



Drainage Maintenance Strategy Martin Harris Music Practice Block, University of Manchester, M15 6FH

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DRAINAGE MAINTENANCE STRATEGY

Revision List

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Drainage Maintenance Strategy

Many drainage features are not visible at ground level, and it is the same at the new educational facility at the University of Manchester.

Regular and thorough maintenance are key to maintaining the effective operation of these drainage features to minimise flood risk caused by blockages in the drainage network.

This document provides a brief overview of the drainage features at the Martin Harris Music Block, University of Manchester, along with the maintenance requirements and responsibilities.

Summary of Drainage Features

Drainage Feature	Ownership
Foul drainage under private land ownership (carrier pipes and chambers)	Management Company (currently unnamed) – to be formed at time of development
Surface water drainage under private land ownership (carrier pipes, channel drains, chambers and attenuation tank)	Management Company (currently unnamed) – to be formed at time of development

Why Maintain your Drainage?

Drainage systems are used to capture, control and store wastewater or un-used surface water (rainfall).

As part of the developments commitment to sustainable practices your private drainage system has been designed to discharge foul drainage (toilet, sink, shower used water) to the public sewer in the road adjacent to your property. This wastewater will end up at a United Utilities controlled sewage treatment plant for processing.

Rainwater is to be captured and attenuated prior to discharging to the public combined sewer in the adjacent highway, the system has been designed to accommodate for an extreme storm event with a 1% annual probability of occurring along with a 45% uplift to account for future climate change as recommended by the current environment agency guidance.

Not maintaining your drainage system can increase the risk of water damage to both your property and those downstream of your property from potential flooding caused by blockages or damage to the pipes under the ground.

This document will summarise the maintenance recommended for your development.

Maintenance Responsibilities

Any drainage which falls within the ownership boundary for the University of Manchester development site e.g., the courtyard area and areas of soft landscaping etc, are to be made the responsibility of an appointed management company to maintain.

The following pages provide recommended maintenance regimes to ensure suitable operation of your below ground drainage.

Manholes and Inspection Chambers

Description

Manholes providing rodding and jetting access to pipe work.

Normally manholes, in similarity to inspection chambers, are designed for access by operatives. Manholes must only be accessed after a risk assessment, and the implementation of a safe system of work, which identifies the specific risk to confined space.

Maintenance Issues

It is not likely that Manholes will present maintenance issues. However, they allow both the access to the drainage infrastructure and allow visual inspection from the surface of any key maintenance issues.

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Remove covers and ensure that there are no blockages. Inspect and ascertain any parts that are not operating correctly and resolve.	For 3 months after installation
	Check covers do not need repairing.	Monthly
	Check drainage is running freely by inspecting manholes and inspection chambers.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Suction sweeping and cleansing (to Water Jetting Association standards) and CCTV where appropriate.	2 – 4 Years
Remedial maintenance	<ul style="list-style-type: none">• Silt removal• Inlet/outlet repair• Erosion repairs• System recovery following a pollution event• Manhole Cover replacement• Repairs to brickwork or concrete• Chancel repair	When required (tasks to repair problems due to wear, damage or vandalism)

Catchpits

Description

Catchpits are similar to manholes, however, they include a sump to the base which is designed to capture silt and prevent it reaching other parts of the drainage network. Catchpits provide a useful location to remove silt for drainage networks. Catchpits must only be accessed after a risk assessment, and the implementation of a safe system of work, which identifies the specific risk to confined space.

Maintenance Issues

If the silt captured in catchpits does not get removed regularly it will cause silt to move downstream to other part of the drainage network, some of which may be difficult to access, or totally inaccessible.

Maintenance Regime

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Remove manhole covers and ensure that there are no blockages. Inspect and identify any parts that are not operating correctly and resolve. Inspect silt storage in sump. Remove silt as appropriate using subcontractor with vacuum extraction plant.	For 3 months after installation
	Check covers do not need repairing. Repair/replace as required.	Monthly
	Inspect catchpits to ensure that the drainage is running freely, and free of debris. Inspect silt storage in sump. Remove silt as appropriate using subcontractor with vacuum extraction plant.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Suction sweeping and cleansing (to Water Jetting Association standards) and CCTV where appropriate. Resolve any chamber structural defects, or any defects that could reduce the free flow of water.	2 – 4 Years
Remedial maintenance	<ul style="list-style-type: none">• Silt removal• Inlet/outlet repair• Erosion repairs• System recovery following a pollution event• Manhole Cover Replacement• Repairs to brickwork or concrete	When required (tasks to repair problems due to wear, damage or vandalism)

Linear Drains

Description

Surface Water is drained over impermeable sections towards grated, or slot-type linear drains at low points and water is carried to below ground pipework.

Maintenance Issues

Linear drains could get blocked by silt or debris, causing flooding.

Linear drains frequently include silt traps at outlets which can cause siltation of downstream drainage infrastructure if the appropriate maintenance is not undertaken.

Maintenance Regime

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Inspect linear drains to make sure that there are no blockages at surface level. Remove covers to outflow boxes and check for blockages or siltation. Inspect and identify any parts that are not operating correctly and resolve.	For 3 months after installation
	Inspect linear drains to make sure that there are no blockages at surface level.	Monthly
	Remove covers to outflow boxes and check for blockages or siltation.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Jetting of linear drains and suction vacuuming of outlet boxes (to Water Jetting Association standards) and CCTV where appropriate.	1 – 2 Years
Remedial maintenance	<ul style="list-style-type: none">• Silt removal• Inlet/outlet repair• Erosion repairs• System rehabilitation following a pollution event• Linear drain cover replacement• Chancel repair• Ensure that impermeable surfaces surrounding linear drains have not settled below top of linear drain level, causing ponding	When required (tasks to repair problems due to wear, damage or vandalism)

Pipework

Description

Below ground drainage pipework connects drainage inlets (gullies, linear drains etc) to manholes as well as providing connections between manholes.

Maintenance Issues

Pipes could become blocked by silt, debris fat, grease, or collapse. In addition, it's possible for pipe joints to become displaced or for roots to grow from the surrounding ground into the pipes.

These factors can cause a reduction in, or loss of, the hydraulic capability of the pipes which could cause flooding to land and buildings.

Defects in pipes could cause a reduction in stability to ground underlying foundations, thus, causing settlement and damage to buildings and external surfaces.

The material of pipes and associated couplings can be damaged if aggressive liquids are passed through the pipes.

It is recommended that trees are not planted within 3m of pipes to reduce the risk of root ingress.

Maintenance Regime

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Inspect and identify any parts that are not operating correctly and resolve.	For 3 months after installation.
	Monitor working of drainage at ground level. The indications damaged pipework's may include localised flooding or emission of smells.	Monthly
	Remove manholes covers to check for blockages.	Every 6 months
Occasional maintenance	CCTV pipework, clean to WRC Sewer Jetting Code of Practice. Resolve issues as appropriate.	1 – 2 Years
Remedial maintenance	<ul style="list-style-type: none">• Silt removal.• Fat and Grease removal.• Erosion repairs.• Joint displacement.• Structural failure, cracking or collapse.• System rehabilitation following a pollution event.	When required (tasks to repair problems due to wear, damage or vandalism)

Vortex Controls

Description

Vortex controls, often called Hydrobrakes, are installed in some manholes to limit the rate of flow. Vortex controls are normally constructed in steel and installed in a manhole with a sump.

Maintenance Issues

Vortex controls could become blocked by debris, plastic bags or other sheet material. If silt is allowed to build up in the sump the operation of the device could be impeded causing flooding upstream.

Maintenance Regime

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Check manufacturer's specification. Inspect and identify any parts that are not operating, consult supplier and remediate as required.	For 3 months after installation
	Monitor working of drainage at ground level. Where localised flooding occurs, check the condition of all system elements.	Monthly
	Remove manholes covers to check for blockages. Remove sediment from pre-treatment structures, gullies, catchpits etc.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Clean to WRC Sewer Jetting Code of Practice. Resolve issues as appropriate.	1 – 2 Years
Remedial maintenance	Inspect, and remedy to ensure that the features are in fully working order.	As required (tasks to repair problems due to wear, damage or vandalism).

Geocellular Attenuation Storage

Description

Attenuation storage tanks are used to create a below-ground space for the temporary storage of surface water before infiltration, controlled release or use. Geocellular storage crates are advantageous as they allow for spatial versatility as opposed to in situ concrete tanks.

Maintenance Issues

For Geocellular attenuation tanks typical issues relate to the build-up of silt within the tank, causing a decrease in capacity over time.

Maintenance Regime

Schedule	Action Required	Frequency
Regular Maintenance	Inspect and identify any areas that are not operating correctly. Take remedial action as appropriate	For 3 months after installation, then annually.
	Remove debris from the catchment surface (where it may cause a risk to performance)	Monthly
	For systems where rainfall infiltrate into the tank from above, check surface of filter for blockage by sediment, algae or other matter. Remove blockage and replace surface infiltration medium as appropriate.	Annually
	Remove Sediment from pre-treatment structures and/or internal forebays.	Annual, or as needed
Remedial Actions	Repair/rehabilitate inlets, outlets, overflows and vents.	As needed
Monitoring	Check all inlets, outlets, vents and overflows to ensure that they are working as designed.	Annually
	Survey inside of tank for sediment build-up and remove as appropriate.	Every 5 years or as needed.