



## **DRAINAGE MAINTENANCE SCHEDULE**

**FOTHERGILL COATED FABRICS LIMITED**

**FOTHERGILL EXTENSION**

**AT**

**FOTHERGILL COATED FABRICS**

**UNIT 12 RIVERSIDE DRIVE**

**ROCHDALE**

**OL16 2HS**

**HBL Ref: 11122- HBL-XX-XX-RP-C-5102**

**REV.P01**

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## 1. INTRODUCTION

- 1.1. Drainage systems require maintenance to ensure that all elements including the SuDS components operate effectively for their lifetime.
- 1.2. This typical drainage maintenance report has been prepared to accompany the drainage design for a proposed extension to an existing industrial building, located in Rochdale, providing an overview of the operation and maintenance requirements for the drainage features included within the proposed drainage layout in **Appendix A:**

### **11122-HBL-XX-XX-DR-C-5200 P01 PROPOSED DRAINAGE LAYOUT**

- 1.3. Full consideration to long term maintenance should be given, as part of the detailed design process, installation, and construction of the proposed drainage system; this report should be updated throughout the design and construction process.
- 1.4. The recommended operations and frequencies in this report are typical only and should be more frequent initially (establishment maintenance) to ensure that there are no unforeseen issues with the operation of the SuDS components and then adjusted to suit the site requirements.
- 1.5. Any specialist or proprietary products that has been specified, should be installed in accordance with the manufacturer's design and details and should be issued by the manufacturer with specific maintenance regime, which should be followed during construction period and included within the Operation and Maintenance Manual for the site.
- 1.6. 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.
- 1.7. Maintenance of systems during construction and for agreed period after the development is complete, will be the responsibility of the developer.
- 1.8. The developer should take all possible measures to prevent debris of any kind entering the drainage system.
- 1.9. Any existing and permanent proposed drainage features used during construction phase should be suitably protected to accommodate construction traffic. Following the main construction works the permanent drainage used during construction should be thoroughly cleaned and surveyed before being incorporated into the final scheme drainage.
- 1.10. The developer will keep records of maintenance activities, silt removal operation for duration of the construction and agreed period post construction. This information can be used to make modification to the ongoing maintenance plan which will be adopted by the site owners/operators upon completion.
- 1.11. Detailed maintenance schedule, based on as built drainage plans, post construction CCTV surveys with supporting information from manufacturers of all drainage components/proprietary systems, must be incorporated within the Operation and Maintenance (O&M) manual for the site and should be accessible to those who undertake maintenance.
- 1.12. The Detailed Maintenance Schedule/Plan should be reviewed annually and/or when maintenance contracts are renewed. This review should apply to all drainage components on site but is particularly important for the soft landscape elements, as plants and trees require different periodic management techniques as they develop.
- 1.13. The drainage maintenance plan should be a living document that is reviewed periodically with references to changes on site and surroundings where may be appropriate.

## 2. MAINTENANCE RESPONSIBILITIES

- **Private property drainage and SuDS** - located within property boundaries.
  - During construction and for agreed period after completion – **T.B.C.**
  - Future maintenance of private drainage network including private SuDS (where applicable) – **Fothergill Coated Fabrics Ltd**

**Note:**

Due to the limitations of sewer record accuracy and changes introduced by the Public Sewer Transfer Regulations in 2011, not all public sewers may be shown on the records provided in **Appendix B**.

All works should therefore be approached with caution, and appropriate site investigation should be undertaken prior to commencement.

If any uncharted or unknown sewers are encountered during investigation or construction, **United Utilities must be contacted immediately** for further guidance and approvals.

Minimum easement distances should be maintained in accordance with **United Utilities local practice**, unless a formal easement agreement is in place—in which case, the specified easement width shall apply.

For any works in proximity to public assets, or where diversion of a sewer is proposed, **United Utilities for specific guidance and consent**.

### 3 OVERVIEW OF MAINTENANCE

- 3.1. All drainage systems, whether piped systems or SuDS require regular maintenance, therefore a suitable maintenance strategy should be adopted to ensure that the drainage network is cleaned regularly, and the routine maintenance and cleansing regime undertaken is documented.
- 3.2. The maintenance of the SuDS system at the development should be included alongside other regular maintenance tasks.
- 3.3. A copy of final construction drainage layout (as built Drainage Plan based on post construction CCTV surveys) and detailed maintenance schedule should be provided within the Operation and Maintenance (O&M) manual for the site and should be accessible to those who undertake maintenance.
- 3.4. It is recommended that the drainage system (inspection of inlets, outlets and control structures) is inspected monthly (and no less than three monthly), at the same time as other routine maintenance activities such as litter collection, grass cutting etc., with the system also being inspected after any major storm event.
- 3.5. Photographic records of the inspection are recommended as this can pick up any long-term changes that might not be apparent on a single visit, especially if inspections are carried out by different member of staff.
- 3.6. Inspections should comply with all relevant health and safety legislation (the Management of Health and Safety at work Regulations 1999) including the development of risk assessment for working close to or in water.
- 3.7. If any areas of significant sediment deposition are identified following major storm events, a post event clean-up operation may be required including removal of litter, vegetation, sewerage debris and any larger objects.
- 3.8. Long-term management practices should include monthly sweeping of external paved areas to remove sand and contaminants directly from paved surfaces before they become mobilised during storm events and transported to the drainage system.
- 3.9. During the winter months, drainage features such as gullies and channels should be cleared of ice, snow, debris and litter.
- 3.10. Table 1 below gives an overview of typical maintenance tasks and the frequency with which they need to be undertaken.

**Table 1: Drainage Systems - typical maintenance tasks**

| DRAINAGE SYSTEMS - TYPICAL MAINTENANCE TASKS |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACTIVITY                                     | INDICATIVE FREQUENCY                                                                  | TYPICAL TASKS                                                                                                                                                                                                                                                                                                                                                           |
| Establishment Maintenance.                   | Initial one-off requirement particularly for planting establishment, design specific. | <ul style="list-style-type: none"> <li>• Inspections,</li> <li>• Weeding,</li> <li>• Watering.</li> </ul>                                                                                                                                                                                                                                                               |
| Regular Maintenance.                         | Monthly to annually (For typical care of SuDS components).                            | <ul style="list-style-type: none"> <li>• General inspection of inlets, outlets, control structures, suds components,</li> <li>• Litter and debris removal,</li> <li>• Grass cutting, weed and invasive plant control,</li> <li>• Shrub management (including pruning),</li> <li>• Shoreline vegetation management,</li> <li>• Aquatic vegetation management.</li> </ul> |
| Occasional Maintenance.                      | Annually (Dependent on design).                                                       | <ul style="list-style-type: none"> <li>• Sediment management</li> <li>• Vegetation replacement,</li> <li>• Vacuum sweeping and brushing.</li> </ul>                                                                                                                                                                                                                     |
| Remedial Maintenance.                        | As required (tasks to repair problems due to damage).                                 | <ul style="list-style-type: none"> <li>• Structure rehabilitation/ repair,</li> <li>• Infiltration surface reconditioning.</li> </ul>                                                                                                                                                                                                                                   |

CIRIA C697 RECOMMENDATIONS

- 3.11. Table 2 below gives an overview of typical key SuDS components operation and maintenance activities that will be or may be required.
- 3.12. SuDS Maintenance Inspection Checklist will be developed during detailed design and construction phase and included within Operation and Maintenance Manual for the site.
- 3.13. Maintenance Inspection Checklist should be used by the contractor and by the organisation responsible for the long-term maintenance of the SuDS system as a recording process to facilitate consistent inspection of the condition of the drainage system on site.

**Table 2: Typical key SuDS components operation and maintenance activities**

| TYPICAL KEY SuDS COMPONENTS OPERATION AND MAINTENANCE ACTIVITIES – Ciria C697 |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
|-------------------------------------------------------------------------------|-----------------|---------|-----------------|--------------------|----------|---------------------|--------------|-----------------|-------------------|--------------------------|--------------|-------------|-------------------------------|
| OPERATION AND MAINTENANCE ACTIVITY                                            | SuDS COMPONENTS |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
|                                                                               | Pond            | Wetland | Detention basin | Infiltration basin | Soakaway | Infiltration trench | Filter drain | Modular storage | Pervious pavement | Swale/bioretention/trees | Filter strip | Green roofs | Proprietary treatment systems |
| <b>Regular maintenance</b>                                                    |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| Inspection                                                                    |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| Litter and debris removal                                                     |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| Grass cutting                                                                 |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| Weed and invasive plant control                                               |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| Shrub management (including pruning)                                          |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| Shoreline vegetation management                                               |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| Aquatic vegetation management                                                 |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| <b>Occasional maintenance</b>                                                 |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| Sediment management <sup>1</sup>                                              |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| Vegetation replacement                                                        |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| Vacuum sweeping and brushing                                                  |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| <b>Remedial maintenance</b>                                                   |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| Structure rehabilitation/repair                                               |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |
| Infiltration surface reconditioning                                           |                 |         |                 |                    |          |                     |              |                 |                   |                          |              |             |                               |

CIRIA C697 RECOMMENDATIONS

Key:

- Will be required
- May be required

Notes: <sup>1</sup> Sediment should be collected and managed in pre-treatment systems, upstream if the main device.

## 4 SITE DRAINAGE COMPONENTS - TYPICAL MAINTENANCE SCHEDULE

- 4.1. SuDS components included within Fothergill Coated Fabrics as presented on the Drainage Plan included within **Appendix A** aim to:

- Control the flow, volume and frequency of water leaving the site,
- Prevent pollution by intercepting silt and cleaning runoff from hard surfaces,
- Create opportunity for wildlife,
- Provide attractive surroundings for the community.

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

**Inlets, outlets, gratings, drainage channels and gullies** - are often conveyance pipes protected with mesh guards. They should be free from obstruction at all times to allow free flows through the SuDS.

**Pipes** - are intended to be the main conveyance across the development and where oversized they form the attenuation volume required by the limitation of the discharge rate. Pipes are proprietary products, and the materials can vary across the site and as such where used the manufacturer's recommendations should be followed.

**Access points, inspection chambers, manholes, rodding eyes** - are used on bends or where pipes come together to allow for cleaning of the system if necessary.

**Silt traps and sump units** - Structures (manholes or chambers) designed to capture suspended solids or sediment in their bottom sump. Some include removable buckets or filters for easier clean-out.

**Attenuation tanks** - tank structure providing underground storage/attenuation during/ after rainfalls where water is slowly released back to the system usually via flow control to downstream outfall.

**Vortex Flow control units or pumps** - proprietary flow control systems - maintenance should be in strict accordance with the manufacturer's instructions and recommendations.

**Overflow and flood routes (exceedance routes)** - allow water volumes exceeding the capacity of the SuDS system to allow water to be collected on surface in exceedance area or pass safely through the site.

**Planting and existing vegetation** - Native trees and shrubs, ornamental trees as detailed in Landscape Architect's specification and drawings.

### Inlets, outlets, gratings, drainage channels and gullies.

- 4.3. Inlets and outlets to be inspected monthly for damage, blockage, and silt accumulation. Remove all debris and silt from apron where present. Strim 1m area around structure where in grass or sweep to ensure unrestricted access.
- 4.4. Gratings – inspect monthly to check for damage, blockages, and silt accumulation. Remove all debris and silt from apron below grating where present. Evaluate requirements to rod, jet pipe run at each inspection and annually after leaf fall. Strim 1m area around structure where in grass.
- 4.5. Channels and gullies should be inspected and cleaned in accordance with the manufacturer's details. Channel 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. The throat section of channel units should be kept clear at all times to ensure uninterrupted flow of surface water into the drainage channel and any debris within the throat should be removed.
- 4.6. 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.
- 4.7. 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 area such as the car park channels.

**Table 3: Typical operation and maintenance requirements for Inlets, outlets, gratings, drainage channels and gullies.**

| INLETS, OUTLETS, GRATINGS, DRAINAGE CHANNELS AND GULLIES – TYPICAL MAINTENANCE                                |                                                                                                                                                                                                                                                                                                                                     |                                                  |
|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| MAINTENANCE                                                                                                   | REQUIRED ACTION                                                                                                                                                                                                                                                                                                                     | TYPICAL FREQUENCY                                |
| Monitoring<br>(to be undertaken more frequently within the first year of operation and adjusted as required). | Initial Inspection.                                                                                                                                                                                                                                                                                                                 | Half yearly and after large storms.              |
| Regular inspection/<br>maintenance.                                                                           | Litter/debris removal.                                                                                                                                                                                                                                                                                                              | Monthly or as required.                          |
|                                                                                                               | Inspect and remove vegetation/weed growth near channel runs.                                                                                                                                                                                                                                                                        | Monthly or as required.                          |
|                                                                                                               | Inspect for evidence of poor operation and/or weed growth. If required, take remedial action.<br><br>Inspect silt accumulation rates and establish appropriate brushing frequencies.<br><br>Silt can also be caused by adjacent landscaping areas which should be reprofiled to provide a flat area or berm adjacent to the paving. | Every 3 months, 24-48 hours after a large storm. |
| Remedial Maintenance.                                                                                         | Inspect access/outlet boxes and rod through poorly performing channels and outlets as initial remediation.                                                                                                                                                                                                                          | As required.                                     |

## Pipes.

- 4.8. Pipes are proprietary products, and the materials can vary across the site and as such where used the manufacture's recommendations should be followed. All manufacturer's products data sheets and recommendations should be included within the Operation and Maintenance (O&M) manual for the site and should be accessible to those who undertake maintenance.
- 4.9. Pipes are intended to be the main conveyance across the development and where oversized they form the attenuation volume required by the limitation of the discharge rate. They are intended to be dry except for during rainfall events. These have been designed to be self-cleaning where possible for smaller diameter pipes, and for larger diameters the risk is reduced due to the overall pipe size.
- 4.10. Access for maintenance is provided through access chambers and manholes.
- 4.11. Regular inspection and maintenance are important to identify areas which may have been obstructed and may not be functioning correctly.

**Table 4: Typical operation and maintenance requirements for pipes.**

| PIPES – TYPICAL MAINTENANCE                                                                                   |                                                                                                                        |                                                  |
|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| MAINTENANCE                                                                                                   | REQUIRED ACTION                                                                                                        | TYPICAL FREQUENCY                                |
| Monitoring<br>(to be undertaken more frequently within the first year of operation and adjusted as required). | Initial Inspection should be as part of the post construction CCTV survey.                                             | Post construction CCTV survey.                   |
| Regular inspection/maintenance.                                                                               | Inspect for evidence of poor operation by assessing water level in access chambers. If required, take remedial action. | Every 3 months, 24-48 hours after a large storm. |
| Remedial Maintenance.                                                                                         | Rod through poorly performing pipe runs as initial remediation.                                                        | As required.                                     |
|                                                                                                               | If poor performance continuous jet and CCTV survey.                                                                    | As required.                                     |
|                                                                                                               | Seek advice as to remediation techniques suitable for the type of performance issue, location, pipe material.          | As required.                                     |

Access points - inspection chambers and manholes.

- 4.12. 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.
- 4.13. Inspect monthly and after major storms during year 1 to check for damage and blockages.
- 4.14. Annual inspection after leaf fall thereafter removing all accumulated debris and silt. Check control tubes flow freely.
- 4.15. 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 Maintenance Manager prior to any access.

Silt traps and sump units.

- 4.16. Silt traps and sump units are designed to capture suspended solids or sediment in their bottom sump. Some include removable buckets or filters for easier clean-out.
- 4.17. Maintenance to be undertaken strictly according to manufacturer's specification and details. As a general guide, the following typical maintenance schedule is presented within table below:

**Table 5: Typical operation and maintenance requirements for silt traps and sump units.**

| SILT TRAPS – TYPICAL MAINTENANCE |                                                                                      |                           |
|----------------------------------|--------------------------------------------------------------------------------------|---------------------------|
| MAINTENANCE                      | REQUIRED ACTION                                                                      | TYPICAL FREQUENCY         |
| Routine maintenance.             | Inspection                                                                           | Monthly.                  |
|                                  | Litter/debris removal.                                                               | Monthly or as required.   |
| Occasional Maintenance.          | Sediment removal - Silt baskets, catchpits should be emptied and/or filters changed. | 6 monthly or as required. |
| Remedial Maintenance.            | Repair (as a result of damage).                                                      | As required.              |

## Attenuation tank

- 4.18. Regular inspection and maintenance are important for the effective operation of attenuation tanks as designed. As the feature is buried, a regular inspection regime is very important to ensure the correct functionality of the surface water drainage network.
- 4.19. Maintenance to be undertaken strictly according to manufacturer's specification and details. As a general guide, the following typical maintenance schedule is presented within table below:

**Table 6: Typical operation and maintenance requirements for attenuation storage tanks**

| ATTENUATION TANKS – TYPICAL MAINTENANCE |                                                                                                                                                                                                        |                                      |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| MAINTENANCE                             | REQUIRED ACTION                                                                                                                                                                                        | TYPICAL FREQUENCY                    |
| Regular Maintenance.                    | Inspect and identify any areas that are not operating correctly. If required, take remedial action.                                                                                                    | Monthly for 3 months, then annually. |
|                                         | Remove debris from catchment surface (where it may cause risks to performance).                                                                                                                        | Monthly.                             |
|                                         | For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary. | Annually.                            |
|                                         | Remove sediment from pre-treatment structures and/ or internal forebays.                                                                                                                               | Annually, or as required.            |
| Remedial Maintenance.                   | Repair/rehabilitate inlets, outlet, overflows, and vents.                                                                                                                                              | As required.                         |
| Monitoring.                             | Inspect/check all inlets, outlets, vents, and overflows to ensure that they are in good condition and operating as designed.                                                                           | Annually.                            |
|                                         | Survey inside of tank for sediment build-up and remove if necessary.                                                                                                                                   | Every 5 years or as required.        |

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Flow control units, pumps.

- 4.20. The flow control unit is intended for flood control and flow restriction, and access or maintenance has been provided by locating it within manhole chambers.
- 4.21. Maintenance to be undertaken **strictly according to manufacturer's specification and details**. As a general guide, the following typical maintenance schedule is presented within table below:

**Table 7: Typical operation and maintenance requirements for Flow Control Units**

| FLOW CONTROL UNITS – TYPICAL MAINTENANCE |                                                                                                                                                                                                                      |                                                                                                                                                                                                                     |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MAINTENANCE                              | REQUIRED ACTION                                                                                                                                                                                                      | TYPICAL FREQUENCY                                                                                                                                                                                                   |
| Monitoring                               | Inspect inlets, outlets, weirs/ orifices for structural integrity and ensure access covers are intact.<br>Check for blockages, and clear if required.<br>If faults persist, jetting and CCTV survey may be required. | Post construction CCTV survey.<br>Inspections be undertaken more regularly within the first year of operation and adjusted as required.<br>Monthly initially, then quarterly, and, 24-48 hours after a large storm. |
| Routine maintenance.                     | Inspection and identification of areas not operating correctly.<br>If required, take remedial action.                                                                                                                | Monthly for 3 months, then quarterly.                                                                                                                                                                               |
|                                          | Litter/debris removal.                                                                                                                                                                                               | Monthly or as required.                                                                                                                                                                                             |
| Occasional Maintenance                   | Sediment removal                                                                                                                                                                                                     | 6 monthly or as required.                                                                                                                                                                                           |
| Remedial Maintenance                     | Repair (as a result of damage)                                                                                                                                                                                       | As required.                                                                                                                                                                                                        |

### Overflows and flood routes.

- 4.22. Overflows are overland access weirs, through gratings or within chambers and should be kept clear at all times to protect areas from flooding, they allow onward flow when part of the SuDS system is blocked.
- 4.23. Flood routes (exceedance routes) allow water volumes that exceed the capacity of the SuDS system to pass though or round the site without causing damage to property. These routes should be clear of obstructions at all times.

**Table 8: Typical operation and maintenance requirements for overflows and flood exceedance routes.**

| OVERFLOWS AND FLOOD ROUTES – TYPICAL MAINTENANCE |                                                                                                                                                                                       |                                  |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| MAINTENANCE                                      | REQUIRED ACTION                                                                                                                                                                       | TYPICAL FREQUENCY                |
| Regular Maintenance                              | Overflows – remove any accumulated grass cuttings or other debris on top of grass weirs or stone- filled baskets overflows.                                                           | Monthly                          |
|                                                  | Overflows - Jet the pipes leading from overflow structures annually and check by running water though the overflow. Check free flow at next SuDS feature – inlet to basin or chamber. | Annually and after large storms. |
|                                                  | Flood routes - make visual inspection. Check route is not blocked by new fences, walls, soil or other rubbish. Remove as necessary.                                                   | Monthly                          |
| Remedial Maintenance                             | Overflows - if overflow is not clear then dismantle the structure and reassemble to design detail.                                                                                    | As required.                     |

Planting and existing vegetation.

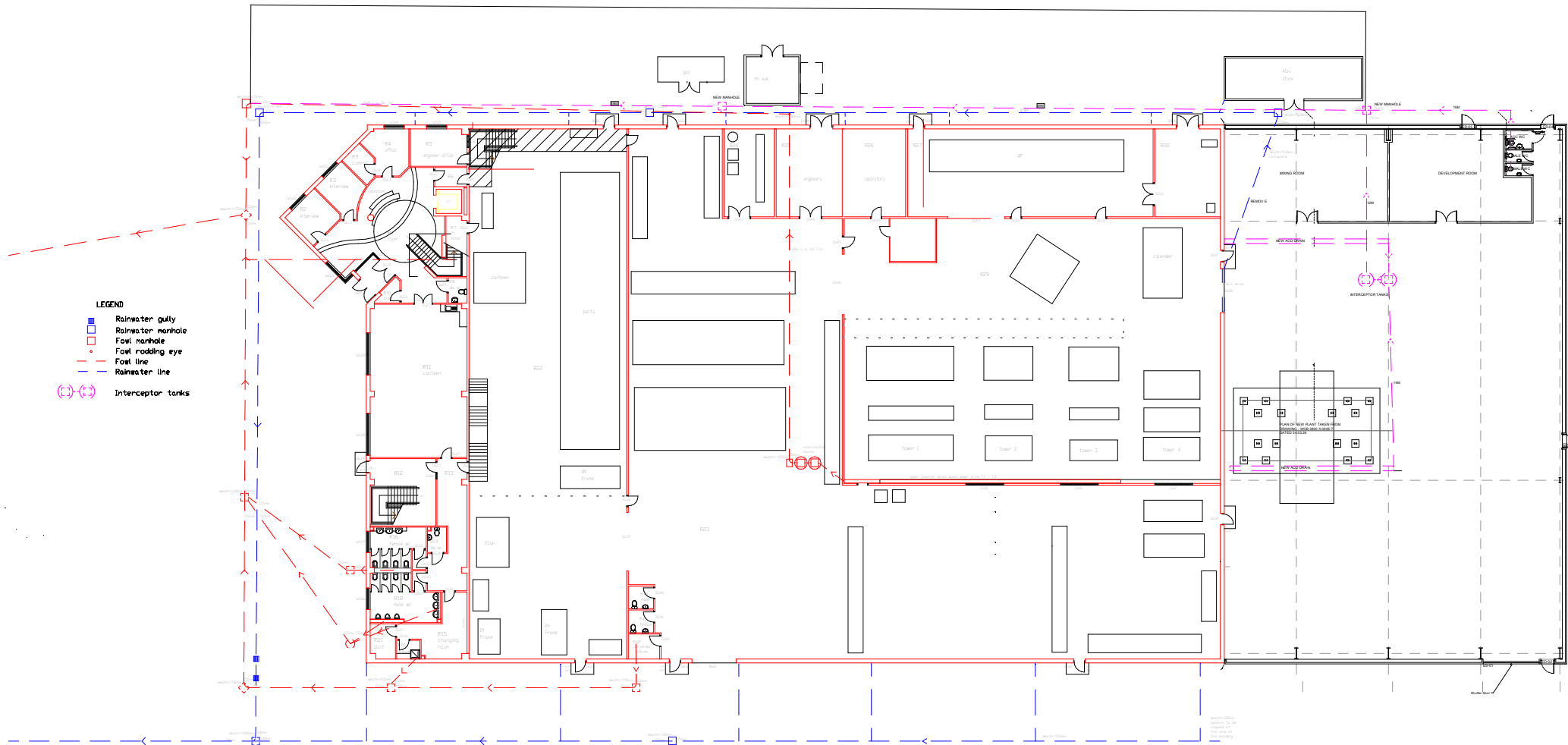
- 4.24. Ornamental trees - an ornamental planting to be kept weed free and prunes to keep the shrubs to an agreed and reasonable size and as detailed in Landscape Architect's specification and drawings.
- 4.25. Native trees and shrub - all native planting to be allowed to grow freely, removing overhanging branches as required and as detailed in Landscape Architects specification and drawings.

**Table 9: Planting and vegetation - typical maintenance to be read in conjunction with Landscape Architect's specification and drawings.**

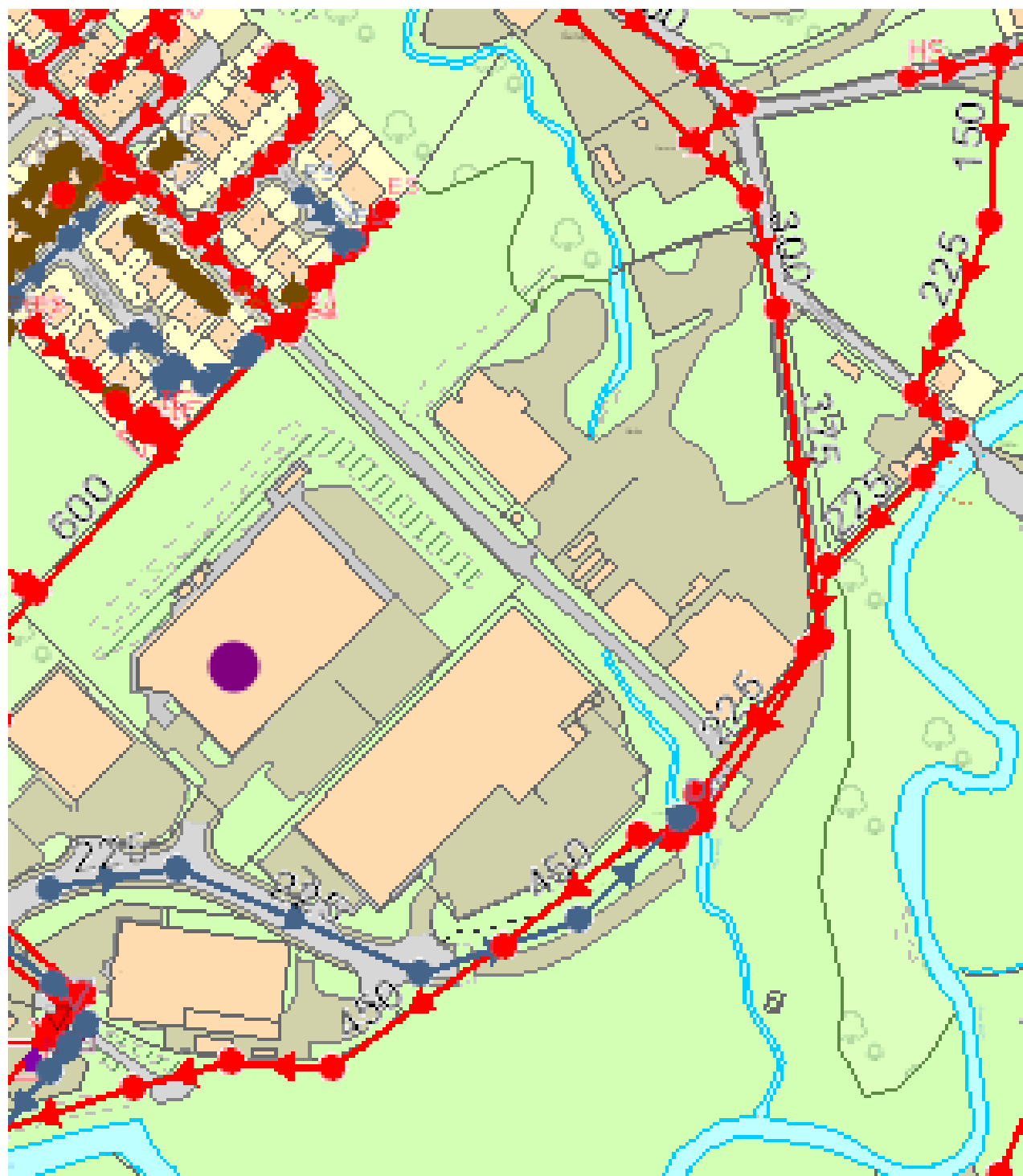
| PLANTING AND VEGETATION – TYPICAL MAINTENANCE |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| MAINTENANCE                                   | REQUIRED ACTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | TYPICAL FREQUENCY                                                                                                              |
| Regular Maintenance                           | <b>Grass maintenance:</b><br>Amenity grass - mow all grass verges, paths and amenity grass at 35-50mm with 75mm maximum. All cuttings to remain in situ or be moved to wildlife stockpiles.<br>Rough grass – mow at 75 -100mm but not exceeding 150mm. All cuttings to wildlife piles.<br>Wildflower areas trimmed to 50mm in Sept-Oct,<br>Or<br>Wildflower areas trimmed to 50mm July and September,<br>Or<br>Wildflower areas trimmed to 50mm on 3-year rotations, 30% each year.<br>All cuttings to wildlife pile.                                                                                      | Average 16 visits per year.<br><br>4-8 visits annually<br><br>1 visit annually<br><br>2 visit annually<br><br>1 visit annually |
|                                               | <b>Ornamental trees and shrub planting</b><br>Weed all shrub beds as detailed in Landscape Architects specification, as necessary.<br>Cut back planting from lights, paths and visibility sight lines in late autumn and as necessary.<br>Cut hedges slightly tapered back from base with flat top as specified height.<br>Do not mulch planting adjacent to any permeable or porous paving surfaces.<br>Remove stakes and ties from trees when no longer needed for support and within 3 years from planting.<br>Protect from strimmer damage and remove competitive growth until it is well established. | Annually and after large storms.                                                                                               |
|                                               | <b>Native and shrub planting</b><br>Prune to shape in year 1.<br>Protect trees from strimmer damage and remove competitive growth until well established.<br>Remove stakes and ties from trees when no longer needed for support and within 3 years from planting.                                                                                                                                                                                                                                                                                                                                         | 1 visit annually                                                                                                               |
|                                               | <b>Existing trees</b> - Check existing trees for safety                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1 visit annually or as required.                                                                                               |
| Remedial Maintenance                          | Replace trees and shrubs that fail in the first 5 years after planting. Carry out tree surgery as necessary.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | As required.                                                                                                                   |

## APPENDIX A – PROPOSED DRAINAGE LAYOUT

## APPENDIX B – PUBLIC SEWER RECORDS



|          |      |                |                                                                                             |
|----------|------|----------------|---------------------------------------------------------------------------------------------|
|          | Name | Date           | Fothergill<br>Coated<br>Fabrics LTD<br>Unit 12<br>Riverside<br>Drive<br>Rochdale<br>OL162SH |
| Drawn    | GR   | 7/4/26         |                                                                                             |
| Checked  | GR   | 7/4/26         |                                                                                             |
| Approved |      |                |                                                                                             |
|          |      |                |                                                                                             |
|          |      |                |                                                                                             |
| Scale    | A0   | FCF Drain Plan | REV 01                                                                                      |
|          |      |                |                                                                                             |



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APPENDIX C – TYPICAL MAINTENANCE INSPECTION CHECKLIST

## SuDS Maintenance Inspection Checklist – C753 The SuDS Manual

### General Information:

|                                                     |  |                                                                                             |  |
|-----------------------------------------------------|--|---------------------------------------------------------------------------------------------|--|
| Site ID:                                            |  |                                                                                             |  |
| Site location and co-ordinates (GIS if appropriate) |  |                                                                                             |  |
| Elements forming the SuDS scheme                    |  | Approved drawing reference(s)                                                               |  |
| Inspection frequency                                |  | Approved specification reference                                                            |  |
| Type of development                                 |  | Specific purpose of any parts of the scheme (eg. biodiversity, wildlife and visual aspects) |  |

### Inspection date

|  | Details | Y/N | Action Required | Date Completed | Details | Y/N | Action Required | Date Completed |
|--|---------|-----|-----------------|----------------|---------|-----|-----------------|----------------|
|--|---------|-----|-----------------|----------------|---------|-----|-----------------|----------------|

### General inspection items

|                                                                                                                                        |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|
| Is there any evidence of erosion, channelling, ponding (where not desirable) or other poor hydraulic performance?                      |  |  |  |  |  |  |  |  |
| Is there any evidence of accidental spillages, oils, poor water quality, odours or nuisance insects?                                   |  |  |  |  |  |  |  |  |
| Have any health and safety risks been identified to either the public or maintenance operatives?                                       |  |  |  |  |  |  |  |  |
| Is there any deterioration in the surface of permeable or porous surfaces (eg rutting, spreading of blocks or signs of ponding water)? |  |  |  |  |  |  |  |  |

## SuDS Maintenance Inspection Checklist - C375 The SuDS Manual

| SuDS Maintenance Inspection Checklist - C375 The SuDS Manual                                                                                                                                                                                                                                                                                                                        |         |     |                 |                |         |     |                 |                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----|-----------------|----------------|---------|-----|-----------------|----------------|
| Inspection date                                                                                                                                                                                                                                                                                                                                                                     |         |     |                 |                |         |     |                 |                |
|                                                                                                                                                                                                                                                                                                                                                                                     | Details | Y/N | Action Required | Date Completed | Details | Y/N | Action Required | Date Completed |
| <b>Silt/sediment accumulation</b>                                                                                                                                                                                                                                                                                                                                                   |         |     |                 |                |         |     |                 |                |
| Is there any sediment accumulation at inlets (or other defined accumulation zones such as the surface of swales, basins and within proprietary devices)?<br>If yes, state depth (mm) and extent.<br>Is removal required?<br>If yes, state waste disposal requirements and confirm that all waste management requirements have been complied with (consult environmental regulator). |         |     |                 |                |         |     |                 |                |
| Is surface clogging visible (potentially problematic where water has to soak into the underlying construction or ground (e.g., under-drained swale or infiltration basin)?                                                                                                                                                                                                          |         |     |                 |                |         |     |                 |                |
| Does permeable or porous surfacing require sweeping to remove silt?                                                                                                                                                                                                                                                                                                                 |         |     |                 |                |         |     |                 |                |

| SuDS Maintenance Inspection Checklist - C375 The SuDS Manual                                  |         |     |                 |                |         |     |                 |                |
|-----------------------------------------------------------------------------------------------|---------|-----|-----------------|----------------|---------|-----|-----------------|----------------|
| Inspection date                                                                               |         |     |                 |                |         |     |                 |                |
|                                                                                               | Details | Y/N | Action Required | Date Completed | Details | Y/N | Action Required | Date Completed |
| <b>System blockages and litter build-up</b>                                                   |         |     |                 |                |         |     |                 |                |
| Is there evidence of litter accumulation in the system?<br>(If yes, is this a blockage risk?) |         |     |                 |                |         |     |                 |                |
| Is there any evidence of any other clogging or blockage of outlets or drainage paths?         |         |     |                 |                |         |     |                 |                |

## SuDS Maintenance Inspection Checklist - C375 The SuDS Manual

| SuDS Maintenance Inspection Checklist - C375 The SuDS Manual                                                                         |         |     |                 |                |         |     |                 |                |
|--------------------------------------------------------------------------------------------------------------------------------------|---------|-----|-----------------|----------------|---------|-----|-----------------|----------------|
| Inspection date                                                                                                                      |         |     |                 |                |         |     |                 |                |
|                                                                                                                                      | Details | Y/N | Action Required | Date Completed | Details | Y/N | Action Required | Date Completed |
| <b>Vegetation</b>                                                                                                                    |         |     |                 |                |         |     |                 |                |
| Is the vegetation condition satisfactory (density, weed growth, coverage etc)?<br>(Check against approved planting regime.)          |         |     |                 |                |         |     |                 |                |
| Does any part of the system require weeding, pruning, or mowing?<br>(Check against maintenance frequency stated in approved design.) |         |     |                 |                |         |     |                 |                |
| Is there any evidence of invasive species becoming established?<br>If yes, state action required                                     |         |     |                 |                |         |     |                 |                |

## SuDS Maintenance Inspection Checklist - C375 The SuDS Manual

| SuDS Maintenance Inspection Checklist - C375 The SuDS Manual                                                                                                                                |         |     |                 |                |         |     |                 |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----|-----------------|----------------|---------|-----|-----------------|----------------|
| Inspection date                                                                                                                                                                             |         |     |                 |                |         |     |                 |                |
|                                                                                                                                                                                             | Details | Y/N | Action Required | Date Completed | Details | Y/N | Action Required | Date Completed |
| <b>Infrastructure</b>                                                                                                                                                                       |         |     |                 |                |         |     |                 |                |
| Are all check dams or weirs in good condition?                                                                                                                                              |         |     |                 |                |         |     |                 |                |
| Is there evidence of any accidental damage to the system (e.g., wheel ruts?)                                                                                                                |         |     |                 |                |         |     |                 |                |
| Is there any evidence of cross connections or other unauthorised inflows?                                                                                                                   |         |     |                 |                |         |     |                 |                |
| Is there any evidence of tampering with the flow controls?                                                                                                                                  |         |     |                 |                |         |     |                 |                |
| Are there any other matters that could affect the performance of the system in relation to the design objectives for hydraulic, water quality, biodiversity, and visual aspects? (Specify.) |         |     |                 |                |         |     |                 |                |

| SuDS Maintenance Inspection Checklist - C375 The SuDS Manual |         |     |                 |                |         |     |                 |                |
|--------------------------------------------------------------|---------|-----|-----------------|----------------|---------|-----|-----------------|----------------|
| Inspection date                                              |         |     |                 |                |         |     |                 |                |
|                                                              | Details | Y/N | Action Required | Date Completed | Details | Y/N | Action Required | Date Completed |
| Other observations                                           |         |     |                 |                |         |     |                 |                |
| Information appended (e.g., photos)                          |         |     |                 |                |         |     |                 |                |

| SuDS Maintenance Inspection Checklist - C375 The SuDS Manual |         |     |                 |                |         |     |                 |                |
|--------------------------------------------------------------|---------|-----|-----------------|----------------|---------|-----|-----------------|----------------|
| Inspection date                                              |         |     |                 |                |         |     |                 |                |
|                                                              | Details | Y/N | Action Required | Date Completed | Details | Y/N | Action Required | Date Completed |
| Suitability of current maintenance regime                    |         |     |                 |                |         |     |                 |                |
| Continue as current                                          |         |     |                 |                |         |     |                 |                |
| Increase maintenance                                         |         |     |                 |                |         |     |                 |                |
| Decrease maintenance                                         |         |     |                 |                |         |     |                 |                |
| Next inspection                                              |         |     |                 |                |         |     |                 |                |
| Proposed date for next inspection                            |         |     |                 |                |         |     |                 |                |