

1290 Oldham Road, Newton Heath

Management and Maintenance Strategy

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1 Introduction

1.1 Project Background

Curtins have been appointed by One Manchester to provide a management and maintenance plan for the proposed below ground drainage design for 1290 Oldham Road.

The report is based on currently available information and best practice guidance.

Proposals contained or forming part of this report represent the design intent and may be subject to alteration or adjustment in completing the detailed design for this project. Where such adjustments are undertaken as part of the detailed design and are deemed a material deviation from the intent contained in this document, prior approval shall be obtained from the relevant authority in advance of commencing such works.

The surface water network has been designed to accommodate the 1 in 100-year storm rainfall event plus 40% for climate change. As the flows are generally being attenuated on site features there will be a period of time after storm events where the network is still partially or fully surcharged and is draining down. Where this surcharging is still present after 48hrs appropriate action should be taken.

1.2 Scope of the Maintenance Strategy

This manual is intended to give an overview of the operation and maintenance for the drainage features included with the drainage strategy and in relation to typical details only. Where proprietary products are specified the manufacturer's instructions and recommendations should be followed in priority to this document unless specifically noted otherwise due to project constraints.

The recommended operations and frequencies are typical only and should be more frequent initially to ensure that there are no unforeseen issues with the operation and then adjusted to suit the site requirements.

2 Maintenance Recommendations

2.1 Components

The following components have been included within the drainage design for the proposed development:

- Inspection, Manhole and Catchpit Chambers
- Pipes
- Gullies / Sump, Outlet and Access Units
- Linear Slot Drainage
- Cellular Storage
- Hydrobrake

2.2 General Maintenance

The maintenance of the drainage network within the ownership boundary will be the responsibility of the landowner, One Manchester,

The maintenance of the drainage network outside of the Ownership Boundary will be the responsibility of Manchester City Council and United Utilities.

A copy of the final construction drainage layout should be provided in the final Operations and Maintenance Manual. Reference should be made to the proposed drainage layout: Curtins drawings 074031-CUR-00-XX-DR-C-92500 & 074031-CUR-00-XX-DR-C-92501.

The maintenance scheduling should begin from the completion date.

It is recommended that the drainage system is inspected as a minimum twice a year, with the system also being inspected after any major storm event.

Significant sediment deposition is likely in areas used for storage, so a post clean-up operation may be required including the removal of litter, vegetation, sewerage debris and larger objects.

Long-term management practices include monthly sweeping of external paved areas. The sweeping program will remove sand and contaminants directly from paved surfaces before they become mobilised during storm events and transported to the drainage system.

During the winter months, drainage features such as gullies and channels should be cleared of ice, snow, debris or litter.

2.3 Inspection, Manhole and Catchpit Chambers

The locations of the chambers are indicated on Curtins drainage drawings 074031-CUR-00-XX-DR-C-92500 & 074031-CUR-00-XX-DR-C-92501.

Access points have been located at the head of each run, at a change in direction and at a change of pipe size in accordance with Building Regulations Part H.

The appropriate barriers and signage should be installed during any opening of manholes to warn pedestrians.

Existing manholes are subject to existing access procedures. Typically chambers with a minimum working space of 900mm can be accessed by personnel; however, a winch must be used. Where 1050mm of working space is provided, manholes should be accessed using steps and where 1200mm working space is provided; manholes should be accessed using ladders, this is in accordance with Building Regulations Part H.

When accessing chambers, the latest Health and Safety legislation should be adhered to.

The appropriate health and safety equipment must be used when accessing manholes. Confined space certificates must be held by any personnel entering a manhole and the appropriate permits should be obtained from the Facilities Maintenance Manager prior to any access.

Sediment/material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols; especially where run-off is taken from potentially contaminated areas.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Initial inspection should be provided as post construction CCTV survey.	N/A
	Inspect for evidence of poor operation via water level in chambers. If required take remedial action.	3-monthly, 48 hours after large storms.
Occasional maintenance	Check and remove large vegetation growth near pipe runs.	6 monthly
Remedial actions	Rod through poorly performing runs as initial remediation.	As required.
	If continued poor performance jet and CCTV survey poorly performing runs.	As required.
	Seek advice as to remediation techniques suitable for the type of performance issue and location.	As required If above does not improve performance.

2.4 Pipes

The locations of the pipes are indicated on Curtins drainage drawing 074031-CUR-00-XX-DR-C-92500 & 074031-CUR-00-XX-DR-C-92501.

Pipes can be cleaned using drain cleaning rods or drain cleaning jets, accessed from inspection chambers and manholes.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Initial inspection should be provided as post construction CCTV survey.	N/A
	Inspect for evidence of poor operation via water level in chambers. If required take remedial action.	3-monthly, 48 hours after large storms.
Occasional maintenance	Check and remove large vegetation growth near pipe runs.	6 monthly
Remedial actions	Rod through poorly performing runs as initial remediation.	As required.
	If continued poor performance jet and CCTV survey poorly performing runs.	As required.
	Seek advice as to remediation techniques suitable for the type of performance issue and location.	As required If above does not improve performance.

2.5 Gullies / Sump, Outlet and Access Units

The locations of the gullies or sump outlet units are indicated on Curtins drainage drawings 074031-CUR-00-XX-DR-C-92500 & 074031-CUR-00-XX-DR-C-92501.

Gullies and sump outlet units installed have removable covers to allow cleaning and clearing of debris and silt. The appropriate barriers and signage should be installed during any opening of gullies to warn pedestrians.

Sediment/material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols; especially where run-off is taken from potentially contaminated areas.

2.6 Linear Slot Drainage

Linear channel drainage systems should be inspected and cleaned in accordance with the manufacturer's maintenance guide as below:

Gatic Slotdrain channels should be inspected regularly to ensure that the system continues to operate effectively, and is free from damage and blockage by debris or solid objects.

The system should be cleaned at least once a year, and incorporated into a planned maintenance schedule. The frequency of inspection and maintenance depends on the local environment and conditions.

Channel units can be cleaned through the use of a high-pressure hose. This can be fed into the channel system through access units strategically placed along the channel run

The throat section of channel units should be kept clear at all times to ensure uninterrupted flow of water into the drainage channel. Any debris within the throat should be removed.

The seating areas for covers and grates should be cleaned before they are replaced. The covers and grates should be locked into position to prevent these being removed, stolen or dislodged by traffic. Locking bolts should be replaced and sufficiently tightened, taking care that the bolt heads do not stand above the top surface of the cover or grate. If grates/covers are allowed to move within their frame, this may cause damage to the frame or seating.

2.7 Cellular Storage

The Attenuation System should be inspected and cleaned in accordance with the manufacturer's details (**Manufactures Details To be added** Maintenance guide, *Appendix B*).

Geocellular units are proprietary products and therefore manufacturer's recommendations should be taken in to consideration.

SDS who will manufacture the onsite cellular tanks specify in their maintenance guide that tanks itself needs very little maintenance. They state how the incoming pipe will be connected to a catch pit manhole which will require periodic inspection and emptying in line with the surrounding drainage. The internal distribution pipe needs routine inspection and jetting again in line with the surrounding drainage on site.

Sediment\material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols, especially where run-off is taken from potentially contaminated areas such as car parks/service yards.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Inspect inlets, outlets and overflows for blockages, and clear if required. If faults persist jetting and CCTV survey may be required.	Monthly and after large storms.
	Check penstocks and other mechanical devices (if present).	Half yearly.
Regular maintenance\inspection	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 after heavy rainfall events)
Remedial actions	Repair/rehabilitation of inlets, outlet, overflows and vents.	As required.

2.8 Permeable Pavements

The locations of the permeable pavements are indicated on Curtin's drainage drawings 074031-CUR-00-XX-DR-C-92500 & 074031-CUR-00-XX-DR-C-92501.

Permeable pavements contain proprietary products and as such, where used, the manufacturer's recommendations should be followed.

The permeable pavements are intended to be water quality and attenuation storage features. These features are intended to be dry except during rainfall events.

The surface has been designed to contain gaps where rain can flow through the upper construction layers into the voided stone which makes up the subbase. Where these features are intended to be used as infiltration devices or soakaways any capping also needs to be permeable to permit the flows to the formation.

Access for maintenance is provided as this is a surface feature only.

Regular inspection and maintenance is important for the effective operation of the pervious pavement.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required).	Initial Inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth. If required take remedial action. Inspect silt accumulation rates and establish appropriate brushing frequencies. Silt can also be caused by adjacent landscaping areas which should be reprofiled to provide a flat area or berm adjacent to the paving.	3-monthly, 48 hours after large storms.
Regular maintenance\ inspection	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 and as per landscape architect's specification.
	Removal of weeds	As required.

Maintenance Schedule	Required Action	Frequency
Remedial Action	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. This could include replacement of the jointing and bedding material. The upper geotextiles layer may also need replacing if clogged and Terram 1000 has a life span of 25 years.	As required (if infiltration performance is reduced as a result of significant clogging).

Appendix A

Proposed Drainage Drawings: 074031-CUR-00-XX-DR-C-92500 & 074031-CUR-00-XX-DR-C-92501

Appendix B

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