Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.57%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	51.890	0.115	57.5	0.2367	0.0000	OK
15 minute summer	2	11	50.526	0.208	137.4	0.5180	0.0000	OK
15 minute summer	3	11	49.885	0.479	162.2	0.7809	0.0000	SURCHARGED
15 minute summer	4	11	49.378	0.342	156.6	0.3865	0.0000	SURCHARGED
15 minute summer	5	11	49.096	0.670	197.6	1.2614	0.0000	SURCHARGED
15 minute summer	6	11	48.344	0.646	195.7	0.7305	0.0000	SURCHARGED
15 minute summer	7	12	47.758	0.533	194.9	0.6030	0.0000	SURCHARGED
15 minute summer	8	12	44.766	1.459	60.5	3.2353	0.0000	FLOOD RISK
15 minute summer	9	12	44.713	1.468	56.3	1.6604	0.0000	SURCHARGED
15 minute summer	10	12	44.657	1.469	70.0	1.6609	0.0000	SURCHARGED
15 minute summer	11	11	46.784	0.345	53.0	0.7336	0.0000	SURCHARGED
15 minute summer	12	10	48.571	0.109	67.1	0.2717	0.0000	OK
15 minute summer	13	10	47.316	0.155	66.9	0.1753	0.0000	OK
15 minute summer	14	11	44.573	1.616	163.2	2.3124	0.0000	SURCHARGED
15 minute summer	15	11	44.491	1.587	243.2	3.0103	0.0000	SURCHARGED
15 minute summer	16	11	44.252	1.973	471.8	3.7731	0.0000	SURCHARGED
15 minute summer	17	11	44.136	2.157	1005.3	9.2227	0.0000	SURCHARGED
15 minute summer	18	11	43.791	1.945	1034.9	3.8258	0.0000	SURCHARGED
15 minute summer	19	11	46.160	1.105	39.6	1.9145	0.0000	SURCHARGED
15 minute summer	20	12	43.247	1.684	1132.6	3.6816	0.0000	SURCHARGED
960 minute summer	21	660	43.102	1.602	124.7	2.8314	0.0000	SURCHARGED
960 minute summer	22	660	43.102	1.632	179.2	1424.1640	0.0000	OK
15 minute summer	23	12	52.703	0.838	41.8	1.5678	0.0000	SURCHARGED
15 minute summer	24	12	52.624	1.175	77.0	2.2844	0.0000	FLOOD RISK
15 minute summer	25	12	52.008	0.736	69.5	0.8319	0.0000	SURCHARGED
15 minute summer	26	12	53.016	1.345	23.2	2.1056	0.0000	FLOOD RISK
15 minute summer	27	12	51.664	0.491	84.4	0.5552	0.0000	SURCHARGED
15 minute summer	28	12	51.207	0.998	137.3	1.9519	0.0000	SURCHARGED

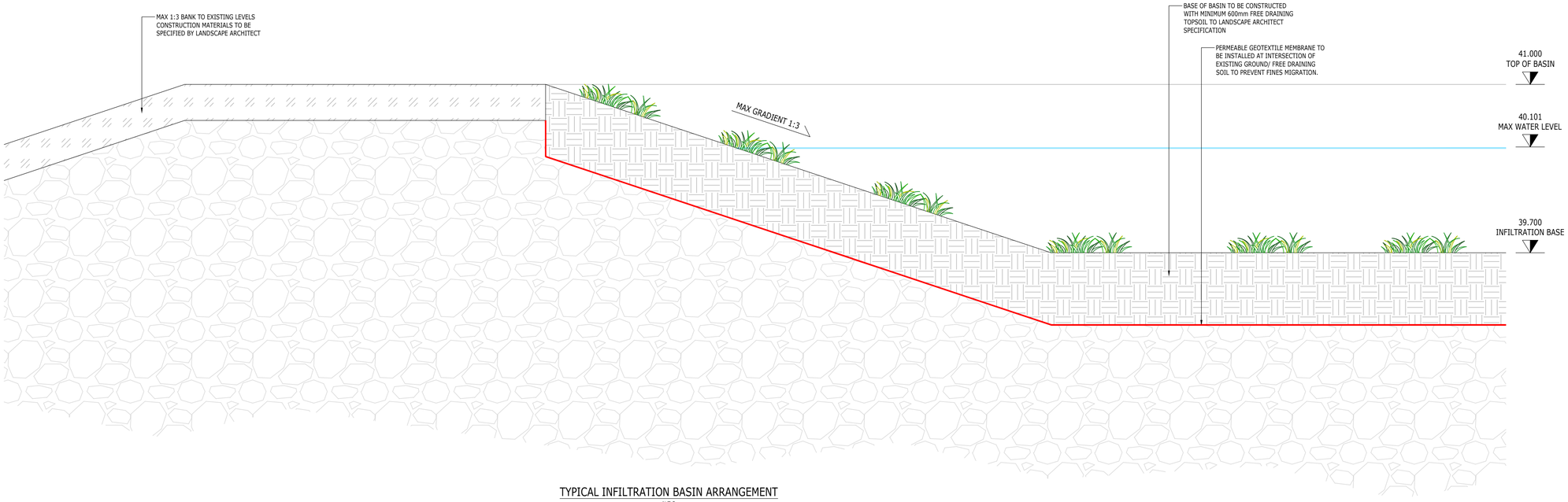
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	1	1.000	2	57.5	2.710	0.500	0.6299
15 minute summer	2	1.001	3	133.8	2.116	0.728	2.0576
15 minute summer	3	1.002	4	156.6	2.522	1.015	1.3550
15 minute summer	4	1.003	5	153.1	2.785	0.507	0.5872
15 minute summer	5	1.004	6	195.7	2.852	0.850	1.2033
15 minute summer	6	1.005	7	194.9	2.768	0.885	0.8563
15 minute summer	7	1.006	16	194.9	2.768	1.092	0.5850
15 minute summer	8	2.000	9	56.3	0.979	0.796	1.0684
15 minute summer	9	2.001	10	70.0	0.994	0.985	0.9730
15 minute summer	10	2.002	14	84.0	1.193	1.186	1.3932
15 minute summer	11	3.000	14	50.6	1.285	1.270	1.5196
15 minute summer	12	4.000	13	66.9	2.762	0.472	0.4271
15 minute summer	13	4.001	14	66.5	2.519	0.632	0.2246
15 minute summer	14	2.003	15	180.1	1.145	1.127	3.3958
15 minute summer	15	2.004	16	252.2	1.950	0.744	5.7640
15 minute summer	16	1.007	17	479.2	1.342	0.530	11.5375
15 minute summer	17	1.008	18	993.5	2.783	1.058	4.7385
15 minute summer	18	1.009	20	1029.5	2.884	1.099	10.1182
15 minute summer	19	5.000	20	34.6	1.964	1.955	0.5230
15 minute summer	20	1.010	21	1127.4	3.159	3.129	15.0045
15 minute summer	21	1.011	22	1119.0	3.674	3.123	7.2256
720 minute summer	22	Infiltration		34.9			
15 minute summer	23	6.000	24	34.1	0.980	0.379	0.5577
15 minute summer	24	6.001	25	69.5	1.747	1.745	1.1926
15 minute summer	25	6.002	27	68.1	1.712	1.616	0.5945
30 minute summer	26	7.000	27	16.4	2.097	1.779	0.1263
15 minute summer	27	6.003	28	88.3	2.261	0.606	0.4943
15 minute summer	28	6.004	29	133.1	3.407	1.223	0.7123

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.57%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	29	12	49.554	0.181	133.1	0.2049	0.0000	OK
15 minute summer	30	10	47.016	0.111	43.3	0.2215	0.0000	OK
15 minute summer	31	11	46.462	0.197	171.6	0.2233	0.0000	OK
15 minute summer	32	10	49.245	0.100	76.1	0.2488	0.0000	OK
15 minute summer	33	10	47.150	0.118	76.0	0.1335	0.0000	OK
15 minute summer	34	10	45.757	0.126	75.7	0.1421	0.0000	OK
15 minute summer	35	11	44.564	0.325	75.4	0.3675	0.0000	SURCHARGED
15 minute summer	36	12	44.246	0.606	102.4	1.0490	0.0000	SURCHARGED
15 minute summer	37	11	44.049	0.483	103.4	0.5461	0.0000	SURCHARGED
15 minute summer	38	11	43.906	0.541	335.1	1.1827	0.0000	SURCHARGED
15 minute summer	39	11	43.615	0.626	412.0	1.6483	0.0000	SURCHARGED
960 minute summer	40	660	43.103	0.779	49.3	1.1143	0.0000	SURCHARGED
960 minute summer	41	660	43.102	1.321	60.9	1.8910	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	29	6.005	31	133.3	4.043	0.910	1.2738
15 minute summer	30	8.000	31	43.2	2.248	0.436	0.3183
15 minute summer	31	6.006	38	170.8	3.637	0.696	1.7750
15 minute summer	32	9.000	33	76.0	3.983	0.382	0.2800
15 minute summer	33	9.001	34	75.7	3.451	0.488	0.3491
15 minute summer	34	9.002	35	75.4	2.714	0.606	0.7638
15 minute winter	35	9.003	36	69.5	1.902	0.669	0.4896
15 minute summer	36	9.004	37	103.4	1.469	1.461	1.2719
15 minute summer	37	9.005	38	103.7	1.488	1.454	0.8647
15 minute summer	38	6.007	39	332.7	2.478	0.686	2.6530
15 minute summer	39	6.008	40	404.2	2.892	0.879	5.2283
15 minute summer	40	6.009	41	403.3	2.546	0.490	1.3393
15 minute summer	41	6.010	22	404.2	2.551	2.535	4.1164

N



TYPICAL INFILTRATION BASIN ARRANGEMENT

N.T.S

NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT SPECIFICATION AND ALL OTHER RELATED DRAWINGS ISSUED BY THE ENGINEER.
2. DO NOT SCALE FROM THIS DRAWING. WORK FROM FIGURED DIMENSIONS ONLY.
3. ALL DIMENSIONS SHOWN ON THIS DRAWING ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
4. ALL DIMENSIONS, LEVELS AND SURVEY GRID CO-ORDINATES ARE TO BE CHECKED ON SITE AND THE ENGINEER NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OF THE WORKS.
5. NO DEVIATION FROM THE DETAILS SHOWN ON THIS DRAWING IS PERMITTED WITHOUT PRIOR PERMISSION FROM THE ENGINEER.
6. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY FULLY WITH THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOLUME ONE, SPECIFICATION FOR HIGHWAY WORKS AND THE LOCAL AUTHORITY SPECIFICATION FOR ROAD CONSTRUCTION AND STANDARD DETAILS
7. THE CONTRACTOR SHALL UNDERTAKE SUCH MATERIALS TESTING AS INDICATED IN THE SPECIFICATIONS AND SHALL INCLUDE THE COST OF TESTING IN THE TENDER.
8. UNLESS STATED OTHERWISE, ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF AT AN APPROVED TIP OFF-SITE.
9. THE PUBLIC HIGHWAY AND WORKS WILL BE KEPT CLEAN AND FREE OF DEBRIS BY USE OF WHEEL WASHING FACILITIES AND ROAD SWEEPERS TO THE COUNCIL'S SATISFACTION.
10. ALL SETTING OUT SHALL BE AGREED ON-SITE WITH THE ENGINEER, PRIOR TO THE COMMENCEMENT OF THE WORKS.
11. UPON COMPLETION OF THE WORKS, THE CONTRACTOR SHALL UNDERTAKE ALL NECESSARY MAINTENANCE REPAIRS TO RETURN THE HIGHWAY TO ITS FORMER CONDITION.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY APPROVALS FROM THE LOCAL AUTHORITY PRIOR TO COMMENCING WORKS ON THE HIGHWAY.

KERB NOTES:

1. ALL KERBS TO BE IN ACCORDANCE WITH BS EN 1340.
2. ALL INSITU CONCRETE TO FOUNDATION AND HAUNCH TO BE CLASS ST2 TO CL. 2602 OF SHW
3. KERB FOUNDATION TO BE LAID ON ROLLED SUB-BASE OF MINIMUM THICKNESS 100mm.
4. THE KERB BED AND BACKING SHALL NORMALLY BE LAID IN ONE OPERATION.
5. WHERE THE BED IS LAID IN ADVANCE OF THE KERBS A 200x20mm DIA. MILD STEEL DOWEL BARS WILL BE REQUIRED IN BACKING AT 600mm CENTRES AND KERBS WILL BE BEDDED ON 10mm THICK MORTAR TO DESIGNATION (i) OF CL. 2404 OF SHW.
6. KERBS SHALL BE LAID WITH DRY JOINTS AND CLOSELY BUTTED TO ADJACENT KERBS AND CHANNELS.
7. TRANSITION KERBS SHALL BE USED AT ALL CHANGES IN KERB FACE.
8. FOR RADII OF 12m OR LESS AND CHANNELS OF THE APPROPRIATE RADIUS SHALL BE USED.
9. FOR RADII OF BETWEEN 12m AND 18m STRAIGHT KERBS 600mm LONG SHALL BE USED.
10. CUTTING KERBS AND CHANNELS SHALL BE APPROVED MECHANICAL MEANS.
11. THE LENGTH OF ANY KERB OR CHANNEL SHALL NOT BE LESS THAN 300mm.

CONSTRUCTION NOTES:

1. ALL SOFT SPOTS AND VOIDS SHALL BE REMOVED BEFORE CONSTRUCTION AND REPLACED WITH SUITABLE FILL MATERIAL.
2. APPROVED RESIDUAL WEEDKILLER, WHICH DOES NOT CONTAIN ATRAZINE OR SIMAZINE, MUST BE APPLIED TO ALL FORMATIONS.
3. ALL CONCRETE AND CEMENT MORTAR MUST BE SULPHATE RESISTING TO BS4021.
4. ALL CARRIAGEWAY MATERIALS SHALL BE SUPPLIED AND LAID IN ACCORDANCE WITH BS EN 13108 & BS 59487.
5. ALL MATERIALS IN CARRIAGEWAYS TO BE LAID BY MACHINE.
6. MINIMUM PAVEMENT DEPTH OF 450mm IS REQUIRED FOR NON FROST SUSCEPTIBLE MATERIAL.
7. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING THE CBR VALUES FOR EACH ACCESS ROAD AND SHALL SUBMIT DETAILS OF THE PROPOSED CONSTRUCTION TO THE ENGINEER IN WRITING FOR APPROVAL PRIOR TO COMMENCING THE WORKS.
8. A CAPPING LAYER, WITH A MINIMUM THICKNESS OF 600mm WILL BE REQUIRED WHEN THE CBR OF THE SUB-GRADE IS LESS THAN 2.5%.
9. THE CBR OF THE COMPACTED CAPPING LAYER SHALL BE AT LEAST 15%.
10. ALL EARTHWORKS TO BE IN ACCORDANCE WITH SERIES 600 OF SHW.
11. PROPOSED PAVEMENT CONSTRUCTION DETAILS BASED ON A DESIGN CBR VALUE OF 3.0%, TO BE CONFIRMED AS NOTED.

Rev	Description	Drn	Chk	App	Date
P1	FIRST ISSUE	JSH	AMC	AD	18-11-25

Purpose: PRELIMINARY

Status: NOT YET APPROVED

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Client: ESQUIRE DEVELOPMENTS

Project Title: ROSE FARM, ISTEAD RISE

Drawing Title: SUDS PRIVATE CONSTRUCTION DETAILS SHEET 1

Drawn by	Checked by	Approved by	Revision
JSH	AMC	AD	P1

Scale	Date
1:NTS@A1	18-11-25

Drawing Number: 2500920-ACE-XX-XX-DR-C-0611

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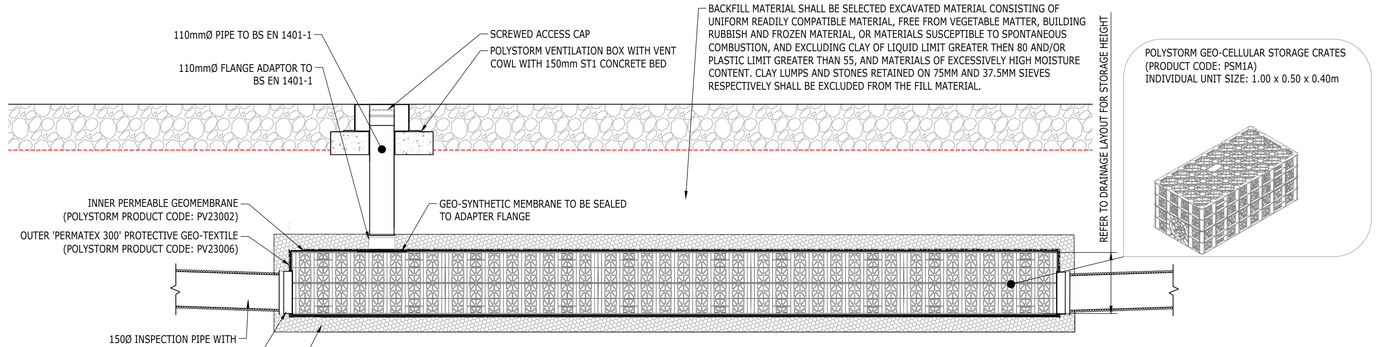


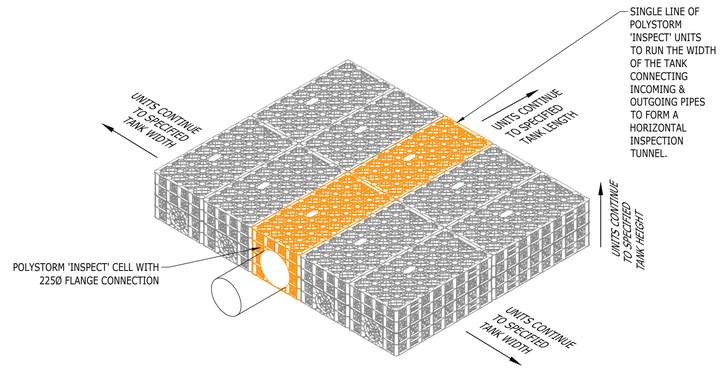
TYPICAL POLYSTORM GEO-CELLULAR TANK ARRANGEMENT

N.T.S

ALL TANK DETAILS SHOWN ARE INDICATIVE. REFER TO MANUFACTURERS DETAILS FOR INLET & OUTLET MANIFOLDS AND VENTING DETAILS. ALL WORKS TO BE CARRIED OUT IN STRICT ACCORDANCE WITH MANUFACTURERS SPECIFICATION. (REFER TO GENERAL ARRANGEMENT DRAWINGS FOR TANK LOCATIONS AND INLET/OUTLET ARRANGEMENTS).

IMPORTANT NOTE:

CONTRACTOR TO BE AWARE OF MAXIMUM LATERAL LOADING AS DETAILED ABOVE AND MANUFACTURER REQUIREMENTS. SUITABLE MEASURES ARE TO BE IMPLEMENTED TO ENSURE LATERAL LOADING IS NOT EXCEEDED DURING CONSTRUCTION BY CONSTRUCTION TRAFFIC. SUITABLE EASEMENT TO TANKS TO BE IMPLENTED DURING CONSTRUCTION TO RESTRICT RISK OF OVERLOADING.



TYPICAL INSPECTION TUNNEL ARRANGMENT USING POLYSTORM 'INSPECT' UNITS

N.T.S

NOTES:

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2. ALL INSITU CONCRETE TO FOUNDATION AND HAUNCH TO BE CLASS ST2 TO CL. 2602 OF SHW
3. KERB FOUNDATION TO BE LAID ON ROLLED SUB-BASE OF MINIMUM THICKNESS 100mm.
4. THE KERB BED AND BACKING SHALL NORMALLY BE LAID IN ONE OPERATION.
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6. KERBS SHALL BE LAID WITH DRY JOINTS AND CLOSELY BUTTED TO ADJACENT KERBS AND CHANNELS.
7. TRANSITION KERBS SHALL BE USED AT ALL CHANGES IN KERB FACE.
8. FOR RADII OF 12m OR LESS AND CHANNELS OF THE APPROPRIATE RADIUS SHALL BE USED.
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4. ALL CARRIAGEWAY MATERIALS SHALL BE SUPPLIED AND LAID IN ACCORDANCE WITH BS EN 13108 & BS 59487.
5. ALL MATERIALS IN CARRIAGEWAYS TO BE LAID BY MACHINE.
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10. ALL EARTHWORKS TO BE IN ACCORDANCE WITH SERIES 600 OF SHW.
11. PROPOSED PAVEMENT CONSTRUCTION DETAILS BASED ON A DESIGN CBR VALUE OF 3.0%, TO BE CONFIRMED AS NOTED.

Rev	Description	Drn	Chk	App	Date
P1	FIRST ISSUE	AMC	AMC	AD	18-11-25

Purpose: PRELIMINARY

Status: NOT YET APPROVED

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Client: ESQUIRE DEVELOPMENTS

Project Title: ROSE FARM, ISTEAD RISE

Drawing Title: SuDS PRIVATE CONSTRUCTION DETAILS SHEET 2

Drawn by	Checked by	Approved by	Revision
JSH	AMC	AD	P1

Scale: 1:NTS@A1

Date: 18-11-25

Drawing Number: 2500920-ACE-XX-XX-DR-C-0612

STORMSHARK

ADVANCED HYDRODYNAMIC VORTEX SEPARATOR

Model: SSK1000M

INTRODUCTION

The STORMSHARK is a cutting-edge hydrodynamic vortex separator that sets the standard in the industry with its unique patented design and exceptional performance. Engineered specifically for Sustainable Drainage Systems (SuDS) treatment trains, the STORMSHARK delivers outstanding water quality treatment while significantly enhancing amenity and bio diversity downstream. It serves as a powerful guardian, effectively protecting controlled waters from harmful sediment-bound pollutants.

Manufactured in Germany for the global stormwater management market, every model in the STORMSHARK range not only meets but exceeds the most stringent German Stormwater Treatment standards, including DWA M153 D24 and D25. Furthermore, the STORMSHARK has undergone rigorous testing in the United States, fully complying with the guidelines established by the New Jersey Department of Environmental Protection (NJDEP).

The STORMSHARK's remarkable flexibility allows it to operate both online and offline, seamlessly integrating with or without an external bypass unit. This adaptability positions it as the definitive solution for a wide range of multi-treatment water purification processes.

DESIGN CERTIFICATION & TESTING

- **NJDEP 2021**
- **NRW Trennerlass (Independent German Lab & field test)**
- **DIBt**

PERFORMANCE

The STORMSHARK removes sediment bound contaminants. Available in differing sizes to suit site flows and conditions. The STORMSHARK removes over 50% of fine TSS (0–200 microns, median size 75 microns) at design flows and up to 99% of TDS 0.1 to 0.4mm (coarse).

MITIGATION	TSS Total Suspended Solids	TOTAL METALS	TOTAL HYDROCARBONS
TSS Coarse	0.99	0.75	0.79
NJDEP*1	0.5	0	0
Turtle Enviro*2	0.5	0.4	0.45
British Water Code of Practice*3	0.8	0.6	0.96*3

*1 NJDEP protocol

*2 "Best advice" (in part as NJDEP only covers TSS)

*3 The British Water Code of Practice (Assessment of Manufactured Treatment Devices. Designed to Treat Surface Water Runoff) using DiBT and EN858 data.

PLASTICS

NRW Tested	Polyethelene	Polystyrene
% Retained	0.6224	0.7541

The STORMSHARK hydraulic flow rates have larger pipe connection sizes, ideal for sites where higher peak flows are anticipated or required. The STORMSHARK also affords ease of connection to twinwall and other structural wall drainage pipes commonly used in the UK storm water drainage market.

***Adjustable feet are fitted to this model, so the levels can be adjusted, if fitted into pre cast concrete chamber.**

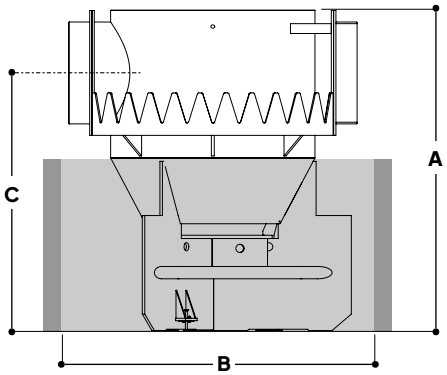
INSTALLATION:

The installation design should consider traffic loadings, ground conditions and variable ground water elevations. If in any doubt consult your schemes' Designer/Engineer. A suitably qualified professional is required to sign off the installation.

***To view installation instructions click here.**

FEATURES

- Supplied as a single piece unit with machine pre-fitted into a PE twinwall chamber
- Pipework connections pre installed
- Can also be installed into PCC chambers
- Patented design that has been tested
- No head loss; the level inverts remain stable
- Cannot become air locked
- Inlet deflector plate creates a vortex
- Retains floatable materials and liquids
- Prevents re-suspension of settled solids
- Upward flow provides a uniform flow pathway, even at high design flows
- Shark toothed weir ensures balanced, optimised flow
- Simple maintenance required
- 25 year warranty



SPECIFICATION

Overall Height **A**:	1950mm
Minimum Ø chamber required **B**:	1050mm
Height to Inlet centre **C**:	1587mm
Standard Pipework Connection:	225mm
Sediment Storage Capacity:	0.46m³
Oil/Debris Storage Capacity:	200 litres
Machine Weight: (Chamber weight not included)	70kg

email: sales@turtleenviro.co.uk | sales & technical support: tel. 0191 3036315 | www.turtleenviro.co.uk

Appendix D - SuDS Management Plan

SUDS Element	**Soakaways**	
Maintenance Period	**Maintenance Task**	**Frequency**
Regular Maintenance	Inspect for sediment and debris in pre-treatment components and flood of inspection tube or chamber and inside of concrete manhole rings	Annually
	Cleaning of gutters and any filters on downpipes	Annually (or as required based on inspections)
	Trimming any roots that may be causing blockages	Annually (or as required)
Occasional Maintenance	Remove sediment and debris from pre-treatment components and flood of inspection tube or chamber and insider concrete manhole rings	As required, based on inspections
Remedial Actions	Reconstruct soakaway and/or replace or clean void fill if performance deteriorates or failure occurs	As required
	Replacement of clogged geotextile (will require reconstruction of soakaway)	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

SUDS Element	**Detention Basin**	
Maintenance Period	**Maintenance Task**	**Frequency**
Regular Maintenance	Remove litter and debris	Monthly (or as required)
	Cut the grass – for spillways and access routes	Monthly (during growing season), or as required
	Cut grass - meadow grass in and around basin	Half yearly (spring, before nesting season, and autumn)
	Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
	Inspect inlets, outlets, and overflows for blockages, and clear is required	Monthly
	Inspect banksides, structures, pipework etc. for evidence of physical damage	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies	Monthly (for first year), then annually or as required
	Check any penstocks and other mechanical devices	Annually
	Tidy all dead growth before start of growing season	Annually
	Remove sediment from inlets, outlets and forebays	Annually (or as required)
	Manage wetland plants in outlet pool- where provided	Annually
Occasional Maintenance	Reseed areas of poor vegetation growth	As required

	Prune and trim any trees and remove cuttings	Every 2 years, or as required
	Remove sediment from inlets, outlets, forebay and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided)
Remedial Actions	Repair erosion or other damage by reseeding or returfing	As required
	Realignment of rip-rap	As required
	Repair/rehabilitation of inlets, outlets and overflows	As required
	Relevel uneven levels and reinstate design levels	As required

STORMSHARK

ADVANCED HYDRODYNAMIC VORTEX SEPARATOR

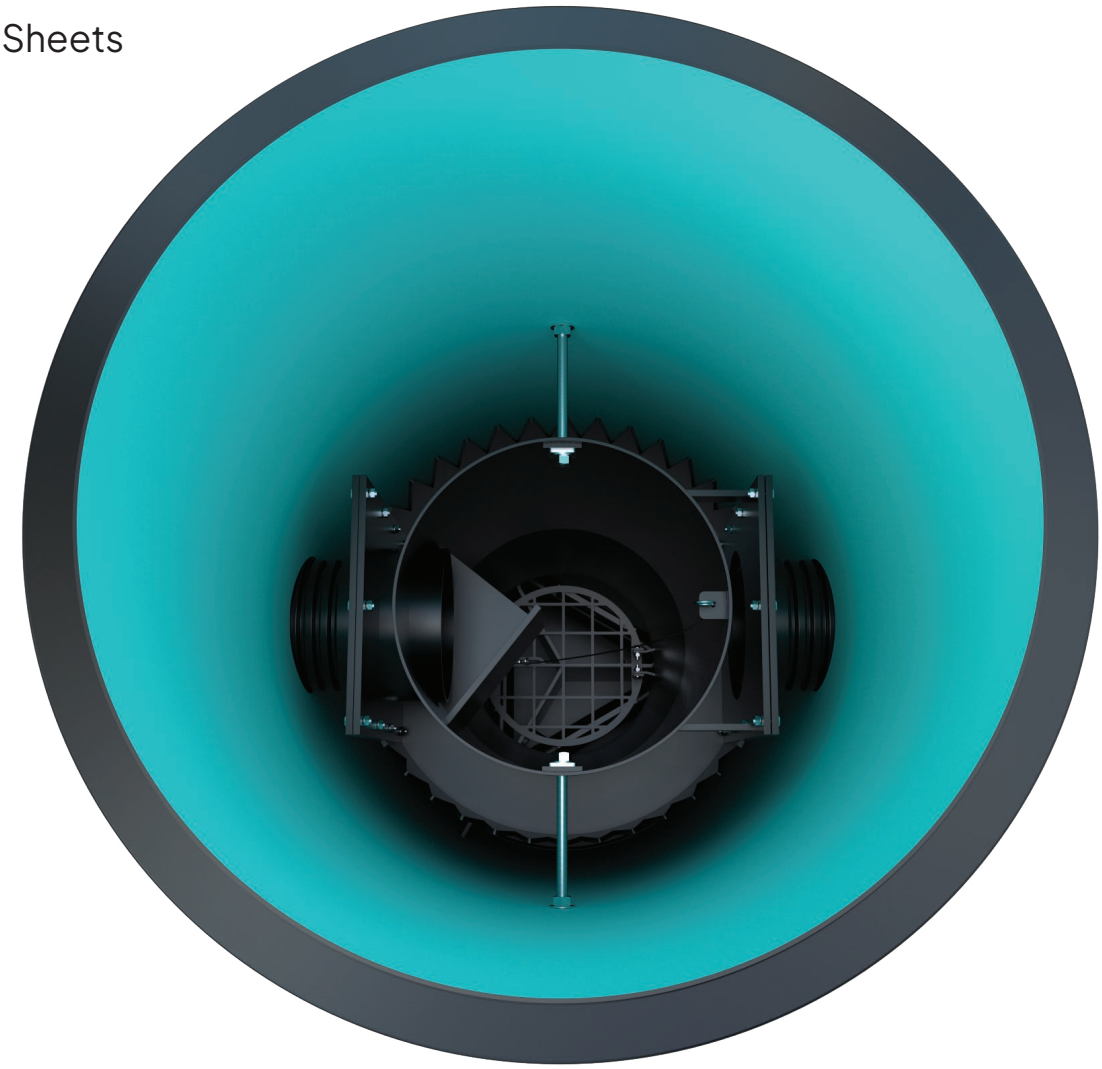
STORMSHARK
Operating Manual & Installation Instructions

For PPIC : Poly-Propylene Inspection Chamber Installation

ATTENTION

This document contains important notes, please read carefully before commencement of your STORMSHARK Installation

Table of Contents



General Information

This manual should be completed and a copy left with the owner of the STORMSHARK unit. The information below should be completed by the installer of the STORMSHARK, or from the construction company, or the management company, who will remain responsible for the plant

Location of the plant

Name of the Site	
Address	
Postcode	
Telephone	
Email	

Operator of the plant

Company / Municipality	
Address	
Postcode	
Responsible Person	
Telephone	
Email	

Construction Company

Company / Municipality	
Address	
Postcode	
Responsible Person	
Telephone	
Email	

Design Details

Type of Connected Area	
Installation Date	
Commissioning Date	
No. of STORMSHARKS	

Product Description

All available sizes of the STORMSHARK have the same operational components

1. Inlet
2. Deflector Plate
3. Flow Breakers
4. Sludge Trap
5. Balancing Weir
6. Outlet

The STORMSHARK must only be handled and lifted by competent persons. Avoid any concentrated point loading. The unloading, storage and transport at site are entirely the responsibility of the Purchaser.

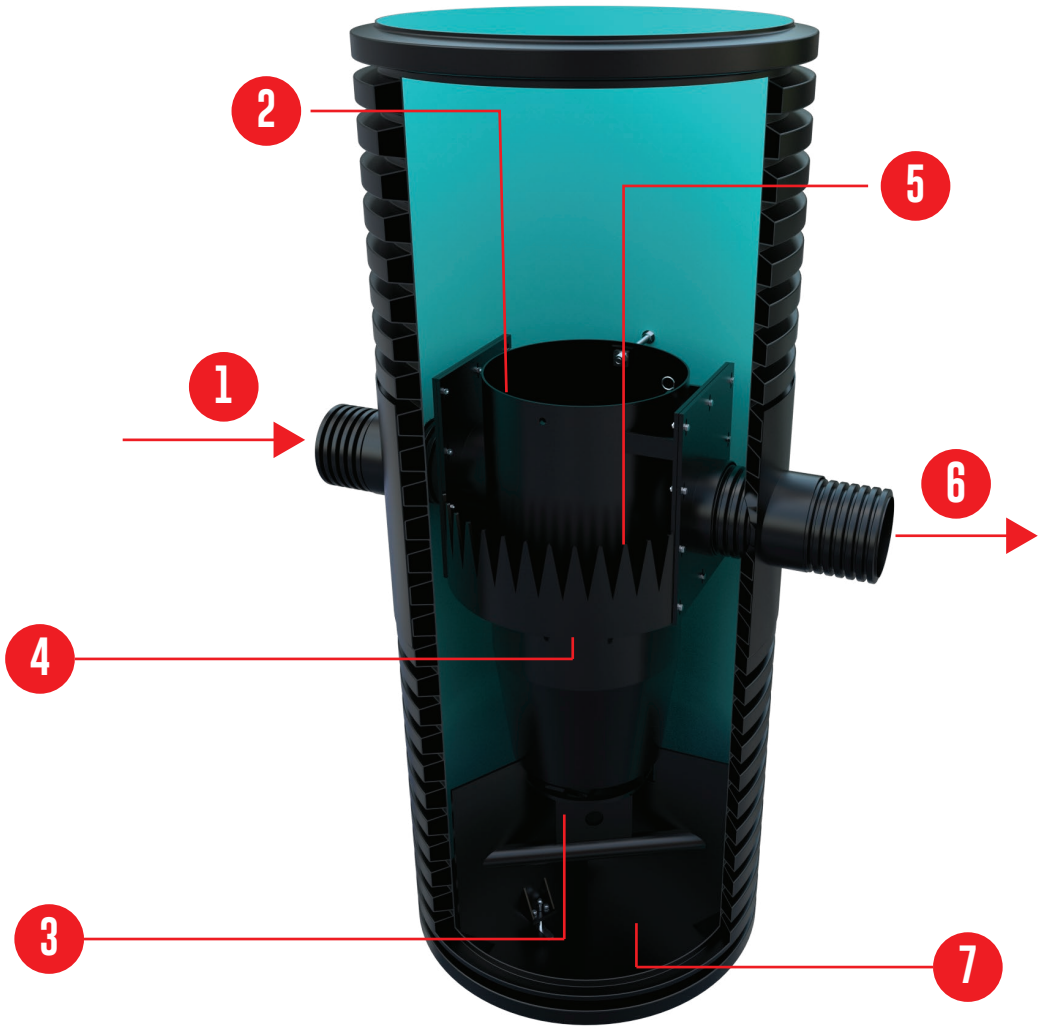
Backfill and excavation works are by other, in accordance with site designs, site ground conditions and legal requirements.

If you are in any doubt as to the function, applicability or safety if the device as supplied at site, you must seek Professional Advice from your supplier and/or a Professional Engineer.

The water quality flow rates and hydraulic peak capacity for the site would have been fully designed.

Working Principles

Applicable to all STORMSHARK models apart from SSK750*

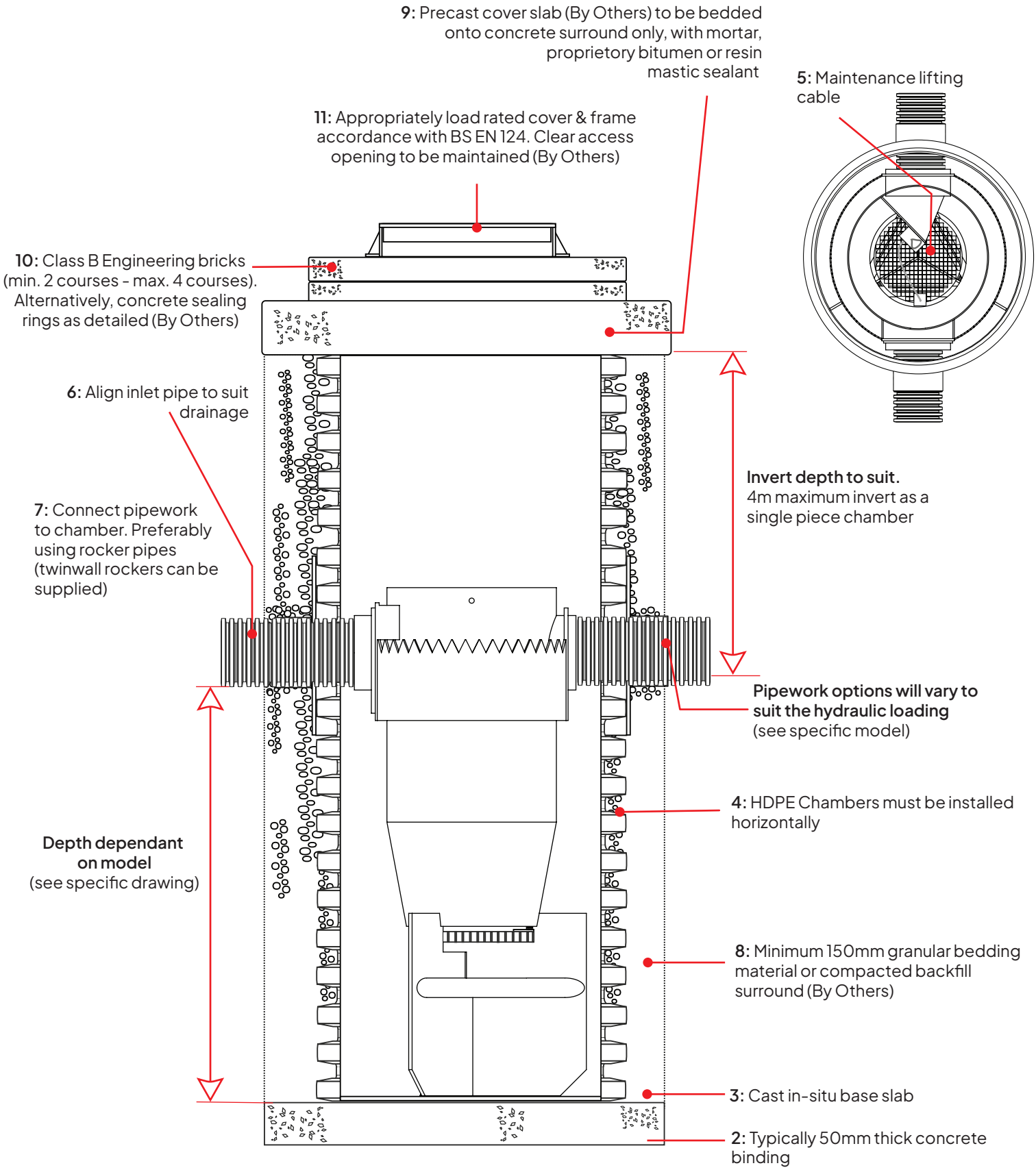


1. Incoming stormwater is deflected into a radial flow pattern.
2. Vortex flow ensures solids settle to the sludge chamber, floatable's are retained at the surface.
3. Solids pass down into the sludge chamber below the treatment chamber. Remobilisation of the retained solids is not possible, flow baffles prevent this.
4. Cleaned water flows up the outer chamber in an even flow distribution.
5. Water flows over the toothed balancing weir to the annular flow channel surrounding the treatment chamber.
6. Clean stormwater passes to the outlet to discharge to the water environment.
7. Retained solids are easily removed by vacuum hose, once the retention safety grill* is lifted using the lifting chain supplied and fitted within the unit.

* **The SSK750 models do not have the retention grill**

Installation Instructions

For STORMSHARK models SSK750M and SSK1000M into PPIC



Installation Instructions (continued)

For STORMSHARK models SSK750M and SSK1000M into PPIC

Instructions

1. Excavate pit for chamber, whilst supporting the wal according to legal requirements and ground conditions.
2. Pour concrete blinding layer for base, typically 50mm thick.
3. Cast in-situ concrete base slab.
4. Using safe and approved lifting methods, manoeuvre the chamber onto base slab ad check the horizontal positioning is correct.
5. Maintenance and lifting cable is the appropriate length, if inverts are deeper this can be sited on the wall of the chamber
6. Align the left opening to the correct position to suit the drainage layout. The inlet end is identified by the deflector positioned in front of the inlet pipe.
7. Connect pipework to the chamber. We reccomend rocker pipes to inlet and outlet, particularly where ground settlement might arise.
8. Backfill as detailed.
9. Postion precast concrete cover slab.
10. Install Class B engineering brickwork or PCC seating rings.
11. Lay ductile iron cover & frame (appropriate load rating)

Please Note:

- If in doubt regarding any of the above, we suggest you consult a professional engineer for further advise.
- At all times, the STORMSHARK must be protected against contamination & construction debris & physical damage during installation

Operating and Maintenance Instructions

Due to the solids and pollutants in stormwater runoff, treatment systems must be checked and cleaned regularly. The following notes provide guidance for the typical work necessary for associated with the effective operation of a STORMSHARK.

Annual Maintenance:

At intervals between 6 months and 3 years, the sludge trap must be emptied as the site conditions, local regulations, or site-specific conditions require. The amount of sludge depends on the local stormwater conditions and will vary between sites.

For Stormwater runoff with untypically low or high solids loads, these periods may vary. This can be observed and determined for a Programmed Maintenance Schedule, after the first few years of operation.

The STORMSHARK chamber is a confined space. It is not necessary to enter a STORMSHARK for routine maintenance. Local regulations must be fully observed in the event of planned or unplanned man entry.
***If in doubt you MUST consult a professional engineer who can advise you.**

Equipment and materials typically required:

1. Suction and flushing vehicle, or submersible sludge pump with hoses.
2. Generator when there is no power connection nearby.
3. High-pressure cleaner or flushing lance for connection to the pump.

Important pollution prevention notes:

The water pumped out of the chamber and the sludge trap may only be discharged into a foul or a combined sewer where local regulations allow. In no case may the foul water be discharged into a surface watercourse, a stormwater sewer, or a groundwater infiltration system.

If there is no possibility to discharge the water, a mobile water treatment system may be used.

The treated water can be discharged into a receiving water ot storm sewer in accordance with local permits and regulations.

Maintenance Instructions

1. Remove the layer of floatables and oils on the water surface. Lower the water level down to the level of the retention safety grill* by means of suction hose.
2. Remove any coarse debris from the retention safety grill and then pull the grill up using the maintenance lifting cable.
3. Using a suction hose, remove the sludge and the solids from the sludge trap chamber. Make sure each section of the trap is cleared. Use water to rinse if necessary.
4. Close the grate, check the lock, and firmly secure the cover of the system.

*For SSK1200 models it is preferable to use a 2” or a 3” suction hose.

If you are in any doubt, you MUST consult a professional engineer or competent person to advise you. Your supplier will be able to direct you if they do not provide such a service themselves.

Example Record Sheets

Professional Approved Certificate Example
For the construction or modifications of stormwater treatment systems.

Project Details

Project Name	
Designation of Sedimentation Plant	
Professional / Expert (Name)	
Address	
Postcode	
Telephone	
Email	

Contractor

Company (Name)	
Address	
Postcode	

Location of the Stormshark

Address	
Postcode	

1. I have installed the :
    a. Piping System
    b. Sedimentation Plant
    c. New System
    d. Modified the installation
    e. Checked the install as a professional expert.
2. The treated stormwater is / will be discharged into (tick as appropriate)
    ☐ a groundwater infiltration system
    ☐ receiving surface water
    ☐ stormwater sewer
    ☐ combined sewer
3. The drainage system complies with the requirements of the valid standards.
4. The pipes and components used for the system comply with the relevant product standards.
5. I have received the installation instructions of the manufacturer and installed the system according to these instructions.
6. The installation has been checked as complying with the valid standards and the general accepted rules of technology. The design corresponds to the planning documents including the proper execution of the preliminary work.

Date / Signature of Builder or Expert

Commissioning and Audit Protocol for STORMSHARK

Please use this as an example template. Modify to suit local conditions.

Building Project Owner represented by

Specialist Company represented by

No.	Feature	Remarks
1.	The STORMSHARK insert was fixed in the chamber by means of fixing anchors.	
2.	The STORMSHARK insert was aligned.	
3.	The uniform distance of the balancing weir to the chamber wall was checked.	
4.	The bottom of the chamber was filled with 100mm of concrete.	
5.	The maintenance lifting cable is accessible and appropriately secured.	

The instruction for the operation of the plant has been given. The required operating documents and existing operating and maintenance instructions according to the installation were handed over completely.

Signature of Contractor / Date

Signature of Owner / Date

Maintenance Record Sheets

Please use this as an example template. Modify to suit local conditions.

Building Project Owner represented by

Specialist Company represented by

Maintenance Interval	State Remark	Maintenance Work	Name & Signature
Date:		◦ Inspection of the system for visable damage. ◦ Emptying and cleaning of the sludge trap. ◦ Grate is closed and locked. ◦ Maintenance lifting cable is accessible and secured.	
Date:		◦ Inspection of the system for visable damage. ◦ Emptying and cleaning of the sludge trap. ◦ Grate is closed and locked. ◦ Maintenance lifting cable is accessible and secured.	
Date:		◦ Inspection of the system for visable damage. ◦ Emptying and cleaning of the sludge trap. ◦ Grate is closed and locked. ◦ Maintenance lifting cable is accessible and secured.	

STORMSHARK Warranty

Important Notes –
Warranty Void if following conditions are not met

The installed product MUST be absolutely horizontal in its final position.

The STORMSHARK unit may be delivered on 30mm high adjustable feet; if so, the inlet and outlet openings must be 30mm higher to allow any adjustments to be made.

Please note that the STORMSHARK unit must be filled at the base with 10cm of concrete after installation within a concrete chamber to stabilise flow breaker plates.
If using other chamber materials, please consult your supplier.

This Manual should be completed and a copy left with the owner of the STORMSHARK unit.

A properly installed and commissioned STORMSHARK unit will be given a 25–year warranty in respect to both the PE materials and to the machine performance, subject to carrying out of adequate planned maintenance.

turtle

SSKPPICOM/3/25/V2

Appendix E – Exceedance Flood Routing Plan

N

Silo

Turning

NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT SPECIFICATION, INC. RISK ASSESSMENTS AND ALL OTHER RELATED DRAWINGS ISSUED BY THE ENGINEER.
2. DO NOT SCALE FROM THIS DRAWING. WORK FROM FIGURED DIMENSIONS ONLY.
3. ALL DIMENSIONS SHOWN ON THIS DRAWING ARE IN METRES UNLESS OTHERWISE STATED.
4. ALL DIMENSIONS, LEVELS AND SURVEY GRID CO-ORDINATES ARE TO BE CHECKED ON SITE AND THE ENGINEER NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OF THE WORKS.
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6. ANY WORKS OUTSIDE RED SITE BOUNDARY ARE FOR INFORMATION PURPOSES ONLY. UNLESS SPECIFICALLY NOTED, ALL WORKS OUTSIDE THE SITE BOUNDARY WILL BE UNDERTAKEN BY OTHERS UNDER A SEPARATE CONTRACT.

FLOOD ROUTING KEY

SITE BOUNDARY

EXCEEDANCE ROUTING

0m 5m 25m

Scale: 1:500 @ A1

Rev	Description	Drn	Chk	App	Date
P1	FIRST ISSUE	JSH	AMC	AD	18-11-25

Purpose: PRELIMINARY

Status: NOT YET APPROVED

ARDENT | CONSULTING ENGINEERS
AN EMPLOYEE OWNED COMPANY

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Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client: ESQUIRE DEVELOPMENTS

Project Title: ROSE FARM, ISTEAD RISE

Drawing Title: EXCEEDANCE ROUTING PLAN SHEET 1

Drawn by	Checked by	Approved by	Revision
JSH	AMC	AD	P1

Scale	Date
1:500@A1	18-11-25

Drawing Number: 2500920-ACE-XX-XX-DR-C-0721

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EXCEEDANCE ROUTING

Rev	Description	Drn	Chk	App	Date
P1	FIRST ISSUE	AMC	AMC	AD	18-11-25

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Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client: ESQUIRE DEVELOPMENTS

Project Title: ROSE FARM, ISTEAD RISE

Drawing Title: EXCEEDANCE ROUTING PLAN SHEET 2

Drawn by	Checked by	Approved by	Revision
AMC	AMC	AD	P1

Scale	Date
1:500@A1	18-11-25

Drawing Number: 2500920-ACE-XX-XX-DR-C-0722

0m 5m 25m

Scale: 1:500 @ A1

Appendix F – Infiltration Test Results