site soils are not viable for infiltration.

Surface Water

The site is located on Clay geology. The site falls from the back to the front and runs off to a boundary ditch to Stroudwood Lane along the front boundary of the site. The existing building and pavement make unattenuated discharge from the existing 450m² impermeable catchment to the ditch at 6.2 l/sec.

It is proposed to surface the rest of the yard to the front of the building and to direct the runoff from this yard and the existing building into 1,010m² of partially infiltrating porous gravel pavement with CGA foundation, to the north of the building. The site soil permeability rate is extremely low so for design purposes the little infiltration there may be has been discounted. The CGA matrix will continue to outfall to the front ditch. Calculations are attached which demonstrate for a 2 l/sec flow restriction the 1%AEP + 45% climate change + 10% urban creep storm scenario requires 146m³ of attenuation storage. Proposed storage 1,010m² of min 420mm thick CGA foundation of 35% void creating storage of 149m³. The calculations for this are attached. The post development discharge will therefore give a 68% reduction in current unattenuated discharge rate.

The use comprises low risk surface water pollution hazards. The attached water quality assessment confirms the proposed drainage will provide sufficient treatment.

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 ACC24185-01.

A SUDS O&M schedule is attached.

Foul Water

The site is remote from the public sewer and the site soils are unsuitable for site treatment and discharge to ground. The ditch to the front of the site only contains a limited amount of rainwater for a short duration during and immediately after significant rainfall. The ditch is unsuitable for discharge of treated effluent to

the watercourse (ditch). Site occupancy will be low and is unlikely to be at full occupancy 7 days a week. Appropriate storage provision is considered to be 50 LPD and assuming 3 full time workers and 2 month emptying frequency (60 days) then size required would be 9,000L. It is proposed to provide a 9,000L cess pool on the site as indicated on drawing ACC24185-01.

Unless noted otherwise this is 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.

Yours Sincerely,

Aqua Callidus Consulting Ltd

Andy Traves

Enc. Permeability test results
 ACC24185-01
 Attenuation calculations
 Water quality calculations
 SUDS O&M
 DET-0005
 DET-0006
 DET-0007
 DET-0009
 DET-0100
 DET-0200
 DET-0201
 DET-0202
 SEL Raintaina and Controflow 300 chamber details
 0150L shallow dig cesspool

Site Ref

Stroudwood Lane

project 24185

BS6297 Percolation Test

Hole Reference

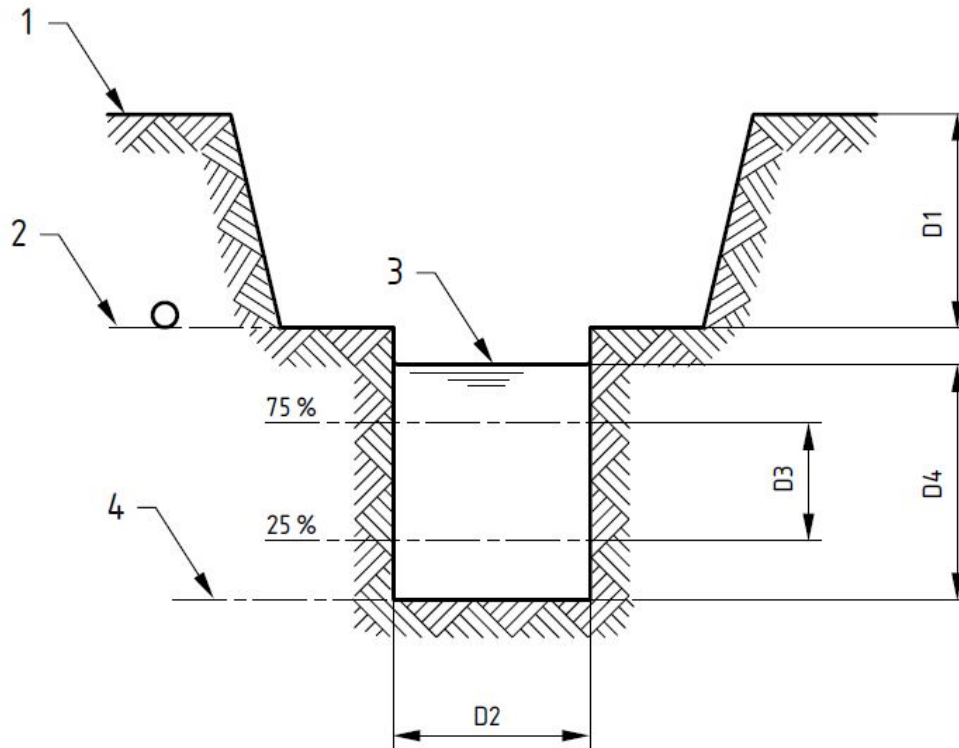
TH01

D1	0.6	m	Notes
D2	0.3	m	
D3	0.15	m	
D4	0.3	m	

by 0.3m (into page)

Notes on soil nature:

Clay

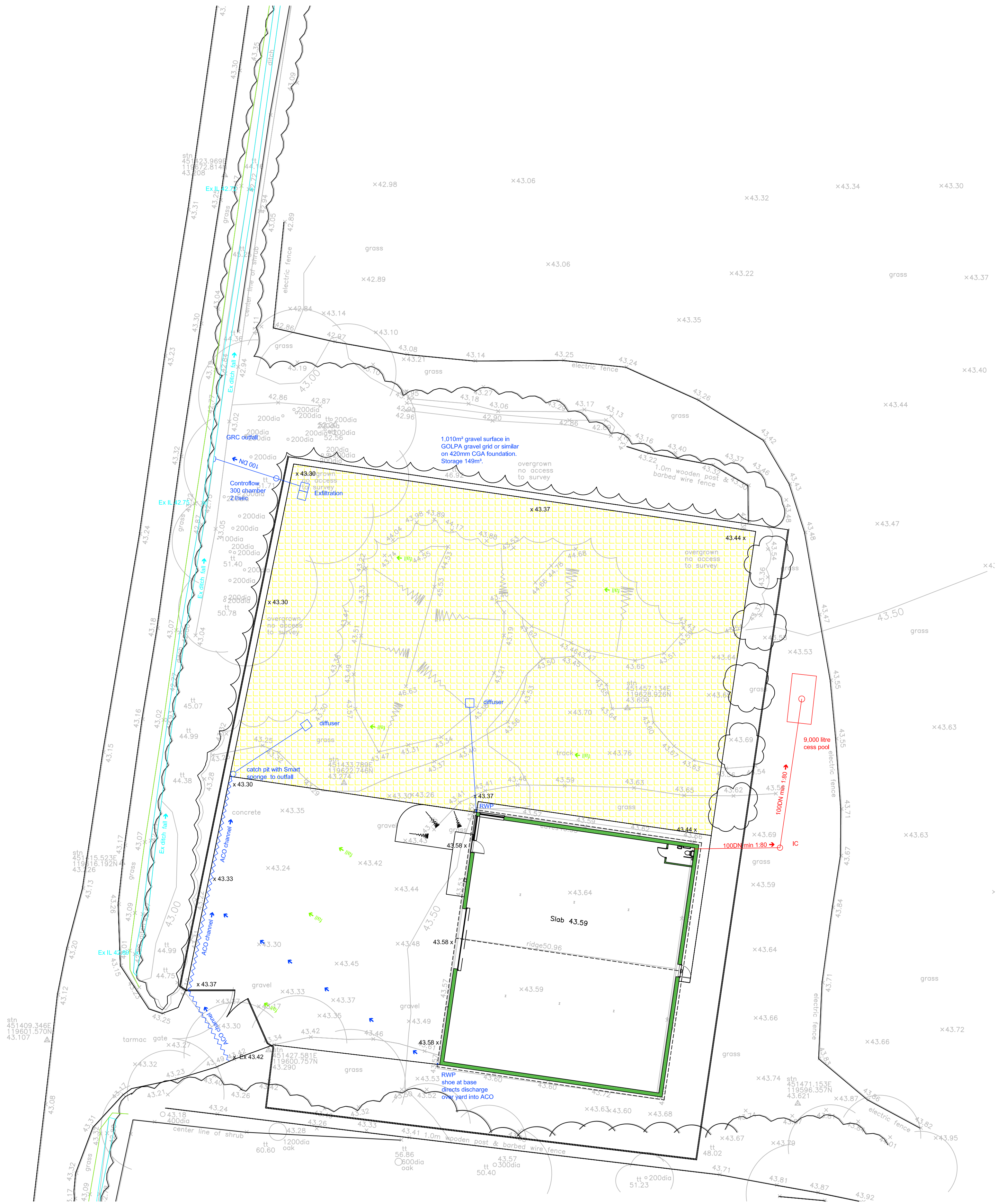


Results

Test No	Time to drop D3 (0.15m)			Total time secs	V _p secs/mm	Notes
	hours	mins	secs			
1	21	50	0	78600	524.0	
2	23	10	0	83400	556.0	
3	23	20	0	84000	560.0	
AVERAGE					546.7	

6.10E-07 m/sec

If V_p greater than 100 a drainage mound may be necessary and where less than 12 a retarding sand blanket may be necessary.



Rev.		Amendment	Date	Original Sheet Size A1 (841 x 594)		Project	
				0 10 mm 50		Stroudwood Lane Upham Hants	
						Subject	
				54 Common Lane Titchfield Hants RG14 4BU 07717 759149		Drainage Layout	
				Scale	Project No.	Drawing No.	Sheet No.
				1:200	24185	ACC-24185-01	na
							Revision
							-

Project No.: 24185
Project Title: Stroudwood lane

Detention Assessment to CIRIA C753

No infiltration

Site Location: Upham
r = 0.36 (range 0.12 to 0.45)
Drained Area = 1830 m²
Design storm 1 in = 100 year
Runoff volume uplift = 45 % for climate change
10 % for urban creep

Catchment ID: gross to 1010m2 permeble gravel pavement
C_v = 1.00

Technical Assessment

Base axis Length L_x = 38.40 m
Base axis Length L_y = 26.30 m
Discharge rate = 2.00 l/s
Storage depth = 0.420 m
storage porosity = 35 %

Base area = 1009.9 m²

storage volume = 148.9 m³
Design volume = 148.9 m³
M5-60 Rainfall = 20 mm

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= 0.36 Value Z1	0.36	0.51	0.62	0.79	1.00	1.22	1.48	1.67	1.90	2.42
Rainfall M5 (mm)	7.2	10.2	12.4	15.8	20.0	24.4	29.6	33.4	38.0	48.4
M100/M5 gf Value Z2	1.84	1.91	1.95	2.00	2.03	2.01	1.97	1.94	1.91	1.82
Rainfall M100 (mm)	13.3	19.5	24.2	31.5	40.6	49.1	58.4	64.9	72.4	88.2
With climate uplift (mm)	19.2	28.3	35.0	45.7	58.9	71.2	84.7	94.1	105.0	127.9
With urban creep (mm)	21.2	31.1	38.5	50.3	64.8	78.3	93.2	103.5	115.5	140.7
RUNOFF (m³)	38.7	57.0	70.5	92.1	118.5	143.3	170.5	189.4	211.4	257.5
inflow rate (l/s)	129.1	94.9	78.4	51.1	32.9	19.9	11.8	8.8	5.9	3.0
storage rate (l/s)	127.1	92.9	76.4	49.1	30.9	17.9	9.8	6.8	3.9	1.0
Discharge (m³)	0.6	1.2	1.8	3.6	7.2	14.4	28.8	43.2	72.0	172.8
Req'd STORAGE (m³)	38.1	55.8	68.7	88.5	111.3	128.9	141.7	146.2	139.4	84.7
Residual drain time (h)	5.3	7.7	9.5	12.3	15.5	17.9	19.7	20.3	19.4	11.8

Date: 01/03/2025

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Site Ref

Stroudwood lane

SuDS Water Quality Management CIRIA C753 Ch26

Simple Index Approach

Catchment

roof

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-non-residential

Hazard

low

TSS index	Metals index	HydroCar index
0.3	0.2	0.05

Treatments

To surface water discharge ☐ Y

Component

1 Permeable pavement

2 N/A

3 N/A

mitigation index

X1 N/A

Enhanced mitigation index

Residual pollution index

TSS MIndex	Metals MIndex	HydroCa MIndex	factor
0.7	0.6	0.7	1.00
0	0	0	0.50
0	0	0	0.50
0.7	0.6	0.7	
0	0	0	1.00
0.7	0.6	0.7	
0	0	0	

Land Use

roofs-non-residential

Hazard

low

TSS index	Metals index	HydroCar index	residual
0	0	0	

Treatments

To groundwater discharge ☐ N

Infiltration surface

1 N/A

2 N/A

Final residual pollution index

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

Is a groundwater risk screening required?

☐ N

Notes:

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Site Ref

Stroudwood lane

SuDS Water Quality Management CIRIA C753 Ch26

Simple Index Approach

Catchment

car park

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

car parks -infrequent turn over

Hazard

low

TSS index	Metals index	HydroCar index
0.5	0.4	0.4

Treatments

To surface water discharge ☐ Y

Component

1 Permeable pavement

2 N/A

3 N/A

mitigation index

X1 N/A

Enhanced mitigation index

Residual pollution index

TSS MIndex	Metals MIndex	HydroCa MIndex	factor
0.7	0.6	0.7	1.00
0	0	0	0.50
0	0	0	0.50
0.7	0.6	0.7	
0	0	0	1.00
0.7	0.6	0.7	
0	0	0	

Land Use

car parks -infrequent turn over

Hazard

low

TSS index	Metals index	HydroCar index	residual
0	0	0	

Treatments

To groundwater discharge ☐ N

Infiltration surface

1 N/A

2 N/A

Final residual pollution index

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

Is a groundwater risk screening required?

☐ N

Notes:

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.

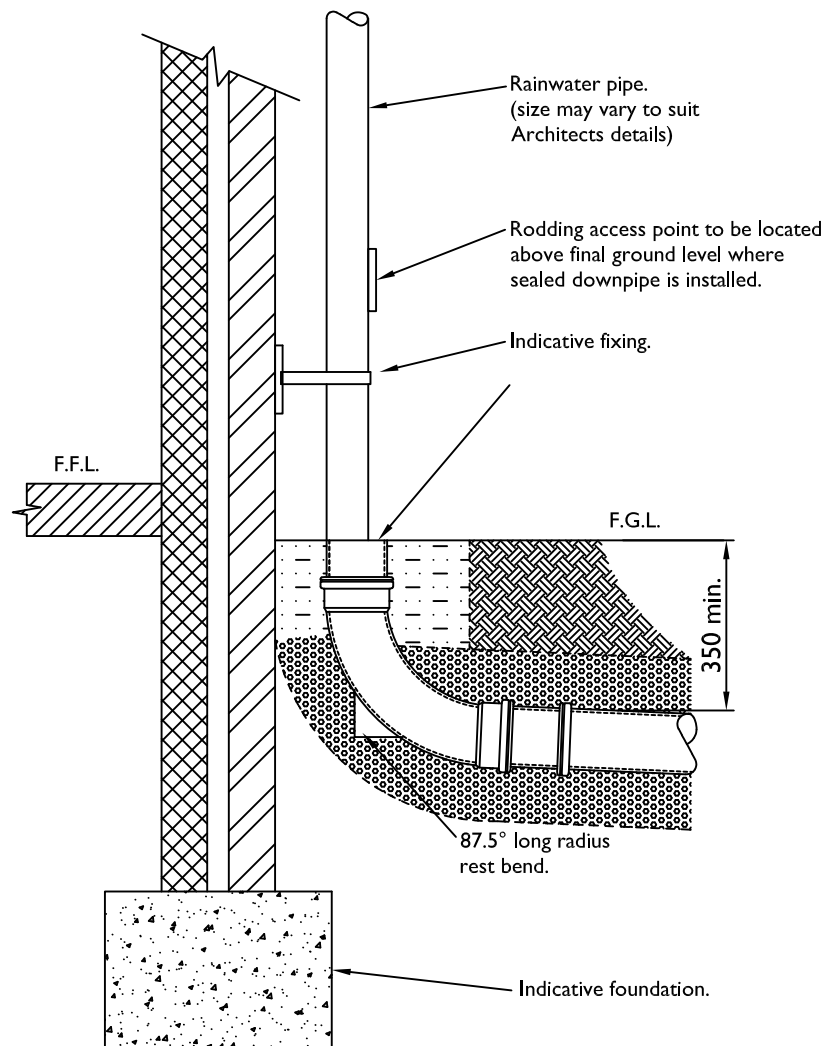
1. Scarifying to remove “thatch”. Thatch is a tightly intermingled organic layer of dead and living shoots, stems and roots, developing between the zone of green vegetation and the soil surface. Scarifying with tractor-drawn or self-propelled equipment to a depth of at least 50 mm breaks up silt deposits, 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.

Pervious pavement operation and maintenance

Maintenance schedule	Required action	Frequency
Regular maintenance	Brushing and vacuuming.	Three times/year at end of winter, mid-summer, after autumn leaf fall, or as required based on site-specific observations of clogging or manufacturers' recommendations.
Occasional maintenance	Stabilise and mow contributing and adjacent areas.	As required
	Removal of weed.	As required
Remedial actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving.	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users.	As required
	Rehabilitation of surface and upper sub-structure.	As required (if infiltration performance is reduced as a result of significant clogging).
Monitoring	Initial inspection.	Monthly for 3 months after installation.
	Inspect for evidence of poor operation and/or weed growth. If required take remedial action.	3-monthly, 48 h after large storms.
	Inspect silt accumulation rates and establish appropriate brushing frequencies.	Annually
	Monitor inspection chambers.	Annually

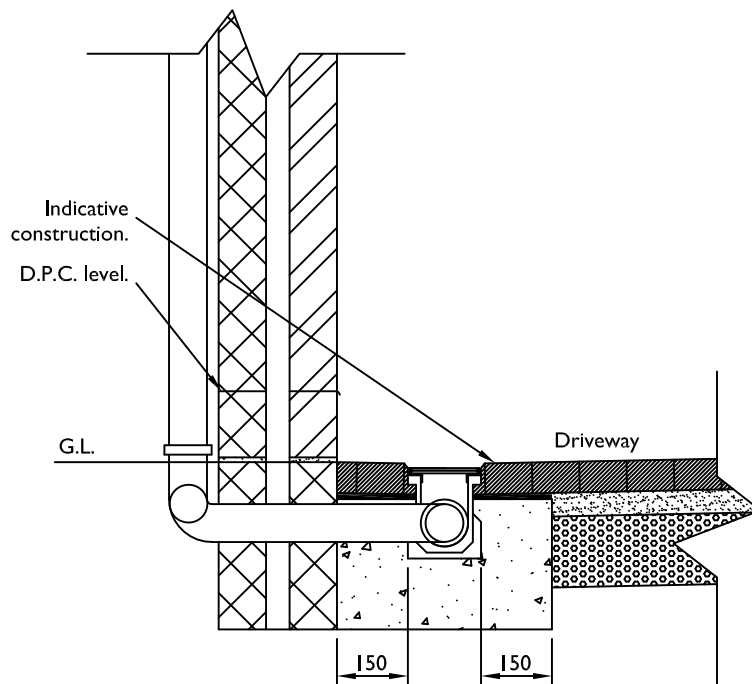
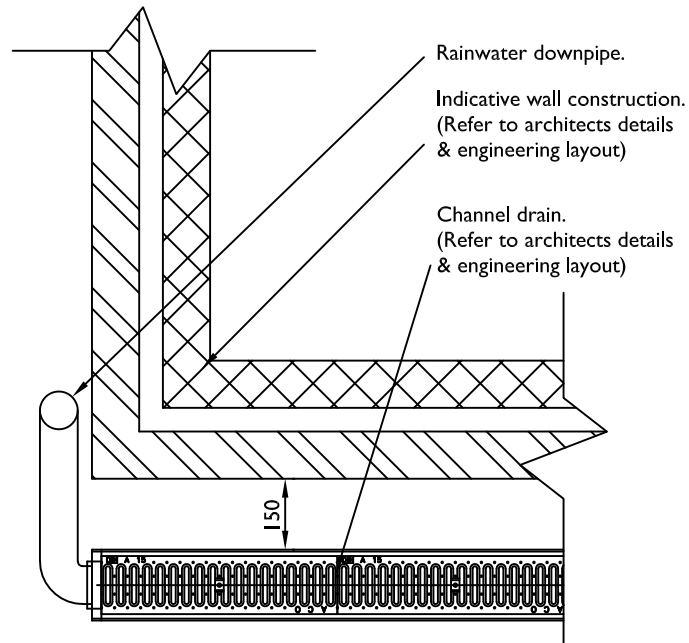
Modular systems operation and maintenance

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



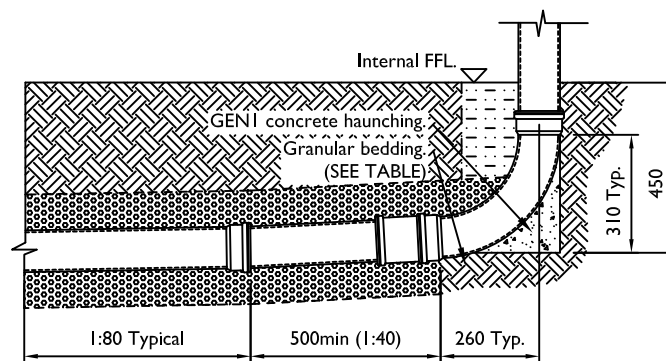
DETAIL OF RAINWATER PIPE
(Scale 1:20)

Original Sheet Size A4 (297 x 210)		Project		
010 mm50				
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 RAINWATER PIPE JOINING TO
ACO CHANNEL**
(Scale 1:20)

Original Sheet Size A4 (297 x 210)		Project		
010 mm50				
52 Common Lane Titchfield Hants PO14 4BU 07717 759149		Subject		
		RWP connection to linear drain		
Scale	Project No.	Drawing No.	Sheet No.	Revision
As stated		DET-0006	na	-



DETAIL OF FOUL REST BEND

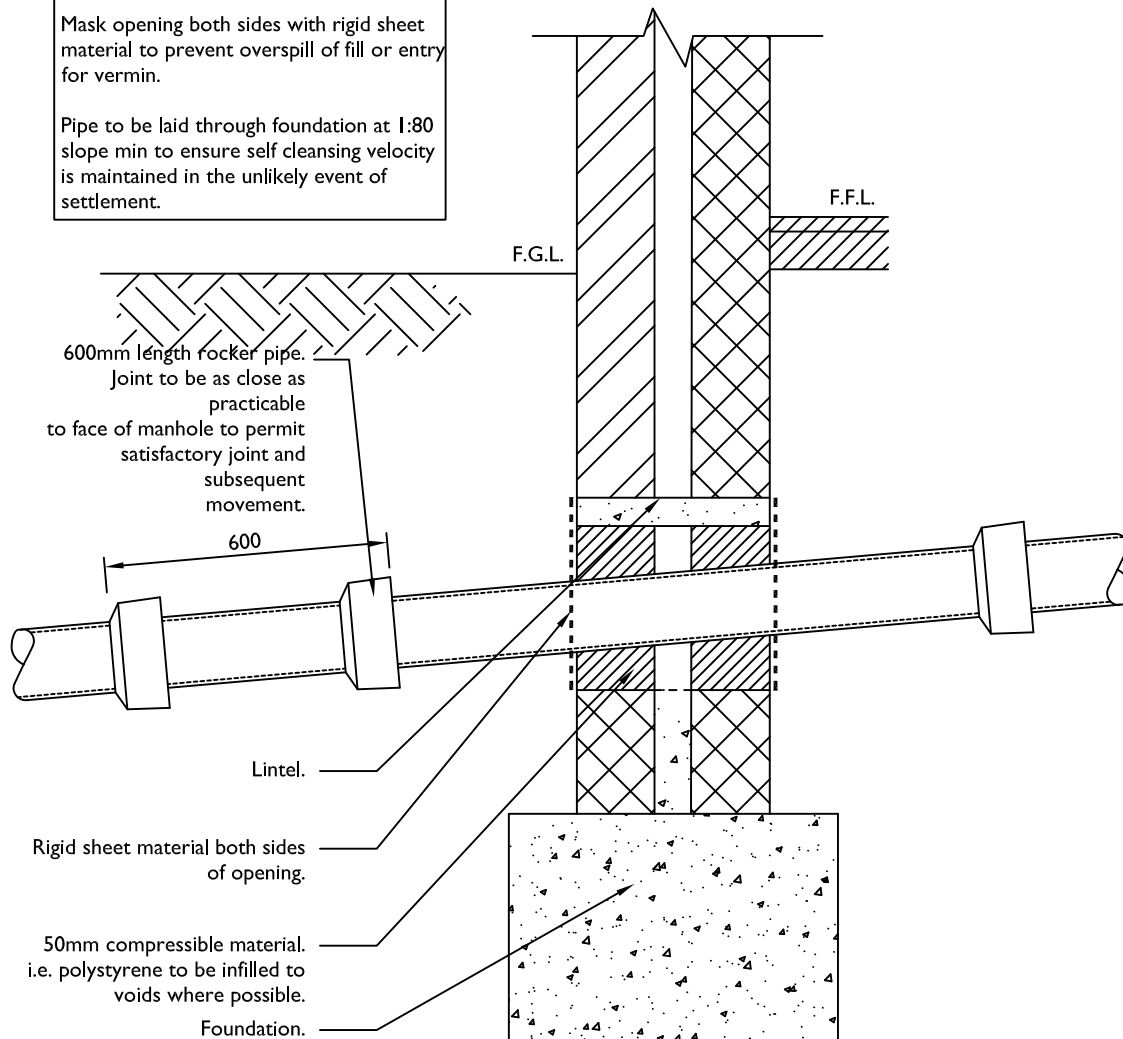
(Scale 1:20)

Original Sheet Size A4 (297 x 210)		Project		
		Subject		
52 Common Lane Titchfield Hants PO14 4BU 07717 759149		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	-

Surface course: 38mm GOLPA grid with 6/10mm unbound angular gravel fill

Bedding course: 25mm Sharp sand to BS 7533-3 cat' 11 of annex D

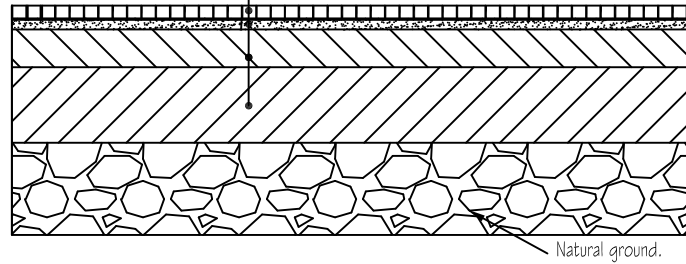
Turfex geotextile

Sub-base: 100mm 5/20mm Close Graded Aggregate (CGA)

min 200mm 10/63mm Close Graded Aggregate (CGA)
(Note minimum total CGA to be 300mm but may be more where required for hydraulic storage)

Turfex geotextile

Sub-Soil: Natural ground.



GOLPA GRAVEL SURFACED PAVEMENT
SHARED DRIVES WITH INFREQUENT USE
BY COMMERCIAL VEHICLES

NOTES

1. Any soft spots in formation to be removed and infilled with conmpacted capping or sub-base
2. Where tests indicate the existing sub-grade is frost susceptible the overall construction depth must be 450mm

Original Sheet Size A4 (297 x 210)		Project		
0 10 mm 50 				
 52 Common Lane Titchfield Hants PO14 4BU 07717 759149		Subject		
		GOLPA standard gravel pavement		
Scale	Project No.	Drawing No.	Sheet No.	Revision
As stated		DET-0100	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)

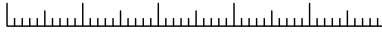
- Products shall comply with the relevant provisions of BS 5911: Part 2, 200 & 230.

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



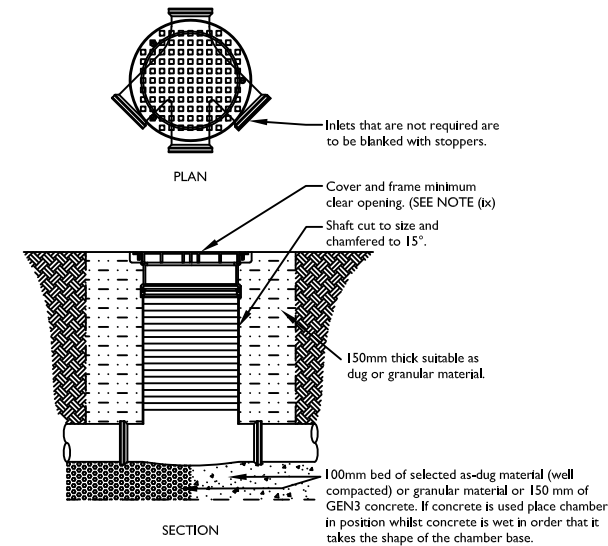

52 Common Lane
Titchfield
Hants
PO14 4BU
07717 759149

Project

Subject

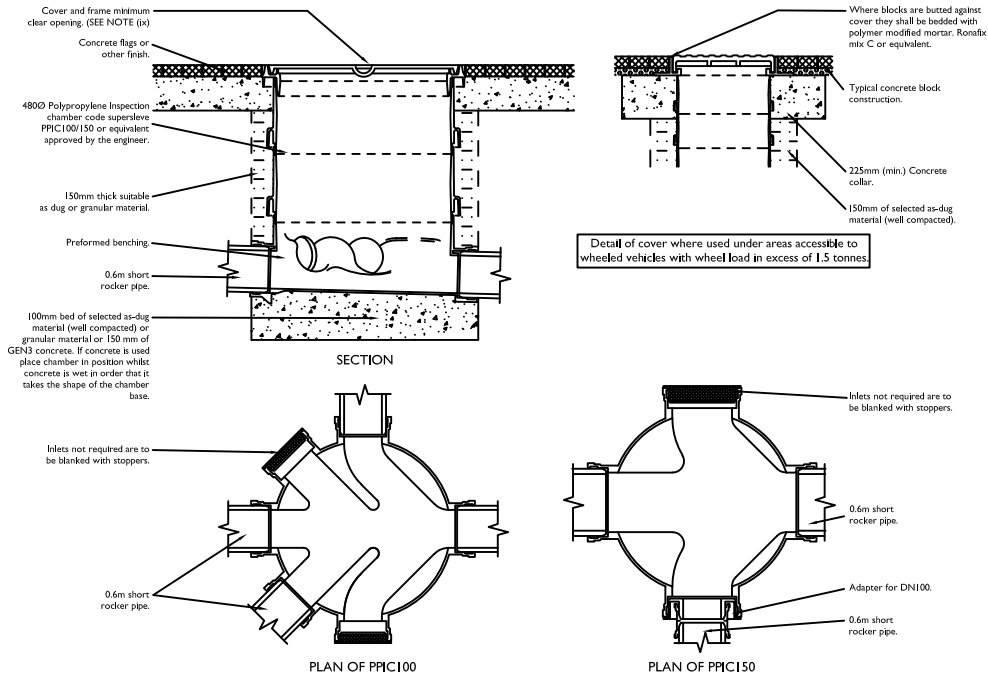
Manhole and chamber notes

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



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

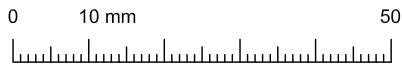
Depth to invert of less than 600mm.



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)



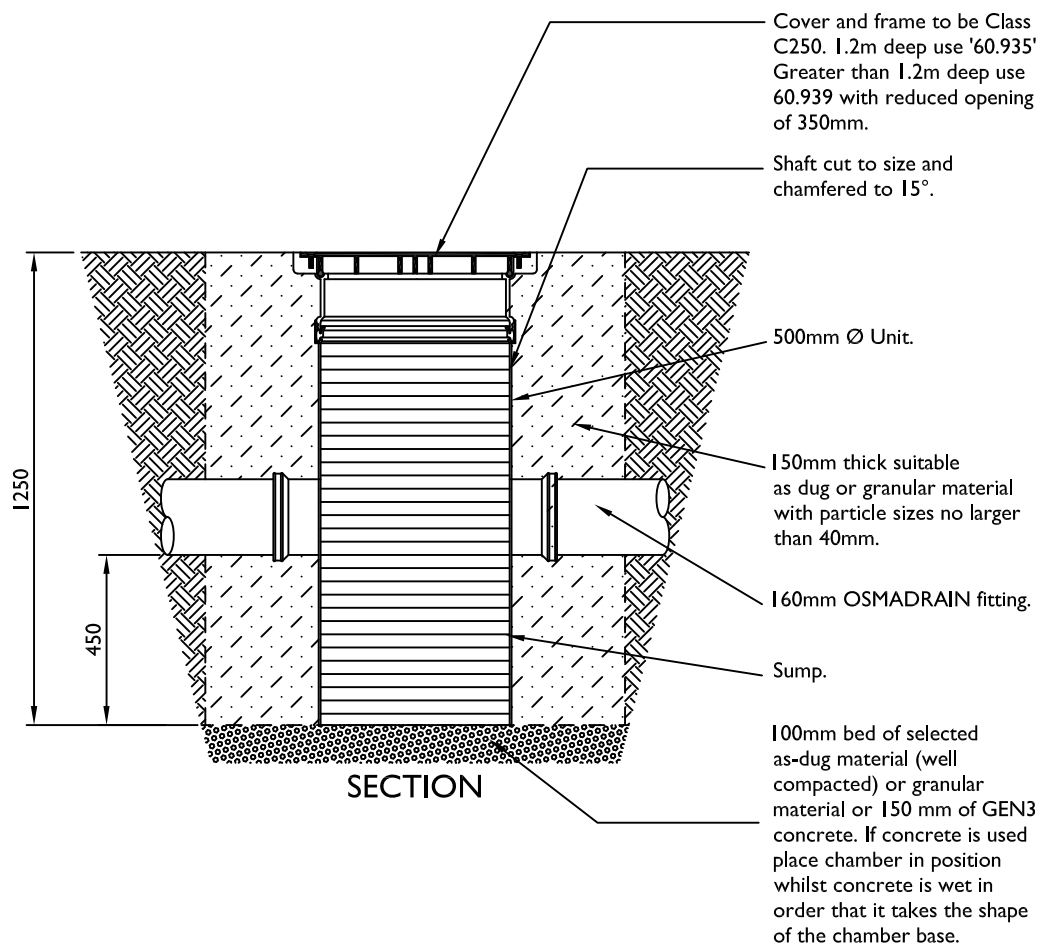
52 Common Lane
Titchfield
Hants
PO14 4BU
07717 759149

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



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Project

Subject

Polypropylene Catch Pit
500mm DN

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



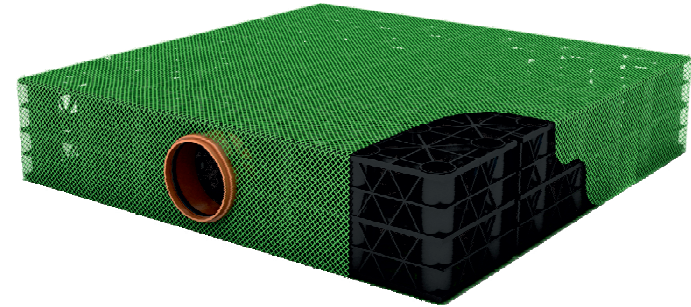
Connecting Downpipes into Permeable Paving



The SEL Raintaina RWP Filter System is a self-flushing downpipe filter chamber. Downpipes discharge directly onto the permeable cover which effectively prevents detritus, such as leaves, moss and feathers, from entering a permeable pavement or pipe collection network. The permeable cover is formed from resin bound gravel and removable for easy maintenance.

The SEL Raintaina RWP Filter System provides the following benefits:

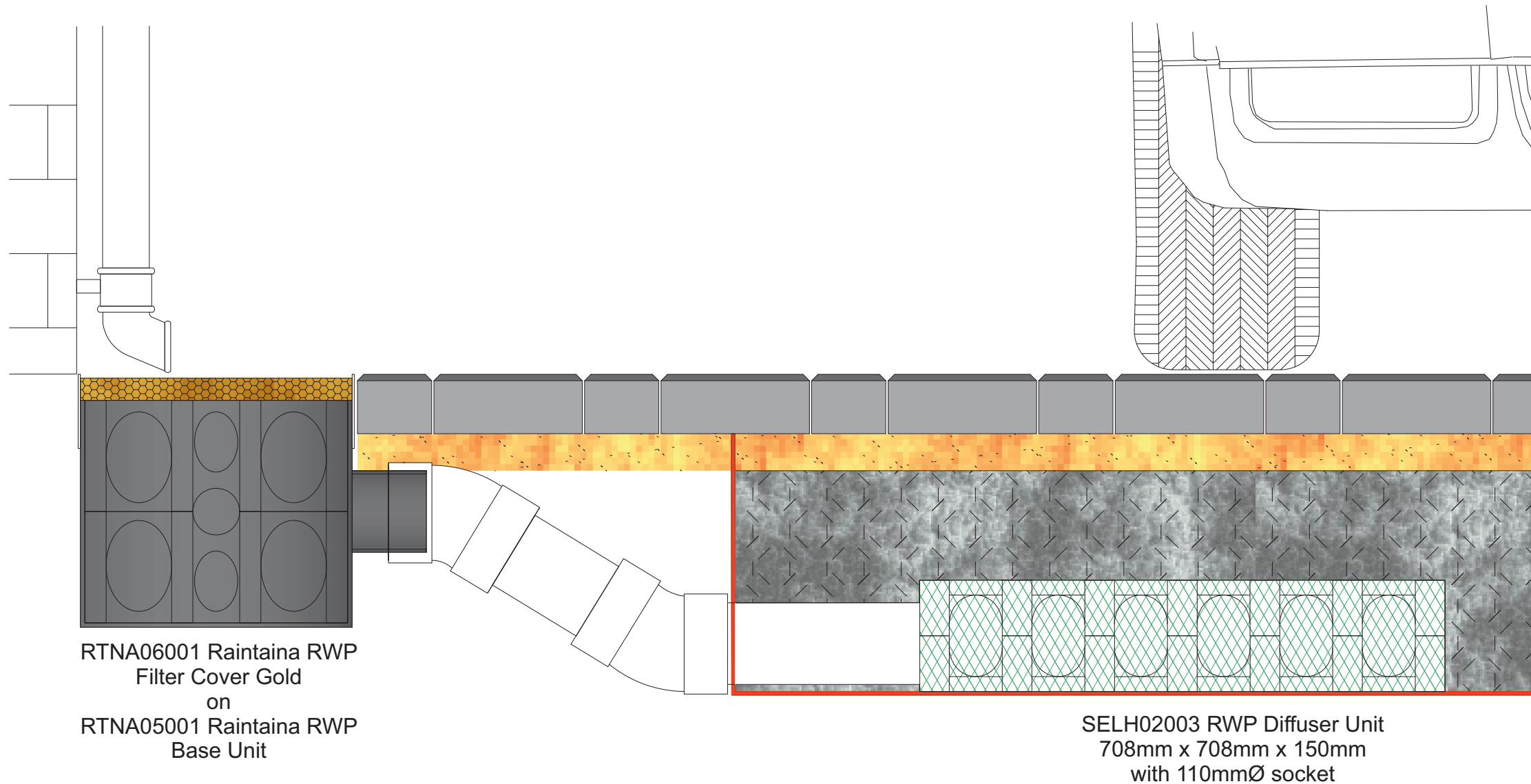
- Downpipe discharges directly onto the top of the SEL Raintaina RWP Filter System.
- Self-flushing; removes leaves, moss, feathers and other debris at ground level potentially avoiding overtopping of gutters.
- Provides a treatment phase, which is especially beneficial where planning conditions seek one treatment phase for roof run-off.
- Efficient filtration and silt separation.
- Prevents silt and debris entering the underground drainage system.
- Units situated under each individual downpipe to minimise the risk of system failure.
- Suitable for pedestrian areas with filter cover available in a variety of finishes.



SEL Source PP Diffuser Units comprise pre-assembled SEL Permavoid® units, which are pre-wrapped in a 2mm polypropylene mesh fabric and fitted with an integral socket to connect to standard 110mm dia. PVCu pipework. Each unit provides efficient diffusion of collected rainwater run-off from downpipes, into and out of the voided sub-base aggregate layers beneath permeable pavements.

The SEL Source PP Diffuser Unit provides the following benefits:

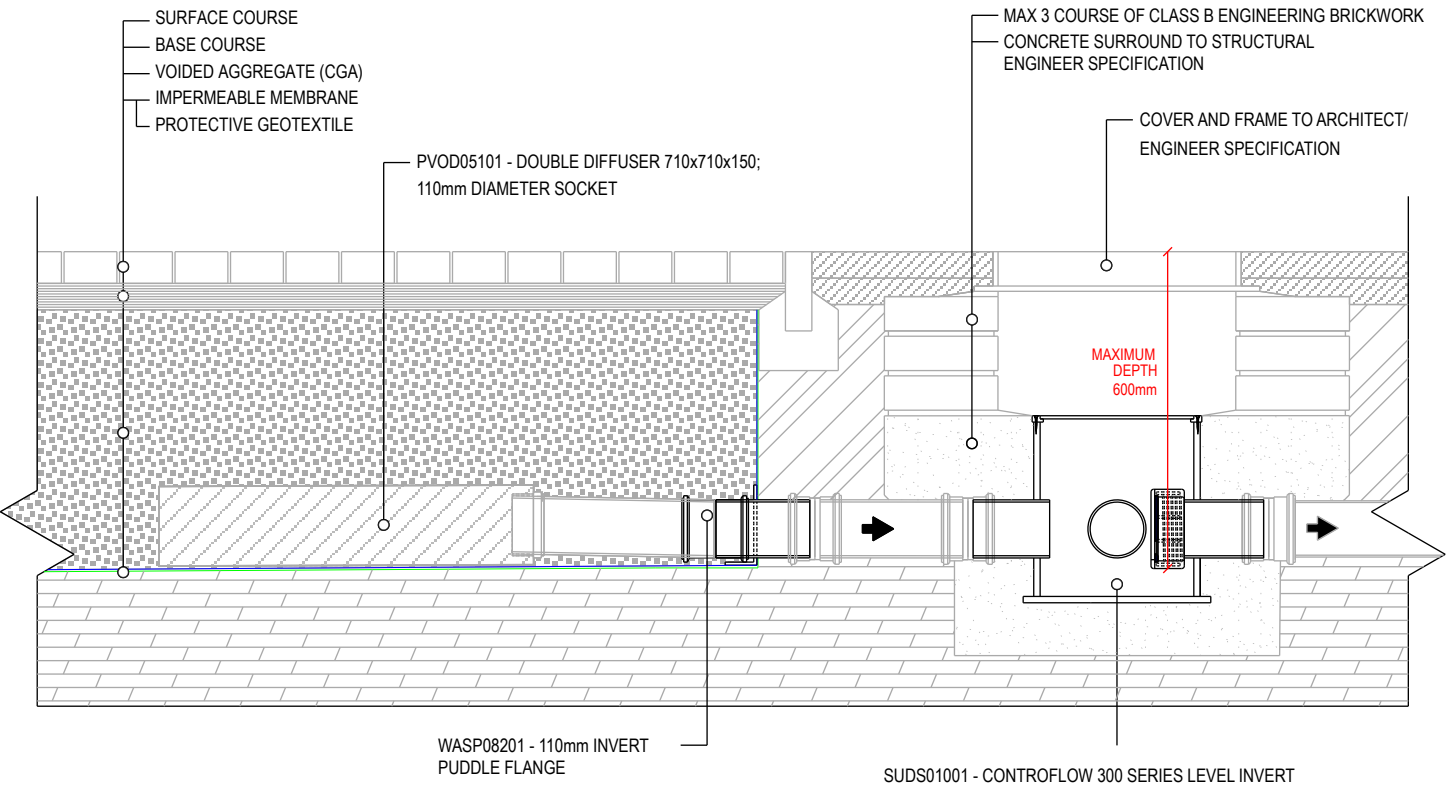
- High strength allows placement within sub-base.
- Cover depths as low as 130mm in domestic driveways.
- Large open surface area allows efficient diffusion of collected run-off into voided sub-base.
- 2mm mesh encapsulation to minimise clogging.
- Connects to standard 110mmØ underground push-fit PVCu drainage.
- 708mm x 708mm x 150mm diffuser will service up to 100m² of roof catchment into minimum 30% voided sub-base.
- Provides a uniform and flat laying surface for the impermeable membrane.
- Fully compliant with BS7533-13:2009
- Ready to install with no-site assembly required.



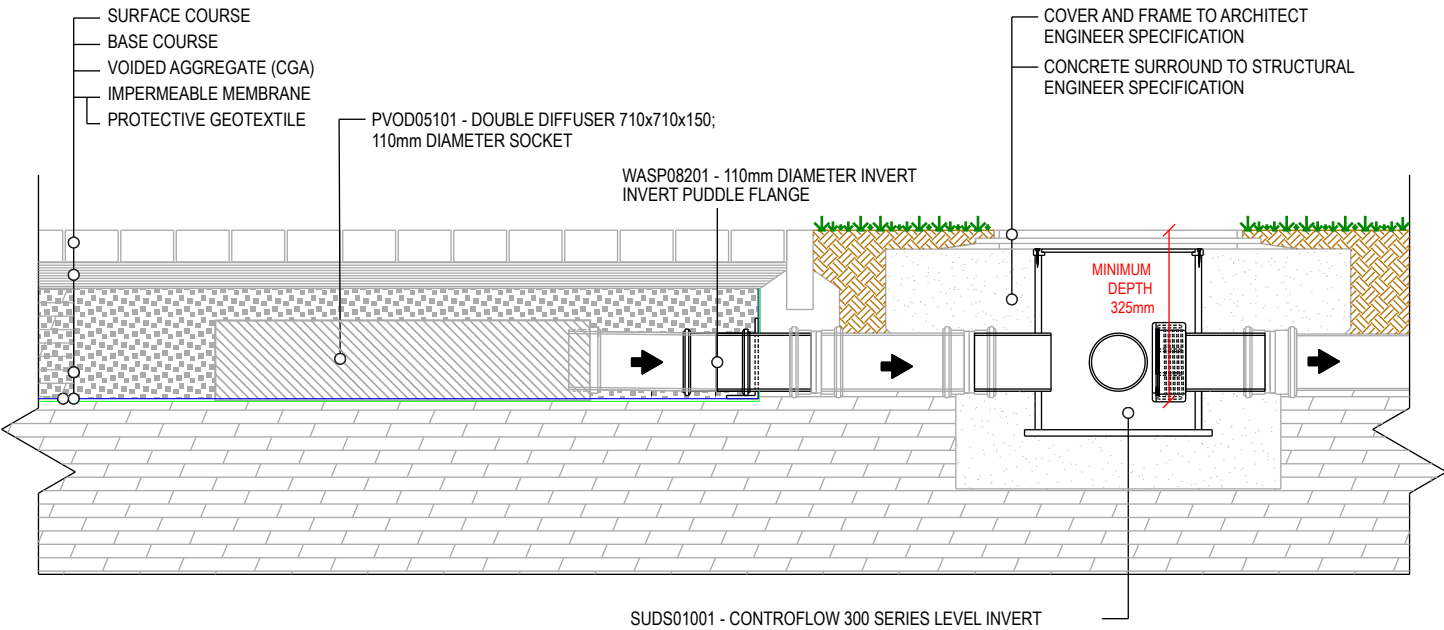
RTNA06001 Raintaina RWP
Filter Cover Gold
on
RTNA05001 Raintaina RWP
Base Unit

SELH02003 RWP Diffuser Unit
708mm x 708mm x 150mm
with 110mmØ socket

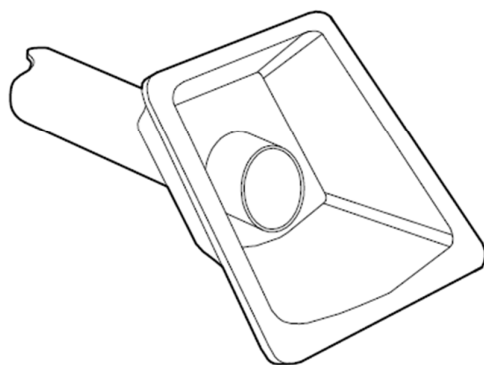
SUDS01001 - CONTROFLOW 300 SERIES LEVEL INVERT MAXIMUM DEPTH APPLICATION

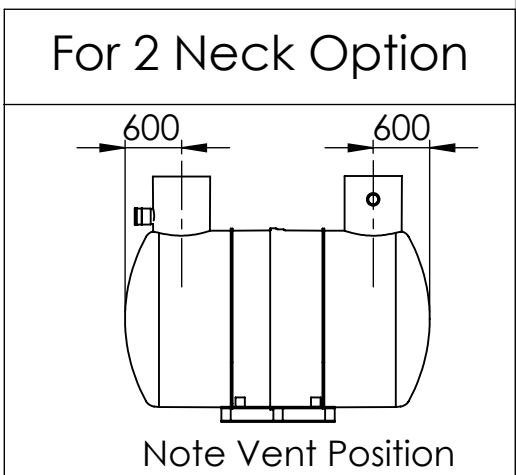
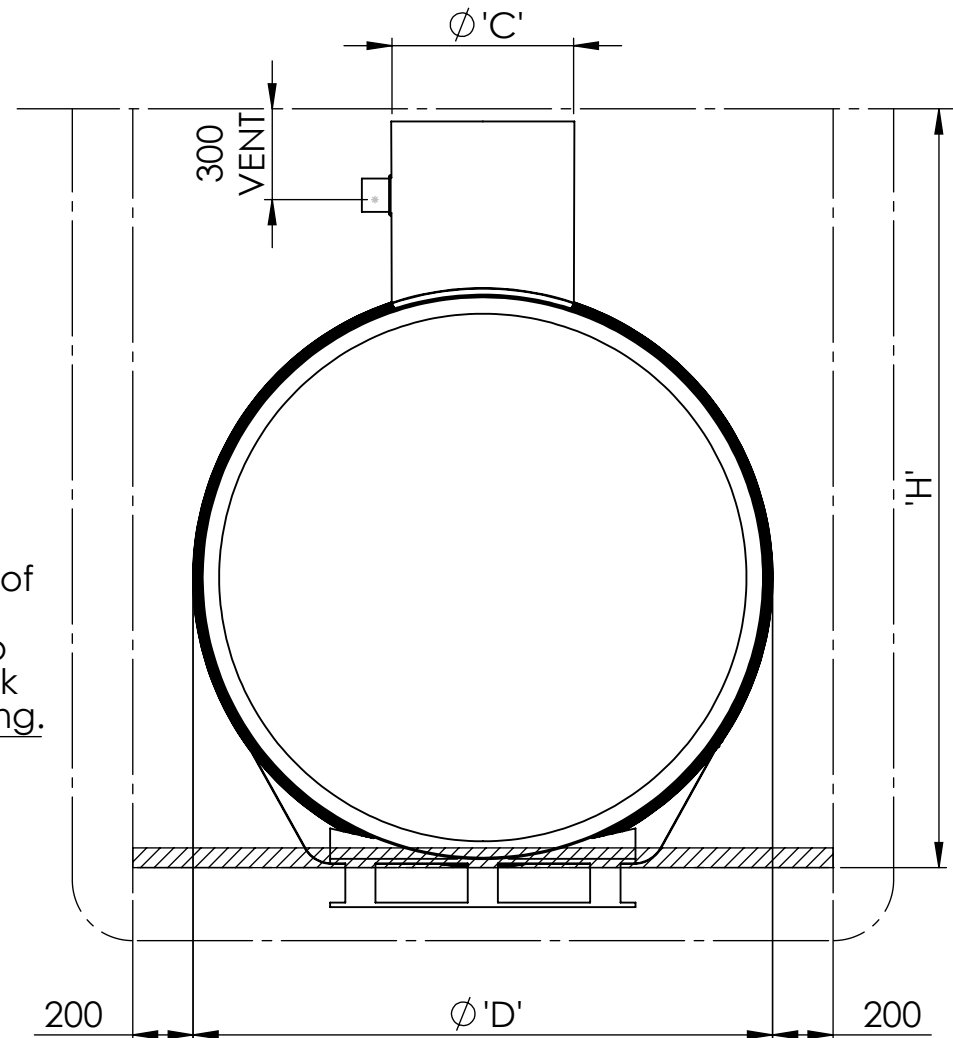
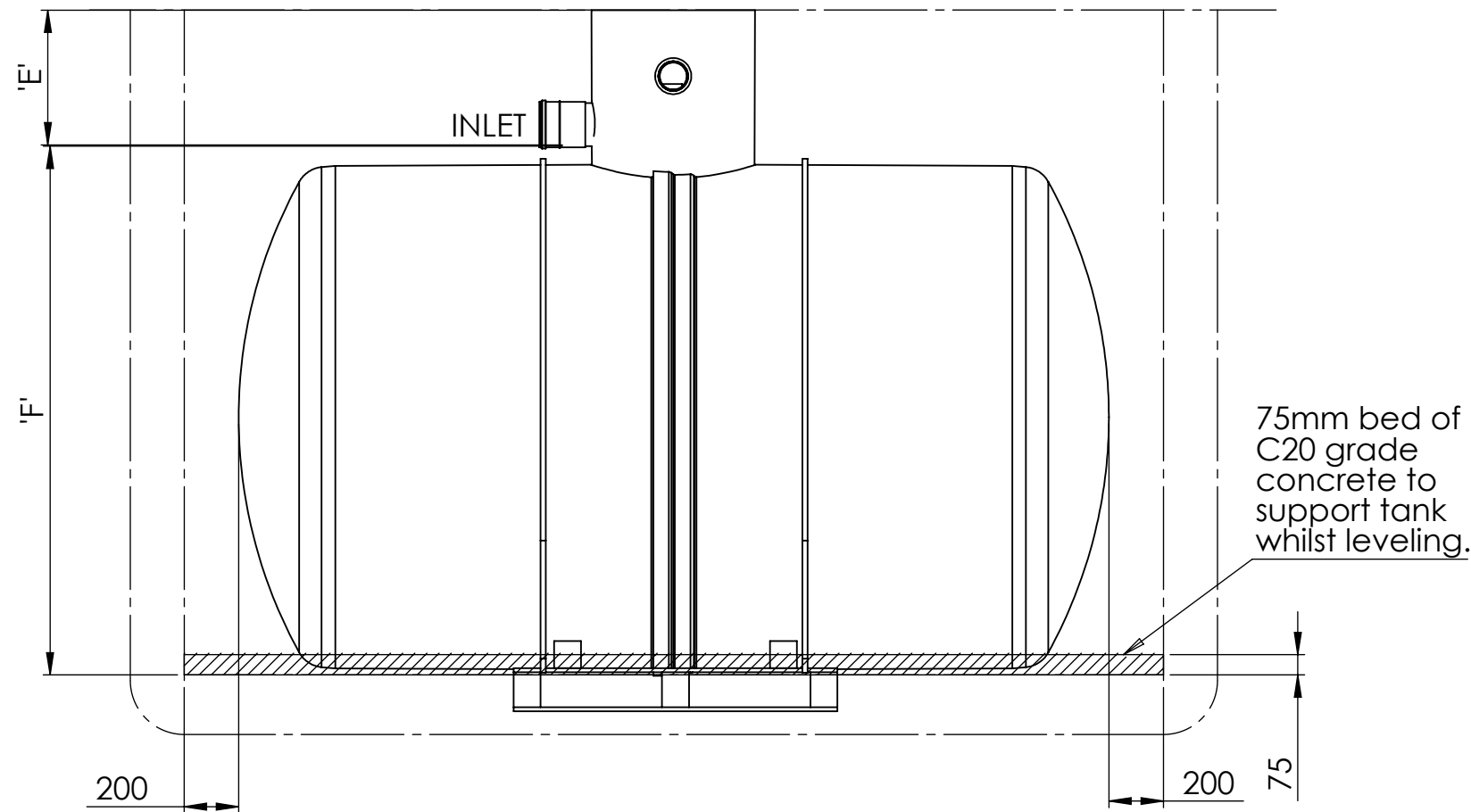
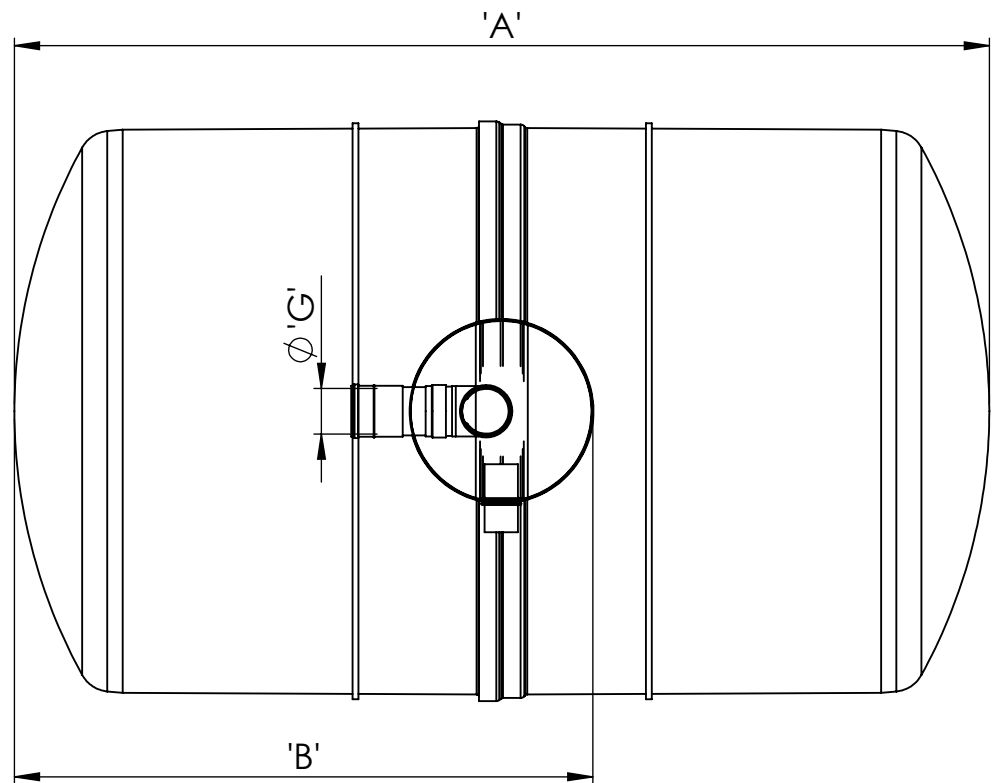


SUDS01001 - CONTROFLOW 300 SERIES LEVEL INVERT MINIMUM APPLICATION



GLASS REINFORCED CEMENT (GRC)





Product Information Table										
Product	Volume (L)	Empty Weight (kg)	Dimensions (mm)							
			'A'	'B'	'C'	'D'	'E'	'F'	'G' SEE NOTE 5	'H'
CPH028	2800	165	3020	1510	Ø460	Ø1225	500	1275	Ø110	1775
CPH038	3800	185	3900	1950	Ø460	Ø1225	500	1275	Ø110	1775
CPH048	4800	190	3775	1793	Ø600	Ø1425	500	1475	Ø110	1975
CPH057	5700	205	4275	2138	Ø600	Ø1425	500	1475	Ø110	1975
CPH071	7150	280	3230	1615	Ø600	Ø1920	500	1950	Ø160	2450
CPH091	9150	325	3965	1983	Ø600	Ø1920	500	1950	Ø160	2450

Notes:

1. Tanks have an inlet invert depth of 0.5m as standard. Upon request this may be extended up to 1.5m via neck GRP riser pieces.
2. This drawing should be used for dimensional information only. Refer to installation guidelines for full tank installation.
3. Confirm with local building regulations if additional venting is required.
4. If backfilling with peashingle the tank must be strapped down using suitable anchoring points and strapping (others).
5. CPH028, 038, 048 & 057 are available with Ø 160mm pipework. CPH071 & 091 are available with Ø110mm pipework although Ø160mm is recommended.

Please check with Kingspan Environmental that this drawing is the latest issue				
Issue	Date	Drawn by	Approved by	Description
05	30/09/22	JMcM	JMcM	ECR189/ECN1626 - Remove Tank Feet
04	26/04/18	W.DYER		CC1433

Modelled By : Name
Weight : 252.42 Kg
Material : Various

Tolerance (unless stated) :
Thickness : n/a
Surface Area : m²

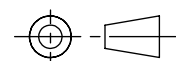
Drawing : DS1219

Page 1 of 1

Shallow Dig Cesspool Tank Range

All Dimensions In mm

Scale: Do Not Scale



Third Angle Projection

A:\Wastewater\Engineering\Drawing Data\02 - Sales Drawings\DS\DS - 12\DS1219

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