



## SUDS MANAGEMENT PLAN

### Proposed Residential Development, Denby Lane, Grange Moor

Reference: SMP/RWO/Y22054/2

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Version: 5

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Yorkshire Country Properties

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## DOCUMENT HISTORY

VERSION	PURPOSE/DESCRIPTION	DATE
1	First Issue	12.07.2024
2	Appendix A updated.	01.10.2024
3	Appendix A updated.	28.11..2024
4	Permeable paving reference removed.	09.01.2025
5	Cellular Storage details added	07.11.2025

## 1.0 INTRODUCTION

This document details the inspection and maintenance specification for sustainable drainage systems (SuDS) maintained by a management company on behalf of Yorkshire Country Properties Ltd.

The document is laid out detailing:

- A description of the SuDS component and its use
- Maintenance requirements and frequencies as set out in **Appendix B**.
- Inspection requirements and frequencies as set out in **Appendix B**.
- Cellular Storage details as set out in **Appendix C**.

The activities listed are specific to the SuDS on the development and represent the minimum maintenance and inspection requirements. This may include:

- Maintenance frequency
- Measurement and recording of sediment levels.
- Photographic recording of problem areas
- Increased frequency of litter removal in areas identified as litter hotspots.

This specification has been based upon latest technical information for SuDS.

The cost to manage the SuDS will be funded through a financially sustainable income stream secured against all the properties on the development.

The surface water drainage system for the site is shown in **Appendix A** and comprises of four asset types: private gravity drainage network, geocellular attenuation tank, and a flow control manhole for all the storm events up to and including the 100 year plus 45% climate change plus 10% urban creep events, along with associated adoptable pipes for the highway drainage.

The management company will be responsible for the inspection and maintenance of the offline private cellular storage structure, associated private pipework and including removal of material deposited within the system. Any gross contamination of the system will be, were practicable, contained, safely removed, and reported to the appropriate body. In such cases the management company will liaise with the Environment Agency and Kirklees Council to assist in identifying the polluter to enable the appropriate action to be taken by those organisations.

The developer and management company will be responsible for carrying out a yearly review of the SuDS to establish if the current management regime is meeting the management objectives. If any significant changes are required to the approved Management Plan, then the developer is to liaise with the Lead Local Flood Authority/Planners at the Council and the Developer Services team at Yorkshire Water.

## 2.0 CELLULAR STORAGE

The cellular storage structure acts as storage for the 1 in 100 year and 1 in 100 year + 45% climate change +10% urban creep storm return periods prior to discharging at a restricted rate into a new adoptable gravity network to the existing surface water sewer located in Denby Lane Drive. The flow is to be restricted by a hydro brake flow control unit (the hydro brake is to be maintained by the management company as part of the below ground piped network). The hydro brake (flow control) is positioned within a flow control manhole structure prior to discharging to the public sewer.

The cellular storage structure and associate pipework is to remain in private ownership and is to be maintained by a management company who will be responsible for maintenance.

The useful life and effective operation of a cellular attenuation component is related to the frequency of maintenance and risk of sediment being introduced into the system. An easement of 2m from any building is to be considered to ensure long term access for maintenance purposes.

The offline storage tank is to have a service life of in excess of 50 years. The cellular storage tank is to be replaced if deterioration is noted during the regular maintenance inspections.

The private inlet and outlet chamber to and from the cellular storage will be private and the management company will be responsible for maintaining this and the associated pipework.

For operation and maintenance requirements refer to the maintenance log in **Appendix B**.

## 3.0 INSPECTION AND REPORTING

The details of the site-specific SuDS features, maintenance requirements and frequencies can be found within the Maintenance Log in **Appendix B**.

The Maintenance Log shall be maintained and updated after every maintenance activity by the management company.

This Maintenance Log will be held by the management company and submitted to the LLFA at the Local Authority on a five yearly basis or if any significant changes to the SuDS maintenance is required.

A copy of the Maintenance Log can be found in **Appendix B**.

## Appendix A Drainage Plan



## Appendix B Maintenance Log

**Appendix B - Maintenance visit log sheet**

**Operation and maintenance requirements for geocellular storage**

Maintenance Schedule	Required Action	Typical Frequency	Date of visit / inspection / work											
			1	2	3	4	5	6	7	8	9	10		
Regular maintenance	Inspect for sediment and debris in pre treatment components and floor of inspection tube.	Annually												
	Cleaning of gutters and any filters on downpipes	Annually (or as required based on inspections)												
	Inspect structures for evidence of poor operation. Assessment of structure condition and operation to identify necessary remedial works.	Quarterly/after significant rainfall event.												
	Trimming any roots that may be causing blockages	Annually (or as required based on inspections)												
Occasional Maintenance	Remove sediment and debris from pre-treatment components and floor of inspection tube.	As required *												
Regular maintenance	Inspect silt traps and note rate of sediment accumulation	Monthly in the first year and then annually												
	Manage other vegetation and remove nuisance plant. Weeding should be conducted by hand or use non-toxic and biodegradable weed killer. Invasive species should be removed in accordance with best practice.	Monthly (at implementation) then as required												
	Remove sediment, litter and debris build-up from around inlets	Quarterly to bi-annually												
Occasional maintenance	Re-seed areas of poor vegetation growth.	As required *												
	Remove sediment from inlets and outlet areas.	As required *												
	Prune & trim trees/ shrubs and remove cuttings. Where vegetation is planted as a barrier management of upward growth to encourage outward growth is necessary (after shrub seedlings are established).	As required *												
Remedial Actions	Remove sediment from structure when attenuation volume is reduced by 10%. Sediment level will be dependent upon presence & type of upstream SUDS, size and land use of catchment as well as local soil conditions.													
	Repair / rehabilitation of inlets, outlets and overflows.	As required												

**Operation and maintenance requirements for permeable parking**

Maintenance Schedule	Required Action	Typical Frequency	Date of visit / inspection / work											
			1	2	3	4	5	6	7	8	9	10		
Regular maintenance	Remove litter (including leaf litter) and debris from filter drain surface, gullies, access chambers and aco-channels	Monthly (or as required)												
	Inspect permeable paving surface, gullies, aco-drains, inlet/outlet pipework and control systems for blockages, clogging, standing water and structural damage	Monthly for first three months, then Quarterly thereafter.												
	Manage other vegetation and remove nuisance plant. Weeding should be conducted by hand or use non-toxic and biodegradable weed killer. Invasive species should be removed in accordance with best practice.	Six monthly												
	Inspect aco-drain channel, inlets and perforated pipework for silt accumulation, and establish appropriate silt removal frequencies	Six monthly												
Occasional maintenance	Remove or control tree roots where they are encroaching the sides of the filter drain, using recommended methods (eg NJUG 2007 or BS3998:2010)	As required												
	Inspect grit material to ensure water is being conveyed and the material is performing. Anticipated life of material 5 years. If performance is suffering replace material.	Every 5 years check material and if performance of filter drain is suffering replace material.												
	Clear aco-drain channel and perforated pipework of blockages	As required												
Remedial actions	Replace failed drives, jointing or sub-structure.	As required												
	Repair / rehabilitation of inlets, outlets and overflows.	As required												

**Operation and maintenance requirements for pipes a (Applicable prior to adoption)**

Maintenance Schedule	Required Action	Typical Frequency	Date of visit / inspection / work											
			1	2	3	4	5	6	7	8	9	10		
Regular inspections	Inspect channel within all manholes for blockages and visual damage within manhole	Monthly												
	Operate hydro brake flow control release cable within the flow control manhole to ensure satisfactory movement, reset once complete. Check visible fixing bolts.	Quarterly												
	Operate penstock within the flow control manhole to ensure satisfactory movement, reset once complete. Check visible fixing bolts on penstock.	Quarterly												
Occasional maintenance	Clean out silt and debris from sump in flow control manhole	As required (likely quarterly)												

**Operation and maintenance requirements for pipes / road gullies**

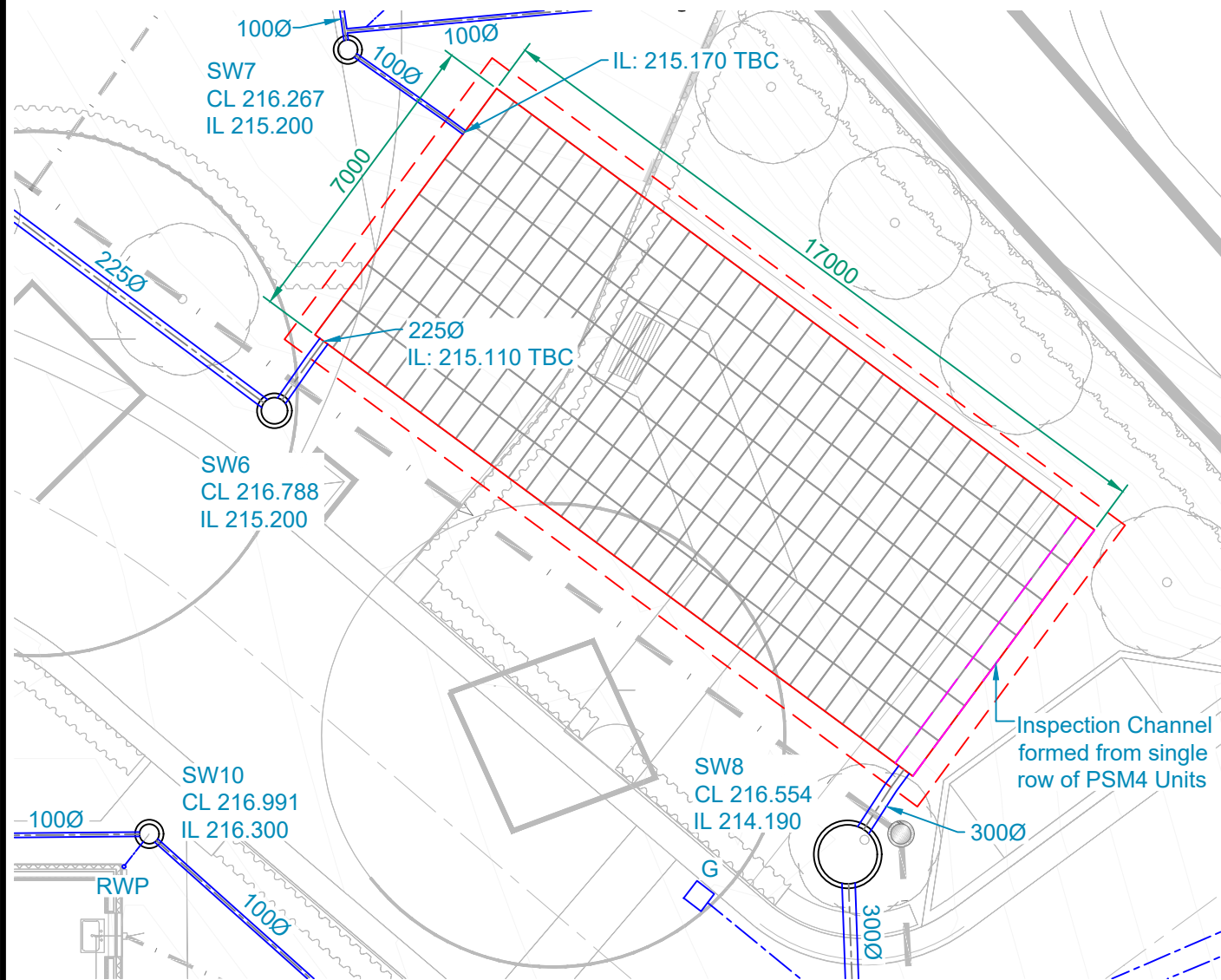
Maintenance Schedule	Required Action	Typical Frequency	Date of visit / inspection / work											
			1	2	3	4	5	6	7	8	9	10		
Regular inspections	Inspect channel within all manholes for blockages and visual damage within manhole	Monthly												
	Operate hydro brake flow control release cable within manhole SW18 to ensure satisfactory movement, reset once complete. Check visible fixing bolts.	Quarterly												
	Operate penstock within manhole SW18 to ensure satisfactory movement, reset once complete. Check visible fixing bolts on penstock.	Quarterly												
Occasional maintenance	Clean out silt and debris from sump in flow control manhole SW18	As required (likely quarterly)												

**Operation and maintenance requirements for POS landscaping**

Maintenance Schedule	Required Action	Typical Frequency	Date of visit / inspection / work											
			1	2	3	4	5	6	7	8	9	10		
Regular inspections	Inspect grassed areas for over compaction or waterlogging	Monthly												
	Inspect grass to ensure it is in healthy condition, free from disease, fungal growth and discoloration. Feed, weedkill and re-seed as necessary.	Quarterly												
	Assess plants for disease, infection, poor growth, invasive species etc and replace as necessary	Quarterly												
Regular maintenance	Remove litter & surface debris	Fortnightly												
	Grass shall be mown to maintain a height between a maximum of 50mm and a minimum of 25mm. During the winter grass shall be maintained at a height of 60mm. Grass not to be cut until a minimum of two weeks has elapsed during the establishment period.	At least once every three weeks from first week of March to last week of October												
	Check tree stakes and ties and adjust/replace as necessary	At each grass cutting visit												
	Watering to take place for at least the first two growing seasons ensuing sufficient water is applied to maintain healthy growth. Water quantity for trees & shrubs: Wet soil to full rooting depth.	As required depending upon weather conditions												
	Clear planting areas of weed growth by a combination of hand-weeding/hoeing and careful use of household weed killer.	Monthly												
	Replace any plants to maintain planting density. Cut back shrubs to maintain a maximum height of 600mm.	As required												
Occasional maintenance	Aerate planted areas and check for excessive compaction, remediate as necessary	Quarterly												
	Pruning to be carried out in accordance with good practice. Trim individual plant/tree appropriate to species, location and season to leave a well-balanced natural shape.	As required												
	Cut back any damaged bark to trees and treat wound with fungicidal sealant	As required												
	Repair damage to any fencing	As required												

\* Inspection, Recording and Reporting to be carried out at least annually

## Appendix C Cellular Storage Details



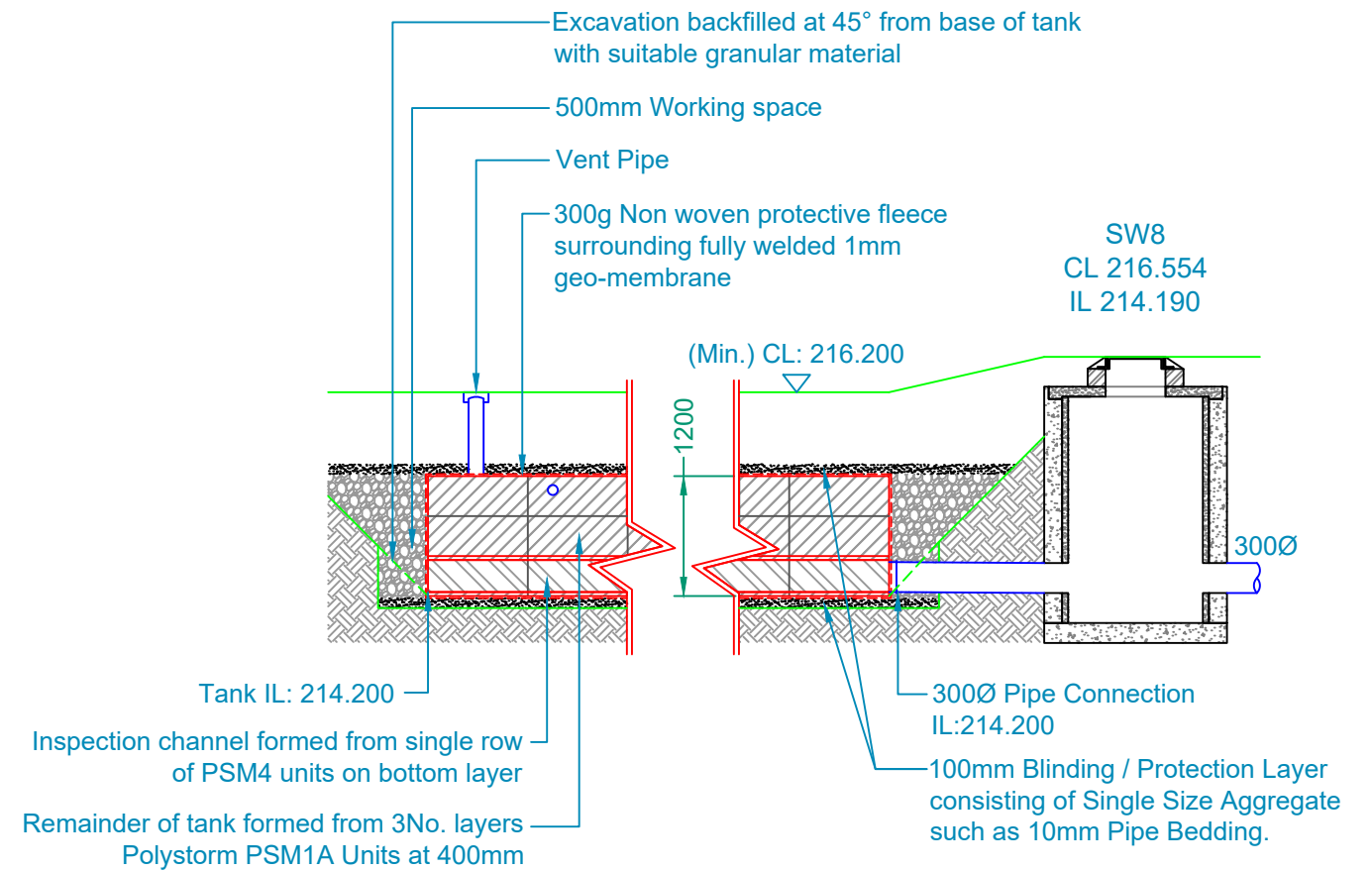
Proposed Plan  
(Scale 1:150)

17.0 x 7.0 x 1.2m deep  
 Total Vol = 142.80m<sup>3</sup>  
 Net Vol ≈ 135.66m<sup>3</sup>  
 At 95% min Void Ratio  
 707 PSM1A units  
 7 PSM4 units

\*Extents of excavation to be an additional 500mm around the perimeter of the tank\*

**NOTES**

1. Proposed Hydro WMS layout.
2. All dimensions are in millimetres, all elevations in metres unless otherwise stated.
3. All temporary and enabling works by others.
4. All dimensions of fabricated items are nominal and may vary within manufacturing tolerances.



Proposed Section  
(Scale 1:75)

REV	AMENDMENT	DATE



HYDRO WMS LTD  
 RANDOLPH HOUSE 3  
 7-41 LONGSHUT LANE WEST  
 STOCKPORT  
 SK2 6RX  
 Tel/Fax: 0161 4563476  
 brian.byrne@hydro-wms.co.uk  
 www.hydro-wms.co.uk

CLIENT  
 -  
 JOB TITLE  
 Denby Lane,  
 Grange Moor

STATUS  
**FOR APPROVAL**  
 DRAWING TITLE  
 Proposed Attenuation Tank Details

DATE	DRAWN	CHECKED
04/09/2025	WS	
SCALE	PROJECT No.	
1:150@ A3		
DRAWING No.	REV.	
001	-	