DRAINAGE MAINTENANCE AND MANAGEMENT PLAN

Dakota Hotel
Manchester Airport

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CONTENTS

Confidentiality Statement

Document History

1.0	**Introduction**	**1**
2.0	**Drains/Sewers**	**2**
3.0	**Manholes/Access Chambers**	**2**
4.0	**Silt Trap Manholes**	**3**
5.0	**Drainage Channels and Kerb Drains**	**3**
6.0	**Road Gullies**	**3**
7.0	**Flow Control Chambers**	**4**
8.0	**Attenuation Tanks**	**4**
9.0	**Oil Separators**	**5**
10.0	**Proprietary Treatment Systems/Devices**	**5**
11.0	**Health and Safety**	**6**
12.0	**Record History**	**6**

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DOCUMENT HISTORY

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1.0 INTRODUCTION

The foul and surface water drainage system proposed as part of the works is shown on JPG drawings 6338-JPG-ZZ-ZZ-DR-D-1400.

The foul and surface water drainage system form part of the proposed development and will require maintenance to ensure continued satisfactory operation for the lifetime of the development.

Pipe sizes and gradients are designed to be self-cleansing, albeit regular maintenance and inspections are required, to ensure the long-term efficiency of the systems.

Any drainage infrastructure located within the plot demise, will be the responsibility of the developer via the developer's management company. This responsibility maybe passed onto the tenant, depending upon whether the building is being rented or will be owned by the end user. This will be subject to individual lease or sale agreements between the two parties.

Where the off-plot infrastructure is to remain privately maintained, this will be the responsibility of the developer via his appointed management company.

However, where off-plot systems are maintained by third parties, the responsibility for maintenance will lay with the third party. For example, highway drainage and public sewers would be the responsibility of Manchester City Council Highways and United Utilities respectively.

No work shall be carried out on the drainage system without permission from a nominated person, who has access to information and a working knowledge of the system.

Maintenance/inspection work shall be carried out in a safe and planned manner.

All work is to be carried out by competent persons, who are suitably trained and equipped, in accordance with current statutory safe working policies.

Entry into confined spaces shall be kept to a minimum and be restricted to suitably qualified and equipped persons, working in accordance with current statutory safe working policies.

High levels of hygiene shall be maintained at all times, with adequate welfare facilities being provided for maintenance personnel.

2.0 DRAINS/SEWERS

The main objective of this maintenance document is to establish procedures to ensure the private drainage system functions appropriately in the long term within an environment of fiscal control.

Maintenance includes:

- Local repair or local replacement of damaged pipes or other structures in order to maintain the functioning of the drainage system.
- Cleaning and removal of sediments, obstructions etc. to restore hydraulic capacity.
- Jetting/vacuum of sewers to be undertaken as often as necessary to remove silts and/or ordinary debris.
- In the event that any extraordinary issues are encountered during an inspection, further information may be required such as a CCTV survey report.
- Maintenance to be undertaken on a six-monthly schedule as a minimum.

To avoid damaging the pipe, PSI pressures need to be verified before jetting of plastic twin wall sewers. Cleaning of drainage systems may require the temporary sealing of the system and careful collection of the effluent for disposal off site.

3.0 MANHOLES/ACCESS CHAMBERS

All manhole covers should be lifted, and the manholes visually inspected for silt, debris, damage to benching and signs of blockages within the drainage system.

Debris shall be removed from the benching and chamber. This shall not be removed by washing down the outgoing pipe.

Any loose benching shall be removed from the chamber and not allowed to be washed down the pipe system where it could cause a blockage. Areas of damaged benching shall be noted and procedure for repair instigated.

Should any debris or blockages be detected, the manholes should be cleaned along with associated pipe runs which should be high pressure jetted and CCTV surveyed to verify/identify that no further remedial works are required.

The manhole covers and frames shall be checked for damage and ensure correctly bolted together. This should be undertaken on a six-monthly basis.

Missing bolts and broken items shall be replaced in accordance with the manufacturer's details. Damaged cover/frames that cannot be repaired shall be completely replaced.

Before replacing the cover, suitable grease or other sealing material shall be applied to the frame as required to form an airtight seal. Bolts shall be replaced and fully tightened.

4.0 SILT TRAP MANHOLES

These chambers are designed with sumps to accumulate silt and debris at specific locations, in particular upstream of the attenuation structures, basins, and ponds. These should be checked and cleaned out on a six-monthly basis.

5.0 DRAINAGE CHANNELS AND KERB DRAINS

All drainage channels and kerb drain systems 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 systems 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/kerb drains can be cleaned using a high-pressure hose. This can be fed into the system through access units.

The throat section of channel units and aperture of the kerb drains should be kept clear at all times to ensure uninterrupted flow of surface runoff into the drainage channel. Any debris 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 or surrounding paving.

Broken or damaged sections for channel and/or grating should be replaced where practical to do so and to avoid further deterioration of the system.

During prolonged periods of dry weather, traps shall be checked and replenished as necessary in order to maintain the seal and preventing the escape of odours.

6.0 ROAD GULLIES

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

The gullies 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.

The gully grating should be kept clear at all times to ensure uninterrupted flow of surface runoff into the gully. Any debris should be removed.

The seating areas for the grate 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.

During prolonged periods of dry weather, traps shall be checked and replenished as necessary in order to maintain the seal and preventing the escape of odours.

7.0 FLOW CONTROL CHAMBERS

Where surface water runoff needs to be restricted a flow-control device will be required. This could be a simple orifice plate or a proprietary vortex flow controller.

Regular inspections of the flow control chamber should be carried out to ensure debris does not obstruct the inlet to the flow control.

Debris and any silt that has accumulated in the sump should be removed.

The frequency of inspection will depend on the catchment size and location of the unit. It is recommended initial inspections should be on a three-month basis for the first year of operation followed by a six-monthly basis thereafter.

In the event that the inlet to a vortex type flow controller becomes blocked, the pivoting bypass door may be operated by pulling the wire rope attached upwards to drain down the chamber and provide access for maintenance.

Note that the bypass door should be reset to the closed position once the blockage is cleared.

8.0 ATTENUATION TANKS

There are several different types of attenuation tanks from large diameter pipe systems to precast concrete tanks, box culverts and geo-cellular storage units and all have different maintenance requirements depending upon the system and manufacturer.

Inspection and maintenance of the attenuation tank shall be in accordance with the manufacturer's recommendations for the installed system.

Attenuation tanks shall be inspected at least twice a year (every six months) or if the tank and/or drainage system does not appear to be fully draining down as there may be a or problem.

Inspection shall be visually from ground level and only as a last resort should a person enter the tank using appropriate safety equipment (where man access to a tank is possible).

Where further investigation and internal inspection is required, this should be carried out via a CCTV survey. Only tank systems which allow for internal inspection should be installed.

Sumps shall be checked and cleaned on a six-monthly basis and silt removed to a licenced facility.

Where a vortex flow control is located in the attenuation tank these shall be maintained in accordance the relevant sections in this document.

9.0 OIL SEPARATORS

Where petrol/oil separators are to be installed as part of the storm water drainage system these shall be maintained as follows:

In order to prevent pollution, the separators need to be regularly maintained. This should be carried out on a six-monthly basis or as required if the alarm is triggered by suitably qualified personnel and in accordance with details in EN858-2:2003 section 6.

Maintenance should be as follows:

- Determine sludge/silt volume in upstream catchpits and remove.
- Assess the depth of accumulated oil and silt in the separator.
- Check the condition of any coalescing device and replace as necessary.
- Service any electrical equipment i.e. alarms or management systems.
- Physically inspect the integrity of the separator and any mechanical parts.

The separator should be emptied when oil/silt levels have significantly built up. All retained waste, including silt must be removed and the separator refilled with clean water. In the event of a spillage, the separator should be emptied. Emptying should be undertaken by a registered waste removal company, experienced in separator emptying.

Every five years, the separator should be emptied and given a general inspection to test its integrity and performance, after which the separator must be refilled with clean water.

A detailed log should be kept up when the separator has been inspected, maintained, emptied and serviced, along with records of any specific events relating to the system such as cleaning, spillages. Failure to carry out the maintenance may result in pollution of the environment.

10.0 PROPRIETARY TREATMENT SYSTEMS/DEVICES

Where a proprietary treatment system is employed, these shall be installed and maintained in accordance with the manufacturer's instructions and recommendations to ensure they continue to operate effectively and as designed.

11.0 HEALTH AND SAFETY

Employers shall, so far as is reasonably practical, provide and maintain systems of work that are safe and without risks to health. The systems of work shall cover all aspects of the works including above-ground operations (for example manhole location and traffic control), access to the sewer system and all operations in the confined space of the sewer system.

12.0 RECORD HISTORY

The site manager shall be responsible for recording and updating details of prior maintenance and operations, which can be made available for future reference.

The site manager shall also be responsible for scheduling future maintenance in accordance with the necessary requirements of each component, create a fixed timetable of routine checks and ensure that the maintenance is undertaken appropriately.

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