CTSDESIGN
CONSULTING ENGINEERS

Proposed development at
HURST ROAD
HORSHAM, WEST SUSSEX, RH12 5DJ

Sustainable Drainage Statement and Maintenance Guide

August 2026

City Construction Group Ltd

PROJECT REF: CS260706-RP02



1 Maintenance Responsibilities:

Maintenance of the drainage system is the responsibility of the property owners.

Contact details are provided below of a suitably qualified company capable of providing maintenance assistance of the drainage network designed on this site.

2 Contact Details

Drainage Maintenance

Company name	DrainLine Southern Ltd
Registered No.	
Address	Mercer Road, Warnham
	Horsham
Post Code	RH12 3SR
Tel No.	01403 261 549
Email	info@drainline.co.uk
Website	drainline.co.uk

3 Introduction

The intention is for this handbook to be used as a reference guide by adopting parties, management company, or those responsible for the maintenance of the SuDS features within the proposed development. This handbook sets out each type of proposed SuDS features within the scheme and provides a schedule of how that system should be operated and maintained to ensure the surface water system operates as it was originally intended and minimise performance deterioration.

For the purposes of this manual, maintenance refers to:

- Inspections required to identify performance issues and plan appropriate maintenance needs;
- Operation and maintenance of the surface water drainage system;
- Landscape management;
- Waste management associated with contaminated silt and other waste materials resulting from maintenance.

All maintenance will need to take the protection of habitats and associated ecology into account. Maintenance regimes should be regularly assessed (i.e. once per year) to make sure that the approach is still achieving objectives in terms of drainage, landscaping, amenity and biodiversity.

4 What is Sustainable Drainage (SuDS)?

Approaches to manage surface water that takes into account water quantity (flooding), water quality (pollution), biodiversity (wildlife and plants) and amenity are collectively referred to as Sustainable Drainage Systems (SuDS). The main purpose of SuDS is to replicate the natural local drainage regime and typically manage rainfall close to where it falls. SuDS are more sustainable than traditional drainage methods because they:

- Manage runoff volumes and flow rates from hard, impermeable surfaces, reducing the impact of urbanisation on flooding;
- Provide opportunities for using runoff where it falls;
- Protect and / or enhance water quality (reducing pollution from runoff);
- Protect natural flow regimes in watercourses;
- Are sympathetic to the environment and needs of the local community;
- Provide an attractive habitat for wildlife in urban watercourses;
- Provide opportunities for evapotranspiration from vegetation and surface water;
- Encourage natural groundwater/aquifer recharge (where appropriate);

5 Sustainable drainage used on this development:

When assessing how to drain a site there is a hierarchy to follow to ensure the most sustainable solution is chosen first, not simply the easiest.

1. Rainwater Re-use
2. Infiltration to Ground
3. Discharge to watercourse
4. Discharge to public surface water sewer
5. Discharge to public combined sewer.

SuDS also talks about treatment trains, which filters and removes particulates from the discharged water.

PRIMARY TREATMENT – to remove litter and coarse particle sedimentation

SECONDARY TREATMENT – to remove fine particle sedimentation and filtration

TERTIARY TREATMENT – Very fine particle removal, filtration and biological processes.

An **attenuation tank** is provided within the drainage design to allow a reduced from rate from the site. When rainfall enters the drainage network it reaches a flow restrictor, which forces water back up the system towards the storage area. When rainfall rates are higher than the rate of permitted discharge, the attenuation tank provides adequate storage volume for the rainfall event. Allowing the rain to stop, and the water within the system to continually discharge into the river until the system is empty again.

Rain Gardens provide an amenity value to the residents while also improving the water quality passing through the network.

6 Additional SuDS Features

When assessing which sustainable drainage feature to utilise on the scheme, various types are assessed for practicality / feasibility for thus implementation and operation.

Due to the nature of the development and the limit of available space within the proposed works there is no further opportunity to provide additional sustainable drainage features.

These would typically be:

- Rainwater harvesting — No requirement for water re-use
- Open attenuation features — No suitable space within development
- Swales — No suitable area within site.
- Soakaways — Ground conditions are not suitable on this site

7 Benefits of SuDS

The general principal is to improve water quality prior to it leaving the site, and to mitigate adverse impacts to water quality of the receiving water environment. CIRIA C753 'The SuDS Manual' (2015' sets out guidance and recommendations for mitigating pollution issues generated by site use.

Peak discharge of water is reduced by attenuating flows within a underground storage tanks and flow control chambers, these restrict the maximum flow of water from the system to match the condition of a green field site reducing the impact of development on the receiving water body.

All driveway / parking areas are surfaced with a permeable paving material to encourage runoff interception at the primary rainfall location, supplementary runoff from adjacent impermeable areas (roofs and tarmac access road) is also directed onto these permeable surfaces to maximise the benefit of this feature.

Pollution from the proposed development captured within the surface runoff will pass through this permeable surface and filter through the sub strata before being released into the drainage system.

Runoff from roofs are classified as a **'very low'** pollution risk and individual driveways and low traffic roads are classified as a **'low'** pollution risk.

Low pollution levels require the application of a 'simple index approach' for water quality mitigation.

The pollution generated by the development is listed in the below table:

Pollution hazard	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Very Low (roofs)	0.2	0.2	0.05
Low (drives & low traffic roads)	0.5	0.4	0.4

Referenced from Table 26.2 of the CIRIA SuDS Manual

Mitigation provided by SuDS feature is listed in the table below

SuDS Component	Mitigation Benefits of SuDS		
	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Rain Garden Vegetation (300mm)	0.6	0.5	0.6

Referenced from Table 26.3 and 26.4 of the CIRIA SuDS Manual

By comparing the pollution hazard value against the higher mitigation value it is evident that by providing the SuDS features listed, that pollution hazards are mitigated against and that the water quality leaving the site complies with the water quality requirements of the SuDS Standards

Compared Mitigation

	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Pollution Hazard	0.5	0.2	0.05
Pollution Mitigation	0.6	0.5	0.6
Residual Hazard	**0.0**	**0.0**	**0.0**

8 Maintenance of SuDS:

Maintenance of the system is vital to the continued performance of the system. It is important that the original design intent is achieved throughout the lifespan of the development otherwise the likelihood of flooding increases as the performance of the system decreases.

Refer to the site-specific drawings contained within the Appendix to familiarise with the arrangement of SuDS features on the site.

This site consists of several components in the design of the drainage network:

1. Silt Trap chamber
2. Underground stormwater storage tank
3. Flow Control
4. Rain Gardens

Silt Trap

A Silt trap is the inspection point at which visual checks and maintenance is carried out on the adjacent attenuation tank. The inspection chamber also includes a sump at the base of the chamber, which is a 450mm deep chamber base, designed to catch silt and detritus before it enters the attenuation tank.

The silt trap area is designed to be easily removable to allow cleaning.

Schedule of Maintenance Tasks

First 3 months	Soon after site works have completed, a large amount of build up is normally expected within the drainage system. Lift the cover to the Silt Trap Chamber and assess any silt build up. Any build up should be removed and disposed of.
Annually	This chamber should be emptied yearly to prevent build-up of silt from entering the tank and reducing its performance efficiency.
Following severe storms	Inspect the chambers for silt / blockage and remove as necessary.



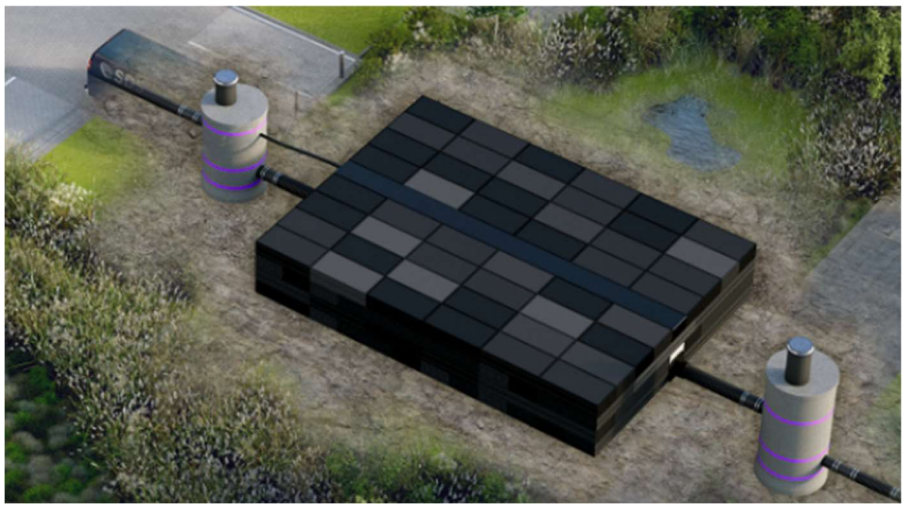
Attenuation Tank

The flow of water through the attenuation network has been carefully designed to balance flows as it passes through the drainage network.

The type of tank crates used on the site are of a large open void structure, which allows for a visual camera inspection through the tank system, together with ready access for jetting by the maintenance crew. The large open nature of the tank crate means maintenance duties are reduced as the passage of water is free flowing with little chance of blockages.

Schedule of Maintenance Tasks

First 3 months	Inspect the performance of the system and advise a drainage engineer of any problems with water levels. The system should only reach full capacity during a very severe storm. Water levels should reduce consistently to nil shortly following a storm.
Annually	Ensure all road gullies and silt traps are clear from blockage and silt build up and clear as required. Excessive build up could enter the tank and reduce the efficiency of the system. A maintenance company can be called out to pressure jet the system and clear out any issues.
Following severe storms	Inspect the drainage network and ensure the system is operating as designed. In the majority of cases no overland flooding should occur. Any flooding will be an indication of blockage reducing the performance.



Flow Control Chamber

The flow control chamber, is a large chamber housing a flow restrictor. This device is simple in function, in that the hole is specifically sized to allow a certain amount of water to pass through it. The device creates a vortex as water passes through it to create a steady and controlled rate at which the water can pass.

The flow restrictor has no moving parts, and thus has very little chance of failure.

Schedule of Maintenance Tasks

First 3 months	Inspect the performance of the system and advise a drainage engineer of any problems with water levels. The system should only reach full capacity during a severe storm.
Annually	Inspect the chamber and ensure no debris is present, which may cause blockages. Remove as necessary.
Following severe storms	Inspect the drainage network and ensure the system is operating as designed. In the majority of cases no overland flooding should occur. Any flooding will be an indication of blockage reducing the performance. Inspect the chambers either side of the tank for silt / blockage and remove as necessary.



Rain Garden

A rain garden requires consistent, seasonal care to remain functional and attractive. Key tasks include clearing water inlets and outlets of debris, weeding and managing mulch layers, watering new plantings during their establishment phase, and pruning dead growth in the spring.

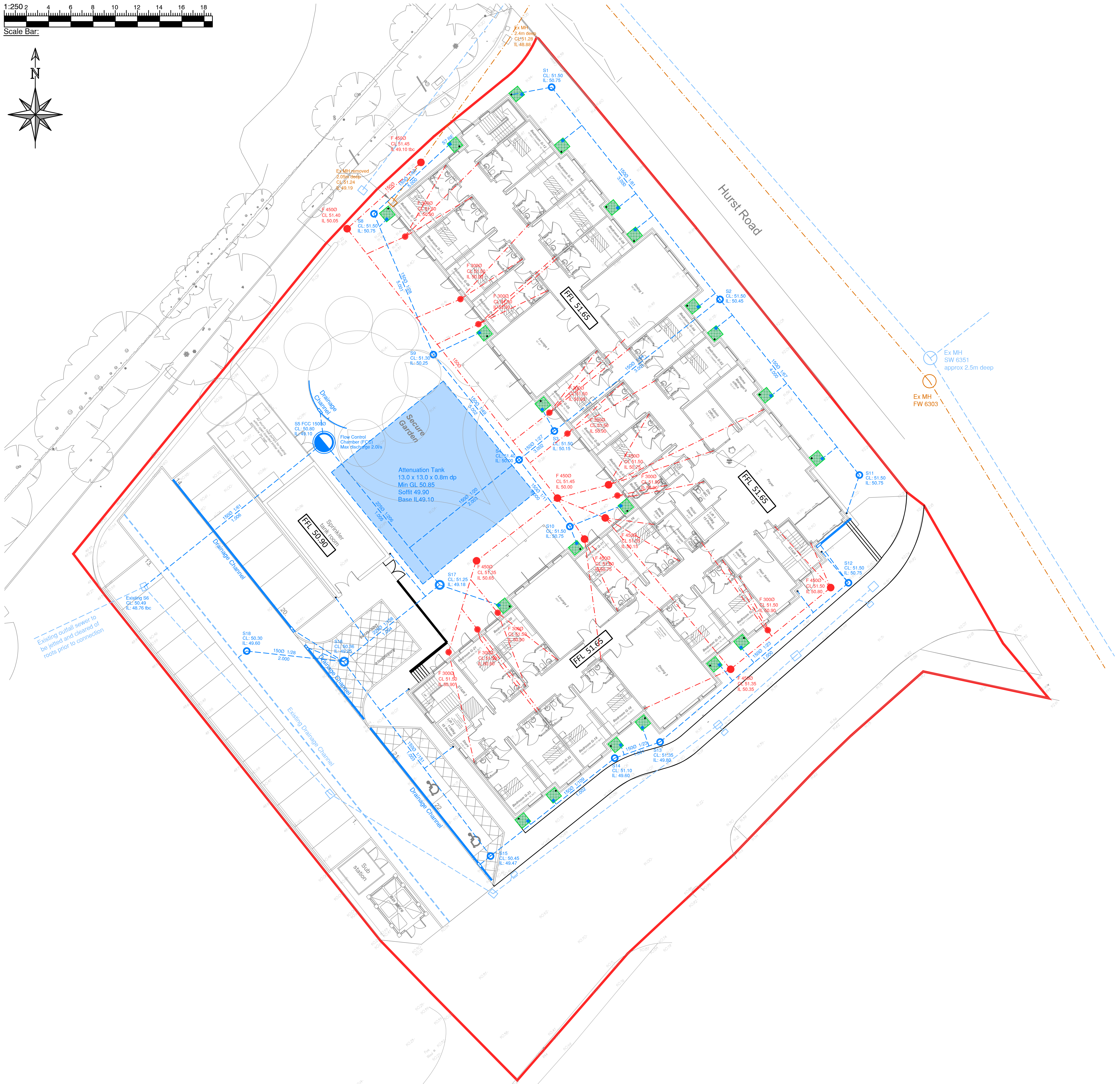
Schedule of Maintenance Tasks

Year-Round & Regular Maintenance	**Inspect Inlets and Outlets:** Regularly clear leaves, litter, and sediment from channels and pipes so rainwater can flow freely into and out of the garden **Weeding:** Remove invasive weeds and woody seedlings on a monthly basis, especially in the growing season, to prevent them from overtaking the garden **Watering:** Water newly established plantings thoroughly during dry periods. New perennials and small shrubs need up to 2 years of supplemental watering, while trees can take 3 to 5 years
Spring (March–May)	**Clean-up:** Remove dead plant parts and debris from the previous year, but wait to prune back all stems until late spring to allow native bees and insects to emerge **Mulch:** Check mulch levels and top up or replace with a 2-inch layer of shredded hardwood mulch to retain moisture and suppress weeds **Erosion Check:** Inspect the basin after heavy storms for any soil erosion or excessive flooding, and add new plants to fill in bare patches
Autumn / Fall (September–November)	**Debris Clearing:** Clear fallen leaves and organic debris from the garden and inflow swales to prevent them from smothering vegetation or clogging the system. **Plant Care:** Cut back shrubs and divide mature perennials as needed to maintain garden health and beauty
Long-Term Upkeep	**Replenish Mulch:** Replace or refresh mulch every 2 to 3 years to maintain soil health and weed suppression. **Silt Removal:** Every 3 to 5 years, or as needed, assess the basin for sediment buildup and restore the garden's ponding capacity by removing excess silt and potentially replanting



Appendix A:

Site Drainage Plan



KEY

Site Boundary	
Existing Foul Sewer	
Existing Storm Sewer	
Private Foul Drains	
Private Storm Drains	
RG	Gully
RE	Storm Rodding Eye
Drainage Channel	
Rain Garden SuDS	
Attenuation Tank	
Flow Control Chamber	

DRAINAGE NOTES:

1. Drainage works to start at the outfall connection and work upstream. Any discrepancies of existing invert levels to be reported immediately as this may alter the design.
2. The Contractor shall be responsible for checking all tie-ins for line and level with existing foul and surface water systems before commencing any works.
3. All drainage work is to be strictly in accordance with the requirements of the Building Regulations, Approved Document Part H, "Drainage and waste disposal".
4. All existing land drains encountered on site during construction are to be re-connected.
5. Temporary protection to be provided to drainage work during construction as necessary.
6. Prior to commencing work on the drainage, all existing drains, sewers manholes and outfalls to remain shall be located, identified and a CCTV condition survey carried out. Where necessary, protection to the existing drainage infrastructure shall be provided.
7. All existing sewers and manholes abandoned due to the proposed works are to be either removed, and suitably backfilled or grouted up.
8. All concrete is to be in accordance with BS EN 206-1, BS 8500 and the recommendations of BRE Special Digest (Concrete in Aggressive Ground).

- Unless specified otherwise, in situ concrete shall be designated mix Gen 3 (Grade C20), or an equivalent mix subject to the approval of the Engineer.
- The following types of pipe may be used unless noted or agreed otherwise;
  Pipes up to 300mm diameter to be Structured Walled to BS EN 13476, Polypropylene to BS EN 1852, PVC-U to BS EN 1401 or Vitrified Clay to BS EN 295.

9. Both Clay and Concrete pipes shall be strength class 120 (100/150mm min crushing strength 28kN/m). Thermoplastic pipes shall have a minimum ring stiffness of SN4.
10. Pipes which run adjacent to buildings shall be installed in strict accordance with Part H, Clauses 2.23 to 2.25. Diagrams 7 and 8 are of particular relevance and shall be complied with.
11. All pipes, chambers and fittings shall be installed, bedded and backfilled in accordance with the manufacturers instructions subject to the following minimum requirements table.

Location	Cover to crown	Bedding Clay/Concrete Pipe*	Bedding Plastic Pipe	Backfill
Roads (HGV)	>1.2m <1.2m	Class S Class 'A' (Concrete)	Class S (S1or2) Class 'A' (Concrete)	Type 1 Granular
Drives / car parking	>0.9m <0.9m	Class S Class 'A' (Concrete)	Class S (S1or2) Class 'A' (Concrete)	Type 1 Granular
Hard and soft Landscaping	>0.6m <0.6m	Class S Class 'A' (Concrete)	Class S (S1or2) Class 'A' (Concrete	Suitable as dug material

12. Pipes Penetrating Walls.
    An opening is to be formed through walls to give pipes at least 50mm clearance all round. Brickwork over shall be supported by a lintel. Opening to be masked each side with rigid sheet material. Pipes embedded in walls shall have joints formed within 150mm of either wall face. Adjacent rocker pipes of max 600mm length with flexible joints shall continue the pipework.
13. All pipes beneath buildings to be B&S in concrete. Where cover is less than 300mm the concrete is to be cast integrally with the floor slab.
14. All drains in the vicinity of existing or proposed trees to be constructed in accordance with the requirements of NHBC Practice Note 3.
15. Ventilation shall be provided at the head of the foul drainage runs.
16. The first flexible joint in pipes adjoining a manhole shall be a maximum length of 600mm from the inside face of the manhole, connecting to a rocker pipe. The length of the rocker pipe shall be as follows;

Pipe Dia	Length of Rocker Pipe
150-600mm	600mm

17. All manholes and inspection chambers situated in areas subject to vehicular loading to have class D400 covers and frames to BS EN124 and those not subject to vehicular loading may have class B125 covers and frames.
18. Drainage frames must be tied to manhole risers by use of manufacturers ties.
19. Cover levels for manholes are approximate only and should be adjusted to match surrounding levels.
20. All manholes, pipe trenches etc. to be backfilled with imported granular fill to Class 6F1-6F5 (Capping material) to (SHW) Table 6/1 & compacted in accordance with Table 6/4.
21. All pipelines shall be tested both before and after backfilling, using either air test or water test, in accordance with BS EN 1610.

REV	DESCRIPTION	BY	DATE
A	Retained parking area included, tank size updated	DM	21.08.26

DRAWING: Drainage Layout
DWG No: CS260706-102
REV: A
DATE: 05.08.2026
DRAWN BY: DMcC
CHECKED BY:
DATE:
SCALE: 1:250 @ A2
PROJECT: Hurst Road, Horsham
West Sussex, RH12 2DJ
PHASE: CONSTRUCTION
CLIENT: City Construction Group Ltd

CTSDESIGN
CONSULTING ENGINEERS
20 LONGFORD CLOSE
BIRMINGHAM B32 4JU
WWW.CTSDESIGN.CO.UK
INFO@CTSDESIGN.CO.UK

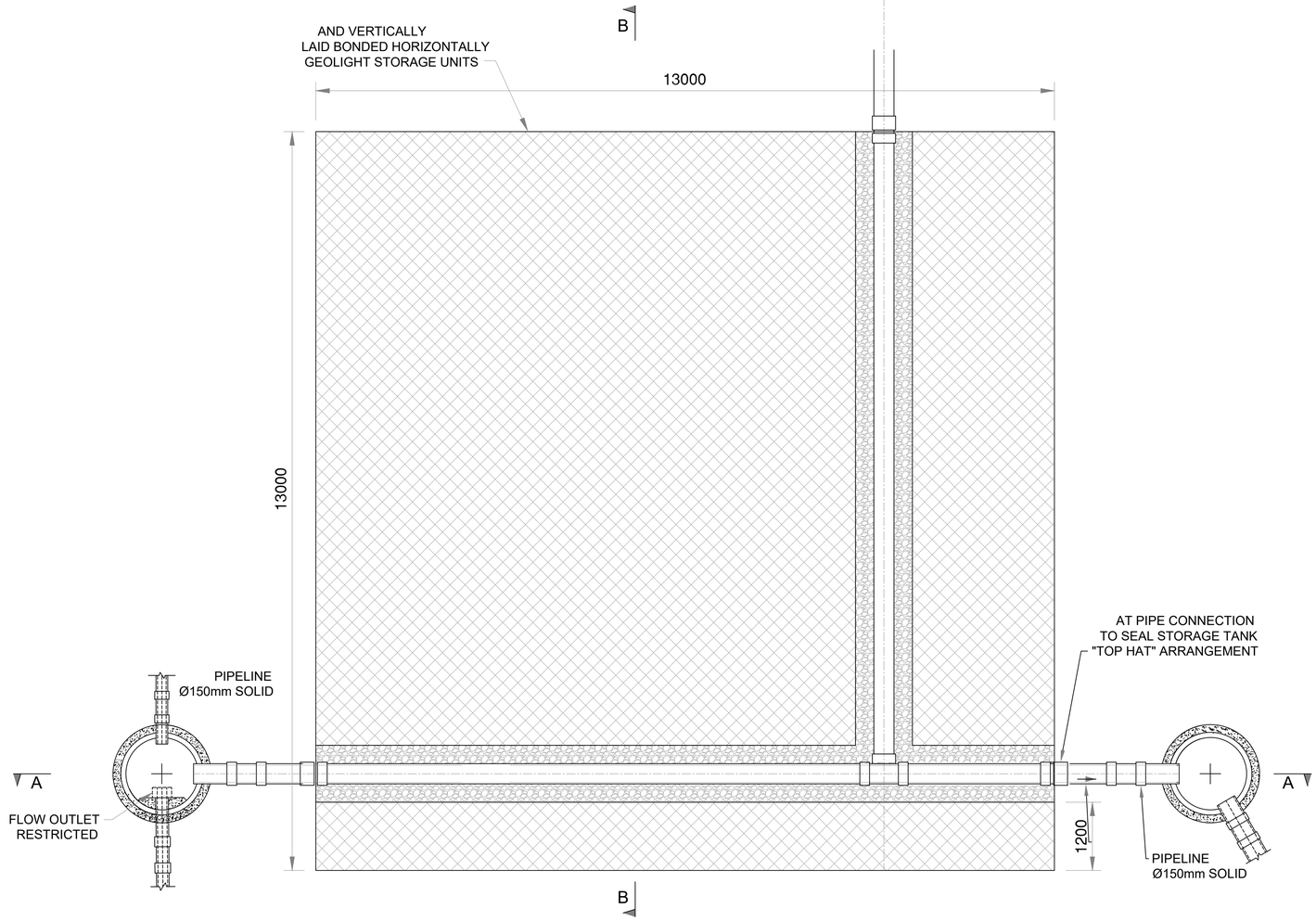
Appendix B:

- Attenuation Tank Details

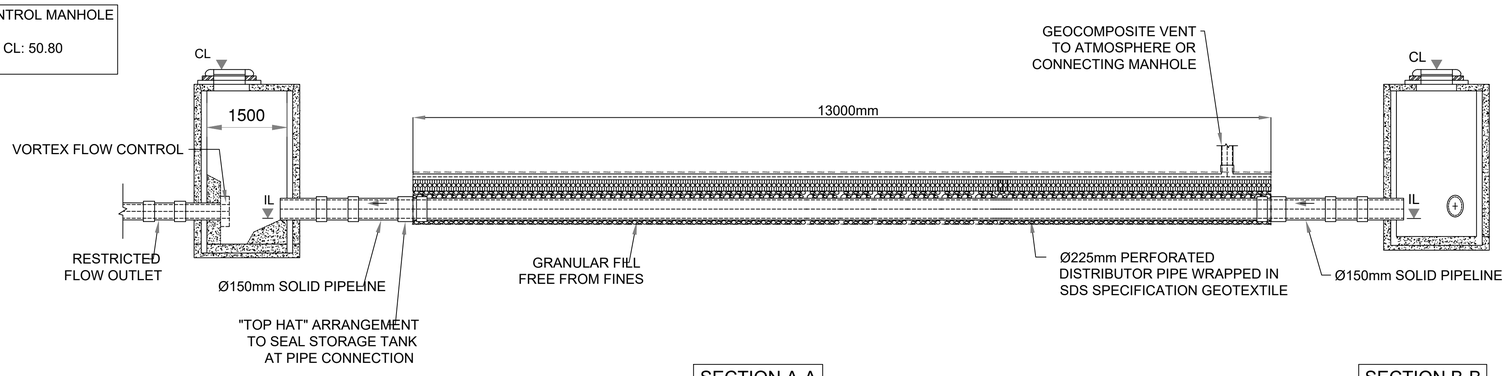
1:50
Scale Bar: 1 2 3

ATTENUATION TANK
GEOLIGHT 400 BY SDS INTERNATIONAL
OR SIMILAR APPROVED

FLOW CONTROL DEVICE
HYDROBRAKE "SHE-0069-2000-0850-2000"
OR SIMILAR APPROVED
DESIGN HEAD 850MM
MAX DESIGN FLOW 2.0 L/S



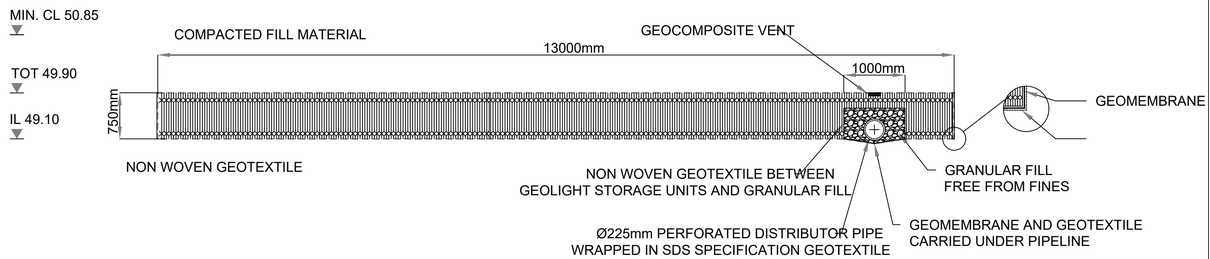
FLOW CONTROL MANHOLE
REF: S5
MANHOLE CL: 50.80
IL: 49.10



CATCHPIT MANHOLE WITH SUMP
REF: S17
MANHOLE CL: 51.25
IL: 49.20

SECTION A-A

SECTION B-B



REV	DESCRIPTION	BY	DATE
A	Tank size updated	DM	21.08.26

CTSDESIGN
CONSULTING ENGINEERS
22 LONGFORD CLOSE
BIRMINGHAM B32 4JU
WWW.CTSDESIGN.CO.UK
INFO@CTSDESIGN.CO.UK

CLIENT
City Construction Group Ltd

PROJECT
Hurst Road, Horsham
West Sussex, RH12 2DJ

PHASE
CONSTRUCTION

DRAWN BY	DATE
DMcC	05.08.2026
CHECKED BY	DATE

SCALE
1:50 @ A1

DRAWING
Attenuation Tank
& Flow Control Chamber

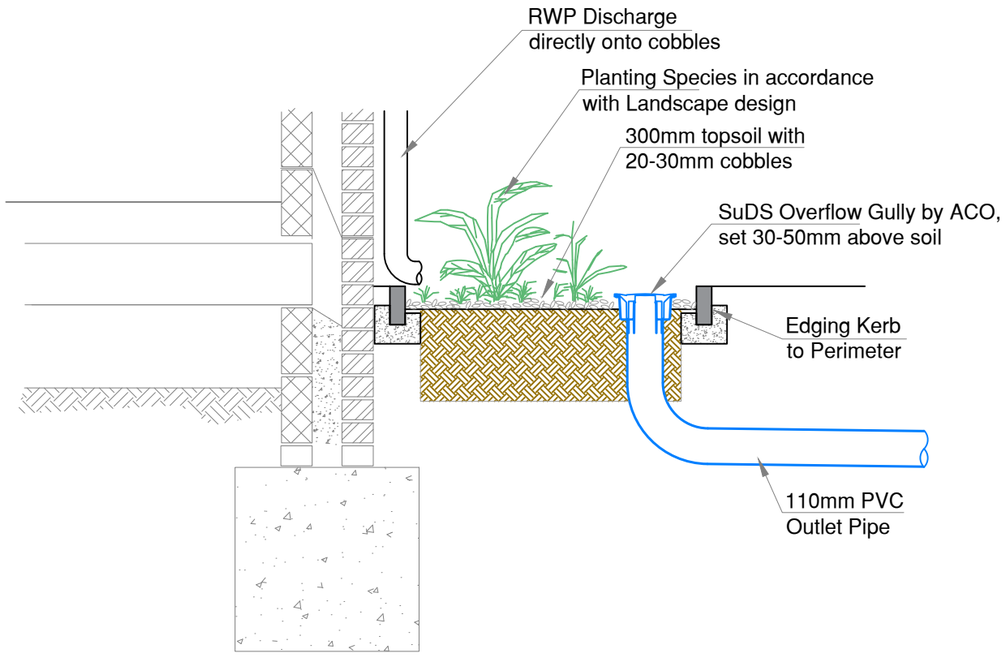
DWG No	REV
CS260706-107	A

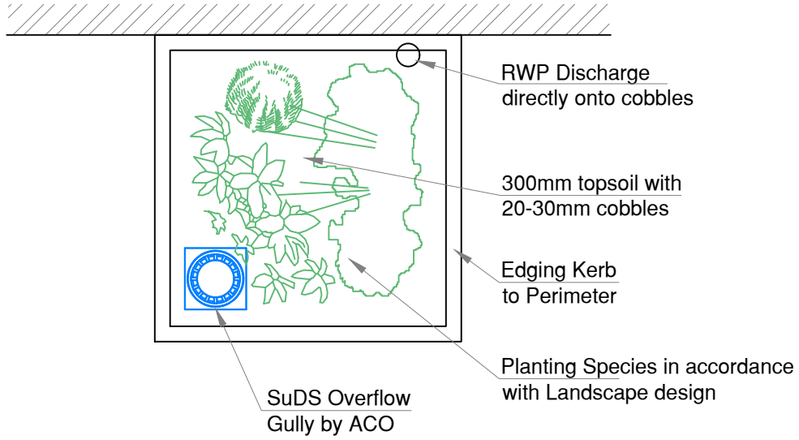
Appendix C:

- Rain Garden Details

1:20 0.2 0.4 0.6 0.8 1.0 1.2 1.4

Scale Bar:





REV	DESCRIPTION	BY	DATE
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CTSDESIGN
CONSULTING ENGINEERS
20 LONGFORD CLOSE
BIRMINGHAM B32 4JU
WWW.CTSDESIGN.CO.UK
INFO@CTSDESIGN.CO.UK

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Hurst Road, Horsham
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PHASE
CONSTRUCTION

DRAWN BY
DMcC

DATE
05.08.2026

CHECKED BY

DATE

SCALE
1:250 @ A2

DRAWING
Rain Garden
SuDS Feature

DWG No
CS260706-106

REV

Appendix D:

Maintenance Log

Date	Works Undertaken	Person / Company