

Poland Steet Zone, Ancoats Green

Drainage Maintenance Schedule

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PREPARED FOR

Manchester City Council

Drainage Maintenance Schedule

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1. Introduction

Civic Engineers have been appointed by Manchester City Council to provide civil and structural engineering services to support a full planning application for the redevelopment of Ancoats Green.

2. Site Description

The proposed development site Ancoats Green is located in Ancoats, Manchester and lies approximately 0.5km to the northeast of Manchester City Centre. The site is bounded by Portugal Street to the north, Wadeford Close to the east, Jersey Street to the south and industrial buildings to the west.

Ancoats Green site area is approximately 1.08ha. The OS Grid Coordinates at the approximate centre of the site are 385220, 398947 and the nearest postcode is M4 6BZ.

3. Maintenance Schedule

3.1. Inspection Chambers & Manholes

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

Covers of inspection chambers and manholes shall be removed and the sides, benching and channels cleared.

Accumulated deposits of silt in inspection chambers and manholes shall be removed. Any traps shall then be plunged and thoroughly flushed out with clean water. This should be completed in Autumn, after leaf fall.

Main and branch drains shall be cleared as required and afterwards be flushed with clean water. Any obstructions found shall be removed and not flushed down the system.

Covers of inspection chambers and manholes shall be replaced, bedded in suitable grease or other sealing material as required and bolted/locked down as appropriate. Missing bolts and broken items shall be replaced in accordance with the manufacturer's details.

3.2. Pipes

Regular inspection and maintenance is important to identify areas which may have become obstructed/clogged and may not be draining correctly, as failure to do so would expose the development to a greater level of flood risk.

Pipes are proprietary products and therefore the materials used can vary across the site. As such, where used the manufacturer's recommendations should be followed. Access for maintenance of the pipes is provided through inspection chambers and manholes Table 1 below sets out the maintenance schedule for the pipe components of the proposed drainage systems.

Table 1: Pipe maintenance schedule

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect for evidence of poor operation via water levels. If required, take remedial action.	Monthly for 3 months, then six-monthly intervals. Also, 48 hours after large storms.
	Check and remove large debris and/or vegetation growth near pipe runs.	Monthly or as required.
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.	As required, if above actions do not improve performance.
Monitoring	Initial inspection should be provided as post construction CCTV survey.	N/A
	Inspect/check all inlets, outlets, and overflows to ensure they are in good condition and operating as designed.	Monthly for 3 months, then six-monthly intervals. Also, 48 hours after large storms.

3.3. Slot Drains, Rills and Gullies

Slot drains, rills and gullies should be inspected and cleaned in accordance with the manufacturer's details. Slot units can be cleaned using a high-pressure hose; this can be fed into the channel system through access units strategically placed along the channel run.

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 covers are allowed to move within their frame, this may cause damage to the frame or seating. Table 2 below sets out the maintenance schedule for the drainage channel and gullies components of the proposed drainage systems.

Table 2: Drainage Channels and Gullies Maintenance Schedule

Maintenance Schedule	Required Action	Typical Frequency
	Litter and debris removal	Monthly or as required

Regular Maintenance	Check and remove large debris and/or vegetation growth near pipe runs.	Monthly or as required.
	Inspect for evidence of poor operation and/or weed growth. If required, take remedial action. Inspect silt accumulation rates and establish appropriate brushing frequencies.	Monthly for 3 months, then six-monthly intervals. Also, 48 hours after large storms.
Remedial Actions	Inspect access/outlet boxes and rod through poorly performing channels and outlets as initial remediation	As required.
	Seek advice as to remediation techniques suitable for the type of performance issue.	As required, if above actions do not improve performance
Monitoring	Initial inspection including channel outlet boxes and gully sumps.	Monthly for 3 months, then six-monthly intervals. Also, 48 hours after large storms.

3.4. Vortex Flow Control Devices

Regular inspection and maintenance are important to identify if the vortex flow control device has become obstructed/clogged and may not be functioning correctly, as failure to do so would expose the development to a greater level of flood risk.

Vortex flow control devices are proprietary products and therefore can vary from manufacturer to manufacturer. As such, where used the manufacturer's recommendations should be followed.

- Normally, little maintenance is required as there are generally a vortex flow control device has no moving parts.
- If blockages occur, they tend to do so at the intake of the vortex flow control device.
- Vortex flow control devices are generally fitted with a pivoting by-pass door, which allows the manhole chamber to be drained down should blockages occur.
- The smaller type of conical units, below the minimum recommended size, are also supplied with rodding facilities or vortex suppressor pipes as standard.
- Following installation of the vortex flow control device it is vitally important that any extraneous material i.e. Building materials are removed from the unit and the chamber.

- After the system is made live, it is recommended that each unit be inspected monthly for three months and thereafter at six monthly intervals with hose down if required. Units should also be inspected within 48 hours after large storms.

3.5. Permeable Paving

Regular inspection and maintenance is important for the effective operation of pervious pavements. Maintenance responsibility for a pervious pavement and its surrounding area should be placed with an appropriate responsible organisation. Before handing over the pavement to the client, it should be inspected for clogging, litter, weeds and water ponding, and all features should be rectified. After handover, the pavement should be inspected regularly, preferably during and after heavy rainfall to check effective operation and to identify any areas of ponding.

Table 3: Table 20.15 from the CIRIA SuDS Manual C753 on the operation and maintenance requirements for pervious pavements.

TABLE 20.15 Operation and maintenance requirements for pervious pavements		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
Remedial Actions	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, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Three-monthly, 48 h after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

3.6. Bioretention Systems

In general, the maintenance for bioretention areas can often be undertaken as part of routine landscape maintenance.

Table 4 Table 18.3 from the CIRIA SuDS Manual C753 on Operation and maintenance requirements for bioretention systems

TABLE 18.3 Operation and maintenance requirements for bioretention systems		
Maintenance schedule	Required action	Typical frequency
Regular inspections	Inspect infiltration surfaces for silting and ponding, record de-watering time of the facility and assess standing water levels in underdrain (if appropriate) to determine if maintenance is necessary	Quarterly
	Check operation of underdrains by inspection of flows after rain	Annually
	Assess plants for disease infection, poor growth, invasive species etc and replace as necessary	Quarterly
	Inspect inlets and outlets for blockage	Quarterly
Regular maintenance	Remove litter and surface debris and weeds	Quarterly (or more frequently for tidiness or aesthetic reasons)
	Replace any plants, to maintain planting density	As required
	Remove sediment, litter and debris build-up from around inlets or from forebays	Quarterly to biannually
Occasional maintenance	Infill any holes or scour in the filter medium, improve erosion protection if required	As required
	Repair minor accumulations of silt by raking away surface mulch, scarifying surface of medium and replacing mulch	As required
Remedial actions	Remove and replace filter medium and vegetation above	As required but likely to be > 20 years

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